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4TH ANNUAL REGIONAL GATHERING

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Abstract Booklet
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Abstract 2023-1

Management of Severe Opioid Withdrawal with Full Agonist and Transition to Long-Acting Injectable Buprenorphine

Sarah G. Gonzalez, MD; Matt Lamon, MD; Raul Meza, MD

Introduction

Opioid withdrawal is rarely life-threatening, however, in the setting of other medical co-morbidities, it may lead to severe complications. It is critical to abate withdrawal symptoms effectively. This may be achieved using high-potency full agonists of the μ-opioid receptor. Buprenorphine is a partial agonist of the μ-opioid receptor used in Medication Assisted Treatment (MAT) of Opioid Use Disorder. Induction traditionally requires a period of interval opioid withdrawal to avoid precipitated withdrawal. Intravenous buprenorphine used in place of sublingual buprenorphine may facilitate micro-induction.

Case Description

36-year-old male with a history of insulin-dependent diabetes mellitus, severe opioid use disorder. Patient was receiving MAT with buprenorphine/naloxone and was homeless. Five days prior to presentation, his medications were stolen, and patient relapsed fentanyl while to trying to abate the effects of opioid withdrawal. He then presented to the Emergency Department (ED) in diabetic ketoacidosis (DKA) complicated by severe opioid withdrawal. His initial Clinical Opiate Withdrawal Scale (COWS) was 32, indicative of moderately severe withdrawal.

To quickly halt the progression of opioid withdrawal in the setting of severe DKA, the patient was given a high potency full agonist. Patient was initially given hydromorphone 2 mg IV while still in the ED. The goal was to administered hydromorphone every 1 hour for a COWS score of 8 or higher while on end tidal CO^2 monitoring in the ICU. Over an approximate 12-hour period, the patient received a total of 11 mg of intravenous hydromorphone. After opioid withdrawal symptoms were controlled, the patient was started on intravenous buprenorphine for 24 hours as part of a micro-induction protocol. During this time, hydromorphone was continued as needed for COWS greater than 8. On days 2-3, patient was placed on subsequent escalating doses of buprenorphine/naloxone while still on a hydromorphone, see table. On day 4, the patient was given buprenorphine/naloxone 8/2 mg every 8 hours, and no full opioid agonist. On day 5, the patient was inducted on LAI buprenorphine 300 mg subcutaneously.

Discussion

In patients with severe concurrent illness, it's important to abate opioid withdrawal to prevent poor outcomes. One approach uses high potency full opioid agonists, such as hydromorphone. In this case, the patient was not able to properly absorb buprenorphine orally due to the severity of his DKA and resulting dehydration. Once his opioid withdrawal was controlled, the goal was eventual resumption of MAT with buprenorphine. We discussed transition to LAI buprenorphine due to the recurrent issue of stolen medication. In this case it was thought best to proceed with an intravenous formulation of buprenorphine to reduce the risk of precipitated withdrawal. Sublingual buprenorphine has about 31% bioavailability when compared to intravenous buprenorphine.[2] A short interval transition to LAI Buprenorphine was achieved after tolerance to 24 mg of buprenorphine daily was demonstrated for 24 hrs.

Conclusion

Intravenous buprenorphine used in place of sublingual buprenorphine may facilitate micro-induction with less precipitated withdrawal symptoms. Once on a stable dose of buprenorphine/naloxone, a patient can be rapidly transitioned to a LAI buprenorphine, which allows for better medication compliance and decreases the risk of relapse.

Abstract 2023-2

Presentation and Management of Concomitant West Nile Encephalitis and Acute Alcohol Withdrawal

Nicole Nikolov, MS III; Cheyenne McKee, MS III; Sacha Scott, MS III; Eric Zamora, MD; Amardeep Chetha, MD; Gagan Kooner, MD; Hector Arreaza, MD

Introduction

West Nile Virus (WNV) is a vector-borne disease that is typically spread through infected mosquitoes. Most people infected with WNV are asymptomatic, while about 20 percent develop acute fever characteristic of West Nile Fever. In less than one percent of cases, infection with WNV can present as neuro-invasive disease, a rare but severe manifestation. This case report describes a unique case of West Nile Encephalitis (WNE) confounded by acute alcohol withdrawal and delirium tremens.

Case Description

A 56-year-old male field worker with a past medical history of uncontrolled diabetes, hypertension, chronic kidney disease, hyperlipidemia, and alcohol use presented to the emergency department with multiple episodes of vomiting, fever, and intractable hiccups. The patient was admitted for symptoms consistent with systemic inflammatory response syndrome. Blood and urine cultures were negative, and brain CT and MRI were unremarkable. Following these results, the patient continued to deteriorate and presented with new onset altered mental status (AMS), including confusion, lethargy, generalized weakness, slurred speech, headache, tremors, and hallucinations. The etiology of the patient's AMS was unclear at the time but was thought to be related to acute alcohol withdrawal or encephalitis due to an infectious process. Further investigations revealed concomitant WNE and delirium tremens. The patient was discharged after fourteen days following resolution of his neurological symptoms.

Discussion

The goal of this report is to raise awareness of the diagnosis and management of an atypical presentation of WNE in the setting of acute alcohol withdrawal. WNE and acute alcohol withdrawal present with many overlapping clinical features and radiographic findings, making it difficult to identify the two disease processes when they present simultaneously. A high suspicion for WNV disease, particularly in immunocompromised patients or those with comorbid conditions in endemic regions, is needed for prompt and accurate diagnosis. This case highlights the importance of thorough history-taking and of considering fewer common etiologies, such as West Nile Virus, in the differential diagnosis.

Abstract 2023-3

Coccidioidal Pulmonary Cavitation: A New Age

Lovedip Kooner, MD; Augustine Munoz, MD; Austin Garcia, MD; Akriti Kaur, MD; Rupam Sharma, MD; Virginia Bustamante, MD; Vishal Narang, MD; George R. Thompson III, MD; Rasha Kuran, MD; Amir Berjis, MD; Royce H. Johnson, MD; Arash Heidari, MD

Introduction

The majority of literature on cavitary pulmonary coccidioidomycosis is from 4 decades ago which was prior to the advent of triazoles and focused on surgical treatment. This observational study is a comprehensive retrospective study of pulmonary cavitary coccidioidomycosis from patients at Valley Fever Institute at Kern Medical over the last 12 years.

Purpose of Study

This study aims to explore the spectrum of coccidioidal cavities and the evaluation and management of those cavities.

Methods

IRB approved, retrospective review of electronic medical records of the Valley Fever Institute database was conducted. Demographics, comorbidities, types, and the number of cavities, complications, and medical and surgical treatment were gathered and compared to the literature. PubMed and Google Scholar were searched for cavitary pulmonary coccidioidomycosis

Results

Of the initially 276 identified patients, 137 met the inclusion criteria. This study found 52 (37.2%) patients with hemoptysis. One case (0.7%) required radiologic intervention to occlude the bleeding vessel, and one (0.7%) case of hemorrhage required right upper lobe lobectomy. No patients in this study required a Fogarty catheter.

Nine (6.6%) cases exhibited a ruptured cavity. Eight of those cases had initial chest tube placement, of which three (3/8, 37.5%) did not require surgical intervention. The remaining five (5/8, 62.5%) cases with an initial chest tube placement ultimately led to a thoracotomy or VATS (three (3/8, 37.5%) wedge resections, four (4/8, 50%) decortications, one (1/8, 12.5%) pleurodesis, and one (1/8, 12.5%) pneumonectomy).

Seven of 137 (5.1%) cases presented with a pleural effusion not associated with a cavity rupture. Five (3.7%) were due to primary coccidioidomycosis. The remaining two (1.5%) cases were attributed to heart failure. One of these two cases had a concurrent perinephric abscess with an associated exudative pulmonary effusion. This was the only cause of a non-coccidioidal exudative effusion in this study. Three of the coccidioidal effusions required therapeutic thoracentesis, and none required a chest tube or surgery.

When patients with insufficient data or dissemination were excluded, the mean duration of the initial antifungal treatment was found to be 563 days (n=80). In 35% (28/ 80) of them, a triazole was switched to another triazole for variable reasons, including treatment failure or side effects. The switch from one antifungal treatment to another was considered the end of the initial treatment.

Discussion

Apart from a study by Panicker et al, this is the largest study of cavitary lung disease secondary to coccidioidomycosis in modern times. In some significant respects, however, our study differs from Panicker et al.'s and other historical research. By analyzing data from a large population of ethnically Hispanic patients, we studied a distinct demographic compared to those formerly reviewed by Panicker et al. and historical cohorts. In addition, we also reviewed far fewer immunosuppressed patients or transplant recipients compared to the 106 (39.1%) in the Panicker et al study.

A historical literature review in this field suggests that surgical techniques once used to manage cavitary tuberculosis, antecedent to antitubercular medical therapy, were also employed to treat coccidioidal disease. Conversely, this study and other recent research demonstrate the diminishing role of surgery in the management of coccidioidal cavities. Compared to prior historical studies, such as that of Hyde, the care of these patients has evolved from aggressive surgical intervention to predominantly medical therapies. This is further illustrated by our series' considerably lower surgical rate when compared to Panicker's (42 of 313, 13.4%) and much lower than the historical series from Hyde.

Infectious Disease Society of America's guideline recommends oral triazoles for symptomatic chronic cavitary coccidioidal pneumonia for at least one year; however, 30% have recurrence of symptoms when treatment is discontinued. This study's mean duration of 563 days of initial treatment with a triazole suggests a longer duration of treatment may be indicated. The 35% of cases that switched initial triazole therapy to a different triazole suggests the need for close follow-up and therapeutic drug monitoring to distinguish between treatment failure and medication non-adherence.

The findings of this study indicate that pleural fluid in a patient with pulmonary cavitary coccidioidomycosis can be attributed to the following three reasons: cavity rupture, coccidioidal effusion, or a non-coccidioidal disease process.

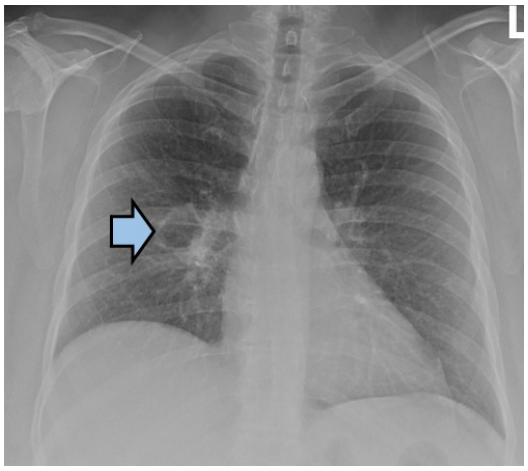
This study found that some patients with pulmonary coccidioidal cavity complications were treated with less invasive interventions. If a ruptured cavity is diagnosed early, a chest tube may suffice in expanding the lung and sealing the leak. The chest tube may evacuate the air from the pleural space and restore negative intrathoracic pressure, which, in turn, may expand the lung and reestablish physiologic ventilation. This is similar to the treatment of bacterial empyema described by Redden et al. in their meta-analysis. If the ruptured cavity diagnosis is delayed, decortication, wedge resection, lobectomy, or even pneumonectomy may be needed. Tube thoracostomy and surgery are not mutually exclusive. In some cases, while tube thoracostomy may resolve the pneumothorax, a persistent air leakage requires surgical intervention.

Surgery may be required for life-threatening hemorrhage or the management of a cavity rupture into the pleural space with VATS or thoracotomy. However, this series demonstrates that surgery is utilized much less common when compared to historical cohorts. We hypothesize three reasons this may have occurred. First, the number of specialists has increased; thus, who evaluates, treats, and directs patient care has changed. Second, the advent of triazoles has provided a much more effective alternative medical treatment. Lastly, the philosophies of thoracic surgeons have shifted from aggressive surgery to lung preservation.

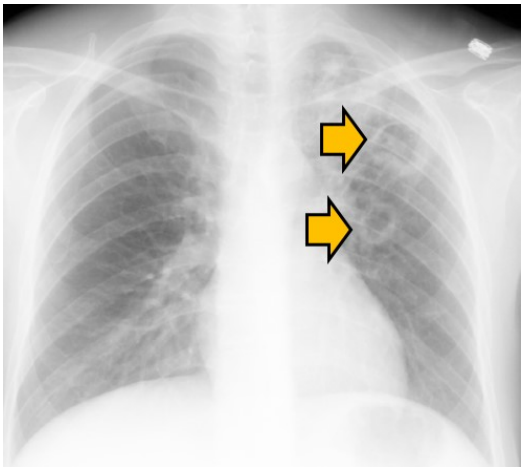
Conclusion

Coccidioidal pulmonary cavitation remains a complex disease to evaluate and treat. This study's review contradicts the notion that pulmonary coccidioidal

cavitary disease and dissemination infrequently manifest in the same patient. In the present age of triazole therapy, indications and the need for surgery continue to decline. Further investigation needs to be conducted to evaluate medical therapy's efficacy and long-term outcomes.



Single Coccidioidal Pulmonary Cavity



Multiple Pulmonary Cavities

**For figures describing demographic characteristics, concomitant dissemination sites, treatment, and complications contact* researchforum@kernmedical.com.

Abstract 2023-4

Asymptomatic Coccidioidal Meningitis Relapse: A Demon in Disguise

Lovedip Kooner, MD; Arash Heidari, MD; Royce H. Johnson, MD

Introduction

Coccidioides spp. is a soil dwelling, dimorphic fungus that causes coccidioidomycosis. It is endemic to the western hemisphere. Although primarily a respiratory disease, it can also cause a myriad of clinical manifestations, from asymptomatic disease to meningitis. In fact, Coccidioides species are the most common etiologic agents of chronic meningitis in regions endemic for coccidioidomycosis. Coccidioidal meningitis is a lethal disease if left untreated. Early diagnosis and treatment are critical to avoid fatal complications. With treatment, cerebral spinal fluid analysis may return to normal. Relapse of coccidioidal meningitis is usually suspected with recurrence of meningitis symptoms. This is a 53-year-old man with a two-decade history of coccidioidal meningitis who was diagnosed with asymptomatic relapse of coccidioidal meningitis.

Case Description

A 43-year-old man had been diagnosed with coccoidal meningitis for two decades. His course was complicated by hydrocephalus, and therefore underwent placement of a ventriculoperitoneal (VP) shunt. His treatment was initiated on fluconazole 1000 mg daily. His care was complicated by multiple VP shunt revisions, the last episode was seven years prior.

Fluconazole levels were monitored at therapeutic goal levels of 40-80 µg/ml. Cerebral spinal fluids (CSF) were obtained periodically to monitor his response and showed minimal pleocytosis between eight to ten, normal protein and glucose, and coccidioidomycosis complement fixation (CF) titers of <1:1 repeatedly. Periodically during the course of his care, he became nonadherent with medications and visits. He represented for a routine follow-up after a year and a half. At this visit, he admitted to being off of therapy for about seven months as he felt "great". He had a lumbar puncture done even though he was entirely asymptomatic. His CSF showed WBC of 261 µg/ml, predominately lymphocytic, glucose of 23 mg/dL, protein of 171 mg/dL, and CSF coccidioidomycosis CF titer of 1:8. Indicating a flagrant asymptomatic relapse. Medication compliance was reinforced.

Discussion

Treatment with high-dose oral fluconazole may achieve remission of coccidioidal meningitis; however, after discontinuation of therapy there is a high incidence of relapse. Thus, coccidioidal meningitis requires lifelong treatment as currently understood.

Guidelines indicate that after a diagnosis and treatment of coccidioidal meningitis, CSF analysis is recommended if the patient has meningeal symptoms. It does not address potential asymptomatic relapse that may be a precursor to symptomatic relapse.

Close follow-up is essential to assure maintaining response to therapy and detection of treatment failures and relapses. Therapeutic drug monitoring may lead to a suspicion of non-adherence or therapeutic failure. Lumbar Puncture even in an asymptomatic patient can confirm or refute that concern. This case demonstrates that periodic lumbar puncture and therapeutic drug monitoring may be useful adjuncts for preventing relapse.

Conclusion

This case demonstrates that coccidioidal meningitis can relapse without any symptoms. This suggests the need for a standardized approach to monitoring disease even in asymptomatic patients that includes periodic evaluation of cerebral spinal fluid and therapeutic drug monitoring to reduce morbidity and mortality of relapsed cocciodioidal meningitis. Therapeutic drug monitoring can also assist in differentiating between treatment failure and non-adherence.

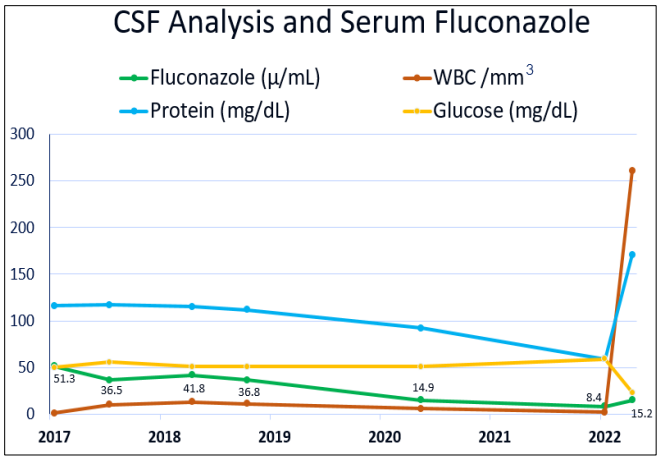


Figure 1. Graph comparing CSF analysis and serum Fluconazole levels over time. Values within graph indicate serum fluconazole level.

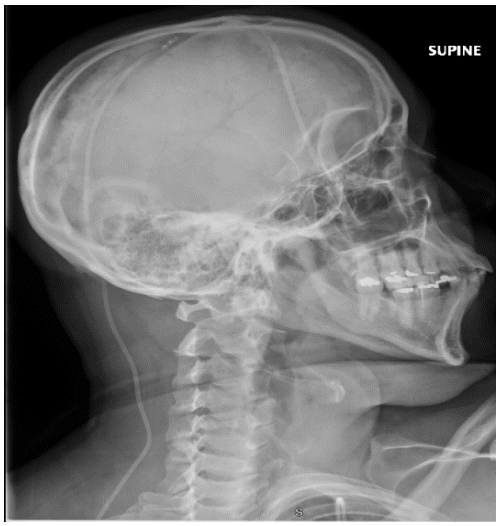


Figure 2. X-ray showing VP shunt.

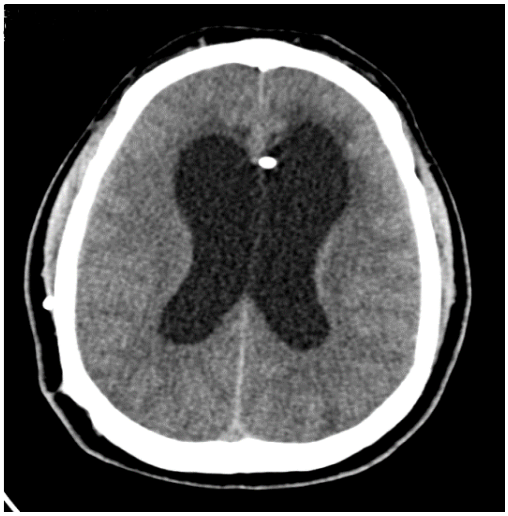


Figure 3. CT showing hydrocephalus and VP Shunt.

Abstract 2023-5

Impact of Pandemic on Return of Endemic

Rupam Sharma, MD; Carlos D'Assumpcao, MD; Michael Valdez, MD; Royce H. Johnson, MD; Rasha Kuran, MD; Verna Marquez, MD; Hector Arreaza, MD; Arash Heidari, MD

Introduction

Purpose of Study: West Nile virus (WNV) has become endemic in all 48 contiguous United States since its

discovery in North America in 1999. It has produced the 3 largest arboviral neuroinvasive disease (encephalitis, meningitis, or acute flaccid paralysis) outbreaks ever recorded in the US. Culex mosquito species drive the transmission of the virus in nature and subsequent spread to humans. 94% of patients have abrupt onset of symptoms in July through September. All ages are affected, although there's strong predilection with advancing age. Diagnosis is made by detection of West Nile virus specific IgM antibody in CSF or serum.

Purpose

This report describes a recent outbreak of 13 WNV cases over three months unreported from California.

Methods

This study was approved by the Kern Medical (KM) Institutional Review Board. Retrospective chart review of KM's electronic health record over a period of 3 months (July 2022 – September 2022) was performed. Literature search was conducted on PubMed and google scholar using the following search terms: West Nile virus outbreak, West Nile treatment, West Nile virus literature review.

Summary of Results

10 out of 13 cases presented with fever >38.2 C along with additional symptoms. Three cases presented with non-specific presentations. 12 cases were diagnosed with west nile antibody IgM and IgG serum or CSF titers. One case was diagnosed with west nile PCR test after two negative IgM and IgG titers. Seven cases received five days of oral or IV steroids. One case was treated with intravenous immunoglobulin. Six cases did not receive any treatment. Seven cases were discharged home in stable condition. Five were discharged to acute rehab facility. One case discharged to long term care facility.

Discussion

More than 94% of human cases are reported between July through September. Around March, after the spring rains the standing water starts to collect and by July when the weather is hot, that's when the mosquitoes are most active and the disease risk is highest. Weather, especially temperature, is an important modifier of WNV transmission, and has been correlated with increased incidence of human disease at regional and national scales. The California West Nile Virus Surveillance Program is a collaboration between the California Department of Public Health, mosquito and vector control agencies, local health departments, and UC Davis. This program incorporates more mosquitoes testing and blood from human blood donors is screened more frequently. All of this information helps local agencies know where they need to focus their mosquito control efforts to reduce the risk of people getting infected with WNV.

Conclusions

In conclusion, sustainable, community-based surveillance and vector management programs are critical, particularly in metropolitan areas with a history of West Nile virus and large human populations at risk for better understanding and prevention of disease transmission.

Abstract 2023-6
Catastrophic Case of West Nile Virus Rhomboencephalitis in a Patient with AIDS

Rupam Sharma, MD; Carlos D'Assumpcao, MD; Elika Salimi, OMS III; Michael Valdez, MD; Akriti Chaudhry, MD; Rasha Kuran, MD; Janpreet Bhandohal, MD; Arash Heidari, MD

Introduction

West Nile Virus is a single-stranded RNA virus member of *Flavivirus* genus that is primarily transmitted by the *Culex* mosquito. Human infections range from asymptomatic to neurological devastation. No treatment is available. CDC provides case reports of steroids, intravenous immunoglobulins, and interferon 2a. Herein presented is a devastating case of West Nile Virus (WNV) rhomboencephalitis in a young man newly diagnosed with AIDS as well as neurosyphilis. Diagnostic and treatment challenges are discussed.

Case Description

26-year-old homeless male with no known past medical history presented with tremors, right arm weakness, associated with fevers. He had 20 lbs. weight loss over 3 months. He developed waxing and waning mentation in the emergency department. Initial MRI brain was unremarkable. Lumbar puncture found lymphocytic pleocytosis. Bilateral lower extremity clonus was noted. HIV and syphilis screening tests were

positive. Intravenous penicillin was started. HIV was confirmed by quantitative polymerase chain reaction and CD4 count was 44 cells per microliter. FTA-ABS was positive, RPR titer was 1:16, and VDRL titer was 1:1 in CSF.

On hospital day 3, he developed worsening mentation and due to the inability to protect the airway, he was intubated. Repeat MRI brain found rhomboencephalitis. Empiric ampicillin for listeria and ganciclovir for cytomegalovirus and herpes simplex virus was started until CSF multiplex PCR was negative. Anti-tuberculosis medications were additionally added. He was initiated on antiretroviral therapy via orogastric tube with tenofovir disoproxil fumarate, emtricitabine, and dolutegravir. He further developed intractable seizures requiring various combinations of 6 antiepileptic medications. CSF and serum West Nile virus IgM and IgG came back negative. However, CSF and serum West Nile virus qualitative PCR returned positive later. Tuberculosis medications were discontinued. He completed 7 days of dexamethasone and 5 doses of intravenous immunoglobulins without meaningful improvement. Interferon 2a formulations used in published cases are no longer manufactured. Tracheostomy and percutaneous gastrostomy tube were placed on hospital day 18. Seizures abated on medications. After hospital day 30, the patient continues to remains in coma with minimal brain stem reflexes. The prognosis remains poor.

Discussion

Overall case fatality rate of neuroinvasive WNV disease is roughly 10%. Neurodeficits in WNVV patients persist for months, years or even lifelong. Younger age is the only significant predictor of recovery and patients with MRI FLAIR and T2 abnormalities have shown to have worse outcomes. At present there are no antivirals or absolute treatment for WNV encephalitis.

Conclusion

West Nile virus rhomboencephalitis has a poor prognosis, presumably worse in the setting of AIDS. Rhomboencephalitis from neurosyphilis has not been reported to date.

Abstract2023-7

Caregiver Quality of Life in Patients with Coccidioidomycosis

Rupam Sharma, MD; Hazem Aboaid, MD; Rasha Kuran, MD; Royce H. Johnson, MD; Arash Heidari, MD

Introduction

Quality of life (QoL) measurements have become an important way to evaluate the care provided to patients and their caregivers. QoL provides pertinent information concerning the emotional and social experience of individuals which is not available for traditional assessments.

Purpose of Study

Our study focuses on the burden and QoL of caregivers of patients with coccidioidomycosis. To the best of our knowledge, this is the first study of its kind. Our study aim is to enroll 100 subjects to determine whether caregivers' QoL is a determinant of patients' QoL among our study population. To this date, 17 subjects have been enrolled.

Methods

This study was approved by the Kern Medical Institutional Review Board. Literature search was conducted on PubMed and Google scholar. This study has been designed and conducted at the Valley Fever Institute clinic in Bakersfield, California, USA. Caregivers of patients with coccidioidomycosis were included in this study. A "caregiver" was identified as an adult 18 years or older. Both the patient and their caregiver were consented to participate in this study. The health-related questionnaire QoL for caregivers of adults with traumatic brain injury (TBI-CareQoL) in two languages English and Spanish was utilized to collect the data.

Summary of Results

64.7% (n=11) of the patients were males. 76.4% (n=13) of the caregivers were females. 58.8% of the caregivers felt like they were the only ones who can care for their patients. 52.9% of the caregivers admitted to "having too much to do" in terms of their responsibilities as caregivers. 52.9% of the caregivers expressed frustration with their situation. 52.9% of the caregivers felt that the

stress of this disease is impacting their overall health. [Table 1]

Conclusion

There is a spectrum of burdens that affect the caregivers' QoL that eventually reflect the care and wellbeing of patients. This is particularly more visible when dealing with chronic debilitating diseases such as coccidioidomycosis. Identifying these burdens will assist clinicians to better understand the care to improve the overall quality of care.

Table 1: Statistics of the study.

Patient Gender	**Number**
Male	11
Female	6
Patient Age	**Number**
18 and older	14
< 18	3
Caregiver Gender	**Number**
Male	4
Female	13
Caregiver Age Range	**Number**
18-30	3
31-50	8
+50	6
Caregiver Relationship to Patient	**Number**
Mother	5
Wife	5
Son	2
Husband	1
Father	1
Daughter	1
Sister	1
Girlfriend	1
Type of Coccidioidomycosis	**Number**
Pulmonary	14
Central Nervous System (CNS)	7
Osseous, Cutaneous, Soft tissue	9
Significant results of the study	**Number**
Caregivers being the only ones who can care for the patient	10
Caregivers having too much responsibilities as a caregiver	9
Caregivers expressing frustration with their situation	9
Caregivers with stress impacting their overall health	9

Abstract 2023-8

Isavuconazole in the Treatment of Chronic Forms of Coccidioidomycosis

Rupam Sharma, MD; Arash Heidari, MD; Qusai Shakir, MD; Madiha Shah, PharmD; Josh Clement, PharmD; Monica Donnelly, MD; Trina Reynolds, MD; Kate Trigg, Jeff Jolliff, PharmD; Rasha Kuran, MD; Royce H. Johnson, MD ; George R. Thompson III, MD

Introduction

Coccidioidomycosis is a fungal infection with a range of clinical manifestations. Currently used antifungal agents exhibit variable efficacy and toxicity profiles necessitating evaluation of additional therapeutic options. Isavuconazole offers potential advantages over other triazoles commonly used for coccidioidomycosis (e.g. fluconazole, itraconazole, etc.). Isavuconazole exhibits low MICs against *Coccidioides*, excellent bioavailability, fewer drug-drug interactions, and a lower adverse event rate than comparators. There is limited patient-level data regarding the in vivo efficacy of Isavuconazole in the treatment of coccidioidomycosis.

Purpose

We report the experience of two high-volume coccidioidomycosis centers in the treatment of patients with coccidioidomycosis who received Isavuconazole.

Methods

Patients with coccidioidomycosis who received Isavuconazole were identified by cross-indexing ICD-9

and ICD-10 codes from patients and data abstracted. Responses to Isavuconazole therapy were measured using a modified Mycoses Study Group (MSG) Coccidioidomycosis Scoring system as described previously.

Patients were included if they had ≥30 days of Isavuconazole therapy with subsequent clinical follow-up. Nine of the included patients (meningitis only) have been previously published although their treatment courses and duration of follow-up are expanded here. Responses to Isavuconazole therapy were measured using a modified MSG Coccidioidomycosis Scoring system.

Summary of Results

82 patients met the criteria for inclusion. Over half of the patient exhibited pulmonary involvement 45/82 (55%), although meningitis 32/82 (39%), bone and joint disease 14/82 (17%) and skin/soft tissue infection 7/82 (9%) were also seen. The majority of patients experienced a decrease in their MSG score following initiation of Isavuconazole therapy (median MSG score change across all patient groups 7→2, $p<0.0001$). Overall improvement was noted in 58/82 (71%) patients, while no change was observed in 19/82 (23%) and 5/82 (6%) who were unresponsive to antifungal changes.

Discussion

Coccidioidomycosis represents a spectrum of diseases ranging from asymptomatic acquisition with resultant immunity, to widely disseminated and life-threatening disease. Advances in antifungal therapy have significantly improved outcomes for patients with severe or chronic forms of coccidioidomycosis. Isavuconazole exhibits several attributes making it an attractive choice in the treatment of invasive fungal infections including coccidioidomycosis. Isavuconazole offers a long half-life and shortens the QTc interval (compared to the QTc prolonging effects of other triazoles). It is available in both intravenous and oral formulations.

Conclusions

These results are promising and extend the number of antifungals with potential activity in chronic coccidioidomycosis. Patients treated with Isavuconazole salvage therapy were highly treatment-experienced, and although their MSG scores prior to Isavuconazole therapy suggest they had evidence of active coccidioidal infection the potential for survivor bias and the retrospective nature of the study are potential limitations. Failures were noted only in the patients with the meningeal disease, further reiterating the need for new therapeutic options in these patients with the most morbid form of coccidioidomycosis.

Abstract 2023-9

A Rare Case of TMP-SMX induced DRESS and Clinical TSS in a Pediatric Patient

Verna Marquez, MD; Cecilia Covenas, MD; Hyoshim Yang, MS III

Introduction

Drug rash with eosinophilia and systemic symptoms (DRESS) is a rare but potentially life-threatening adverse drug reaction with estimated incidence of up to 0.9 to 2 per 100,000 patients per year. It may occur in children, although the incidence is likely to be lower than adults. DRESS is a clinical diagnosis that typically occurs after drug exposure with anticonvulsants and sulfonamides being the most common ones. Fewer cases of overlap DRESS syndrome and TSS were reported. Here we present a case of a 14-year-old girl with symptoms and signs that initially presented as clinical TSS with later overlapping of DRESS syndrome.

Case Study

A 14-year-old female with unremarkable past medical history who presented to the emergency department with 1-week history of generalized pruritic hyperpigmented rash, intermittent fever and 2 days of eye/facial swelling after completing a 26-day course of Bactiver (Trimethoprim/Sulfamethoxazole) prescribed in Mexico for her acne. Denied eye redness nor vision changes. Initial serology showed leukocytosis, elevated liver enzymes, and mildly elevated CRP. Patient received methylprednisolone, diphenhydramine and famotidine without improvement and was subsequently transferred to a higher level of care. She presented with fever (102.4), brief hypotension that initially responded to fluid boluses, tachycardia, and tachypnea. Physical examination revealed strawberry tongue with perioral impetigo for which she was started on Meropenem, Vancomycin and Clindamycin due to concern of TSS. She was transferred to PICU due to hypotensive shock.

Laboratories revealed leukocytosis with eosinophilia and transaminitis. The antibiotics were then discontinued. IV solumedrol was started for possible DRESS. Vital signs improved. Antibiotics were restarted due to possible TSS (impetigo and strawberry tongue possibly due to Streptococcal infection). Patient continued to improve, and abdominal desquamative rash was noted. Patient was discharged on tapering steroids and antibiotics.

Discussion

Both DRESS and TSS are clinical diagnosis. In the case of DRESS, the Registry of Severe Cutaneous Adverse Reactions (RegiSCAR) scoring system can be used as part of the diagnostic criteria. Data about DRESS due to TMP-SMX in children is scarce with the majority from case reports. In our case, patient had a definite DRESS diagnosis based on RegiSCAR score with points for fever, lymphadenopathy, eosinophilia, skin involvement, organ damage, and exclusion of other causes. During hospital course, she developed sudden onset of shock-like symptoms with hypotension and evolving mucosal features with strawberry tongue and impetigo placing clinical TSS high in the differential. Patient was finally managed with corticoids and antibiotics with complete resolution of symptoms.

Conclusion

It is rare but possible that DRESS and clinical TSS can coexist in a pediatric patient. Management prioritizing discontinuation of offending agent, initiation of steroids and antibiotics can make a difference in the outcome.

Abstract 2023-10

A Curious Case of Mastocytosis

Roshun Rahimi, MS IV; Valerie Espinoza, MD; Hua Truong, MS IV; Essam Hashem, MS IV; Nishan Mangat, MD; Igor Garcia-Pacheco, MD

Abstract

Mastocytosis is a group of rare disorders characterized by over accumulation of mast cells, which can present with skin, gastrointestinal, hematologic, and musculoskeletal symptoms. Diagnosis is challenging and often delayed. We describe a case of a 33-year-old otherwise healthy male who presented with cyclic nausea, vomiting, and hives.

Case Report

The patient is a 33-year-old male with history of hiatal hernia and cannabis hyperemesis syndrome (CHES), who presented to the ED for intractable nausea and hematemesis. Patient was admitted due to upper GI bleed and started on sucralfate, PPI, Zofran, and morphine. On hospital day 3, a diffuse urticarial blanching rash developed over his trunk, extremities, and face. This was initially considered an adverse reaction to either sucralfate vs morphine. The patient was treated with Benadryl with some noted improvement. Upon further questioning, the patient reported multiple similar previous episodes. The rash was noted to be worse around areas of friction such as the patient's wristband or blood pressure cuff. Given symptoms of nausea, vomiting, anorexia, urticarial rash working diagnosis was mastocytosis. Patient was started on famotidine, topical hydrocortisone cream, and Montelukast, which notably improved skin and abdominal symptoms. Of note, serum tryptase levels obtained inpatient were within normal limits.

Discussion

Mastocytosis is an abnormal accumulation of mast cells, a specialized portion of the immune system releasing histamine as an inflammatory response to foreign material. They function as the primary immune response in anaphylactic reactions to protect the body during initial exposure to allergens. Since this is a clonal disorder of the hematopoietic system, clinical presentation and patterns vary affecting 1 in every 10,000 to 20,000 individuals differently depending on site of accumulation.

Our patient showed symptoms of systemic mastocytosis with cutaneous and gastrointestinal manifestations. Patients may present with flushing, dyspepsia, diarrhea, abdominal pain, musculoskeletal pain, or hypotension. Mastocytosis mimics common disease processes, which makes diagnosis a challenge with frequent underdiagnosis. The wide array of clinical manifestations and the non-specific nature of the disease, prompt variable clinical evaluations at significant financial cost and emotional burden to patients, ultimately delaying effective treatment.

Misdiagnosis incites needless visits to the ED and referrals to specialties where serial diagnostic tests are often negative, as in this case. Clinicians who maintain high suspicion for mastocytosis should become familiar with diagnostic criteria as outlined by the World Health Organization to correctly identify this rare disorder and facilitate proper testing and treatment.

Conclusion

As seen throughout the patient's clinical journey, obtaining an accurate history of present illness and review of symptoms remains one of the most powerful diagnostic tools. Mastocytosis has posed a challenging diagnosis considering its many forms of presentation and loose diagnostic criteria in tandem with its mimicry of many variable conditions. Through, clinical suspicion and thorough interviewing, the diagnosis of mastocytosis can be promptly determined to initiate proper treatment.

Abstract 2023-11
Black Tar Heroin and Botulism
Valerie Espinoza, MD; Nihad Al-Yousfi, MD; Nishan Mangat, MD; Igor Garcia-Pacheco, MD

Introduction

Since the introduction of black tar heroin, the incidence of wound botulism in injection drug users has significantly increased. However, the rarity of cases delays the diagnosis of botulism and the subsequent treatment with the antitoxin.

Case Description

We present the case of a 60-year-old male with no known medical history and a social history significant for intravenous heroin and inhalation methamphetamine use. The patient presented with one day of slurred speech, dyspnea, diplopia, weakness, and inability to hold his head straight up following the use of heroin. Labs were significant for elevated troponin and urine toxicology was positive for opiates and amphetamines. CT head and CT angiography head and neck were unremarkable. Upon arrival, the patient's vitals were blood pressure 174/93mmHg. The remainder of the vitals were within normal limits. Physical exam was remarkable for innumerous black pinpoint lesions from subcutaneous drug injection. Upon initial evaluation, the patient had dysarthria and a National Institute of Health Stroke Scale score of 1. The patient was admitted for hypertensive urgency and transient ischemic attack and treated for acute coronary syndrome. On hospital day 2, the patient was unable to swallow his morning medications. He then experienced acute respiratory distress and became altered. Chest X-ray and CT angiography chest were unremarkable. Arterial blood gas was remarkable for pH of 7.09 and CO2 92. The patient was placed on BiPAP without improvement and required intubation for airway protection and hypercapnia. On hospital day 3, the patient had severe ptosis with inability to open eyes and new onset extremity weakness. During a spontaneous breathing trial, the patient had a decreased tidal volume with a reduced respiratory rate. The patient had a normal sensory exam with absent deep tendon reflexes. The patient remained alert and oriented and could communicate through hand squeezes. Upon questioning, he confirmed use of black tar heroin.

Given the progression of symptoms, the diagnosis of botulism was considered. The CDC was contacted and the antitoxin was administered to the patient on hospital day 4. The CDC laboratory confirmed the diagnosis via blood obtained prior to antitoxin administration. Over the course of weeks, the patient's clinical prognosis improved. The patient required a total of 18 days in the intensive care unit. He required a tracheostomy and a percutaneous endoscopic gastrostomy. At time of discharge to a long-term acute care facility, the patient was able to open his eyes and communicate through writing and minimal verbalization.

Discussion & Conclusion

The case shows the importance of including botulism in the differential diagnosis of acute descending paralysis with cranial nerve palsies. The rapid progression of the disease requires prompt diagnosis as the timely administration of the antitoxin does not result in immediate cessation of the disease course. The differential of wound botulism should be considered in patients with known drug use and presentation of neurological symptoms.

Abstract 2023-12

Anticoagulant-Associated Heavy Menstrual Bleeding in Pre-menopausal Women

Valerie Espinoza, MD; Jesslin Abraham, MD; Nhi Thai, MS III; Sevak Nersesyans, MS III; Tanya Eftekhari, MS IV; Nihad Al-Yousfi, MD; Greti Petersen, MD

Introduction

The use of direct oral anticoagulants has been suspected to be associated with abnormal uterine bleeding and a paradoxical increased risk of recurrent thromboembolism in premenopausal women. We describe a case of a 46-year-old woman with anticoagulant-associated heavy menstrual bleeding.

Case Description

The patient is a 46-year-old female with a medical history significant for anxiety, anemia, and left lower extremity deep vein thrombosis (DVT). The patient presented for evaluation of worsening generalized fatigue, lightheadedness, and exertional shortness of breath associated with chest pain and blurred vision. She reported experiencing seven weeks of daily vaginal bleeding with the passage of large clots after being prescribed a 21-day course of rivaroxaban for the treatment of a left lower extremity DVT. On presentation, the patient had a hemoglobin of 4.6g/dL and was transfused four units packed red blood cells with stabilization of hemoglobin above 9g/dL and resolution of symptoms.

CT angiography chest demonstrated extensive bilateral pulmonary emboli (PE) in the proximal portions of the right upper and lower lobe branches with no central emboli. Bilateral lower extremity ultrasound (US) showed no DVT. Interventional Radiology (IR) was consulted and in agreement with Hematology decided against the placement of an IVC filter at that time. Hematology recommended iron sucrose and half-dose anticoagulation in the setting of anemia and a cervical mass. Pelvic US showed a solid appearing mass within the anterior aspect of the upper cervix.

Gynecology performed a pap smear with biopsy of a friable uterine polyp that extended from the cervical os. Pathology showed endometrium with superficial ulceration without evidence of atypia. The patient was discharged on apixaban 2.5mg twice daily. The patient presented two days after discharge for evaluation of acute right leg pain and bilateral groin pain and dyspnea at rest. CT pulmonary angiogram with contrast demonstrated multiple bilateral segmental and subsegmental pulmonary embolisms. CT abdomen and pelvis with contrast demonstrated an occlusive venous thrombus of the right iliac vein extending to the external iliac vein, nonocclusive infrarenal inferior vena cava (IVC) thrombus and small nonocclusive thrombus of the left iliac vein. The patient underwent thrombectomy and IVC filter placement by IR. While inpatient, the patient was started on heparin and remained hemodynamically stable with improved vaginal bleeding. Of note, the hypercoagulable workup completed was unremarkable. She was discharged on apixaban 5 mg twice daily and underwent outpatient polypectomy with the resolution of abnormal uterine bleeding.

Discussion & Conclusion

Direct oral anticoagulants (DOACs) have become the mainstay of DVT and PE treatment, however, the risk of abnormal uterine bleeding and recurrent thromboembolism in premenopausal women warrants further investigation. The risks and benefits of prescribing DOACs to pre-menopausal women should be recognized by prescribing physicians.

Abstract 2023-13

Subarachnoid Cysticercosis Presenting as Chronic Meningitis with Severe Hypoglycorrhachia: A Diagnostic Challenge

Jesus Fandino, MS IV; Gabriela Garcia, MS IV; Samantha Ratnayake, MD; Valerie Espinoza, MD; Michael Valdez, MD; Carlos D'Assumpcao, MD; Arash Heidari, MD; Rasha Kuran, MD; Greti Petersen, MD

Introduction

Neurocysticercosis is a parasitic tissue infection by larval cysts of *Taenia solium* in the central nervous system. Neurological manifestations include intraparenchymal cysts and extraparenchymal cysts. Extraparenchymal forms include ventricular cysts subarachnoid cysts, racemose cysticercosis with chronic meningitis, spinal cysts, and ophthalmic cysts. Prolonged anti-parasitic medications, steroids, and sometimes neurosurgery is needed. We describe the diagnostic challenge involving subarachnoid cysticercosis that presented with chronic meningitis with severe hypoglycorrhachia.

Case Description

50-year-old woman originally from Guatemala 10 years prior with a history of migraine headaches for 7 years who was sent to the hospital by ophthalmology for blurry vision associated with 7-month history of worsening headaches of different character. Bilateral papilledema was noted. Computed tomography and MRI of brain was reported normal. Lumbar puncture with opening pressure of 270 mmH2O, lymphocytic pleocytosis, hypoglycorrhachia less than one, and elevated protein. She tested negative for HIV and syphilis. CT found no occult malignancy.

She was started on treatment for presumed coccidioidal and tuberculosis meningitis. Symptoms returned 2 weeks later. MRI of spinal cord found possible arachnoiditis of cauda equine nerve roots. Chronic meningitis workup was expanded. After cysticercosis serology returned positive, prior MRI images were reviewed. Cystic structures were noted near the foramen magnum. CT myelogram confirmed extra axial cystic structures at the cervical-medullary junction and in the thoracic and lumbar arachnoid spaces. CSF Cysticercus serology was positive.

The patient was started on albendazole, praziquantel, and prednisone with plans for a prolonged course with duration guided by repeat imaging to look for cyst degeneration. Hospital follow-up found she was no longer taking any migraine medications and only using acetaminophen.

Conclusion

Subarachnoid neurocysticercosis is a debilitating infection that can be a diagnostic challenge. Cysts in the subarachnoid space are difficult to visualize on CT and MR imaging and may require a CT myelogram. Extreme hypoglycorrhachia can be seen in subarachnoid neurocysticercosis which needs to be considered in the differential diagnosis of chronic meningitis of unknown etiology. Treatment duration is prolonged. The National Institute of Health recommended CSF cysticercus antigen titers may be helpful to tailor treatment duration but is not commercially available to date.

Abstract 2023-14

A Rare Case of Mandibular Ameloblastoma

Valerie Espinoza, MD; Jesslin Abraham, MD; Sophia Dhillon, MS IV; Sevak Nersesyans, MS IV; Nhi Thai, MS IV; Tanya Eftekhari, MS IV; Nihad Al-Yousfi, MD; Greti Petersen, MD

Introduction

Ameloblastomas are tumors of odontogenic origin derived from cells around the tooth root, also known as the ectoderm germ layer. The incidence rate of malignant ameloblastomas was found to be 1.79 per 10 million people a year in the United States. We present the case of a 55-year-old male with a jaw mass presenting with altered mental status and lower extremity weakness.

Case Description

The patient is a 71-year-old male with no known past medical history. The patient was initially brought to the hospital due to altered mentation after he was found wandering the streets. Physical exam was remarkable for approximately 9cm x 6cm right mandibular mass with intraoral involvement and right submandibular lymphadenopathy. The mass distorted the lower face and jaw with noted shifting teeth. Labs were significant for hypercalcemia of 13.5mg/dL and ionized calcium of 1.76mmol/L. The patient was treated with intravenous fluids with normalization of his calcium and concomitant improvement of his altered mentation. Bisphosphonates were held due to the possibility of osteonecrosis in the setting of jaw mass. Neck and maxillofacial CT with contrast showed an enlarged expansile and lytic mass was seen arising from the mandible with heterogeneous soft tissue components demonstrating some enhancement.

Upon reassessment, the patient reported severe right-sided jaw pain, bilateral lower extremity pain, weakness, and constipation. He denied dysphagia, odynophagia, facial paresthesia, or difficulty breathing. He stated the mass had been growing for approximately three years, but he was unable to seek medical care due to a lack of insurance and funds. He reported recent difficulty chewing with subsequent inability to tolerate usual oral intake. The patient underwent a core needle biopsy of the lesion which demonstrated fragments of

ameloblastoma. The patient was seen by Nutrition for dietary recommendations while pending further reconstruction efforts. Further outpatient management included a multidisciplinary approach with hematology-oncology and otolaryngology, in addition to primary care.

Discussion & Conclusion

Ameloblastomas account for one percent of all jaw tumors, however, they are the second-most common type of odontogenic tumor. While the tumors are benign, they can become locally aggressive over time invading nearby bones.

Abstract 2023-15

Osteomyelitis of the Sternum due to Cutibacterium acnes: An Emerging Pathogen

Michael Valdez, MD; Samantha Ratnayake, MD; Carlos D'Assumpcao, MD; Arash Heidari, MD

Introduction

Cutibacterium formerly known as Propionibacterium, is a slow-growing gram-positive anaerobic bacillus that was first described in 1896 and belongs to the Actinobacteria class. Four species have been identified, which are usually of low virulence and found in the normal flora of the skin and mucosal surfaces, particularly in regions with higher concentrations of sebaceous glands and hair follicles. Pathogenicity is attributed to biofilm formation and low susceptibility to chlorhexidine. Clinical manifestations include acne, orthopedic prosthesis or hardware infection, CNS infection, endovascular infections, and vertebral osteomyelitis. The presentation may be indolent, and diagnosis can be challenging due to delayed time of symptom onset and prolonged time to positive culture. Cutibacterium is typically susceptible to penicillin, cephalosporins, vancomycin, and daptomycin. Successful treatment often requires prosthesis or device removal when present.

Case Description

50-year-old man with active injection drug use presented with right shoulder and neck pain for 1 week. Pain was localized, constant, and 10/10 in severity. He denied any constitutional symptoms including fevers and rigors. Examination revealed tenderness to palpation of the right sternoclavicular (SC) joint and limitations in the right shoulder range of motion. Labs revealed ESR 71 but were otherwise unremarkable. The right shoulder x-ray was unremarkable but CT neck and MRI of the shoulder showed erosive osseous abnormalities in the region of the right sternoclavicular joint as well as small fluid collection with enhancement. Patient was started on vancomycin and piperacillin/tazobactam empirically and underwent arthrocentesis of the right SC joint. Aerobic, anaerobic, and fungal cultures showed no growth. He underwent subsequent manubrium bone biopsy with no growth on cultures initially. Antibiotics were changed to vancomycin and ceftriaxone with the plan to complete 42 days. 9 days after the biopsy, anaerobic culture grew Cutibacterium acnes. Patient developed while on Vancomycin therefore antimicrobial regimen was changed to Daptomycin to complete 42 days of antimicrobial therapy. Upon follow in the clinic, both clinical symptoms and neutropenia improved.

Conclusion

The presence of Cutibacterium in normal skin flora, low susceptibility to chlorhexidine, and ability to produce biofilm may be contributing to the emergence of this organism as an important pathogen. Additionally, the slow growing nature leads to difficulty in identification by culture and therefore poses a major diagnostic challenge. In cases of culture-negative infection, cultures should be held for an extended duration of at least 10 days and subsequent diagnostic modalities including 16S rRNA or metagenomic sequencing should be considered.

Abstract 2023-16

Severe Acute Hemolytic Anemia Post COVID Vaccination

Nathan Heathcoat, MS IV; Jesslin Abraham, MD; Samantha Ratnayake, MD; Nishan Mangat, MD; Shikha Mishra, MD

Introduction

Hemolytic anemia is destruction of the red blood cell while the site of blood production remains intact leading to decreased overall hemoglobin levels. Hemolytic anemia can be the product of congenital defects in the red cell membrane or a physiologic milieu prone to hemolysis secondary to inherited disorders. Hemolysis could also be due to antigens against the red cell, infectious processes, shear forces on the red cell, or medications and toxins. We present a case of hemolytic

anemia in the setting of recent messenger RNA COVID-19 vaccination.

Methods

A single patient case report was conducted after IRB approval.

Case Presentation

A 26-year-old woman with a history of warm autoimmune hemolytic anemia, immune thrombocytopenia, triple positive antiphospholipid syndrome, and chronic migraine presented to the emergency department with worsening generalized fatigue for 1 week associated with headache, dyspnea on exertion, nausea, vomiting and lightheadedness. Of note, she had received her second dose of mRNA COVID-19 vaccine 4 days prior to presentation.

On admission, she was found to be severely anemic with a hemoglobin of 4.3g/dL which is decreased from her baseline hemoglobin of 9-10.5g/dL; however, her W-AIHA precluded the administration of blood product until adequate blood with the appropriate antibodies could be acquired.

During the hospitalization her hemoglobin decreased to 3.3g/dL. She was then administered the most compatible blood product which she tolerated well. Hematology was consulted who started the patient on hydroxychloroquine, high dose methylprednisolone, and IVIG. Throughout the admission the patient remained asymptomatic. After 2 days of IVIG, 3 days of high dose glucocorticoids, and 1 unit of packed red blood cells, the patient's hemoglobin increased to 7.2g/dL and she was discharged home on prednisone taper and hydroxychloroquine.

Conclusion

Episodes of hemolytic anemia after either the first or second dose of mRNA COVID vaccines are rare and have occurred in patients with known hematological pathology as well as patients without any history of hematologic or immunologic disorders. When taking the history of patients presenting with hemolytic anemia, it is important to query recent vaccinations as, while rare, mRNA COVID vaccine may well be the etiology. While this ultimately will likely not change patient management, this information would be beneficial for further study.

Abstract 2023-17
Guillian-Barre Syndrome Post COVID-19 Vaccination
Jesslin Abraham, MD; Valerie Espinoza , MD; Kasey Fox, DO

Introduction

Guillain Barre Syndrome (GBS) is a rare immune-mediated neurological disorder affecting peripheral nerves and nerve roots. GBS presents as acute sensorimotor neuropathy that starts with distal paresthesia that progresses to weakness of legs and arms. It also causes flaccid paralysis. The most known vaccinations reported to cause GBS include meningococcus, polio, influenza, and rabies vaccines. However, an association with the COVID-19 vaccine is yet to be established.

Case Presentation

This is a 50-year-old man that presented to the ED complaining of generalized weakness and acute loss of ability to ambulate which has been progressing for about a month.

Patient began having left arm and leg weakness, which started in his fingertips of his left upper extremity and soon moved proximally to upper left arm. Symptoms then progressed to right upper and lower arms. Symptoms further continued to progress making the patient bedridden.

All imaging including CT head, cervical spine, and MRI of brain showed no significant findings except a C1/C2 subluxation possibly chronic without significant focal soft tissue swelling. Upon evaluation, patient had significant motor weakness and required maximal assistance for movement. Patient also had flaccidity of muscles associated with weakness with no bulbar weakness. Patient had no difficulty in breathing or with speech. A lumbar tap was performed which showed elevated protein, WBC, and glucose.

Upon further investigation, patient stated that he received his (3rd dose) of the Moderna Vaccine for Covid-19 about a month before the onset of symptoms and felt fine. Two weeks later, he began experiencing

subjective fevers, diarrhea, abdominal pain, and fatigue that lasted for a week and then self-resolved. Approximately another two weeks later is when patient began noticing his neurological symptoms. GBS was suspected at this point and patient was started on Intravenous Immunoglobulin (IVIG). Stool cultures were collected for C. jejuni which came back negative. Further studies were also sent out such as CSF culture, CSF cocci, CSF West Nile Ab IgM, and Gastrointestinal Pathogen Panel PCR Feces, which all came back negative.

Over the course, patient tolerated the treatment well and endorsed improvement of weakness especially on the right side of his body. Patient was eventually discharged to a rehab center and planned to receive another round of IVIG 0.4 g/kg for 5 days.

Discussion

Molecular mimicry has been widely accepted pathophysiology behind infections and vaccinations causing GBS. The reported cases of COVID-19 vaccination causing GBS support this theory. However, proving a causal relationship in a molecular level has not been accomplished yet and remains a challenge.

Conclusion

GBS has several precipitating triggers such more commonly infectious: C. jejuni, cytomegalovirus, M. pneumoniae, Epstein-Barr virus and Zika virus. A rarer trigger are vaccines. More recently, there has been several studies that have linked GBS to COVID-19 vaccine. With COVID-19 cases continuing to persist, and increasing advocacy for vaccination against the disease, GBS should be considered as very rare but possible side effect of the vaccine.

Abstract 2023-18
Treatment of Delirious Mania with Catatonia in a Community Teaching Hospital: A Case Series
Tyler Wheeler, MD; Sarayu Vasan, MD

Introduction

Delirious mania (DM) is a serious and poorly understood neuropsychiatric syndrome with features of mania, delirium, catatonia, and psychosis. Although it was first described in the 1800s, there is no consensus on nosology or diagnostic criteria, exacerbating challenges in detection and treatment. DM is sometimes viewed as a subtype of mania, while others consider it to be a separate entity. There appears to also be a relationship between DM and catatonia, and DM has similarly been responsive to treatment with benzodiazepines and electroconvulsive therapy (ECT). The literature surrounding DM is limited largely to case studies.

Objective

We present two cases of DM observed and treated in a community-based inpatient psychiatric unit to further add to the available literature on this challenging and severe neuropsychiatric syndrome.

Discussion

Diagnosis of DM was complicated by lack of consensus diagnostic criteria; however, both patients displayed symptomatology consistent with the descriptions of DM put forward in the literature. Given the extensive differential diagnosis for DM, consideration was given to a variety of etiologies, including medical, neurological, and toxicological. Clinical severity throughout each patient's hospital course was assessed using Confusion Assessment Method Severity (CAM-S) and Clinical Global Impressions Severity (CGI-S) scales for each day of admission. Signs and symptoms consistent with delirium and catatonia were also displayed by each patient during their hospital course. In each case, the patients were treated with a combination of antipsychotics, mood stabilizers, and benzodiazepines. We posit that this is an effective treatment regimen in cases of DM with catatonia in which ECT is not accessible.

Conclusion

DM is a serious and likely under-recognized clinical phenomenon. A combination of antipsychotics, mood stabilizers, and benzodiazepines may be an effective treatment regimen in DM cases with catatonia where administration of ECT is not possible. Development of a consensus diagnostic criteria is needed to expand research into the management of DM.

Abstract 2023-19

Metastatic Melanoma Masquerading as a Chest Wall Mass

Lawrence Okumoto, MD; Everardo Cobos, MD; Kishan Ghadiya, MS IV; Arash Heidari, MD

Background

This is an unusual presentation of a metastatic melanoma that presented as a large breast mass that fluctuates in size

Case Presentation

The patient is a 64-year-old male reports that he has a breast and chest wall mass that was a secondary site of metastasis of Malignant Melanoma. The secondary site was large painful and fluctuated in size. The secondary site had an area of depigmentation surrounding an area that was harden edematous tissue. This tissue was surrounded by a larger area of soft edematous tissue that extends into the breast and axilla. What is unique about this case is that the mass would increase and decrease in size. The pain would change with the size of the mass, increase mass would proportionally increase in pain. The mass on his breast/chest would respond to steroids and would decrease in size which also reduced his pain. There were several lymph nodes that were enlarged, the largest was in the cervical triangle.

CT scan showed significant diffuse swelling of the left chest wall extending to the axilla and lateral left breast region. There are numerous size-enhancing nodules/masses within inflamed tissue, largest one measuring 6 cm with surrounding fluid. Some of the masses are heterogeneous with areas of hypodensities. The pain and swelling from the lymph nodes were improved with the use of steroids. This reduces the swelling by 25% and the pain significantly improved for the patient.

The primary site was a mole on his left side superior to the lilac crest that was present with him for 40 years. It was approximately 1 cm in diameter, darkly pigmented with some color changes around the edges. The mole was raised and no hair was growing out of the mole. There was an area of depigmentation measuring 2.5x5cm. The area of depigmentation started 4-5 months ago. This lymph node biopsy was done which melanoma is positive for SOX-10 and S-100, Negative for CD45 and AE-1/AE-3. Treatment was initiated with Nivolumab q21 day treatment.

Discussion

The non-classical presentation of this case demonstrates the difficulty of reaching a diagnosis. The large mass in his chest wall was the primary complaint but was not the source of the malignancy. The size of the chest wall mass may have been a distraction to the small mole that was on the patient's abdomen.

Conclusion

This is an unusual presentation of metastatic melanoma that presented as a breast/chest wall mass that would fluctuates in size. No case report was found of a similar presentation of a metastasis of this size on the external chest wall or with the changes in size. The masses in the chest wall were numerus and painful but responded to steroids which suggests an inflammatory response. Treatment was initiated with Nivolumab and will continue with immunotherapy.

Abstract 2023-20

A Fatal Case of Disseminated Kaposi Sarcoma in AIDS

Baldeep Mann, MD; Carlos D'Assumpcao, MD; Lawrence Okumoto, MD; Shatha Aboaid, MD; Ayham Aboeed, MD; Everardo Cobos, MD; Arash Heidari, MD

Background

This is an unusual presentation of disseminated Kaposi Sarcoma due to multiple organ involvement

Case Presentation

The patient is a 32-year-old male with a medical history significant for HIV diagnosed in 2021. He was lost to follow-up; treatment was not initiated. In July 2022 he started to experience coughing and shortness of breath. Symptoms were mild so he did not seek medical attention. In October of 2022, the patient noticed the appearance of scattered pink/purple nodules on his face, stomach, back, chest and thighs. These lesions progressively grew in size, with lesions on his thighs becoming indurated. In November of 2022, his SOB and

cough worsened with accompanied fever and general malaise. Over the course of a month the lesions on his thighs grew large enough to form a single large indurated plaque on the anterior of his thighs and chest. More lesions started to appear on his arms and face. Pt was admitted and work up for his lesions and cough was performed. Lesion biopsies were performed and were positive for HHV-8 and was supported by the histological findings were consistent for Kaposi sarcoma. Bronchoscopy was performed and found multiple erythematous plaques all over the tracheobronchial tree with telangiectasias and inflammation. Patient was started on Symtuza to treat his HIV infection. Patient was started on chemotherapy with lipophilic doxorubicin upon discharge.

He missed his second cycle of chemotherapy and presented with acute worsening shortness of breath and dyspnea on exertion, respiratory distress and failure, intubated for airway protection and impending respiratory failure. He started on antibiotics and antifungal and his ART was converted to dolutegravir/emtricitabine/tenofovir disoproxil fumarate. Infectious diseases work up came back negative from blood, sputum or urine or repeated bronchoscopy. He unfortunately deteriorated and demised likely due to malignant-KS progression, respiratory failure, with increasing vasopressor requirements.

Discussion

This was a lesson in keeping endobronchial KS in the differential for unresolving pneumonia or respiratory failure HIV patients. Clinical manifestations are similar to infectious or neoplastic etiology. Ruling out infectious etiology before making a diagnosis of KS is vital. Some authors have advocated to suspect pulmonary KS be the cause of respiratory failure in AIDS patient despite negative bronchoscopy finding and the absence of cutaneous disease. Pulmonary KS has poor outcomes, like in our patient, which makes it important for KS to be in the differential diagnosis; prompt treatment needing bronchoscopy with biopsy or BAL with PCR testing for HHV-8 can be done in suspected cases.

Conclusion

KS should always be in differential in AIDS patient with respiratory symptoms. KS should be considered after ruling out infectious causes and prompt treatment preferably with both ART and chemotherapy started as it may have fulminant course as with this patient. Cutaneous lesions serve as a clue for pulmonary manifestations. KS is not only a cosmetic issue but can be aggressive and life-threatening.

Abstract 2023-21

Geriatric Attention-Deficit/Hyperactivity Disorder and comorbid Bipolar 1 Disorder

Joshua Woods, MS III; Tyler Torrico, MD; Nakisa Kiai, MD; Rossano Bangasan, MD

Background

Attention-deficit/hyperactivity disorder (ADHD) is commonly considered a disorder of childhood and adolescence. The majority of patients with ADHD typically experience the extinction of their symptoms with age through the development of coping mechanisms and as their cognitive burden decreases in later life. The prevalence of ADHD in elderly patients is difficult to estimate due to very limited incidence, however few case reports exist. Additionally, those who suffer from bipolar disorder and comorbid ADHD are associated with greater illness burden and complexity.

Case Presentation

We present a 67-year-old female patient with a longstanding history of bipolar I disorder that appeared treatment resistant in her elderly years despite previous successful remissions of mania. In her later years, she complained of difficulties with memory and concentration. In addition, she presented with psychomotor changes, frequently expressing frustration at dropping items she is holding and feeling “clumsy” and inattentive. The patient consistently scored within normal range on Mini-Mental State Examinations and brain Magnetic Resonance Imaging (MRI) were normal. After initiating methylphenidate 5 mg twice daily, the patient’s symptoms significantly improved for the duration of her outpatient treatment.

Discussion

This case report describes a rare case of ADHD in a geriatric patient occurring with comorbid bipolar 1 disorder. We describe the subtle signs and symptoms to monitor when attempting to differentiate a bipolar disorder with or without comorbid ADHD in an elderly

patient. Problems with cognition are common in the elderly, but in this population- signs of minor to major neurocognitive disorder must be carefully differentiated from ADHD. We advise clinicians treating geriatric patients to consider ADHD in patients who do not meet the diagnostic criteria for a neurocognitive disorder but still present with decreased working memory, difficulties with concentration, and lapses in attention.

Abstract 2023-22

Primary Monkeypox and Secondary Syphilis in an HIV Patient: A Community Hospital Experience

Geocel-Grace Castanares, DO; Carlos D'Assumpcao, MD; Michelle Fang, PharmD; Rick McPheeters, DO; Arash Heidari, MD

Introduction

Monkeypox virus, a non-variola Orthopoxvirus, is the cause of a zoonotic pox disease that is endemic in several Central and West African countries. It is understood to be spread via direct contact with sores or scabs on infected individuals as well as large respiratory droplets or indirect and direct contact with bodily fluids. Co-infection of monkeypox, human immunodeficiency virus, and syphilis has only been reported three times to date. Here we report a case of a person with uncomplicated well-controlled HIV who contracted monkeypox and secondary syphilis.

Case Presentation

A 35-year-old-male with uncomplicated well-controlled HIV on anti-retroviral therapy presented to the emergency department with facial lesions for seven days. The first lesion was a small pustular “bump” on his lip. He subsequently developed four more lesions on his lips and chin before seeking medical evaluation. Lesions were non-pruritic, non-tender, flesh-colored with a central concavity and small pustular discharge.

Lesions were swabbed for monkeypox virus using viral culture media and sent to a reference lab for qualitative polymerase chain reaction testing. Four days later, reference lab notified the local public health department of positive results. Public health informed the patient’s infectious disease physician who arranged a clinic visit following infection control precautions as recommended by the CDC.

At the clinic, his facial lesions had increased in size and central crusting. He had also developed a new diffuse maculopapular rash on the neck, chest, and torso with a herald patch on the right chest. After the patient was provided informed consent for use of tecovirimat for treatment, he was started on 600 mg twice a day for 14 days. Co-infection testing revealed reactive syphilis antibody, reactive Fluorescent Treponemal Antibody Absorption test, and Reactive Rapid Plasma Reagin test with titer 1:1, staged as secondary syphilis. He was treated with benzathine penicillin G. He had subsequent resolution of all symptoms, four weeks after symptom onset.

Discussion

This patient represents the first monkeypox diagnosis at our community institution. This patient tested the readiness preparation plan for monkeypox at our institution and offered a critique of the healthcare system at a local level.

The expansion of rapid diagnostic testing to commercial laboratories helped to diagnose him readily. The clinical pharmacy team secured a supply of tecovirimat through the Strategic National Stockpile before our first patient arrived. This required coordination with the Kern County Public Health Department, the California Department of Public Health, and the CDC. In-person follow-up of patients with monkeypox may yield the most therapeutic benefit given secondary syphilis was diagnosed by physical exam on follow-up.

Conclusion

Our case shows that rapidly diagnosing patients starts with the utilization of widely available of testing, physician education of signs and symptoms, a ready supply of appropriate antivirals. Further studies need to be performed to validate whether individuals previously diagnosed with sexually transmitted infections like HIV and syphilis are at higher risk for contracting the monkeypox virus. Such studies could lead to more effective identification of high-risk patients and more rapid intervention, treatment, and possibly decreased burden of disease.

Abstract 2023-23

Brachial Artery Pseudoaneurysm in the Setting of Minor Trauma

Geocel-Grace Castanares, DO; Manish Amin, DO

Introduction

Brachial artery pseudoaneurysms are considered an uncommon complication from iatrogenic causes. There have only been few other case reports presenting of its formation such as after burn reconstruction surgery and cardiac catheterization. It is possible it can also occur secondary to trauma however even more rare. With this case report, we present a case of a person with brachial artery pseudoaneurysm that developed over months in the setting of a minor trauma.

Case Description

A 21-year old male with no significant medical history presented to our emergency department complaining of a right upper arm mass. Two months prior to presentation, he fell and landed on a broken piece of glass which pierced his inner right upper arm leaving a small puncture mark. Initially, he did not seek medical attention but after one week he presented to an urgent care as the mass was increasing in size and he noted mild right-hand numbness with intermittent serosanguinous drainage from puncture site. A single suture was placed and removed eight days later. A week prior to our Emergency Department presentation, he began to feel sharp, intermittent, non-radiating pain at the hematoma site. The patient denied intravenous drug use. Examination of the affected limb showed a non-pulsatile mass on the right upper arm. A computed tomography angiogram of the right upper extremity showed a 45 mm x 37 mm x 27 mm pseudoaneurysm medial to the brachial artery with patency distal to the lesion. Vascular surgery was consulted, and the patient was managed operatively.

Discussion

Brachial artery pseudoaneurysms are considered rare. They often occur because of trauma or from iatrogenic causes. While data is limited, it has been reported the incidence of formation due to an iatrogenic cause is 0.7%, This data was collected from brachial and axillary artery punctures for angiography or angioplasty. These pseudoaneurysms can often take days, months, or years to be detected clinically. This unique presentation of a pseudoaneurysm in the setting of a minor trauma further expands the possibility of pseudoaneurysm occurrence outside of procedural iatrogenic causes.

Conclusion

This case report demonstrates the possibility of a pseudoaneurysm formation from a minor trauma despite being a rare occurrence. It should be considered when there is the formation of a mass with penetrating injury to the extremities and requires further imaging with likely surgical intervention.

Abstract 2023-24

Case Report: Alcohol Use Disorder and Noncompliance as Factors in a Case of Probable Korsakoff Syndrome Diagnosed 10 Years after Gastric Bypass

Tyler Wheeler, MD; David Weinstein, MD; Mohammed Molla, MD; Sarayu Vasan, MD

Abstract

Traditionally, Wernicke encephalopathy and Korsakoff syndrome have been associated with significant alcohol use disorder. Wernicke encephalopathy has also been known to occur in postoperative bariatric surgery patients. There is evidence to link alcohol use disorder with bariatric surgery where patients embrace negative coping mechanisms, such as alcohol misuse, as an alternative to their inability to participate in a past eating behaviors. This case report emphasizes a late complication of bariatric surgery and encourages the early diagnosis of Korsakoff syndrome as immediate treatment may prevent clinical deterioration.

Abstract 2023-25

Malignant Melanoma Presenting as a Cavernous Malformation: Systematic Literature Review and Report of Two Cases

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Objective

Intracranial cavernous malformations (CMs) are common, relatively benign neurovascular lesions

whereas malignant melanomas (MMs) of the brain are rare but very aggressive tumors. With nearly identical clinical and radiographic presentations, CMs and MMs are difficult to distinguish. Despite these similarities, the clinical course and management differ considerably. Herein, the authors conducted a systematic review of the literature for all cases of MM presenting as CM and present two cases from their institution.

Methods

A comprehensive literature search was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to identify all case reports and/or case series on MM misdiagnosed as CM in the PubMed and Embase databases. The authors' prospective institutional database of CMs was also searched for similar cases. Data regarding the clinical and radiological presentation and postoperative outcomes were gathered.

Results

8 patients in the literature and 2 patients in the authors' institutional series who fit the inclusion criteria were identified. The median age at presentation was 51 years (range 9-79 years). Among these patients, all presented with radiologically-confirmed hemorrhage, 7 with focal neurological deficits, 6 with headaches, 1 with seizures, and 1 with no symptoms. 6 lesions localized to the brainstem and 4 to the cerebrum. T1-weighted imaging was hyperintense in 7 cases. Out of the 10 total patients misdiagnosed with CMs, 5 had a final diagnosis of primary MM and 5 of metastatic MM.

Conclusion

Intracranial CMs and MMs are challenging to differentiate prior to histopathological analysis, thus they are often misdiagnosed on initial presentation. This review emphasizes the importance of considering MM in the differential diagnosis of hemorrhagic intracranial lesions. Early recognition and intervention are critical to improving morbidity and mortality of MMs.

Abstract 2023-26
Missed Opportunities, A Case of Giant Cell Tumor Masquerading as Back Pain
Lawrence Okumoto, MD; Everardo Cobos, MD; Kishan Ghadiya, MS IV; Arash Heidari, MD

Introduction

Large giant cell tumors of the sacrum are rare and bring diagnostic challenges due to vast differential diagnoses that can delay the proper intervention in a timely manner.

Case Description

The patient is 29 years old female who presented with nighttime back pain started a year prior. The pain was intermittent that radiated to the posterior side of her tights bilaterally. The pain was aggravated by laying on her side and alleviated by placing several pillows under her legs for elevation.

She had multiple visits to emergency rooms over the next following 2 months due to worsening frequency and affecting her sleep. She was diagnosed with "sciatica" with supportive care. For the following 2 months after that, she started to have urinary incontinent and was diagnosed with "urinary tract infections" and received antibiotics. Later she started to experience numbness in her mons pubis area that spread to her vulva and vagina. Subsequently, she started to have dark red rectal bleeding with rectal pain. She was diagnosed with "uterovaginal prolapse, cystocele, and rectocele" causing her mixed urinary incontinence after consultation with gastrointestinal and urogynecologist. Hysterectomy and reconstructive pelvic surgery were discussed with the patient. Six months into her initial presentation, her numbness expanded to a saddle shape, she became incontinent to stool and she developed acute onset left lower extremity weakness with decreased plantar flexion. Computer Tomography showed a large expansile and destructive lesion of the sacrum with mild diffuse enhancement, invading the lumbar canal extending from S1 to S4.

MRI showed a large mass 10x5x7 cm, centered within the S1-4 vertebral bodies and bilateral sacral ala with significant extraosseous extension, obliterating almost all sacral neural foramina, and terminal thecal sac. Involvement of the bilateral piriformis muscles with likely compression of the sciatic nerves.
Giant Ccll tumor of the bone is a locally aggressive tumor that rarely metastasizes. The tumor is most found in the metaphysis and the epiphysis of long bones. In the axial

skeleton it is most commonly found in the proximal sacrum.

Surgical debulking of the tumor was performed by Neurosurgery at UCSF. She started adjuvant chemotherapy When she returned to Kern Medical Center. Treatment was initiated with denosumab.

Discussion

This case shows there were multiple missed opportunities to evaluate the underlying cause of this patient's symptoms. Looking at only the symptoms at the time of the encounter can miss the bigger picture of disease progression. Biases in looking at the symptoms from a specialist's view can also miss the underlying pathology.

Conclusion

Clinicians should be aware of occult malignancies presenting with simple symptoms. Even though a large cell tumor of the sacrum is rare, several opportunities to make the diagnosis was missed in this case perhaps due to her age.

Abstract 2023-27
Two Cases of Anterior Shoulder Dislocation and Fracture Secondary to Generalized Tonic-Clonic Seizure
Kevin Dao, MD; Hari Kunhi Veedu, MD; Britney Ly, RA; Jennifer Ipe, RA; Charlotte Nguyen, RA; Michael Eagan, MD

Introduction

Shoulder dislocations generally account for approximately 45% of all dislocations seen in the emergency department, with anterior dislocations being the most common. Posterior dislocations are quite rare but in epilepsy patients occur more commonly due to a distinct mechanism whereby seizure activity causes powerful muscular contractions in the shoulder girdle. Since these seizure-induced dislocations are uncommon, we would like to present a case series involving two patients, both of whom had an anterior shoulder dislocation secondary to a seizure, with one patient having an associated ipsilateral proximal humerus fracture.

Case Descriptions

Case #1 - A 27-year-old male with refractory nonlesional bitemporal lobe epilepsy since late 2017 presented to clinic to establish care. He underwent epilepsy monitoring unit (EMU) evaluation. On the 7th day of the EMU, he had a habitual electroclinical seizures, which was classified as a focal to bilateral tonic-clonic seizure. Patient sustained right shoulder dislocation. Orthopedic recommended a closed reduction of the shoulder and the patient was placed in a sling. CT scan confirmed a Hill-Sachs lesion in the humeral head and a bony-Bankart fracture of the anterior/inferior glenoid. The patient's detailed epilepsy pre-surgical workup showed the patient has nonlesional bitemporal lobe epilepsy and is waiting to undergo bilateral responsive neurostimulation (RNS) implantation to control his epilepsy.

Case #2 - A 34-year-old male with a history of traumatic brain injury who presented to the emergency department complaining of left shoulder pain after waking up confused. In the ED, a physical exam revealed restricted shoulder motion secondary to pain. Radiographs showed a comminuted proximal humerus fracture with anterior dislocation of the glenohumeral joint and a bony-Bankart fracture of the anterior inferior glenoid rim involving about 20% of the articular surface area. Neurology was consulted and patient was started on levetiracetam. Orthopedics was consulted and patient was placed on Ultrasling and eventually had a Latarjet procedure.

Discussion

Shoulder dislocations due to epilepsy tend to be rare. Although EMU is critical in diagnosing epilepsy the benefit should outweigh any expected risks. The first step in managing a possible shoulder dislocation is the evaluation of the patient, which includes a neurologic examination of the extremity. Plain radiographs are generally adequate to diagnose major fractures, but smaller fractures of the glenoid or humerus may not be adequately seen. Consultation with an orthopedic surgeon is recommended, and treatment can vary substantially based on the character of the injury. Antiepileptic treatment should be initiated, and close follow-up is highly recommended.

Conclusion

With 5 million people being diagnosed with epilepsy every year, it is crucial that physicians remain vigilant to

minimize seizure-related complications. A history and physical should be performed to rule out musculoskeletal and neurological injuries after a seizure, and liberal use of imaging. In patients with a reported history of seizures who are taking anti-epileptic medication, EMU studies can be considered to understand the evolution and development of seizure activity. Orthopedic intervention may vary widely because of the heterogeneous nature of the injuries.

Abstract 2023-28

Management of Vesico-uterine Fistula Requiring Uterine Re-anastomosis

Taide Chavez-Sturman, MD; Yufan Chen, MD; Shahab Hillyer, MD; Maggie Jiang, DO

Purpose

The objective is to present a patient suffering from utero-vesical fistula (UVF) secondary to cesarean section with cyclic gross hematuria initially thought to be an urachal fistula remnant. Management significant for intraoperative incidental supracervical hysterectomy by urology requiring re-anastomosis of the uterus resulting with full return of function.

Methods

The case information was retrieved through the electronic medical record of Kern Medical Center. We collected the patient's demographic information, medical history, imaging examination, treatment process as well as follow-up information. Literature review was also conducted via published journal articles.

Results

The patient being presented was initially seen by urology for cyclic hematuria after her second cesarean section. On CT imaging, an anterior dome bladder mass was present which was initially thought to be a urachal fistula remnant. A robotic partial cystectomy was performed by urology and subsequently uncovered a uterovesical fistula after the uterus was incidentally transected at the lower uterine segment due to severe adhesions from prior cesarean sections. Upon Urogynecology consultation a hysterectomy vs re-anastomosis was considered and re-anastomosis of the uterus to the cervix was performed due to patient desire for fertility. Confirmation of watertight re-anastomosis done via methylene blue chromopertubation. Procedure was performed based on knowledge and technique from radical trachelectomy. At one-year follow-up patients report resolution of symptoms, return of menstruation and normal HSG imaging reviewed.

Conclusion

For patients with a history of cesarean section, if cyclic hematuria is present, we should have high suspicion for UVF. Imaging should be performed to confirm fistula and surgery should follow to repair the fistula and reconstruct normal anatomy of the uterus and bladder. Awareness of possible complications should be cautioned and salvaging the uterus if possible is recommended if the patient desires continued fertility.

Abstract 2023-29

An Effective Treatment for Neurogenic Bowel in the Setting of Coccidioidomycosis Meningitis: A Case Report

Essam Hashem, MS IV; Alexandra Elias, MD; Rasha Kuran, MD

Introduction

Neurogenic bowel dysfunction is a challenging condition that affects patients with spinal cord injury, however, patients with neurogenic bowels can achieve relatively normal bowel function with proper lifelong management. Most effective methods include lower extremity stretches, daily dietary fiber supplementation, daily suppository treatment, and daily digital rectal manipulation. This is especially challenging for patients with quadriplegia who lack the ability to participate in those maneuvers. Inadequately managed neurogenic bowel may persist and lead to serious complications, such as bowel dilation, perforation, and ultimately death. We describe an effective method for managing colonic dilation due to neurogenic bowel by inserting a rectal tube beyond the rectosigmoid junction.

Case Presentation

Patient is a 52-year-old man with longstanding central nervous system coccidiomycosis (CNS cocci), or Coccidioidal meningitis, with extensive spinal cord arachnoiditis and partial quadriplegia treated with intrathecal Amphotericin 0.8mg via Ommaya reservoir and Posaconazole 400mg daily. Patient resides at a skilled nursing facility and presented to the emergency department for severe chronic abdominal distention for

9 months, worsened over two days (Figures 1 & 2). Patient reported no pain, nausea, vomiting, or irregularities in bowel frequency. Abdominal distention had progressed despite the use of fiber supplementation.

The patient was evaluated by the surgical team, who recommended nonsurgical management. Fleets enema administration followed by rectal tube insertion to the level of the rectosigmoid with low intermittent wall suction was performed. Four days later, the abdominal distention had completely resolved, and he was discharged back to his skilled nursing facility with recommendations for regular decompression.

Discussion

Coccidioidomycosis meningitis is an infection by a dimorphic fungus of the *Coccidioides* species. It typically presents with chronic headache, cognitive dysfunction, confusion, and emotional liability, and if left untreated can be fatal. A common yet often under recognized complication of CNS cocci is spinal arachnoiditis, which has various effects on patients' clinical outcomes. Our patient was suspected to have spinal cord vascular injury resulting from arachnoiditis of the cervical spine.

Neurogenic bowel dysfunction manifests in 2 different patterns, dependent upon the level of injury. Injury above the conus medullaris, as in our patient, causes hyperreflexic pelvic muscle contractions and inability to relax the external anal sphincter, leading to constipation and stool retention. Lesions below the conus lead to slow transit time and constipation with fecal incontinence due to hypotonic anal sphincter. Different methods of management have been explored for neurogenic bowel; however, there is paucity of data on optimal treatment guidelines. Some studies suggest proper diet management could be sufficient to improve bowel function. Other studies suggested that digital rectal manipulation or trans anal colonic irrigation enemas may be effective in the management of chronic constipation.

Conclusion

Neurogenic bowel is a chronic condition that has no cure and requires lifelong management. Some patients can have disease progression leading to serious complications, even while on treatment. In these cases, using a rectal tube with or without suction should be considered as a safe, cost-effective, and efficient method of relieving life-threatening colonic distention in the setting of neurogenic bowel.

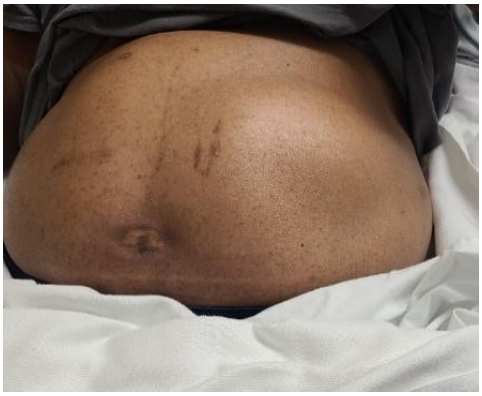

Figure 1. Abdominal distention with periodic colonic peristalsis seen through the skin on initial admission.

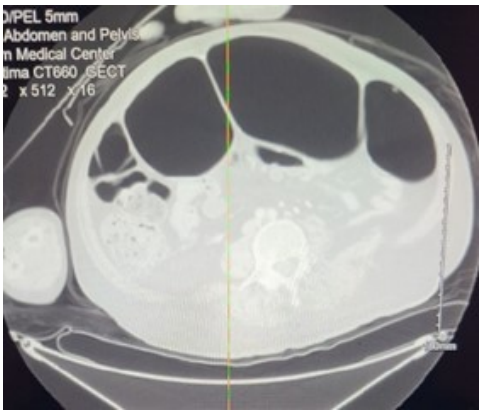

Figure 2A. CT with contrast: showing entire colonic dilation measuring 10 cm, extending to the rectosigmoid colon and anus with no abscess or mass in axial view.

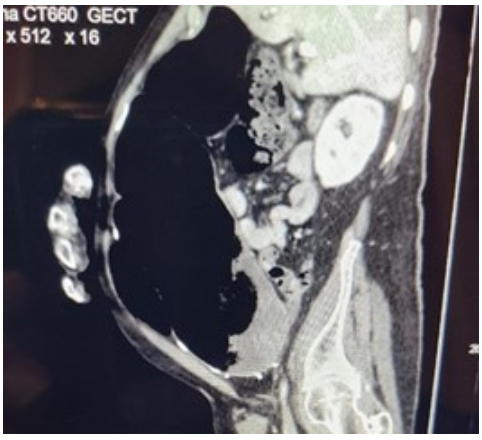

Figure 2B. CT with contrast: showing entire colonic dilation measuring 10 cm, extending to the rectosigmoid colon and anus with no abscess or mass in sagittal view.

Abstract 2023-30

An Unrecognized Association: Do Repeat Inflammatory Attacks of Familial Mediterranean Fever Make Patients More Prone for Posterior Reversible Leukoencephalopathy Syndrome?

Nausheen Hussain, OMS III; Vu Luu, OMS III; Baldeep Mann, MD

Introduction

Posterior Reversible Leukoencephalopathy Syndrome (PRES) is a clinical syndrome that presents with a cluster of symptoms including headache, altered mental status, vision changes, and seizures. This condition has gained more recognition in the last decade because of better imaging modalities available for its diagnosis. On imaging it presents with a characteristic finding of posterior cerebral white matter edema. Although a variety of conditions have been reported in association with this syndrome, to our best knowledge, this is one of the few case reports where PRES has been described during the attack of FMF.

Case Description

We report a case of a 38-year-old patient with history of end stage renal disease (ESRD) on hemodialysis due to amyloidosis secondary to Familial Mediterranean Fever (FMF) who was admitted for altered mental status, seizure-like activity, and vomiting. Differentials including electrolyte disturbance, meningitis, normal pressure hydrocephalus, epilepsy were eliminated via metabolic laboratory, microbiology, and imaging results. He was eventually diagnosed to have Posterior Reversible Leukoencephalopathy Syndrome (PRES) via head MRI.

Discussion

Pathophysiology of PRES is not well understood. Two hypotheses concerning the pathogenesis of PRES are hypertension-related cerebral hyper-perfusion and endothelial dysfunction leading to vascular damage and altered permeability. Both result in some degree of breach in the blood-brain barrier and ultimately insults to the central nervous function. This manifests as neurologic changes such as altered mental status or in worse cases, seizure.

FMF is an autoinflammatory disease in which there is increased expression of interleukin-1 beta due to a mutated Mediterranean Fever (MEFV) gene encoding pyrin, leading to episodic flares of recurrent inflammation. A complication of progressive flares is ESRD due to secondary renal amyloidosis. ESRD increases the risk for hypertension, and subsequently increases the risk of PRES. In two other cases of PRES in FMF, extremely elevated BP was not noted. This supports the notion that a chronic inflammatory state in FMF is permissible for PRES to occur due to endothelial dysfunction. We observed in our case report with previous ESRD diagnosis and a MAP of 159 mmHg on admission. On top of that, the patient was diagnosed with FMF at the age of 13 and experienced multiple FMF flare ups through the years. As the hypotheses of PRES suggested, the hypertensive state and proinflammatory state both cause the patient more prone to developing PRES.

Conclusion

It is prudent for diagnosticians to consider PRES on a differential list in patients with acute neurological changes in the setting of FMF flares. More importantly, regardless of FMF progression, we should always consider neurologic consequences as part of its pathogenesis. In this way we call for physicians who care for patients with FMF to minimize acute attacks and to pay attention to subtle or overt neurologic changes that may present in their clinical course. In patients developing hypertension with or without ESRD, a tighter antihypertensive approach should be taken as a neurologic consequence such as PRES in FMF, though rare, can be detrimental.

Abstract 2023-31

Cardiomyopathy as an Early Manifestation in Juvenile Hemochromatosis

Haidar Hajeh, MD; Jesslin Abraham, MD; Theingi Tiffany Win, MD; Arash Heidari, MD; Greti Petersen, MD

Introduction

Hemochromatosis is caused by abnormal deposition of iron causing organ toxicity and dysfunction. Cardiac hemochromatosis is a potentially preventable cause of heart failure. Cardiac iron overload can lead to dilated cardiomyopathy, diastolic or systolic dysfunction and heart failure. It can also cause conduction disturbances, sinus node dysfunction, and arrhythmias. Very rarely they can also cause sudden cardiac death. Heart disease may be the first manifestation of hereditary

hemochromatosis in certain individuals. These individuals are also likely to have iron deposition in the liver as well. Cardiac involvement may be assessed by cardiac MRI or endomyocardial biopsy. The condition may be reversible with conventional therapy and repeated phlebotomy.

Case presentation

34-year-old Hispanic male with no known significant past medical history presented to the emergency department with shortness of breath on minimal exertion. He used to work as a farmer but had to quit his job due to short of breath and severe fatigue barely after 5 minutes of exertion. He also endorses intermittent lower extremity but denied any chest pain or palpitations. Vitals on presentation showed blood pressure 100/70, heart rate 95 and oxygen saturation 96% on room air. Trace lower extremity edema with a fluid wave in the abdomen was noted on physical examination. Chest x-ray revealed significant cardiomegaly and transthoracic echocardiogram showed severe bi-ventricular systolic failure with estimated ejection fraction of <10% moderate mitral regurgitation and severe tricuspid.

Patient denied any history of alcohol consumption, any illicit drug use or smoking. Further questioning revealed that the patient was having difficulty conceiving with his wife for 4 years. Testicular ultrasound showed small bilateral testicles. In addition, ultrasonography of the liver showed stigmata of liver cirrhosis.

An iron panel revealed severely elevated ferritin level up to 3,794 ng/mL with transferrin saturation of 83.4%. A diagnosis of hemochromatosis with end-organ damage (dilated cardiomyopathy, liver cirrhosis, testicular atrophy) was made. Cardiac catheterization revealed no evidence of coronary artery disease. Liver biopsy confirmed the diagnosis with architectural distortion with septal fibrosis and diffuse iron deposition within the hepatocyte on iron staining. Genetic analysis was negative for HFE and TFR2 mutations. Juvenile-variant hemochromatosis was suspected pending HJV and HAMP genetic studies. Patient was transferred for evaluation for liver and heart transplantation.

Discussion

After diagnosing a new onset heart failure, it is important to determine the etiology. Less common etiology should be considered in young individuals who present with early onset heart failure with no other cardiac risk factors.

Conclusion

Although coronary heart disease (in addition to drug abuse in certain communities) is the most common etiology of heart failure, other less common causes should be investigated. Hemochromatosis causes iron deposition in multiple organs including the heart leading to cardiomyopathy. Juvenile hemochromatosis is characterized by earlier involvement of the cardiomyocyte. Consideration of a rare etiology is vital for a prompt diagnosis and appropriate treatment for a better prognosis.

Abstract 2023-32

Unfettered Growth of a Pyogenic-like Granuloma Squamous Cell Carcinoma

Cesar Aranguri, MD; Jesslin Abraham, MD; Baldeep Mann, MD; Matthew Clarke, MD; Everardo Cobos, MD

Introduction

Cutaneous squamous cell carcinoma (cSCC) accounts for 20% of all skin cancers, making it the second most common skin cancer after basal cell carcinoma. While the majority of cSCC lesions can be successfully treated with surgical resection or radiation, larger lesions are associated with poor prognosis, including greater risk of local invasion or metastasis. Prompt recognition and diagnosis is therefore a priority. Pyogenic granuloma is a benign, vascular tumor that can grow rapidly and, in some cases, can resemble malignant lesions. We report a case of a rapidly growing, fungating lesion of the knee in a 66-year-old male with an ambiguous presentation.

Case Presentation

66-year-old male with a history of hypertension who presents for evaluation of a left knee mass. The mass was initially noted 3 months prior, with the patient believing it was a “callus.” The initially flat lesion progressively enlarged into a fungating mass. The patient presented for evaluation due to difficulty walking with his left lower extremity.

Upon evaluation, a 6.8 x 5.7 x 3.5 cm fungating, pedunculated and ulcerative soft tissue mass over the left patella with serosanguineous and bloody fluid drainage was noted. Furthermore, patient presented tachycardic, with a mild leukocytosis, and elevated inflammatory markers concerning for infection. Initial

imaging with X-ray of the left lower extremity demonstrated a large radiodensity involving the infrapatellar soft tissues. CT of the lower extremity with contrast demonstrated a large exophytic mass originating from the skin, with no intra-articular extension, and internal enhancing components concerning for neoplasm. Ultrasound-guided core biopsy of the mass was performed and sent to pathology. Due to insurance reasons, patient was unable to await biopsy results and was discharged to home with family with instructions to await telephone communication for pathology results.

Pathology of the fungating, skin lesion of the left patellar revealed poorly differentiated squamous cell carcinoma. Patient was contacted over the phone, with discussion of results from the biopsy. Patient was also advised to make an appointment with our oncologist outpatient for prompt initiation of treatment. Patient was seen in oncology clinic outpatient awaiting initiation of treatment.

Discussion

cSCC is more commonly seen in sites frequently exposed to the sun. Poorly differentiated lesions can resemble pyogenic granulomas, and with unfettered growth can progress to fungating lesions. As a lesion > 4 cm, this lesion is considered a very high-risk cSCC that would benefit from chemotherapy/radiation to shrink the mass followed by surgical resection with an aim to fully excise the mass while preserving knee functionality.

Conclusion

Squamous-cell carcinoma is the second most common cancer among whites. cSCC are associated with a substantial risk of metastasis compared to most basal-cell carcinomas. These lesions may have varied presentations as the case discussed above. Hence, timing to identifying the pathology of the lesion and initiating treatment is important.

Abstract 2023-33

Ocular Syphilis: A Case Series at a Community Hospital

Sevak Nersesyans, MS IV; Essam Hashem, MS IV; Janpreet Bhandohal, MD; Leila Moosavi, MD; Rasha Kuran, MD

Introduction

Syphilis is preventable and treatable sexually transmitted infection caused by the spirochete, *Treponema pallidum*. Multiple studies have shown an increase in prevalence worldwide. It is categorized as early (primary, secondary, and early latent), and late (late latent, tertiary). Neurosyphilis and ocular syphilis can occur at any stage. Ocular syphilis can lead to permanent vision loss if not treated correctly and in a timely fashion.

Purpose of Study

What complications arise from the progression of Syphilis?

Methods Used

This was a retrospective analysis of patients who presented to Kern Medical between January 2020 and January 2023, with a diagnosis of ocular syphilis using the hospital's current electronic medical records system. We checked patient's records and plotted the disease course from the time of initial diagnosis of Syphilis until January 2023. We excluded all minors and prisoners from our study.

Summary of Results

Patient #1 - 31-year-old male presented to Kern Medical in 2021 with flashes and blurry vision, worsening after starting Bicillin and Probenecid for syphilis treatment. He was diagnosed with syphilitic uveitis and HIV by his ophthalmologist. Symptoms resolved after 14 days of IV Penicillin.

Patient #2 - 35-year-old male presented to Kern Medical in 2022 with gradual loss of vision in his R. eye and almost complete loss of vision in his L. eye. He was diagnosed with syphilis by his ophthalmologist and found to have HIV as well. He endorsed Patient received 14 days of IV Penicillin and was lost to follow-up.

Patient #3 - 41-year-old female with Penicillin allergy and an outside diagnosis of syphilis presented to Kern Medical in 2022 to receive desensitization. She had R. sided vision loss which started with central vision loss only. Patient was started on IV penicillin, but left AMA after the first dose.

Patient #4 - 57-year-old male was diagnosed with syphilis in 2015 at Kern Medical, then returned in 2018 with reactivation. Patient delayed treatment and presented in

2020 with worsening vision and was lost to follow-up without treatment. Patient returned in 2021 due to worsening vision but denied treatment and was lost to follow-up.

Discussion

Syphilis (*Treponema pallidum*) has become a reemerging disease within the last decade.[1,4,6] Diagnostic tests have not changed in that time; however, "at-risk" populations have become increasingly non-adherent to safe practices and follow-up treatments. Ocular syphilis presents as blurry vision with uveitis, and panuveitis, and can present at any stage of the disease. However, ocular syphilis can be present without other systemic symptoms, therefore, any indication of an inflammatory ocular condition should prompt a syphilis serology panel.[2] Venereal disease research laboratories (VDRL) test and the rapid plasma reagin (RPR) test are two most used non-treponemal tests for syphilis as initial screening, with reactive samples undergoing a second confirmatory treponemal test, such as the fluorescent treponemal antibody absorption test (FTA-ABS). A more updated approach utilized at our institution employs screening with TP-EIA with reflex confirmation by FTA-ABS.[3] Ocular involvement of the disease warrants consideration of neurosyphilis and cerebral spinal fluid (CSF) analysis for VDRL and FTA-ABS is indicated in all patients.[3] Also, patients should be screened for human immunodeficiency virus (HIV) due to the high coinfection rate, and increased complications in patients living with Acquired immune deficiency syndrome (AIDS).[3,4] Once a positive result is confirmed, curative treatment can be started. According to the Center for Disease Control (CDC) parenteral aqueous crystalline penicillin G remains the drug of choice.[2] Ceftriaxone has been used when penicillin is unavailable and can also be curative. Ceftriaxone can be combined with a 4-week course of low-dose oral steroids if inflammation persisists.[5]

Conclusion

Our study involves 4 patients who presented to our community hospital with active syphilis, 2 of which were also HIV positive. All patients presented with varying degrees of uveitis, blurry vision and vision loss, confirmatory tests were performed, then the standard of care treatment was offered to all patients. Only 2 patients completed treatment and had symptom resolution while the remaining were subsequently lost to follow-up. This highlights some of the challenges encountered in the eradication of this disease.

Abstract 2023-34

Disseminated Histoplasmosis in Central California Seen in an Immunocompromised Patient

Kishan Ghadiya, MS IV; Robert Dunn, MS IV; Gurpal Singh, MD; Hobart Lai, DO; Ralph Garcia-Pacheco, MD

Introduction

Histoplasma Capsulatum is a dimorphic fungus found in central and eastern United States, most commonly in the Ohio and Mississippi river valleys. It is also seen in other regions of the Americas, such as Central and South America. Transmission is primarily through airborne inoculation as patients usually contract the fungus from inhaled microconidia. Histoplasmosis is very much low burden, and for a vast majority of cases in immunocompetent patients, this mycosis is self-limiting. However, in patients with acquired immunodeficiency, disseminated disease is common and can lead to an appreciable increase in morbidity and mortality. This case report studies a newly diagnosed HIV patient with disseminated Histoplasmosis in Central California, a rare occurrence in an area more largely endemic to coccidioidomycosis.

Case Description

A 53-year-old male presented to the ED for 1 month of fatigue, fevers, nonproductive cough, and profuse sweating — ultimately becoming bed-bound. He admitted to accidental needle sticks in the past and worked as a farmer for the past 20 years in the central valley. He was found to be febrile, severely diaphoretic with no palpable lymphadenopathy seen on physical exam. Labs showed elevated liver function tests, normocytic anemia, and thrombocytopenia. Otherwise, patient did not have leukocytosis. On admission, he was found to be HIV positive with negative coccidioidomycosis serology and AFB. Imaging revealed bilaterally pulmonary nodules of infectious nature and diffuse lymphadenopathy in the abdomen. Bronchoscopy did not show any significant findings but BAL gram stain showed intracellular organisms resembling Histoplasma. Later, patient was found to have elevated LDH and Ferritin levels. He was treated with amphotericin and

later itraconazole with good clinical improvement before discharge.

Discussion

This patient's presentation on admission was consistent with infectious pulmonary granulomatous disease and his HIV screen was positive. Imaging and laboratory findings were consistent with disseminated fungal disease with bone marrow and liver involvement – and the BAL gram strain eventually confirmed the diagnosis of Histoplasma. His immunocompromised state was the ideal background for this usually benign organism.

Conclusion

This case of disseminated Histoplasmosis is unique in geographic setting of central California. *Histoplasma* prevalence in western US is considered rare, but has resulted in symptomatic disease in this HIV positive individual. This highlights the importance of recognizing that undetected cases of Histoplasma infection in California can occur more commonly than is reported. This is especially true as clinicians in central California largely attribute symptoms and findings of fungal infection with Coccidiomycosis.

Abstract 2023-35
Apical Hypertrophic Cardiomyopathy Masquerading as Non-ST Elevation Myocardial Infarction
Haidar Hajeh, MD; Theingi Tiffany Win, MD

Introduction

Apical hypertrophic cardiomyopathy (ApHCM) is an uncommon variant of hypertrophic cardiomyopathy. It is characterized by symmetrical deep negative T wave inversions in precordial leads on electrocardiography (ECG). Transthoracic echocardiogram (TTE) plays an important role in the diagnosis of ApHCM. ApHCM can mimic other cardiac diseases in presentation including acute coronary syndrome (ACS).

Case Description

A 46-year-old male with history of alcoholism presented to the emergency department with complaints of chest and epigastric pain. The patient described the pain as heaviness in the epigastric and substernal area. He also endorsed chronic intermittent exertional angina over the past months. ECG showed T wave inversions in precordial leads. ACS protocol was started. Troponin-I was elevated and plateaued at 0.31 ng/mL. TIMI score was 3. Subsequent ischemic workup with nuclear stress test (Lexiscan) showed a moderate sized reversible perfusion defect at the cardiac apex suggestive of ischemia. However, coronary angiography revealed no evidence of coronary artery disease. TTE showed apical variant of hypertrophic cardiomyopathy with preserved left ventricular ejection fraction. The patient's symptoms resolved with beta-blocker therapy.

Discussion

In patients presenting with chest pain, excluding ACS is vital. Ischemic EKG changes and elevated troponin levels raise suspicion of ACS. In this case, the patient's presentation pointed towards acute coronary syndrome which was later excluded by performing definitive coronary angiography. Subsequently, other etiologies for ischemic EKG changes and troponin elevations were considered and TTE revealed ApHCM as the potential cause.

Conclusion

ApHCM does not have any pathognomonic clinical symptoms but can present as acute coronary syndrome associated with angina, ischemic EKG changes and abnormal cardiac markers. The main complaints of the patients are nonspecific leading to late diagnosis. Medical treatment including beta-blockers and calcium channel blockers often lead to excellent clinical outcomes with resolution of ischemic symptoms.

Abstract 2023-36
Improving the Capture of Qualifying Patients for Lung Cancer Screenings in the Ambulatory Setting
Ralph Garcia-Pacheco, MD; Glenn Goldis, MD; Rebecca Minas-Alexander, RA

Introduction

Lung cancer is the leading cause of cancer-related death in adults, yet only a small fraction of eligible candidates is being screened. Majority of patients with lung cancer present with symptoms due to the already advanced stage of the illness, a progression that could have been detected earlier if screenings were taking place. We hypothesize that a majority of Kern Medical patients who may qualify to partake in a lung cancer screening (LCS) program are not receiving such preventative care.

Further investigation revealed Kern Medical's ambulatory tobacco history intake form did not accurately assess a patient's extent of tobacco use and patient charts, in turn, did not include detailed information regarding a patient's tobacco intake for provider evaluation. Furthermore, Kern Medical did not have a multidisciplinary system in place to ensure LCS were properly taking place.

Purpose of Study

What number of patients at Kern Medical, if any, based on current medical guidelines qualify for LCS and are not receiving such care?

Would changing the ambulatory tobacco history intake form to include questions allowing us to calculate smoking history based on standardized pack-years reporting encourage effective provider-patient conversation regarding LCS and increase the identification of patients that may benefit from screenings based on guidelines?

What quality measures can help increase patient and medical provider participation in LCS and improve lung cancer-related outcomes?

Goal of Study

Establish a multidisciplinary LCS program to ensure that screening is properly performed and results properly interpreted, followed and managed when suspicious lung nodules and/or other significant incidental findings are found. Increase the capture of qualifying patient served by Kern Medical for guideline appropriate LCS.

Methods

This quality improvement measure was a retrospective study utilizing both a comprehensive tobacco history questionnaire as well as a multidisciplinary LCS program. The questionnaire accurately calculates smoking history based on standardized pack-years reporting and if patient is interested in speaking to a medical provider about LCS. Patients who were flagged as potential candidates for LCS were surveyed using this questionnaire. Patient follow-up was organized among the outpatient pulmonology team. Patient involvement in the LCS program, currently taking place at the Columbus site, is now prospectively tracked to study the effectiveness of the comprehensive tobacco history questionnaire as well as the subsequent preventative care received. All patients who qualified and were interested in taking part in the LCS program are now given the opportunity to have subsequent appointments and provider-patient conversations regarding LCS. These patients then can decide to begin their preventative screenings with once-a-year low dose CT chest for as long as they qualify based on guidelines and continue with outpatient follow-up.

Summary of Results

Initially, the data showed that from the approximate 160 patients who were both qualified and interested in receiving LCS from our study population, about 13% were already receiving such care. From the other 87%, roughly 34 patients thus far have met with a primary care provider associated with the lung nodule clinic and LCS, and scheduled for a low-dose CT screening to initiate their LCS and follow-up visit. Data collection is ongoing and follow-up patient counts are likely to increase as more of the 87% are reached to schedule their appointments and begin LCS.

Discussion

Thus far the research shows that there is a demonstrated need and interest for an LCS program within the Kern Medical patient population. Patients who were qualified and interested in speaking with a provider about LCS, based on the questionnaire results, are currently in the process of being seen and starting their LCS. This in turn, indicates that effectively improving the capture of qualifying patients for LCS in the ambulatory setting, is multi-faceted and begins with engaging patients in insightful conversations and accurate documentation that reveals to the provider if their patient qualifies while revealing to the patient that an opportunity of preventative care is available to them.

Conclusions

Recommendations for additional research on this topic include recording prospectively how many qualifying patients are now being captured for LCS by the multi-faceted approach outlined in this study. Additional research can also include, what other quality improvement changes within the hospital's electronic medical record system can further encourage providers at the primary care level to engage their patients in conversations about LCS.

Additional Contributors

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Abstract 2023-37

Early Discharge Process Initiative

Samantha Ratnayake, MD; Valerie Espinoza, MD; Shatha Aboaid, MD; Haidar Hajeh, MD; Eunice Hartsock, MSN, SPRN, FNP-C, CPHQ; Carmie Magno, MSN, RN, CCM; Greti Petersen, MD; Kasey Fox, DO; Shikha Mishra, MD

Introduction

Prior to January 2021, it was noticed that the median discharge time was about 3.5 hours after discharge orders were placed. The percentage of discharges of less than 2 hours after orders were placed was 21.5%. Due to the delay in discharges, we formed the Early Discharge Committee, a multidisciplinary team consisting of resident physicians and attending physicians, nurses, case management, physical therapy, department of performance improvement, and hospital administration. This committee proposed the following goals of reducing median discharge time from 3.5 hours to 2 hours and increase the percentage of discharges within 2 hours or less to 60%.

Inclusion

- All inpatient status
- Units: 2C, 3C, 3D
- Timeframe: Jan 1, 2021 to present

Exclusion

- Any units outside of 2C, 3C, and 3D
- Incomplete/Missing Data
- Duplicates
- Certain discharge dispositions, including skilled nursing and acute rehab

Methods

- Formation of a multidisciplinary committee in March 2021.
- Bi-weekly meetings.
- Total Discharges Reviewed: 11,646. From those 8,360 were discharged home or self-care.
  - Reasons for delays in discharge were identified, which were department specific .
  - The major reasons for delays were delayed communication between physicians, case management, and physical therapy, the requirement of a 2-phase discharge order plan, medication reconciliation not being performed prior to discharge, and DME orders being delayed.
  - Other department delays included nursing care and transportation, which were managed by case management and nursing.
  - Several interventions were made from every department including:
    - Physician plan
      - Interdisciplinary Team meetings (call and post post-call team) occurring daily at 8:30-9am with attendings supervising started in May 2021.
      - 2 phase discharge order plan was delayed due to nursing need to activate orders. This was changed to single phase discharge order only activated by physicians (June 2021).
      - Electronic sticky notes for communication between physician teams and case management (May 2022).
      - Mandatory medication reconciliation at time of admission.
      - DME orders being proposed by physical therapy (June 2022).
    - Nursing plan
      - Nursing huddle in 3C and 3D at 9am with case management (February 2023)

Results

By March 8, 2023, monthly median discharge improved from 3.5 hours to 2.2 hours after discharge orders were placed by physicians. The percentages of discharges occurring within 2 hours of discharges being placed improved from 21.5% to 44.5%.

Conclusion

With these changes, we have seen significant changes, however we recognize that there is still room for improvement. Future goals include involving physicians with nursing huddles with case management.

Abstract 2023-38

A Comparison of Injuries in Train-Pedestrian versus Automobile-Pedestrian Collisions in Kern County

Yasmin Fazli, MD; Essam Hashem, MS IV; Rebecca Minas-Alexander, RA; Matthew Hannon, MD

Introduction

Train pedestrian (TP) accidents present unique diagnostic and management challenges. Automobile pedestrian (AP) accidents are more common and have been extensively studied. There are four freight rail lines that operate within the catchment area of our Level 2 Trauma Center, and we see all TP injured patients in the region. We sought to compare TP injury patterns, injury severity and treatment to AP injuries, and hypothesized that TP patients would have unique injury patterns with more severe injuries.

Purpose of Study

Compare train-pedestrian collision injury characteristics and severity to automobile-pedestrian injuries.

Methods Used

We used data from our trauma registry and electronic medical record to compare patients 18 years or older, injured in TP collisions to AP collisions from January 2019 through June 2022. Variables obtained from the trauma registry were age, mechanism of injury, intensive care unit (ICU) length of stay, hospital length of stay, initial heart rate and blood pressure, Injury Severity Score (ISS), Glasgow Coma Scale (GCS), Abbreviated Injury Scale (AIS) and patient disposition. The electronic medical record was reviewed to abstract data on operations performed. Welch's t-test was used to compare means between groups. A logistic regression using univariate and multivariate models was performed to determine variables predicting survival.

Summary of Results

There were 546 AP patients and 19 TP patients. Mean age was similar (TP 41.4 v AP 41.9). In the TP group 79% were male and in AP 68%. Mean ISS in the TP group was 26.1 compared to AP 12.3 (p=0.0025). Mean GCS was 9 for TP patients and 13 for AP (p=0.0003). AIS Chest was higher in the TP group compared to AP (3.6 v 2.9, p=0.038). AIS Abdomen was also higher in the TP group compared to AP (4 v 2.9, p=0.058). TP patients underwent a mean of 2.8 surgeries while AP patients underwent 0.8(p=0.00). Hospital length of stay was 15.3 days for TP and 10.7 days for AP (p=0.15). Mortality was 26.3% for TP patients and 3.3% for AP. On univariate analysis, train injury mechanism and severity of AIS abdomen were associated with a lower odds ratio for survival.

Discussion

Average ISS in TP patients was 26.1 and overall mortality was 26.3%. The ISS in our patients is somewhat higher than in other studies, which have reported an ISS from 11.9 to 21.4. Other authors have found pedestrians injured by trains to have a mortality of 6.4 to 38%. Our patient populations ISS and mortality are at the higher end of these ranges which probably reflects the fact that our patients were hit by a train or injured jumping from a train. TP patients had a much higher ISS and mortality than AP patients in our study. If hit by a vehicle, the patient is 5.6 times more likely to survive than if hit by a train. The percentage of TP facing death on the scene is higher than those injured by an automobile, thus necessitating use of life-saving measures, such as cardio-pulmonary resuscitation on the scene.

TP patients had a mean AIS of 3 or higher for head, chest, abdomen, and extremity body regions. The AIS head was similar for AP patients, but chest, abdomen and extremity injuries were more severe in the TP patients.

The current study confirmed that a significant percentage of TP patients require urgent interventions on arrival to the ED and often require multiple operations during their hospital stay, for an average of 2.8 operations per patient. In our study, TP patients, compared to AP patients were much more likely to undergo emergent intubation, craniotomy, laparotomy, IR procedures and limb amputations. We found that 21% (5 of 19) of TP patients had limb amputations.

Both hospital and ICU LOS were longer for TP patients compared to AP, although this was not statistically significant. However, with a hospital LOS almost 5 days longer in TP patients, this consumes significant resources for the hospital.

Conclusion

TP patients are severely injured compared to AP patients. They have more severe chest, abdominal and extremity injuries and a lower GCS. They require more operations and have a longer hospital length of stay. Mortality is high. Severe injuries and significant resource utilization should be anticipated for these patients.

Abstract 2023-39

An Effective Treatment for Neurogenic Bowel in the Setting of Coccidiomycosis Meningitis: A Case Report

Anna Stewart, MS III; Elva Lopez, MD

Introduction

Fetal papyraceus describes a calcified fetus in a multiple gestation pregnancy in which one fetus dies and is flattened by the living fetus and uterus. This mainly occurs in a second-trimester fetal demise due to poorly understood reasons. Most intrauterine fetal demises (IUFD) in the first trimester result in the "vanishing twin" in which the fetal demise is resorbed or lost, similar to the pathophysiology of a spontaneous abortion. The vanishing twin is not uncommon and is the most expected outcome in a twin gestation IUFD in the first trimester. In general, fetal papyraceus has been reported to occur in 1 out of 12,000 pregnancies; out of those pregnancies, the occurrence in twin pregnancies ranges up to 1:200. The pregnancies resulting in fetal papyraceus are more common in monochorionic twins than dichorionic twins due to few documented occurrences.

Case Presentation

A 22-year-old Spanish-speaking female presented for higher level of care of a dichorionic, diamniotic (di-di) twin pregnancy with suspected single fetal demise at 13 weeks. Ultrasound performed at the first visit showed a thick cystic wall structure from the fetus with echogenic bowel and generalized subcutaneous edema, concerning for possible fetal demise. Repeat scan completed three weeks later showed only remnants of demised fetus and polyhydramnios of surviving fetus. Patient was managed conservatively until delivery of the surviving fetus at 37 weeks by cesarean section secondary to fetal malpresentation and oligohydramnios. There was gross observation of fetal papyraceous present on delivery of the placenta. Pathology confirmed fetus papyraceus 6.5 x 3.2 x 1.0cm present in membranes with extensive necrosis and partial circummarginate insertion of membranes.

Discussion

Fetus papyraceus is a rare sequalae of IUFD in multi-gestational pregnancies. It can occur in monochorionic and dichorionic pregnancies, but more cases are documented in monochorionic pregnancies. This is most likely due to the higher rate of monochorionic pregnancies compared to dichorionic pregnancies. Most fetal papyraceus occur in the second trimester due to unknown reasons.

Many theories have been proposed including cord abnormalities, placental abnormalities, and congenital factors. While diagnosis most commonly occur in the second trimester, pathological examination shows evidence of earlier demise based on fetal size and physical features.

Conservative management is the primary approach for pregnancies with fetal papyraceus. This includes more frequent nonstress test (NST) and regular check-up appointments. As with this patient, routine appointments were every two weeks, and NST appointments were once weekly starting in the third trimester then increased to biweekly. This allowed close monitoring for any potential complications, including preterm labor or possible demise of the remaining fetus.

Conclusion

There is limited data on complications to the surviving fetus in a dichorionic-diamniotic twin gestation which can be secondary to the low prevalence of di-di pregnancies. Fetal papyraceus is a concern due to its potential effect on the mother and surviving fetus. Conservative management has been the approach to pregnancies with fetal papyraceus and shown to have favorable outcomes, including in dichorionic pregnancies.

Abstract 2023-40

Outcomes of a Vesicostomy in a Newborn with Urosepsis Secondary to Anterior Urethral Valves

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Introduction

Urethral valves are obstructive membranes that develop in the urethra that can obstruct or block the outflow of urine causing urinary problems and infection. Posterior urethral valves are not common, affecting about 1 in 8,000 births, and anterior urethral valves (AUVs) affect even less. If undiagnosed and untreated, patients with AUVs can present with urinary retention, hydronephrosis, recurrent urinary tract infections (UTIs), and urosepsis depending on the severity of urinary obstruction. For temporary management of AUVs in whom safe ablation of the valves is not possible, a vesicostomy can be performed. However, the presence of the vesicostomy in the suprapubic region of the abdomen has complications of its own, including cellulitis of the vesicostomy site as seen in this case.

Case Presentation

6-week-old male, monochorionic-diamniotic twin born at GA 30 weeks 6 days with prolonged NICU course requiring transfer to UCLA for surgical consult on day 25 of life, was brought in by mother for one day of fussiness, irritability, and poor sleep. Past medical history was significant for Klebsiella and Enterococcus bacteremia and grade 3 hydronephrosis with bilateral distention secondary to AUVs status post vesicostomy. Examination showed suprapubic vesicostomy site approximately 4 cm in length with granulation tissue, beefy red appearance, slightly erythematous edges without drainage or pus. Differential included urinary tract infection, urosepsis, and cellulitis of the vesicostomy site. Labs and cultures were drawn prior to empirically starting IV ceftriaxone and were non-diagnostic. There was notable improvement in patient's symptoms and in the appearance of the vesicostomy site on day #2 of IV ceftriaxone, and topical bacitracin was started at this time. Patient continued to improve and was discharged on oral cephalexin and topical bacitracin with complete resolution of symptoms.

Discussion

AUVs are a rare cause of urinary tract obstruction requiring urgent treatment. Treatment of choice is endoscopic valve ablation. However, ablation may be deferred in favor of a vesicostomy in premature infants, infants with low birth weight, and those with high creatinine levels. A vesicostomy is a well-tolerated and reversible surgical procedure establishing a temporary urinary diversion through the abdominal wall protecting the upper urinary tract. Complications include cellulitis of the site, narrowing of the opening resulting in poor drainage of the bladder, and prolapse of bladder tissue through vesicostomy opening. If cellulitis develops, as in this case, it can be treated initially with IV ceftriaxone before switching to oral penicillins once there is evidence of clinical improvement.

Conclusion

AUVs are a rare congenital cause of urinary tract obstruction which can lead to further medical complications ranging in severity. These include bladder distention, urinary retention, hydronephrosis, recurrent UTIs, and urosepsis. Due to the high degree of variability in patient presentation and possible complications, it is imperative to diagnose and treat AUVs without delay. If a vesicostomy is indicated for temporary management of AUVs and the site is not properly maintained, cellulitis may develop. If cellulitis does develop in the setting of a vesicostomy, it can be managed with antibiotics with full resolution of the infection.

Abstract 2023-41

West Nile Meningoencephalitis in a Patient with Leiomyosarcoma Presenting with Neutropenic Fever

Rohini Bilagi, MD; Lawrence Liu, MD; Ratha Kulasingam, MD; Rupam Sharma, MD; Kasey Fox, DO; Baldeep Mann, MD

Introduction

West Nile Virus (WNV) was first isolated from the West Nile district of Northern Uganda in 1937, but was first detected in the United States well over half a century later in 1999. The arthropod-borne virus has since persisted, with 2,401 cases reported to the CDC on average annually. The infection typically causes a nonspecific acute systemic febrile illness with occasional gastrointestinal and skin manifestations; however, in less

than 1% of infected patients, it can cause severe and potentially fatal neuroinvasive disease, presenting as meningitis, encephalitis or acute flaccid paralysis. Immunosuppression is one of the risk factors associated with the development of neuroinvasive disease, and chemotherapy thus places patients at risk. Uterine leiomyosarcoma is a rare gynecological malignancy. Palliative chemotherapy is common in late stage disease, but may predispose patients to conditions that present as neutropenic fever, leading to a diagnostic conundrum. This is the first case report where patient with neutropenic fever was found to have West Nile neuroinvasive disease, so it is important to include West Nile disease in the differential diagnosis.

Case Description

This is a case of a 45-year-old female with history of diabetes, hypothyroidism and recently diagnosed uterine leiomyosarcoma status post tumor debulking with metastasis on palliative chemotherapy with gemcitabine that presented to the Emergency Room for a fever of 103.8 degrees Fahrenheit. Given the history of advanced leiomyosarcoma, the patient was admitted for neutropenic fever with an absolute neutrophil count of 1000. During the hospitalization, the patient became acutely altered and confused. CT head without contrast and lumbar puncture were performed. Due to clinical suspicion of meningitis, she was started on broad spectrum antibiotics. Lumbar puncture revealed leukocytosis of 168 with lymphocytic predominance and elevated protein level in the cerebrospinal fluid, therefore acyclovir was started due to high suspicion of viral meningoencephalitis. An EEG showed severe diffuse encephalopathy as the patient was persistently altered. A broad workup of infectious etiology was considered including HIV, syphilis, hepatitis A, B, C, COVID-19, adenovirus, pertussis, influenza, WNV, HHV6, coccidiomycosis, aspergillus, and tuberculosis. Patient was ultimately found to have elevated IgM and IgG titers for West Nile Virus.

Discussion

It is important to consider a broad spectrum of diagnosis in patients with metastatic carcinoma presenting with new-onset fever and acute encephalopathy. This includes working up for other causes of altered mental status including cardiac, neurologic, psychiatric, endocrine, metabolic, electrolyte, drug, and infectious etiology. While uncommon in the healthy population, WNV encephalitis should be on the radar for any patient who is immunocompromised or on immunosuppressive therapy, especially those who present with a neutropenic fever.

Abstract 2023-42

Fainting After a Cough: A Case of Cough Syncope

Danish Khalid, MD; Haidar Hajeh, MD; Gurpal Singh, MD; Brittney Banfer, MD; Meghana Munnangi, OMS III; Leila Moosavi, MD

Introduction

Cough syncope, also known as laryngeal ictus, is a well-known condition which results in a transient loss of consciousness during episodes of coughing. It is most commonly associated in patients with severe chronic obstructive lung disease (COPD), asthma, pulmonary hypertension, or obesity.

Case Description

Here we present a 65-year-old Caucasian male with a history of COPD who presented with a syncopal episode during a vigorous bout of coughing in the clinic. Initially, he was evaluated for seizure, however after obtaining a proper history, the patient had similar episodes in the past associated with bouts of coughing. Physical examination was remarkable for diffuse bilateral wheezing. Chest x-ray showed hyperinflation of the lungs. Transthoracic echocardiogram showed no evidence of valvular abnormalities or pulmonary hypertension. Lexiscan showed no definite reversible perfusion defects. CT scan of the head was non-lesional. Initial 3-hour EEG was unremarkable with subsequent 12-hour EEG showing no paroxysmal events. Further investigation with MRI brain attempted, however unable to obtain due to claustrophobia. Patient was discharged with cough suppressants and urgent follow-ups with neurology and pulmonology.

Discussion

Cough syncope is primarily diagnosed based on clinical features of the event and mainly a diagnosis of exclusion. There are no testing procedures that are sensitive or specific enough to establish diagnosis. There have been several mechanisms that have been postulated for the explanation of cough syncope. Most recent literature suggests that coughing results in increased intrathoracic

and intra-abdominal pressure which causes severe pulmonary vasoconstriction and decreased venous return ultimately decreasing cardiac output leading to cerebral hypoperfusion. Cough syncope may present similarly to other disease processes such as seizures or even cataplexy. Thus, it's imperative to obtain a detailed history to differentiate these conditions. Work-up of cough syncope should rule out cardiac, neurologic, and metabolic causes with appreciation of pulmonary disease. Treatment of cough syncope includes management of underlying COPD and cough. Additionally, current smokers should be encouraged to abstain.

Conclusion

Although cough is a common clinical symptom, the vasomotor effects on the heart and systemic circulation is often underappreciated. On one hand, cough may allow a protective mechanism in extreme situations, and on the other hand, cough-induced syncope can present as a serious and potentially harmful complication. Although well-studied, cough syncope continues to be underdiagnosed and often overlooked. We hope that with this case presentation cough syncope becomes a differential diagnosis in syncopal work-ups.

Abstract 2023-43

Purple Urine Bag Syndrome: A Rare Phenomenon of Urinary Tract Infections

Danish Khalid, MD; Haidar Hajeh, MD; Gurpal Singh, MD; Meghana Munnangi, OMS III; Norka Quillatupa, MD

Introduction

Purple urine bag syndrome (PUBS) is a unique, benign disease entity in which patients with urinary catheters present with an alarming purple urine bag. It more commonly presents in females, those with catheter use, and chronic constipation; and is often associated with bed-ridden, dependent individuals.

Case Presentation

Here we present an 81-year-old wheelchair bound male who complained of suprapubic abdominal pain and weakness. Additionally, the patient has been experiencing constipation during this hospitalization requiring suppositories. The patient had become wheelchair dependent, a preliminary stage of being bed-ridden, status post an above the knee amputation. Aside from this, his other past medical history is significant for chronic foley catheter use due to obstructive uropathy. On examination, the patient exhibited mild suprapubic with left flank tenderness. His urine bag was noted to have a purplish- hue. Urine analysis obtained revealed large leukocyte esterase with 20-50 WBC and many bacteria. Urine culture was positive for E. coli. After treatment of the urinary tract infection and constipation, the purple urine disappeared.

Discussion

It's postulated that this purplish hue, exhibited in this case, is caused by the mixture of indigo (blue) and indirubin (red) pigments from the metabolism of tryptophan. Tryptophan is metabolized into a more soluble substrate in the intestines by gut biome where it can be converted in the liver for renal excretion. In the urine, a sulfatase enzyme converts the metabolite into the two pigments - blue and red resulting in purple. Both constipation and urinary tract infections (UTIs) potentiate the conversion of tryptophan. Constipation allows more time for tryptophan metabolism to occur, whereas bacteria causing UTI release more sulfatase and phosphatase enzymes encouraging conversion in the urine. Alone these two conditions do not produce the striking purplish urine, however when present together increases the chance of this phenomenon.

Conclusion

Although benign, this striking presentation should clue physicians to investigate into the underlying cause. Treatment should be directed towards resolving the underlying condition. However, if left untreated, purple urine bag syndrome can progress to Fournier's gangrene, thus increasing mortality and morbidity.

Abstract 2023-44

Automobile - Pedestrian Crash Injuries: An Analysis of Injury Pattern and Severity by Geographic Region

Matthew Hannon, MD; Amber Jones, DO; Essam Hashem, MS IV; Rebecca Minas-Alexander, RA

Introduction

Over the years the number of pedestrian deaths resulting from automobile pedestrian (AP) crashes has increased

significantly. There were 55 AP fatalities in Bakersfield in 2021 and 60 fatalities in 2022. According to the most recent Dangerous by Design report published in 2022, Bakersfield ranks seventh in the United States for pedestrian fatalities per 100,000 population. Although the COVID-19 mandatory stay-at-home order issued in 2020 led to significant disruptions in daily life, including a general decrease in the number of commuters, the AP crashes and pedestrian casualties continued to increase. Given the significant public health burden of auto pedestrian crashes within Bakersfield, we sought to determine factors which contribute to increasing numbers of injuries and fatalities.

Purpose of Study

The goal of this retrospective study is to examine AP injury pattern and severity as it relates to the geographic location within our trauma center catchment area. This study will identify high-incidence locations in Bakersfield and compare patient injury pattern and severity as well as pedestrian safety features. This information will then be used to guide injury prevention efforts.

Methods Used

The study population is patients ages 15 and over admitted after AP injuries from January 1, 2022 through December 31, 2022. The trauma registry will be used to abstract age, sex, Injury Severity Score (ISS), Abbreviated Injury Scale (AIS), Glasgow Coma Score (GCS), initial blood pressure (BP), heart rate (HR), disposition from ED, discharge disposition, death, and Intensive Care Unit (ICU) and hospital length of stay (LOS).

An electronic medical record review will then be used to collect location, time and description of incident, as well as alcohol or drug use at the time of the incident. Information regarding incident location and pedestrian safety features was assessed using Google Street View. Factors assessed include the presence of a high visibility crosswalk, traffic signal, refuge island, less than six traffic lanes, pedestrian countdown timer, and presence of a sidewalk.

Summary of Results

Our study found 160 patients who met the inclusion criteria. A majority of AP incidents occurred within the northeast region of Bakersfield, north of State Route 58 and east of State Route 99. There were 18 crashes on Chester Avenue, 15 on Union Avenue, 6 on Brundage Lane, 4 on 24th Street, and 3 on Truxton Avenue. There were fewer than 4 pedestrian safety features at locations where 63% of patients were injured. Approximately 50% of patients were confirmed to have at least one or more substances of abuse in their system upon arrival. Alcohol was present 29 patients (18.1%), amphetamine in 28 patients (17.5%) and marijuana in 25 patients (15.6%). The mean ISS is 13.9. An ISS of 9 to 15 is considered moderate severity injury. The AIS head/neck is 3.4, AIS face is 1.8, AIS chest is 2.8, AIS abdomen/pelvis is 2.9, and AIS extremities 2.6. An AIS of 2 is a moderate injury while 3 is considered a serious injury. Our data analysis is ongoing to assess for additional trends and significant correlations.

Discussion

Though our investigation is ongoing, we are starting to see a trend in that a majority of AP incidents are taking place at locations where multiple pedestrian safety features are not present. Additionally, the heavier concentration of AP incidents within the northeast area of Bakersfield, suggests that the road designs within this region may not be conducive to pedestrian safety. The large number of patients within this study presenting with one or more substances of abuse in their system suggests that this may be a factor contributing to the relatively high number of AP incidents in the Bakersfield area.

Lastly, AP injuries occur in a predictable pattern. The bumper or front of the vehicle strikes the lower extremity. The person is then thrown onto the hood and windshield causing injury to the abdomen, chest, and head. The injured person then will fall off of the vehicle impacting the ground. Our preliminary findings confirmed this, with higher AIS for the head, chest, abdomen, and extremities.

Conclusions

Thus far the results of our study emerged from only a year's worth of data collection. Additional research involving two or more years of data is recommended to identify additional trends and investigate how the currently observed trends may vary or remain consistent over time. Given the results that we do have, we need to focus on the northeast Bakersfield area for AP incident prevention.

Abstract 2023-45

Worsening Psychosis Associated with Administrations of Buspirone and Concerns for Intranasal Administration: A Case Report

Samuel Apeldoorn, MS IV; Rebecca Chavez, MS IV; Freshta Haschemi, MS IV; Kareem Elsherif, MS IV; David Weinstein, MD; Tyler Torrico, MD

Introduction

Buspirone is commonly used to treat generalized anxiety disorder and demonstrates a limited side-effect profile compared to other anxiolytics. Buspirone is considered generally safe, and neuropsychiatric adverse reactions are uncommon. There are rare clinical case reports that suggest buspirone-induced psychosis.

Case Description

We present a case of buspirone worsening psychosis for a patient psychiatrically hospitalized for an episode of decompensated schizoaffective disorder. The patient had a primary diagnosis of schizoaffective disorder and was treated with antipsychotics during this hospitalization, but his symptoms worsened when buspirone was administered on two separate occasions. During the first trial of buspirone, the patient exhibited traits of increased aggression, odd behaviors, and paranoia. The buspirone was discontinued after the patient admitted to hiding his pills to later consume through nasal ingestion. The second trial resulted in repeated exacerbated symptoms of paranoia related to food and substantially decreased oral intake.

Discussion

Considering its complex mechanism of action, buspirone is suggested to derive its neuropharmacological effects through 5-HT1A receptors. However, the drug also has been found to mediate dopamine neurotransmission. Buspirone acts as an antagonist at presynaptic dopamine D2, D3, and D4 receptors. Yet, contrary to expected outcomes, it was unable to produce antipsychotic effects and instead resulted in a substantial increase in dopaminergic metabolites. The route of administration may also play a role in the enhancement of the buspirone's effects, particularly considering that after first-pass metabolism, buspirone has approximately 4% oral bioavailability. Intranasal administration of buspirone leads to faster drug absorption by direct transport from the nasal mucosa to the brain and increased bioavailability.

Conclusion

Although buspirone is a generally safe anxiolytic azathioprine drug, it appears to have a rare adverse reaction of exacerbating psychosis in some patients. This may be associated with the intranasal administration of buspirone, resulting in increased bioavailability, which is more commonly seen in patients with stimulant use disorder and incarceration history.

Abstract 2023-46

An Unusual Presentation of Cardiac Amyloidosis

Sagar Mehta, MS III; Haidar Hajeh, MD; Alaleh Bazmi, MD

Introduction

Amyloidosis typically presents with multiple symptoms including waxy skin, easy bruising, enlarged muscles, symptoms and signs of heart failure, cardiac conduction abnormalities and hepatomegaly. However, some cases may have a more subtle presentation without any specific amyloidosis signs or symptoms which may complicate the diagnosis and delay the treatment.

Case Description

This a 48-year-old female with a past medical history of GERD and recurrent syncope presented to the hospital with another syncopal episode occurring when she was attempting to use the bathroom. According to the patient and her family, this has happened approximately 5 times over the last 2-3 years and could have taken place during any of her daily activities. She is usually found by family members who have reported seeing her lose consciousness for up to 1 minute and upon waking usually denies symptoms of chest pain or palpitations preceding the syncope. However, she usually feels presyncopal symptoms of lightheadedness, nausea, and diaphoresis with dizziness on ambulation. Due to these severe symptoms and recurring syncopal episodes, she spends the majority of her time in bed unable to have a satisfactory quality of life.

During her hospital evaluation, she was found to have intermittent orthostatic hypotension and was prescribed midodrine, fludrocortisone and given IV fluids to manage the hypotension. This regimen was similar to what was prescribed in her prior hospitalizations and had not

provided long term relief. Work-up was significant for low voltage electrocardiograms (ECGs) and a subsequent transthoracic echocardiogram (TTE) showing ejection fraction of 50% with severe concentric left ventricular hypertrophy with grade 3 diastolic dysfunction. These findings in consideration with her presenting signs and symptoms led to tentatively considering cardiac amyloidosis as a differential diagnosis. A technetium 99m pyrophosphate single-photon emission computed tomography (SPECT) scan was completed resulting in finding a grade 3 visual uptake demonstrating a high myocardial to rib tracer absorption and a 1 hour to 3-hour heart to contralateral (H/Cl) ratio of 1.90. These findings were highly suggestive of cardiac amyloidosis. As she was discharged from the hospital, she was followed by physicians in our outpatient clinic and was recently prescribed Tafamadis. She will be trialing the medication over the coming months to see if there is any long-term improvement.

Discussion

Syncope is a common cause of hospital admissions representing 2% of hospital admissions across the nation. This case highlights the importance of exploring more rare causes after excluding the more common ones. Although rare, amyloidosis may present with orthostatic hypotension and syncope. Cardiac amyloidosis should be remembered as a rare cause of syncope in the proper clinical setting.

Conclusion

Cardiac amyloidosis should be investigated in patients presenting with syncope in the proper clinical setting.

Abstract 2023-47

Taking the Scenic Route: Endophthalmitis Secondary to Bacteremia in a Patient with Suspected Colonic Malignancy

Syed Saad Uddin, MD; Haidar Hajeh, MD; Gurpal Singh, MD; Arash Heidari, MD; Igor Garcia-Pacheco, MD

Introduction

Endophthalmitis is an inflammation of the internal components of the eye. It is considered an ophthalmic emergency and is frequently associated with intraocular infections. It is routinely associated with direct inoculation of bacteria via recent ophthalmic surgery or trauma. It is rarely caused by metastatic spread from bacteremia.

Case Discussion

A 71-year-old male with uncontrolled Diabetes Mellitus Type 2, Dyslipidemia, and Benign Prostatic Hyperplasia presented to the Emergency Department with unilateral left eye blurring of vision which evolved into complete blindness over 3 days. The patient began experiencing eye floaters upon awakening from sleep and gradually had decreased visual acuity in the affected eye. Further questioning revealed he had also suffered from fevers, night sweats, and a 20-pound weight loss in the prior six months. Physical exam was positive for mild left periorbital swelling, left conjunctival injection, and hypopyon. The patient's vitals were stable and he was afebrile. Admission labs were significant for WBC of 14.1 × 10^3/L, hemoglobin A1c of 13.6%, and a glucose level of 420 mg/dL. Further work-up with a CT scan of the left Orbit and Sella revealed a small Subchoroidal curvilinear collection suspicious for abscess as well as a subcutaneous abscess lateral to the left globe. A CT scan of the Abdomen and Pelvis was performed and exposed mural thickening of the sigmoid colon and several right hepatic lobe hypoattenuating masses consistent with abscesses which were confirmed by an MRI of the abdomen. Blood cultures were positive for Streptococcus Intermedius and ultrasound-guided drainage of the liver abscesses showed purulent discharge containing the same bacteria. A complete Transthoracic Echocardiogram was negative for intracardiac vegetations. An inpatient colonoscopy was performed and was significant for sigmoid diverticulosis with an ulcerative mass. The patient was referred to a higher level of care for ophthalmology services.

Discussion

Endophthalmitis is the exogenous spread of bacteria or fungus into the intraocular fluid via inoculation from trauma or ophthalmic surgery. Endogenous causes have been linked with Diabetes Mellitus, Immunosuppression, Dental infections, Sepsis, Liver abscesses, and underlying Colonic malignancy. Common bacterial agents responsible are Gram-positive Staphylococcus and Streptococcus although Gram-negative bacteria such as Klebsiella and Pseudomonas are also reported. Streptococcus Intermedius is flora of the GI tract and systemic infection manifests as pyogenic Liver Abscesses. In a patient with Endophthalmitis and high-grade

bacteremia with manifestations of organ abscesses, appropriate screening should be conducted for a potential infection source and treatment initiated with Systemic and Intravitreal antibiotics.

Abstract 2023-48
Race Inequity in TOLAC and VBAC Rates
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Purpose

The widespread use of race based Vaginal Birth After Cesarean (VBAC) calculators has further influenced racial inequities in obstetric care in the United States. Black and Hispanic patients are often not informed about Trial of Labor after Cesarean (TOLAC). This study aims to assess a diverse population of TOLAC eligible patient's knowledge regarding TOLAC.

Methods

Survey information was collected through a convenience sample of patients seen at Kern Medical Labor and Delivery 11/3/2021 through 11/2/2022. Patients were required to have a history of cesarean section (CS) without absolute contraindications to TOLAC. Patient's demographic information, medical history, and TOLAC eligibility was confirmed through the electronic medical records (EMR). Additional delivery outcomes were used as follow-up information collected via EMR. Literature review was also conducted via published journal articles.

Summary of Results

A total of 155 surveys were collected and the replies were analyzed based on patient race; Black (15), Hispanic (109), White (20), and Other (5). There is statistical evidence suggesting a relationship between race and knowledge of TOLAC ($p = 0.0020$). The proportion of White women that had knowledge of TOLAC was 50%, and Hispanic 63.30%, whereas 100% of Black women (n=15) had no knowledge of TOLAC.

Discussion

Our study showed there is statistical evidence suggesting how a patient learned about TOLAC is associated with race ($p=0.0181$). There is evidence to suggest a relationship between knowledge that "ACOG recommends women with one previous cesarean delivery, without contraindications, be counseled about and offered TOLAC" and race ($p=0.000$).

Conclusion

Use of race based VBAC calculators result in race inequity in TOLAC rates. When providers fail to inform patients of TOLAC eligibility they compromise patients' autonomy, and undermine informed consent.

Abstract 2023-49
Acute Pulmonary Coccidioidomycosis Presenting as Pulmonary Embolism
Valerie Espinoza, MD; Shikha Mishra, MD; Rasha Kuran, MD

Introduction

Diagnosis of pulmonary coccidioidomycosis can be challenging as it can mimic other pulmonary diseases, such as pulmonary embolism, necessitating the need for enhanced understanding of the diverse clinical manifestations and diagnostic strategies.

Case Description

A 22-year-old female with a history of goiter and positive ANA presented to her primary care physician with chest pain and intermittent shortness of breath for 3 days. Upon assessment, the patient was noted to have tachycardia and tachypnea and was prompted to go to the emergency department for further evaluation. Patient reported 1 week of intermittent episodes of sharp, non-radiating right-sided chest pain. The pain was unable to be reproduced and was exacerbated with taking a deep breath.

In the emergency department, the patient was febrile, tachycardic, and tachypneic. CT angiogram of the chest was significant for a right middle lobe peripherally located consolidation with inability to rule out small subsegmental pulmonary embolism.

Initial laboratory values were significant for an elevated white blood cell count and arterial blood gases consistent with respiratory alkalosis. A bilateral venous duplex was unremarkable for DVT, and TTE showed no evidence of thrombus or valvular abnormalities. Coccidioidomycosis

serology and QuantiFERON TB gold were negative two weeks before admission. The patient was started on enoxaparin, ceftriaxone, and azithromycin and admitted to the inpatient unit. Follow-up chest X-ray on day 3 showed worsening airspace consolidation in the right middle lobe favoring pneumonia. Repeat CT angiogram of the chest with contrast showed worsening right middle lobe pneumonia with trace right pleural effusion and trace pericardial fluid without evidence of pulmonary embolism. She was discharged with Augmentin for 14 days and primary care follow-up.

One week later, the patient returned to the emergency department for persistent dry cough and a new rash on her bilateral lower extremities. The rash was described as multiple tender nodules with surrounding erythema. She was discharged with instructions to use ibuprofen and warm compresses for pain, and the rash resolved over the next 3-4 days. The patient had negative cocci serology on 3 occasions since symptom onset, but a month after symptom onset, a follow-up cocci serology test during a research project at the hospital showed positive cocci serology with titers of 1:32. Patient was informed and advised to follow up with her primary care physician. Repeat cocci serology at that time was positive with titers again at 1:32, and chest X-ray showed a 3cm opacity in the right middle lobe. She was started on Fluconazole 800mg PO and referred to infectious disease clinic. Patient noted complete resolution of symptoms at her 2-month follow up with good tolerance to Fluconazole.

Conclusion

Coccidioidomycosis should be considered in the differential diagnosis of patients presenting with respiratory symptoms, especially in endemic areas. A thorough evaluation, including serology testing and imaging studies, should be performed to prevent misdiagnosis and delay in treatment.

Abstract 2023-50
Methamphetamine induced Acute Abdominal Angina
Daniel Quesada, MD

Introduction

Dunbar Syndrome, also known as Median Arcuate Ligament Syndrome (MALS), is a rare cause of abdominal pain resulting from external compression of the celiac trunk and its distributary vessels by the median arcuate ligament (MAL) [(2)]. Patients with this syndrome may often present with a triad of symptoms characterized by postprandial abdominal angina, nausea, and vomiting. The incidence of this disease is not known and symptoms are generally chronic and recurring. Epidemiological data demonstrates a 3:1 female to male ratio with most females diagnosed between ages of 17-30 [(1)]. Dunbar syndrome is a diagnosis of exclusion and is most commonly found during evaluation of symptoms that can mimic esophagitis, pancreatitis, cholelithiasis, gastroesophageal reflux disease, mesenteric ischemia, and/or food intolerance.

Case Description

A 42-year-old female with history of diabetes mellitus and hypertension arrived to the emergency room by ambulance complaining of new onset diffuse abdominal pain. The pain started abruptly 30 minutes after smoking methamphetamine and had been severe and unremitting for 3-hours prior to arrival. The pain was described as diffuse but worst in the epigastric region and associated with nausea. She denied chest pain, shortness of breath, diarrhea, or constipation. Her last menstrual period was 1-week prior and she denied any recent travel, changes in diet, or chronic NSAID or alcohol use.

Vital signs remarkable for a HR of 119, BP125/80 mm Hg, RR 22, and O2 saturation of 100% on RA. Physical exam revealed a patient in moderate distress secondary to pain. Exam revealed a soft, nondistended abdomen, with diffuse tenderness to palpation of all quadrants and voluntary guarding in the absence of rebound tenderness. Laboratory results remarkable for a lactic acid of 3.2 mmol/L.

Computed tomography angiogram of the abdomen and pelvis demonstrated severe stenosis of the celiac artery trunk (Fig 1) raising concern for the possibility of median arcuate ligament syndrome (MALS) Patient was admitted by the general surgery department for a short observation period during which time she had complete resolution of symptoms and was able to tolerate oral intake without precipitation of symptoms.
Patient was evaluated and admitted by general surgery. Ultimately conservative management resulted in complete resolution of pain. Patient was able to tolerate

oral intake without reoccurrence of symptoms and discharged with outpatient follow-up.

Discussion

This Case demonstrates how methamphetamine use led to the diagnosis of MALS in a patient who was thought to have a longstanding history of refractory gastroesophageal reflux. Given the known vaso-constrictive properties of sympathomimetics, this patient's symptoms were likely precipitated by her amphetamine use which unmasked and aggravated the pre-existing compression of the celiac axis.

Conclusion

Understanding and recognizing sympathomimetic vascular physiology will allow clinicians to keep a broader differential in evaluating abdominal pain in patients with history of acute amphetamine use. In this case, the patient's presentation was concerning for mesenteric ischemia resulting in advanced imaging that revealed significant celiac trunk narrowing.

Abstract 2023-51

The Impact of Social Determinants of Health in Patients with Violent Traumatic Injuries Before and During the COVID-19 Pandemic

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Introduction

Unprecedented public health safety measures instituted in the state of California to reduce the spread of COVID-19, such as the mandatory statewide stay-at-home (SAH) order issued on March 19, 2020, led to significant social and economic disruptions in daily life. Consequently, these disruptions have contributed to an increase in the incidence of violent traumatic injuries, particularly in areas with poorer health outcomes and lower socioeconomic status as measured by census data.

Purpose

The objective of this retrospective cross-sectional study is to utilize zip code level indicators to examine whether the COVID-19 pandemic was associated with differences in characteristics and clinical outcomes in patients with penetrating and blunt trauma injuries presenting to a level II trauma center in a community teaching hospital. This study identifies trends and compares patient demographics, particularly injury locations, during the first year of the COVID-19 pandemic and contrasts them with the previous year to determine whether a patient's zip code is a useful indicator for primary prevention and focused treatment and follow-up interventions.

Methods

This retrospective cross-sectional minimal risk study utilized Kern Medical's trauma registry to identify 803 patients in Kern County who presented to the emergency department with intentional gunshot wound (GSW), stab wound, or assault between March 2019 and February 2021. All reported unintentional injuries were excluded. Each case was categorized as pre-COVID (March 2019 - February 2020) or COVID (March 2020 - February 2021) and further subclassified based on incident zip code. Kern County zip codes were combined into urban regions as NW, NE, SW, and SE with a separate category defined as Rural outside Bakersfield city limits. These regions were also defined by median income as ≤$50k and >$50k based on California census data.

Results

Analysis of the zip code regions using a Fisher's exact test revealed that the Rural and SE regions have a higher occurrence of traumatic incidents overall (P=0.000) (Tables 10, 13).

The incidence of stab wounds and GSWs was significantly impacted by the COVID-19 pandemic. The overall number of stab wounds decreased following the implementation of the SAH order, as the observed values during COVID were significantly less than the expected values pre-COVID (P=0.0027) (Tables 6, 7, 9). GSWs, on the other hand, increased in incidence and had observed values that were significantly higher than the expected values during COVID compared to pre-COVID (P=0.0041) (Tables 6, 7, 9).

Zip codes identified as ≤$50k and >$50K were analyzed using a Cochran-Mantel-Haenszel test with an ad hoc analysis looking at the occurrence of GSWs and stab wounds pre-COVID and during COVID. GSWs pre-COVID where the income was ≤$50k trended towards being unusually low, while they were unusually high in areas with income >$50k during COVID (P=0.0860) (Table 19).

Conversely, stab wounds in regions with an income ≤$50k were unusually high pre-COVID and unusually low during COVID with income >$50k (P=0.0009) (Table 19). With regard to specific injury types, the SE region had more GSWs than expected (P=0.0230), and the Rural region had more stab wounds than expected (P=0.0016) (Table 18).

	NW	NE	SW	SE	Rural
Assault	1	26	5	25	20
Gunshot	4	98	11	116	64
Stab	7	141	7	95	183

Table 10: Injury type by Geographical area.

	NW	NE	SW	SE	Rural
Assault					
Gunshot				0.0000*	0.0000
Stab			0.0654	0.0000	0.0000*

Table 13: P-values for unusual observations. A Bonferroni correction was applied to all p-values.

	Assault	Gunshot	Stab
Pre-COVID	34	115	222
COVID	43	178	211

Table 6: Total Assaults, Gunshots and Stab wounds reported by time period.

	Assault	Gunshot	Stab
Pre-COVID	35.58	135.37	200.05
COVID	41.42	157.63	232.95

Table 7: Table of Expected Values

		Assault	Gunshot	Stab	p-value
$\leq \$50k$	Pre-COVID	17	85	165	0.0860
	COVID	31	107	160	
$> \$50k$	Pre-COVID	17	30	57	0.0009
	COVID	12	71	51	

Table 19: Injury Type by Time Period by Median Income. P-values in the table indicate level of significance for Fisher's Exact.

	Assault	Gunshot	Stab
<=$50k		0.0230	0.0016*
>$50k		0.0230*	0.0016

Table 18: P-values for unusual observations. A Bonferroni correction was applied to all p-values.

Discussion

Our 2-year analysis of intentional GSWs, stab wounds, and blunt traumatic injuries at known incident zip codes shows an inverse relationship between median income and the incidence of trauma. Moreover, the geographical distribution of trauma by zip codes shows that focused interventions should take place in Kern County zip codes within the SE and Rural regions. The significant increase of GSWs in the SE region and stab wounds in the Rural region identifies the geographical locations and socioeconomic levels in need of trauma prevention. We cannot exclude the probability that more time removed from COVID could result in regression to trends observed before the initiation of the SAH orders. We believe that such probabilities do not limit the findings of this analysis and that upcoming research can observe additional variables such as age, sex, and race.

Conclusions

Trauma prevention education should be focused on zip codes located in the SE and Rural regions of Kern County. Education prevention programs can also be tailored to match populations at risk within each zip code region with specific demographic factors. Furthermore, data regarding the change in rates of GSWs, stabbings, and blunt trauma during the COVID-19 pandemic can aid in the education and prevention measures practiced at Kern Medical. Future research includes taking the data gathered here a step further by implementing action plans devoted to primary prevention of trauma and focused treatment interventions in the zip codes most at risk.

Abstract 2023-52

A Challenging Case of Infective Endocarditis Post-TAVR Despite Prophylactic Antibiotics

Haidar Hajeh, MD; Vishal Narang, MD; Jesslin Abraham, MD; Theingi Tiffany Win, MD

Introduction

Infective endocarditis is the infection of the endocardium lining the heart. It is characterized by fever, positive blood cultures and valvular vegetations in many cases and is complicated by septic emboli, valvular abnormalities, perivalvular abscesses and heart failure among other serious complications.

Due to the severity of this disease and its sequelae, prophylactic antibiotic treatment for preventing infective endocarditis is indicated in certain cases including the presence of a prosthetic valve.

Case Description

This is a 51-year-old female with medical history of severe aortic stenosis of bicuspid valve (replaced with a prosthetic valve via Transcutaneous Aortic Valve Replacement TAVR 4 years ago), heart failure with improved ejection fraction, complete heart block (with permanent pacemaker) and hypertension who presented to the hospital with shortness of breath. Her symptoms started 3 months ago where she noticed gradual progression of shortness of breath, lower extremity swelling and inability to lay flat.

During hospitalization, patient was diagnosed with acute on chronic heart failure. A transthoracic echocardiogram was performed and showed worsening of left ventricular ejection fraction (LVEF) from baseline of 55% to 25% in addition to severe stenosis and regurgitation of aortic valve with vegetations and valve dehiscence. It also demonstrated severe tricuspid regurgitation and possible vegetations on the atrial lead of the pacemaker. Blood cultures showed methicillin-resistant coagulase negative Staphylococcus. Vancomycin was started and patient was transferred for valve and pacemaker leads replacement.

Upon further questioning, patient endorsed that she underwent a dental procedure shortly before her symptoms started and she was prescribed antibiotics for infective endocarditis prophylaxis before the procedure.

Discussion

Infective endocarditis is a well-documented sequela of dental procedures. The risk of developing this complication is high in patients with prosthetic valves and guidelines recommend antibiotic prophylaxis.

Aortic valve replacement has seen revolutionary advancements in the past years with the innovation of TAVR. Valves used in TAVR are usually bulkier than the valves placed surgically. In addition, TAVR leaves the native calcified valve that is usually resected in surgical aortic valve replacement SAVR. This theoretically creates a nidus for infections especially after dental procedures.

Revision of the infective endocarditis antibiotic prophylaxis guidelines is warranted after the introduction and wide use of TAVR in medical practice.

Conclusion

TAVR can theoretically create a nidus for infective endocarditis. Revision of the endocarditis antibiotic prophylaxis guidelines is warranted after the introduction and wide use of TAVR in medical practice.

Abstract 2023-53

Disseminated Coccidioidomycosis Presenting as an Ovarian Mass

Indudeep Bedi, OMS III; Wendy Collins, MS III; Ratha Kulasingam, MD; Daniela Amodio, MD; Taide Chavez-Sturman, MD; Carlos D'Assumpcao, MD; Amin Ramzan, MD; Rasha Kuran, MD

Introduction

Coccidioidomycosis, colloquially known as Valley fever, is an endemic fungal infection predominantly localized to the San Joaquin Valley. While a more common presentation is a community-acquired pneumonia, it can also disseminate systemically to other organs and body cavities, including the peritoneum. We put forward a case of disseminated coccidioidomycosis in a young African American female presenting as an ovarian mass.

Case Description

29-year-old African American female with mild intermittent asthma presented with symptomatic abdominal distension for one month. One year prior, she had suffered gunshot wounds to scalp, left shoulder and left hand. Trauma survey found no internal injuries, but did incidentally find a 7mm noncalcified pulmonary nodule. She underwent left shoulder surgical repair one year later. Post operatively she had persistent throat pain thought to be due to intubation. She was given steroids and morphine. Eventually the pain resolved over three weeks. One month after the surgery, she noted

abdominal distension. This progressed until she developed dyspnea when lying flat for which she presented to outside hospital where she was found to have right adnexal mass, ascites, and elevated CA-125. Due to concern for gynecological malignancy, the patient underwent diagnostic laparoscopy, exploratory laparotomy, right salpingo-oophorectomy, and omentectomy. Pathology found diffuse necrotizing granulomatous inflammation with spherules with endospores consistent with coccidiosis species without evidence of malignancy. Intraoperative tissue culture grew Coccidioides immitis with fluconazole MIC 8 (UT San Antonio). She had positive immunodiffusion IgM and IgG serology with complement fixation titers of 1:128. Nuclear medicine bone scan found no evidence of bony metastasis. She was started on fluconazole 800mg daily with durable contraception in place.

Conclusion

Our case highlights the importance of including coccidioidomycosis in the differential diagnosis for female patients with incidental pulmonary nodules that present with gynecological and constitutional symptoms masquerading as a cancerous process after a steroid exposure, especially in a region endemic to Valley fever.

Abstract 2023-54

Miliary Reactivation of Coccidioidomycosis: 5 Years in the Making

Michael Valdez, MD; Amritpal Dhillon, MD; Maria Beuca, MS IV; Arash Heidari, MD

Introduction

Coccidioidomycosis is a fungal infection that primarily affects the pulmonary system. Only a small percentage, approximately 1%, of pulmonary coccidioidomycosis disseminates. Reactivation of coccidioidomycosis after the initial infection is also uncommon and when it does occur is usually seen in immunocompromised patients. Here we describe a 54-year-old man with uncontrolled diabetes who experienced a reactivation of coccidioidomycosis 5 years after initial infection with miliary, osseous, synovial, and soft tissue dissemination.

Case Description

The patient is a 54-year-old Latino man with poorly controlled diabetes who is a field worker from the central valley of California. He had been previously diagnosed with bilateral diffuse pulmonary coccidioidomycosis at our institution years prior. The diagnosis was made with positive sputum culture for *Coccidioides immitis* and positive IgM and IgG immunodiffusion serology with complement fixation (CF) titer of 1:4. He received 4 weeks of Liposomal amphotericin B (LAmB) due to the extension of his illness and hypoxemia. Treatment was changed to oral fluconazole, and he was followed for one year with complete resolution of chest radiographic findings however was unfortunately lost to follow up thereafter.

Five years later he again presented to our institution with cough, generalized weakness, fever, and right knee pain and swelling. Chest imaging revealed a classic miliary pattern and coccidioidomycosis CF titers significantly increased to 1:64. Right knee MRI with contrast demonstrated abnormal distal femur and proximal tibia marrow enhancement consistent with osteomyelitis as well as rim-enhancing intraosseous fluid collections, large joint effusion, and 5 x 3 cm and 14 x 6 cm complex multiloculated peripherally enhancing fluid collections consistent with abscesses in the lateral vastus and gastrocnemius muscles respectively. Arthrocentesis of the right knee and aspiration of the fluid pockets were collected for fungal cultures. Clinical diagnosis of reactivation coccidioidomycosis with miliary pattern plus osseous, synovial, and soft tissue dissemination was made. Patient was subsequently placed on LAmB regimen with plan to continue for 12 weeks and consultation with orthopedics was obtained for incision and drainage of the knee and posterior lower extremity fluid collections.

Discussion

Although rare, coccidioidomycosis reactivation can occur. Reactivation typically presents as miliary disease or extrapulmonary dissemination. Risk factors for reactivation include immunosuppression, such as uncontrolled diabetes, and incomplete treatment courses.

Conclusions

It is critical for clinicians to continue serial monitoring of clinical symptoms and CF titers after initial therapy is discontinued, especially in those with immunocompromising conditions. A prolonged course of treatment and even lifetime therapy might be necessary.

Abstract 2023-55
A Cue to Fever with Q Fever
Arti Patel, MS IV; Michael Valdez, MD; Arash Heidari, MD

Introduction

Coxiella burnetti is an obligate intracellular, pleomorphic gram-negative coccobacillus that can cause Q fever, a zoonotic infection with a wide spectrum of acute and chronic clinical manifestations including, but not limited to, flu-like illness, pneumonia, hepatitis, and endocarditis. Risk factors include exposure to farm animals or contaminated manure or working in an abattoir. Diagnosis is typically made by serology as *C. burnetti* does not routinely grow in blood cultures. We describe a 51-year-old man in whom work up for fever of unknown origin revealed Q fever.

Case Description

51-year-old man with history of HSV-1 who presented with one month of intermittent fevers, nonproductive cough, and malaise. Fevers occurred 1-2 times per week. Associated symptoms included 7 lb unintentional weight loss during this time. Two weeks prior to presentation, he was treated for symptomatic culture-positive HSV-1 vesicular lesions with acyclovir for 7 days. Fever at that time was attributed to HSV. Patient has been working in the fields for the past 15 years and reported exposure to mosquitoes and insects. He denied any recent travel or sick contacts. On admission, patient was febrile to 39.2C however vital signs were otherwise normal. Well healed lesions on the lips and lower extremities were noted with the remainder of physical examination unremarkable. Labs were notable for leukocytosis 15.5 without bandemia, procalcitonin 1.6, CRP 3.2, and HSV-1 IgG 39. Lumbar puncture was negative with CSF WBC 2. Respiratory biofire panel, HIV Ab/Ag, syphilis Ab, and acute hepatitis panel were negative. Coccidioidomycosis IgG immunodiffusion was very weakly reactive with complement fixation titer <1:2. CXR and CT chest, abdomen, and pelvis were unremarkable. Blood, urine, CSF, and sputum cultures showed no growth. He received one-time doses of vancomycin and cefepime on admission. He defervesced by hospital day 2, remained afebrile thereafter, and was discharged on hospital day 5. Fever of unknown origin workup was negative except for double-stranded Ab elevated at 11, possibly attributable to underlying autoimmune etiology such as lupus, and Q fever serology, which resulted after discharge, significant for IgG phase I titer 1:64 and IgG phase II titer 1:128.

Discussion

The nonspecific nature of the clinical manifestations of Q fever in addition to *C. burnetti* not routinely growing in blood cultures poses a diagnostic challenge and may contribute to underdiagnosis. In cases where acute Q fever is diagnosed, patients should be evaluated for underlying valvulopathy and immunocompromising conditions that may contribute to the progression of disease.

Conclusion

Given that Q fever is a reportable disease and treatment durations vary depending on chronicity of disease, clinicians should be mindful to consider Q fever in all patients being worked up for fever of unknown origin.

Abstract 2023-56
Eubacterium limosum Bacteremia in a Patient with Rectal Carcinoma
Arti Patel, MS IV; Amritpal Dhillon, MD; Michael Valdez, MD; Arash Heidari, MD

Introduction

Eubacterium limosum is a gram-positive, non-spore-forming anaerobic rod. Although a common gastrointestinal organism, current literature in regards to infectious nature and pathogenesis is limited. Common risk factors include diabetes mellitus and pre-existing gastrointestinal disease. To our knowledge, only one case report discusses the possible link between *Eubacterium limosum* bacteremia and colon cancer. We describe a 32-year-old male with rectosigmoid cancer who presented with a gastrointestinal bleed and was found to have bacteremia due to *Eubacterium limosum.*

Case Description

The patient is a 32-year-old male with stage III rectosigmoid cancer diagnosed 2 years ago s/p laparoscopic sigmoid loop colostomy one month after diagnosis and inadequate tumor response despite chemotherapy who presented with bleeding in the colostomy bag and from the rectum. On admission, he was afebrile but tachycardic with heart rate 119 BPM. WBC was 13.1, Hb 10, CRP 7.69, and lactic acid 3.8 which

improved with fluids. Empiric ceftriaxone and vancomycin were started. CT abdomen and pelvis showed a large heterogeneous mass in the rectum with air and fluid suggesting a combination of neoplasm with superimposed infection. EGD was negative and colonoscopy showed normal mucosa up to 5 cm from the ostomy site; the scope was not advanced any further due to poor bowel preparation. Bleeding from the colostomy bag resolved by hospital day 4 and the patient remained afebrile throughout the hospitalization. Blood cultures (2 of 4 bottles from 2 sets) grew gram positive rods, which were eventually identified as *Eubacterium limosum*. Ceftriaxone was discontinued and the patient was discharged on Amoxicillin/Clavulanate 875 mg twice daily for 42 days. The isolate was sent to a reference laboratory for susceptibility testing.

Discussion

Medical management of *Eubacterium limosum* infections can be challenging. There are currently no treatment guidelines for *Eubacterium limosum* bacteremia and penicillin resistance has been documented. Antibiotics that have demonstrated low minimum inhibitory concentrations include ampicillin-sulbactam, metronidazole, carbapenems, tigecycline, and daptomycin.

Conclusion

Eubacterium limosum should be considered as a potential pathogen responsible for bacteremia in patients with gastrointestinal malignancies. Further research into pathogenesis, possible association with gastrointestinal malignancies, and therapeutic management of *Eubacterium limosum* is needed.

Abstract 2023-57

Multi-Venous Thrombosis with JAK2 V617F Mutation in the Absence of Thrombocytosis

Shatha Aboaid, MD; Marah Sukkar; MD; Janpreet Bhandohal, MD; Kasey Fox, DO; Baldeep Mann, MD

Introduction

Venous thrombosis is the third most common cardiovascular affliction after ischemic heart disease and stroke. The pathogenesis of venous thrombosis is multifactorial, involving acquired and genetic factors.

It is well-known that Porto-mesenteric venous thrombosis (PMVT) may be an early or presenting complication of an undiagnosed Myeloproliferative Disorder (MPD), particularly in young patients. After reviewing the literature, we found only a few cases of portal venous thrombosis with no overt MPD.
Our patient had portal venous thrombosis, splenic venous thrombosis extending to the superior mesenteric vein with detected JAK2 V617F mutation in the absence of polycythemia, thrombocytosis or other underlying thrombophilia risk factors.

Case Presentation

A 38-year-old Hispanic male with a history of cerebral venous thrombosis presented with abdominal pain for 1 month, worsening over the week prior to presentation. The pain was described as constant epigastric pain radiating to the right lower quadrant (RLQ), with no other symptoms. The patient is a nonsmoker, not an alcoholic, and denied any recreational drug use.
On physical exam Temperature of 36.7 °C (Oral), HR of 85 beats per minute, RR: 20 per minute, BP: 123/77 mmHg, SpO2: 99% on room air. On abdominal exam noticed to have tenderness over the epigastric and RLQ areas, with no guarding or rebound tenderness.
Laboratory studies showed normal basic metabolic panel, white blood cell count16.3 x 10^3/mcL with neutrophils predominance, hemoglobin of 13.9 g/dL, red blood cell count 5.29 x 10^6/mcL, platelets 386, PT 14.7 seconds, INR 1.15, PTT 29.8 seconds. A hypercoagulability workup was ordered. The COVID test was negative.
CT abdomen and pelvis was obtained and was remarkable for a large occlusive thrombus of the portal vein, right and left intrahepatic portal veins, and splenic vein extending into the SMV and its branches.
The patient was treated medically with a heparin drip during hospitalization and switched to Eliquis 5mg BID on discharge. He did not require any surgical intervention. Hypercoagulability workup later showed negative Factor V Leiden, negative cardiolipin antibodies, and B2 glycoprotein but detected JAK-2 mutation (Protein C, Protein S, antiphospholipid antibody panel were unremarkable in the past). He was followed up by a hematology clinic to continue long-term anticoagulation, and by a primary care physician with no symptoms or recurrent hospitalizations. Patient was followed up with a phone visit and has been doing well on eliquis for last six months.

Conclusion

Physicians should consider testing for JAK2 mutation in patients with PMVT even if they don't fulfill the criteria for MPD (absence of polycythemia or thrombocytosis).

Abstract 2023-58

A Conundrum of Coexistence: Ulcerative Colitis and Recurrent Clostridioides difficile Infection

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Introduction

The incidence of *Clostridioides difficile* infection (CDI) is 6-9% in patients with inflammatory bowel disease. Recurrent CDI (rCDI) is 33% more likely in these patients compared to the general population, which leads to an increased risk of complications and creates diagnostic challenges in differentiating between recurrence of either condition. We describe a case of known ulcerative colitis (UC) with rCDI and briefly review the evidence available for rCDI treatment.

Case Description

A 65-year-old man with a longstanding history of UC presented with recurrent diffuse abdominal pain associated with episodes of bloody diarrhea. Approximately 3 months prior to this index presentation, he had been prescribed clindamycin for a reported tooth infection, with his first positive test for CDI 2 weeks after this. He was initially treated with a 10-day regimen of oral vancomycin, but diarrhea continued. He returned approximately 3 weeks later with similar symptoms and was diagnosed with recurrent CDI. He was treated with fidaxomicin (FDX) for 10 days with temporary improvement in symptoms. Approximately 10 days later, he returned again to the ED for the index presentation, at which point an extended course of fidaxomicin (EFDX) was started and symptoms subsequently resolved.

Discussion

Although the IDSA 2021 guideline for CDI management includes EFDX and adjunctive bezlotoxumab (BEZ) as options for multiple recurrent CDI (mrCDI) treatment, clinical evidence for these is limited, particularly in the context of IBD. In the case series conducted by Skinner et al. and Soriano et al., a combined 37 of 58 (64%) patients with mrCDI (IBD incidence not reported) had sustained clinical response (SCR) to EFDX at 90 days. In participants with mrCDI and IBD treated with FDX in the ANEMONE study, 17 of 21 (81%) had SCR at 30 days. When BEZ was added to FDX in a subgroup of the MODIFY I/II trials, SCR at 12 weeks occurred in 20 of 26 (77%) participants compared to 13 of 20 (65%) participants treated with FDX alone. The use of BEZ in the subset of MODIFY trial participants with IBD (n=44) appeared to reduce rCDI rate at 12 weeks (26.7% vs. 53.8%), although neither MODIFY subgroup analysis was statistically significant. This data supports use of EFDX and BEZ for mrCDI, however, the added benefit from their combined use in patients with IBD remains unclear.

Conclusion

Coexistence of ulcerative colitis and recurrent Clos*tridioides difficile* infection brings challenges in identifying the predominant condition, due to overlap in clinical presentation, as well as challenges in formulating the most appropriate treatment plans for both conditions simultaneously.

Abstract 2023-59

A Case of Disseminated Gonococcal Infection with Large Joint Involvement

Samantha Ratnayake, MD; Michael Valdez, MD; Carlos D'Assumpcao, MD; Arash Heidari, MD

Introduction

Neisseria gonorrhea is a gram-negative diplococcus responsible for more than 600,000 cases of sexually transmitted infections in the US annually. Common manifestations include urethritis in males and cervicitis in females. Disseminated gonococcal infection (DGI) is the result of hematogenous spread of *N. gonorrhea* and occurs in up to 3% of patients with gonorrhea. DGI is often referred to as arthritis-dermatitis syndrome and is characterized by tenosynovitis, dermatitis, and polyarthralgia. Polyarthralgia is often migratory and typical skin lesions are pustular, vesicular, or hemorrhagic macules, papules, or nodules. Blood cultures should be obtained in all patients with suspicion for DGI.

Case Description

A 38-year-old Latina woman with chronic right hip pain status post motor vehicle accident during teenage years and methamphetamine use presented with polyarthralgia for 5 days. Onset was insidious and initially involved the left index finger and right wrist but progressed to include right hip pain with decreased range of motion and difficulty with ambulation. Pertinent negatives included fevers and vaginal discharge. She reported 4 lifetime sexual partners. Examination was notable for decreased range of motion in the right hip, multiple healing papular lesions on the lower extremities, and tenosynovitis of left index finger. Laboratory studies showed CRP of 30.3, ESR of 87, and leukocytosis of 19 with 15% bands but were otherwise unremarkable. Urine gonorrhea and chlamydia rRNA testing was negative as was HIV screen and hepatitis C antibody. Right wrist and left-hand x-rays were unremarkable. Right hip MRI showed severe end-stage osteoarthrosis without effusion. Due to abrupt worsening of right hip pain with new onset decreased range of motion and inability to ambulate, it was presumed that right hip was also involved. Blood cultures grew gram-negative diplococci which speciated to *N. gonorrhea.* She was treated with ceftriaxone 2 gm IV daily with plan to complete a 14-day course. She was also started on doxycycline for treatment of possible chlamydia coinfection. *N. gonorrhea* isolate was sent to a specialty reference lab where it was found to be resistant to ciprofloxacin and ofloxacin yet susceptible to cefixime and ceftriaxone. Patient's clinical condition improved after several days of ceftriaxone.

Discussion

DGI disease process begins with asymptomatic anogenital infections that eventually progress to disseminated disease via hematogenous seeding. Bacteremia due to *N. gonorrhea* is more likely to be associated with polyarthralgia or skin lesions, as noted in our patient. First line therapy for DGI includes ceftriaxone. Empiric treatment for *Chlamydia trachomatis* with doxycycline is also recommended unless ruled out.

Conclusion

Timely and accurate diagnosis of DGI is critically important as most patients respond well to treatment with ceftriaxone. Duration of therapy should be at least 7 days with longer courses of up to 14 days in cases of septic arthritis. Finally, it is important for clinicians to recognize DGI as all of the patient's sexual partners within the past 2 months should be treated for gonorrhea as well.

Abstract 2023-60

Refractory Hemorrhage in GAVE Syndrome in a Chronic Cirrhotic at a County Hospital

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Introduction

Gastric Antral Vascular Ectasia (GAVE) syndrome is a rare disease that accounts for 4% of the non-esophageal variceal bleeding found in patients with upper GI bleeding (UGIB). In GAVE syndrome, also known as "watermelon stomach," the blood vessels in the lining of the gastric antrum become superficial and prone to bleeding. Diagnosis is made by esophagogastroduodenoscopy (EGD) which shows striae of superficial blood vessels resembling watermelon rinds.

Case Description

57-year-old Latina woman presented with abdominal pain, symptomatic anemia with hemoglobin of 3.5, one episode of hematemesis, and one month of melena. She has medical history of three episodes of UGIB from GAVE, Child Pugh Class 3 liver cirrhosis, diabetes mellitus type 2, hypertension, and focal segmental glomerulosclerosis with chronic glomerulonephritis. Examination was significant for hypotension, tachycardia, pallor, positive fluid wave, bilateral upper extremity tremors, and unsteadiness. Paracentesis showed a serum ascites albumin gradient (SAAG) of 1.5 g/dL suggestive of portal hypertension secondary to hepatic cirrhosis. EGD was significant for extensive active oozing GAVE and APC was performed to achieve hemostasis.

Hepatic cirrhosis was incidentally diagnosed in June 2022 by computed tomography and ultrasound, however the etiology remained unknown. Differentials for hepatic cirrhosis included chronic alcohol use, viral hepatitis, autoimmune hepatitis, Wilson's disease, and primary

biliary cholangitis. A full liver workup was conducted and non-contributory leading us to arrive at the diagnosis of Nonalcoholic Steatohepatitis (NASH) cirrhosis. Liver biopsy confirmed stage 4 liver cirrhosis with no other findings.

Discussion

Several comorbid conditions make the diagnosis of GAVE challenging, especially when the patients' history is complicated with portal hypertension which can lead to portal hypertensive gastropathy (PHG). When there is significant hemorrhage, it can be difficult to differentiate PHG and GAVE. When there is minimal bleeding, PHG and GAVE can be differentiated on EGD by location as PHG tends to occur in the gastric pylorus and fundus, while GAVE occurs in the gastric antrum which was seen in our patient. Response to treatment is also a differentiating factor as previous reports have shown that PHG is not responsive to APC treatment.

In order to address GAVE in our patient, APC had been performed three times within two months. To better control GAVE, it was important to understand the etiology of this patient's liver cirrhosis to determine further treatment options. In our patient, workup led to a diagnosis of NASH cirrhosis, and subsequently liver transplant as a curative treatment option.

Conclusion

It is prudent to consider GAVE in populations with NASH cirrhosis as there has been found to be a significantly increased risk. Additionally, GAVE should be a differential in any patient presenting with refractory UGIB with complications of hepatic cirrhosis and portal hypertension.

As primary care physicians, ordering a proper hepatic workup will minimize delay in patient care. In low socioeconomic regions, these workups tend to be left incomplete due to insurance or access to care issues. We advocate for a multidisciplinary approach with the primary care provider at the spear head to improve the ability for our patients to receive the treatment they need.

Abstract 2023-61

Laryngeal Aspergillosis in an Immunocompromised Patient

Amritpal Dhillon, MD; Michael Valdez, MD; Carlos D'Assumpcao, MD; Rupam Sharma, MD; Arash Heidari, MD; Rasha Kuran, MD

Introduction

Invasive aspergillosis is a fungal infection caused by the Aspergillus species. It is predominantly a disease of the immunocompromised and most commonly manifests as pulmonary disease. Laryngeal aspergillosis is rare however complications can be catastrophic. *Aspergillus fumigatus* is the species most associated with pathogenicity. Herein we present a case of primary laryngeal aspergillosis, a rare presentation that eluded diagnosis for months.

Case Presentation

47-year-old Latino man with ESRD s/p DDRT 1 year prior to presentation on long-term immunosuppressant medications with tacrolimus, mycophenolate mofetil, and prednisone presented with hoarse voice and dry cough for 3 months. Symptoms persisted despite oral antibiotics and empiric treatment for GERD. Flexible laryngoscopy revealed diffuse edema and erythema of the left true vocal cord with a polyp. Subsequent direct laryngoscopy redemonstrated the left true vocal cord polyp and multiple anterior commissure polyps. Biopsy was negative for malignancy. 2 weeks later the patient developed stridor and respiratory failure requiring mechanical ventilation. CT neck showed diffuse soft tissue swelling and a 4.4 x 3.0 cm hypodense collection suggestive of cricoarytenoid vs laryngeal abscess with airway stenosis. He was started on empiric Vancomycin and PIP/TAZ and underwent I&D of bilateral thyroid cartilage abscesses. Laboratory studies were unremarkable, specifically cocci serology and AFB smears form both sputum and laryngeal drainage were negative. Laryngeal drainage fungal culture eventually grew *Aspergillus fumigatus* and patient was started on isavuconazonium 372 mg daily. Tracheostomy and gastrostomy tubes were placed, he progressed to T-tubing, and was discharged to an acute rehabilitation facility. MMF was held per transplant team and per PCP 1-month post discharge, patient was tolerating isavuconazonium and doing well without acute complaints.

Discussion

Less than 50 cases of isolated laryngeal aspergillosis have been documented in the English literature. The true vocal cords are most commonly involved and dysphonia is the main presenting symptom. Pathogenesis includes invasion of the respiratory mucosa after inhalation of conidia. Complications can be severe, including respiratory distress with airway compromise. Diagnosis is often made by biopsy for suspected malignancy. Medical management is preferred with voriconazole, itraconazole, isavuconazonium, or amphotericin B liposomal for prolonged duration of 6-12 months. If debridement is required, extreme caution is necessary to preserve vocal cord function. In the case of our patient, voriconazole was avoided due to significant drug-drug interaction with tacrolimus, which may increase tacrolimus levels and result in QT prolongation or nephrotoxicity.

Conclusion

Primary laryngeal aspergillosis is uncommon and rarely seen in disjunction with pulmonary involvement. Laryngeal aspergillosis should be included in the differential diagnosis for patients with chronic laryngitis or laryngeal polyps, especially those with immunocompromising conditions.

Abstract 2023-62
Erectile Dysfunction Caused by Unsuspected Hyperprolactinemia
Amy Arreaza, FNP-BC; Hector Arreaza, MD

Introduction

Hyperprolactinemia is a rare cause of erectile dysfunction (ED), yet ED is not the most common presenting symptom of a prolactin secreting tumor. We present a case of hyperprolactinemia in a patient whose chief complaint was ED.

Case Description

A 47-year-old male presented to clinic with a 2-year history of ED characterized by a soft penis during penetration, absent morning erections, and decreased sexual drive. He was a monogamous heterosexual male, married for 13 years and had an 11-year-old son. He had 10-pounds intentional weight loss in the past 7 months with improvement of his sexual activity to an average of 4 times a month; however, he was still dissatisfied with his sexual performance.

The patient had a past medical history of Class 1 obesity with pre-diabetes. A review of systems revealed intermittent headaches that interfered with work but responded to acetaminophen. There were no voice changes, no changes in facial hair, no vision changes, no galactorrhea, and he had normal sleep.

The patient's cardiopulmonary exam was normal. External genitalia was Tanner stage 5, with android pubic hair distribution, testicles had normal volume with no masses, and there was no evidence of external genital lesions or deformities. Musculoskeletal system showed normotrophic muscle mass throughout with no joint tenderness or limitations. Neurologic exam was normal.

Initial labs:
TSH 1.21 mIU/L (0.4-4.5)
Hgb A1C 5.9 (<5.7)
LH 3.5 mIU/mL (1.5 - 9.3)
Total testosterone 227 ng/dL (250 - 1,100)
Free testosterone 50.4 pg/mL (35.0 - 155.0)
Prolactin 257.4 ng/mL (2.0 - 18.0)

Lab results revealed hyperprolactinemia and thus a MRI of the pituitary was done. The MRI showed an enlarged pituitary gland with a 1.7 x 1.4 x 1.3 cm mass, consistent with a macroadenoma.

The patient was subsequently started on cabergoline 0.25 mg twice a week for 4 weeks, which was then increased to 0.5 mg twice a week. 2 months after the initiation of cabergoline the patient reported his headaches were resolved and his prolactin had decreased to 22 ng/mL. 3 months following the initiation of cabergoline the patient reported resolution of sexual dysfunction and his prolactin was then within normal range at 12.9 ng/mL. Given the patient's clinical improvement and response to treatment there was no need for surgical intervention for the prolactinoma.

Discussion

ED etiologies can be vascular, neurologic, hormonal, anatomical, drug induced or psychogenic. Evaluation of patients presenting with ED begins with a history and physical exam which has a 95% percent sensitivity but only a 50% specificity in determining the cause of ED. Thus, diagnostic tests are needed to maximize specificity

when considering the various causes of ED. While less than 5% of patients with ED are diagnosed with a pituitary adenoma, this case demonstrates the need for initial hormonal laboratory testing to include a prolactin level.

Conclusion

This case illustrates that ED can be the main symptom of a prolactin secreting pituitary tumor and thus demonstrates the importance of obtaining a serum prolactin in the work-up for ED.

Abstract 2023-63

Emergent Lateral Cantholysis In Acute vision loss Post Blepharoplasty

Jairo Garcia, MD; Lev Libet, MD

Introduction

Acute vision loss is addressed as a true emergency as delays in diagnosis and treatment may lead to permanent vision loss. Postoperative bleeding, proptosis, and a nonreactive pupil in the setting of acute vision loss is a constellation concerning for orbital compartment syndrome (OCS). This entity may lead to permanent vision loss and therefore must be addressed in a timely manner with lateral canthotomy and cantholysis. We present a case of a patient with acute vision loss post blepharoplasty who improved with cantholysis. There are no cases of emergent cantholysis post-blepharoplasty in the emergency medicine literature.

Case Description

A 67-year-old male presented around 5 am to the emergency department with the complaint of bleeding and rapid swelling from the right upper eyelid. They had undergone bilateral upper blepharoplasty the day prior. After the procedure, he felt well, without any complaints and went home. One hour prior to arrival to the emergency department, there was significant bleeding from the right medial aspect of the upper eyelid. He reported to have saturated a bath towel with blood. He endorsed diplopia that progressed from blurred vision and to seeing only shadows. He had remaining light perception to the upper nasal quadrant of his visual field. He also noted a constant pressure to his right eye. He was not on any anticoagulants, nor did he experience any preceding trauma.

Examination was notable for periorbital edema, ecchymosis, and mild proptosis. Eyelid sutures were clean and intact with no active hemorrhage. The right pupil was fixed, dilated and nonreactive. Ophthalmoplegia was noted in all directions. Intraocular pressures (IOP) were measured at OD 14 mmHg, OS 10 mmHg. Due to the normal intraocular pressures, a computed tomography (CT) scan of the orbits was obtained. The CT demonstrated right eye proptosis with extraconal periorbital and infraorbital soft tissue swelling without demonstration of active bleeding or hematoma. Lateral canthotomy with cantholysis of the right eye was performed due to the progressive vision loss, proptosis, and ophthalmoplegia. After the cantholysis, the patient endorsed immediate improvement of the sensation of pressure and return of vision. The right pupil normalized, became equally reactive to light as the left, and extraocular movements returned. Visual acuity post cantholysis was OD-20/70, OS-20/40. Ophthalmology recommended that the patient be discharged to their clinic for further evaluation.

Discussion

The presentation was initially concerning for a retrobulbar hematoma secondary to post-operative bleeding causing acute OCS. Due to the fixed pupil, pain, and vision loss, acute angle closure glaucoma (ACG) was also considered. These two complications of elective blepharoplasty have been described. However, the normal IOP made these two entities less likely. Retrobulbar hematoma is a rare occurrence but is the most common cause of acute vision loss after blepharoplasty, accounting for 51% of cases. Due to the high suspicion for OCS in this case, the history and exam in conjunction with proptosis and progressively worsening vision loss, the lateral canthotomy was performed. The potential outcome of permanent vision loss outweighed the risks of the procedure. The patient reported immediate relief, had rapid return of vision, and resolution of ophthalmoplegia. The presentation aligns with OCS yet there was no retrobulbar hematoma or elevated IOP to support this. It is possible there was a calibration error of our tonometer, however, it is still difficult to explain OCS occurring with the minimal CT findings. This case

highlights the importance of relying on a complete clinical assessment and not on any one particular test.

Conclusion

Post blepharoplasty patient can present with ocular compartment syndrome which requires rapid assessment and treatment. Our patient had rapid improvement in symptoms after lateral canthotomy with cantholysis.

Abstract 2023-64

Data Analysis of Kern Medical EMU Admission between 2018-2021

Kevin Dao, MD; Hari Kunhi Veedu, MD; Chrystal Nguyen, RA; Carolyn Poston, RA; Jennifer Ipe, RA; Charles Y. Liu, MD, PhD; Christianne N. Heck, MD

Introduction

Epilepsy monitoring units (EMU) are a crucial tool that neurologists use in order to further investigate a patient suspected of having seizures. Yet, there hasn't been much published data as to the efficacy of EMU in underserved regions and how that resulted in an improvement of care. Here, we would like to present the uses of EMU care and procedures done in underserved areas by presenting a retrospective study that discusses a patient's ethnicity, socioeconomic status, diagnosis, etc. A comparison between said data will then be done alongside nationally presented data in order to highlight any crucial differences and provide proper awareness. By doing so, we hope to raise awareness about certain aspects of medical access that are lacking and detail how this affects not only patients but the entire country.

Purpose of the Study

Medical access for neurological conditions has been steadily increasing across the United States. When it comes to Epilepsy Monitoring Units (EMU) bed availability, admissions, neurological procedures, and epileptologists, the nation shows a statistical increase. Despite this, a rise in access in underserved communities has remained stagnant over the past few years. This is particularly true in rural, suburban, and underserved areas. We would like to present retrospective data from our underserved suburban level III epilepsy center between 2018-2021 and compare it to the National Association of Epilepsy Centers (NAEC) data from 2012 to 2019.

Methods Used

This study was conducted through the Epilepsy Program at KMC in Bakersfield, CA. Bakersfield resides within the Central Valley of California, a historically underserved region with a high minority population. Patients suspected of having seizures are referred to the EMU for classification of seizure types or definitive categorization of epilepsy symptoms. The patient's case is then discussed in a weekly conference with the USC epilepsy consortium. Patients will then be treated in Bakersfield if no further management is needed, otherwise, if phase II evaluation is necessary, they are sent to USC for higher care. This is primarily a retrospective study.

Summary of results

Despite first-world countries such as the United States having access to medical care, there are underserved areas that lack this access. KMC does have a level III epilepsy center; however, there are cases where patients have more complicated issues that require more management. After EMU evaluation, patients would undergo medical management or discussions as to various options such as surgery, RNS implantation, VNS implantation, etc. These options would be done at a higher level of care.

Discussion

Overall, there is noted to be a 159 % increase in EMU admissions in level III centers and a 34 % increase in level IV centers per 1 million people. NAEC had also noted a rise in procedures, when compared to underserved areas. On a national level, there is an increase in epilepsy centers, admissions, epileptologists, EEG technologists, and surgical case complexity. This stark contrast helps portray that despite the increasing growth of neurologically related resources, underserved communities have remained stagnant and must relegate their complicated cases to other locations. This not only burdens patients' time and resources but also the healthcare system itself since a majority of patients in underserved communities use Medicare or Medicaid.

Conclusions

While the KMC EMU has helped numerous patients, it still leaves something to be desired. The underserved community of Central California has a majority of Medicare and Medicaid patients compared to the national average (76% compared to 34%). If KMC were to

obtain more resources in the future, this would allow for a more productive approach to epilepsy diagnoses and treatment as outlined in a national study. Despite the limitations that KM EMU faces, it continues to serve epilepsy patients throughout the Central Valley with the same standard of care. Hopefully, as neurology accessibility advances on a national scale, it will do so in underserved communities as well.

Abstract 2023-65

Coccidioides Screening During Pregnancy, a Must or a Bust

Elika Salimi OMS III; Noah Stickels, RA; Bianca Torres, RA; Ji Jeon, MD; Arash Heidari, MD

Introduction

Diagnosis of coccidioidomycosis (CM) during pregnancy is not common but a higher incidence of dissemination and morbidity has been historically reported. Even though little is known about the exact incident rate, many clinicians in the endemic area have adopted screening for CM during pregnancy. In our institution, screening serologies are sent to Kern County Public Health Department (KCPHD) laboratory where immunodiffusion (ID) IgM and ID IgG in conjunction with complement fixation (CF) tests as a panel is utilized. Previously the panel also included an IgM Enzyme Immunoassay (EIA) which was eliminated due to a high false positivity rate. The ID IgM and ID IgG generally have a very high specificity of over 90% without significant false positives. The purpose of this research is to study and follow the cases of asymptomatic patients with only ID IgM-positive results for CM.

Purpose of Study

The need for coccidioidomycosis screening during pregnancy and validation.

Methods

Approval was obtained for this retrospective study from the Institutional Review Board at Kern Medical. A literature review was conducted on PubMed and Google Scholar including coccidioidomycosis, pregnancy, false positives serology, and screening serology. The referrals from the department of obstetrics with positive CM serology to Valley Fever Institute at Kern Medical were reviewed from August 2021 to February 2023. Patients with positive IgG or complement titers were excluded.

Results

A total of 84 referrals were found and after the exclusion, 57 patients with only ID IgM reactive test were identified. The mean age was 27.6 years (15-42) with an average gestational age of 14.6 weeks at the time of positive CM serology test**.** There were 33 patients that tested positive during the first trimester, 19 during the second trimester, and 5 during the third trimester. Patients had a history of obesity (14), chronic hypertension (4), tobacco smoking (4), anemia (3), diabetes (2), hypothyroidism (2), asthma (2), seizures (1), and liver cirrhosis (1).
33 patients were lost to follow-up and 4 were still pregnant. 20 patients were studied until after delivery (1 abortion). 16 of them (27% of the total) converted their ID IgM to negative but 4 remained positive even after delivery. All patients remained asymptomatic without conversion of IgG or CF.

Discussion

All serologies were performed in the same reference laboratory which eliminated historical variability in reporting as the strength of this study. Other studies focused on the false positivity of other screening methods such as EIA. This study found that in at least 27% of cases, the positive ID IgM seroconverted to negative. This suggests a unique immunological state during pregnancy that perhaps cross-reacts with the ID IgM test. The absence of symptoms and negative seroconversion of ID IgG and CF excluded active infection with CM. In 4 patients, the ID IgM remained positive after delivery. This could represent either another preexisting mechanism or reactivation by pregnancy. There have been similar experiences with patients that are being screened before the administration of immunosuppression commonly for autoimmune diseases.

Conclusion

The seroprevalence of false positive IgM Immunodiffusion of CM has not been studied. Screening for endemic fungal infections is on the rise due to fear of reactivation before using biologics. It is also unknown if

this rate is higher during pregnancy and the associated etiology. There is a need for more focused studies to determine the benefit and best method for CM screening during pregnancy. Until then, the concern of a higher rate of morbidity and mortality associated with CM during pregnancy will continue to overshadow the clinicians.

Abstract 2023-66

DRESS Syndrome: A Case Report

Essam Hashem, MS IV; Michael Valdez, MD; Marah Sukkar, MD; Michelle Fang, PharmD; Arash Heidari, MD

Introduction

Drug reaction with eosinophilia and systemic symptoms (DRESS) syndrome is a severe adverse drug reaction that presents 2 to 8 weeks after starting a new medication. Specifically, it is characterized as a type IVb cell-mediated hypersensitivity reaction. Herein we describe a case of DRESS syndrome in a patient with coagulase negative staphylococcus prosthetic valve endocarditis on vancomycin and ceftriaxone.

Case Description

51-year-old Latina woman with history of complete heart block s/p pacemaker placement 6 years prior, HFrEF 30%, and aortic stenosis (AS) s/p TAVR 3 years prior presented with dyspnea on exertion and orthopnea. She was admitted for heart failure exacerbation and TTE revealed severe AS. TEE revealed vegetations on the bioprosthetic aortic valve (AV) and pacer leads. Patient was started on vancomycin for coagulase negative staphylococcus prosthetic valve infective endocarditis (IE) and was transferred to higher level of care where she underwent open heart surgery for AV and pacemaker exchange. After the surgery, she was discharged with plan to complete 6 weeks of vancomycin and ceftriaxone. Approximately 3 weeks after initiation of vancomycin and 2 weeks after initiation of ceftriaxone, she developed a maculopapular rash on the thighs and stomach that failed to resolve with Benadryl. She presented to the emergency department (ED) where she was diagnosed with red man syndrome. She received dexamethasone 10 mg x1 and was discharged with return precautions. 2 days later she returned with lightheadedness and progression of the rash. Examination revealed diffuse maculopapular rash with areas of confluence involving the trunk, face, and extremities. There was no associated stridor or airway compromise, but patient was hypotensive with mean arterial pressures in the 40s. Labs revealed eosinophilia 900, lactic acidosis 5.9, and acute kidney injury with creatinine 3.87 from baseline 0.61. She failed to improve with epinephrine 0.3 mg IM x2 and initiation of epinephrine drip. She was admitted to the ICU where septic and cardiogenic shock were ruled out. Vancomycin and ceftriaxone changed to daptomycin. She was eventually started on methylprednisolone as she met diagnostic criteria for DRESS. Hypotension resolved, AKI improved, and rash improved thereafter and patient was discharged on an 8-week steroid taper plus Daptomycin to complete 6-week course for IE.

Discussion

Risk of DRESS varies by offending medication, with seizures medications, allopurinol, and vancomycin associated with high risk. Maculopapular rash generally appears 2 to 8 weeks after initial exposure. Extensive involvement of more than half the body is common. Additional manifestations may include fever, lymphadenopathy, hematologic abnormalities like eosinophilia, or multiple organ involvement such as hepatitis, renal failure, or myocarditis. Several scoring systems are available to aid in diagnosis. Mainstay of treatment includes withdrawal of the offending agent and administration of steroids.

Conclusion

Accurate diagnosis is critically important as severe DRESS may be life threatening. Admission to ICU with prompt withdrawal of the offending agent and administration of steroids is imperative for improved patient outcomes. Finally, patients diagnosed with DRESS must avoid the offending medication for life and require lifelong monitoring for development of autoimmune conditions.

Abstract 2023-67

Loeffler syndrome: When Parasites Cause Respiratory Symptoms

Arianna Crediford, MD; Leepakshi Johar, OMS III; Yosbel Martinez, MD; Hector Arreaza, MD

Introduction

Loeffler syndrome is a subset of eosinophilic pneumonia that is commonly associated with helminth infection in

children. These parasites cause dry cough, wheezing, and fever as they cross the pulmonary capillaries, then ascend where they are swallowed to the gastrointestinal tract [1-2]. The diagnosis is established with chest x-ray, blood eosinophilia, and confirmation of helminth infestation. On radiography, larvae typically present as transient pulmonary opacities. Treatment includes anthelmintic medications [1]. Primary care providers need to be trained to recognize parasitic infections that commonly occur in immigrant populations. Early detection and proper treatment decrease the risk of potential complications.

Case Description

A 4-year-old boy with no significant past medical history presented for a well child exam. Patient arrived from Mexico one month ago. A complete blood count (CBC) showed eosinophilia (2,235 cell/uL). He presented a few weeks later with a new onset of dry cough, non-bloody emesis and subjective fever that started 5 hours prior. He was noted to be tachycardic and tachypneic with a prolonged expiratory phase. Chest x-ray and sputum studies were deferred by family due to health insurance status. Ova and parasite (O&P) stool study resulted positive for *Ascaris lumbricoides* and *Giardia lamblia*, as well as non-pathogenic species: Blastocystis, *Endolimax nana*, and *Entamoeba coli*. A diagnosis of Loeffler syndrome was established. He received one dose of albendazole 400 mg PO, repeated in 3 weeks for ascariasis; and a single dose of tinidazole 750 mg PO for giardiasis. During a follow-up visit, patient reported six helminths in stools after starting treatment. Respiratory symptoms resolved and follow up O&P is pending.

Discussion

This patient presented with typical signs of a viral respiratory illness but eosinophilia prompted additional workup. Without the assistance of chest radiography and sputum studies, the team's high level of suspicion was key to diagnosing Loeffler syndrome. Loeffler syndrome is a rare disease of pulmonary eosinophilia caused by helminths, commonly *Ascaris lumbricoides*, *Ancylostoma duodenale, Necator americanus*, and *Strongyloides stercoralis*. CBC with differential and O&P are part of the initial evaluation. This condition is predominant in developing countries. The United States receives nearly 70,000 immigrants every day, so primary care physicians must become familiar with the recommendations regarding their care.

Conclusion

Loeffler syndrome should be considered early in the differential diagnoses for respiratory pathology in individuals who frequent endemic helminth regions. Respiratory symptoms, abnormal chest radiography, and blood eosinophilia are classic indicators, though 5% of patients may not have abnormal chest radiography. [5] It is vital to incorporate diagnostic tests during initial visits for infections that are predominant in endemic areas. By providing awareness and appropriate screening tools, we can initiate treatment early. Primary care physicians are at the forefront of the healthcare system and need to become familiar with the recommendations to prevent complications and public health problems. [8-12] We recognize that the immigrant population faces multiple challenges that go beyond intestinal parasitic infestation, but our aim is to raise awareness of the importance of considering uncommon conditions when immigrants come for their first medical checkup.

Abstract 2023-68

Cavitary Streptococcus Pyogenes Pneumonia in a Disseminated Cocci Patient

Carlos D'Assumpcao, MD; Royce H. Johnson, MD; Augustine Munoz, MD; Mania Mgdsyan, OMS III; Amanda Cowell, OMS III

Introduction

In patients presenting with hemoptysis and a pulmonary cavitary lesion, *Streptococcus pyogenes* infection is not one of the main differentials. In fact, only about 10% of Group A streptococcus [GAS] infections present in this manner. Our patient was found to have cavitary *S. pyogenes* in the setting disseminated coccidioidomycosis.

Case Description

28-year-old African American male with coccidioidomycosis diagnosed at age 7 and treated with fluconazole until age 16, presented with dyspnea, hemoptysis, night sweats and vomiting. He was found to have a cavitary lesion in the right mid-to-lower lobe, and a large retroperitoneal abscess along the psoas muscle.

Vancomycin and cefepime were started for broad-spectrum antibiotic coverage as well as fluconazole for coccidioidomycosis. Differential diagnoses included reactivation coccidioidomycosis versus active tuberculosis versus superimposed bacterial infection of the cavitary lesion. Sputum AFB stains were negative, blood cultures grew GAS, and the abscess culture grew fungi resembling coccidioidomycosis. Antibiotics were narrowed down to intravenous ceftriaxone. Fluconazole was discontinued and isavuconazonium was initiated for disseminated coccidioidomycosis in the setting of suspected failure of previous fluconazole therapy. The patient began to show significant clinical improvement, was discharged home with amoxicillin, and scheduled for outpatient follow up with pulmonology and infectious disease.

Discussion

GAS pathogens are more commonly known to cause strep throat, impetigo, cellulitis, toxic shock syndrome, scarlet fever and rheumatic fever. Rarely, *S. pyogenes* is responsible for causing pneumonia, which is highly invasive and has an estimated 38% case fatality rate. GAS pneumonia has also shown to cause a rapid deterioration in health, with one study revealing that half of the patients with a fatal outcome of GAS pneumonia died within 24 hours after admission.

Our patient had GAS pneumonia complicated by disseminated coccidioidomycosis. Due to the patient's history and discovery of the psoas abscess positive for *Coccidioides immitis,* it was suspected that the lung abscess could also be due coccidioidomycosis. However, the predominant leukocytosis with bandemia, elevated procalcitonin and ESR were more suggestive of a bacterial infection. Additionally, given that positive blood cultures have been shown to effectively diagnose GAS pneumonia in 75% of patients, we were able to rule out coccidioidomycosis as being the causative agent of pneumonia in our patient. The patient also responded well to antibiotics and quickly returned to his baseline health, which is another indication that this patient's presentation was due to GAS.

Conclusion

The concurrence of GAS lung abscess and disseminated coccidioidomycosis is not only rare but both conditions carry a high risk of morbidity and mortality. While our patient displayed a surprisingly quick recovery, this is not always the case. It is important to have a high index of suspicion in patients presenting with hemorrhagic lung abscess in order to intervene quickly and reduce the risk of a fatal outcome.

Abstract 2023-69

Fatal Coccidioidomycosis Cases in an Endemic Area

Carlos D'Assumpcao, MD; Lovedip Kooner, MD; Amritpal Dhillon, MD; Michael Valdez, MD; Rasha Kuran, MD; Royce H. Johnson, MD; Arash Heidari, MD

Introduction

While a majority of *Coccidioides* infections are asymptomatic, it is estimated that 1% develop severe disease and can be fatal. Prior retrospective reviews that attempt to identify risk factors for fatal disease have been limited to public health data hampered by reporting challenges and accuracies. Morbidity review of fatal cases identified by clinical criteria rather than ICD-9/ICD-10 reporting may improve accuracy of conclusions.

Method

At an academic center in an endemic area, medical records from three sequential electronic medical record systems were reviewed from approximately 2000 to January 2023. Patients with coccidioidomycosis were identified by microbiological, pathological, serological, or skin testing criteria. Deaths were determined by in hospital records, insurance reporting, review of death certificate if available, or public record. Demographics, clinical course, outcomes and causes of death are compared. Incomplete medical records to make comparison were excluded.

Results

To date, at least 50 patients met clinical criteria for having coccidioidomycosis at one point in their life and died. ICD coding was wrong in about half of the cases. Data integrity has been a challenge when extracting data across three electronic medical record systems.

Conclusion

Patients were found to have died either with coccidioidomycosis or from coccidioidomycosis. ICD coding was inconsistent. Precise and accurate

description of coccidioidomycosis staging is important when trying to determine risk factors for fatal disease.

Abstract 2023-70
HIV-Associated Burkitt Lymphoma Presenting as Submandibular Infection: A Devil in Disguise
Lovedip Kooner, MD; Carlos D'Assumpcao, MD; Ali Bazmi, PharmD; Arash Heidari, MD

Introduction

The incidence of HIV-associated malignancies has been decreasing since the introduction of antiretroviral therapy (ART). HIV-associated Burkitt's lymphoma (BL) has been the exception, with more prevalence seen in persons with higher CD4 counts compared to the other lymphomas. BL can have an aggressive disease course even with therapy. We present a case of a 39-year-old male with HIV who presented with a submandibular abscess that was subsequently diagnosed as Burkitt's lymphoma. Diagnostic and treatment considerations are discussed.

Case Description

A 39-year-old Caucasian heterosexual male diagnosed with HIV seven months prior while incarcerated who had a brief lapse in ART after his release presented to the emergency room for right-sided jaw pain and swelling for one week. The patient had a history of multiple periodontal infections due to methamphetamine use. He was afebrile and his laboratory showed an HIV 1 RNA PCR of 18000 copies/ml and his CD4 was 530/mcl. CT of the neck showed a 29 x 25 mm low-attenuation lesion in the right submandibular region. He was admitted and treated for presumptive periodontal infection with Intravenous antibiotics and discharged a day later with oral antibiotics.

After one month, the patient was presented to the outpatient HIV clinic with increasing size of his neck mass and difficulty swallowing. He was sent back to ED and his CT showed that the mass had increased in size to 58 x 46mm with a necrotic center. His HIV RNA Quant PCR was improved with ART to 43 copies/mL and his CD4 was 560/mcL. An ultrasound-guided right submandibular gland mass core biopsy was taken, and a diagnosis of BL was made with malignant cells staining positive with CD20, BCL6, CD10, and nearly 100% with Ki61. In addition, to FISH study demonstrated an MYC rearrangement t (8;14). His Chest, abdomen, and pelvic CT were negative.

He was started on dose-adjusted etoposide, prednisone, vincristine, cyclophosphamide, doxorubicin, and rituximab (DA- EPOCH- R) for 6 cycles every 21 days. In addition, he started on intrathecal methotrexate on days 1 and 5 every 21 days. After the 3rd cycle, his mass started to shrink in size. His CD4 remains over 500.

Discussion

HIV-associated BL has a median age of 44 years, is associated with CD4 counts >100 mcl, most commonly nodal presentation, and increased risk of central nervous system (CNS) dissemination. There is not verified risk stratification and prognostic score. However, age, stage, size of mass (esp. greater than 70mm), lactate dehydrogenase levels (esp. 3 times the upper limit of normal), and CNS involvement have been used as retrospective population-based prognostic factors. Treatment includes ART and chemotherapy. If adherent to ART, outcomes are similar to non-HIV patients.

Conclusion

Burkitt Lymphoma should be in the differential diagnosis of HIV patients with masses. Early diagnosis and initiation of ART and chemotherapy under the care of a multidisciplinary team are crucial to avoid poor prognosis.

Abstract 2023-71
Post-Stroke Schizophrenia-Like Psychosis: A Case Report
Nicole Nikolov, MS III; Kajal Patel, MS III; Arian Ashrafi, MS III; Theodore Chun, MD; Samantha Madziarski, MD

Introduction

Stroke is the second leading cause of death worldwide and results in numerous complications that contribute to significant morbidity and mortality. Neuropsychiatric symptoms may be present in up to 30% of patients following stroke and are a major predictor of poor outcome, however, are often underdiagnosed and undertreated. Schizophrenia-like psychosis, in particular, is a rare complication that develops in about 4.86% of stroke survivors. Herein, we describe a unique case of new-onset schizophrenia-like psychosis that developed following an ischemic stroke.

Case Presentation

A 52-year-old man with no prior psychiatric history presented to the emergency department with command auditory hallucinations, paranoid and persecutory delusions, disorganization, suicidal ideation, and depression that began one week after he had an ischemic stroke. He has a past medical history of hypertension, insulin-dependent diabetes, hyperlipidemia, and traumatic brain injury 10 years ago. He denied any history of substance use. His vital signs on arrival were within normal limits. He was worked up for various medical causes of psychosis and altered mental status, including hypothyroidism, substance use, and intracranial pathology. CBC was significant for mild leukocytosis with no anemia or thrombocytopenia. CMP showed no acute electrolyte abnormalities. Blood glucose was elevated at 193 but no anion gap was measured. Renal, liver, and thyroid functions were within normal limits. B12, folate, and ammonia levels were within normal limits at 767, 8.2, and <10, respectively. Urine toxicology screen was negative. Urinalysis was negative for findings that would suggest an infectious process. A 1-hour EEG was normal. HIV and syphilis were non-reactive. A CT of the brain showed encephalomalacia of the anterior inferior frontal lobe and anterior left temporal lobe with no acute intracranial process. The patient was medically cleared and was transferred to the psychiatric department for further evaluation. Given the negative medical workup, absence of prior psychiatric history, the acute nature and timing of his symptoms, and brain imaging that supported significant encephalomalacia, the patient's psychosis was deemed to be organic secondary to his recent cerebrovascular accident. The patient was managed with quetiapine with moderate symptomatic improvement. He was hospitalized for 24 days until he ultimately left against medical advice prior to stabilization of his symptoms.

Discussion

Post-stroke schizophrenia-like psychosis is associated with significant impairment in daily functioning and an increased 10-year mortality risk. Despite its serious nature, the guidelines for diagnosing and managing post-stroke schizophrenia-like psychosis are lacking, and more research is necessary to inform evidence-based practices. As such, this case report will contribute to the existing literature with a discussion of the unique characteristics of this patient's presentation, workup and diagnosis of his disease process, and management of his psychosis.

Abstract 2023-72

An Unusual Presentation of Diabetic Nephropathy

Arian Ashrafi, MS III; Nicole Nikolov, MS III; Kajal Patel, MS III; Amardeep Chetha, MD; Verna Marquez, MD

Introduction

Diabetic nephropathy is a severe complication of type 2 diabetes mellitus (T2DM) and is the leading cause of end-stage renal disease globally. Diabetic nephropathy is diagnosed clinically by consistent albuminuria (more than 300 mg/day or 200 μg/min at 2 out of 3 measurements within 3 to 6 months), a gradual decline in GFR, and hypertension. This report presents a unique case of diabetic nephropathy that could only be confirmed after a renal biopsy.

Case Presentation

A 49-year-old male with a history of glutaric acidemia type II, hypertension, and T2DM presented to the emergency department with right leg and foot pain, multiple episodes of emesis, and severe epigastric pain. Physical exam was remarkable for blood pressure of 204/112, epigastric tenderness, and 2+ bilateral pitting edema of the lower extremities. Initial labs were remarkable for elevated creatinine, and the patient was diagnosed with acute kidney injury. FAST exam was positive, suggestive of fluid in the hepatorenal and splenorenal region. The patient was admitted for hypertensive urgency. Additional labs were significant for positive cryo-crit quality and elevated IgA and kappa/lambda ratio. Since his elevated blood pressure was refractory to treatment, a native renal biopsy was performed which showed diffuse and nodular diabetic glomerulosclerosis with segmental sclerosis, arterial and arteriolar nephrosclerosis, and acute tubular injury. Following the biopsy, an ultrasound of the abdomen revealed markedly increased renal echogenicity and a benign renal cyst that was assumed to be a perinephric hematoma secondary to renal injury during the biopsy. On day 3, a CT angiogram of the abdomen with contrast found that the mass had enlarged. Concurrently, the daily urine output of the patient decreased from 1.5L to 700mL and then further to 400mL. Subsequently,

embolization of the posterior segmental left inferior renal interlobar and arcuate arteries was performed to prevent further enlargement of the hematoma. The patient ultimately responded to trials of amlodipine, lisinopril, doxazosin, hydralazine, and furosemide and was discharged on them. One week later, the patient returned to the emergency department complaining of edema and shortness of breath. He was admitted for worsening anasarca and hypertensive urgency. The patient responded well to treatment with IV furosemide and endorsed significant improvement in his symptoms. He was discharged on furosemide and metolazone, and his symptoms have remained stable at follow-up visits.

Discussion

Diabetic nephropathy is a severe complication of T2DM that is associated with significant morbidity and mortality. Therefore, for a timely diagnosis and prompt treatment, patients with T2DM should be screened annually for microalbuminuria to avoid the life-threatening progression of this disease. Additionally, for patients with T2DM, physicians must maintain a high index of suspicion and include diabetic nephropathy as a differential diagnosis despite unusual patient presentations. The clinical course of the patient and the need for renal biopsy to reach a definitive diagnosis of diabetic nephropathy in addition to the patient's history of glutaric acidemia Type II make this case a remarkable one to explore further.

Abstract 2023-73

Laparoscopic Camera Simulation Training for Third Year Medical Students

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Introduction

Third year medical students on surgical core rotations such as General Surgery or Obstetrics-Gynecology often enter clinical rotations with no prior surgical experience. This includes the use of a laparoscopic camera. In clinical practice, laparoscopic surgeries are increasingly replacing open surgeries given lower complication rates and faster recovery times (Kang 2010, Scaletta 2020). Training in laparoscopy is an integral part of surgical residency training, and the Fundamentals of Laparoscopic surgery (FLS) certification is often included to evaluate knowledge and skills for laparoscopic surgery. However, many medical students do not experience hands-on training in laparoscopic techniques during their third and fourth-year clinical rotations (Schaffer, Nitschmann). Furthermore, camera navigation skills, although an important component in laparoscopic training, are not routinely taught in traditional medical student curriculum (Watanabe 2015). Camera navigation skills enable the surgeon to operate efficiently and effectively. Training could decrease subjective workload, thus improve performance (Yurko 2010) and foster the medical student experience on a surgical rotation (Galinanes 2013).

At our institution, a new curriculum was instituted following a change in both the number of third year medical students and the medical schools from which they trained, as part of the new contracts with the medical schools. A needs assessment was identified by the Designated Institutional Official (DIO) for laparoscopic camera training to be instituted with the new incoming third-year medical students on surgical clerkships. We therefore sought to better understand the downstream effects of laparoscopic camera training in the simulation center on this important laparoscopic surgical skill.

Purpose of Study

The objective of this study is to evaluate the effectiveness of a physical simulator in training third year medical students in laparoscopic camera navigation. We hypothesize that this trainer provides an opportunity for students to become familiarized with the operations and maneuverability of the laparoscopic camera in a low stress environment, which leads to decreased cognitive load and better performance once introduced to the operating room.

Methods Used

During the academic school year of 2022-2023, third-year medical students on Obstetrics and Gynecology core clerkship were invited, as part of their core curriculum, to participate in a simulation with a low-fidelity model of a laparoscopic camera. Students were enrolled on a

voluntary basis. Our study design is a mixed methods prospective cohort study.

Participants were asked to fill out a pre-training survey to assess their level of experience and comfortability with laparoscopic surgery. The intervention (training curriculum) consists of a video of basic laparoscopic camera parts and operation, and a physical simulator for skills training. After viewing the introduction video, the participants trained on the simulator for one practice session. In the second session, participant's performance was video recorded for final assessment.

The video assessments were evaluated by a blinded interdisciplinary panel for camera navigation skills, specifically focusing on critical actions such as operational field centering, correct angle of the horizon, and correct instrument visualization using a Likert scale. Following the intervention, participants completed a post-training survey to provide feedback on the design of the physical simulator and their experience training on it. Lastly, participants were provided a QR code survey to share with Attendings to solicit feedback on their camera navigation skills in the operating room.

Data collection followed IRB protocols. All survey and video assessments were stripped of identifiers. Participants were assigned numbered codes to link results between pre- and post-surveys and QR code feedback. Minimal risk was involved.

Results

This study analyzes the effects of a standardized curriculum in laparoscopic camera navigation through a blinded evaluation of the recorded final trial and Attending feedback in the operating room using ordinal logistic regression. The study is currently in the data collection phase.

Discussion/Conclusions

We hope to explore the relationship between improvements in student performance in the OR and formal low fidelity training as assessed by remote evaluators and attending perceptions. Though final results are pending, literature supports the introduction of laparoscopic training in medical student curriculum, particularly targeting medical students beginning their core clerkships and expressing interest in a surgical specialty. Further, plans in process to increase the power of this study by including students rotating in other clerkships and at other institutions.

Abstract 2023-74

Postpneumonectomy Syndrome

Afomia Mesfin, MD; Khalid Ramahi, MD; Daniel Quesada, MD; Amber Jones, DO

Introduction

Postpneumonectomy syndrome (PPS) is a rare complication of pneumonectomy that results in shifting of mediastinal structures and hyperinflation of the remaining lung that leads to tracheal and at times esophageal compression. In one study, incidence of PPS was 2% (Soll et al, 2009). It is more common in patients who underwent surgery as a child and is almost exclusively present in right pneumonectomy patients. Symptoms present as progressive dyspnea, cough, and inspiratory stridor. Esophageal and pulmonary vein compression from mediastinal shifts can lead to dysphagia and dyspnea, respectively. If left untreated, symptomatic PPS can lead to a significant increase in morbidity and mortality. Treatment options include surgical repositioning of the mediastinum and filling the postpneumonectomy space with non-absorbable material, such as saline breast implants.

Purpose

This patient fits the classic presentation for PPS as he underwent right pneumonectomy within the first year of life and is presenting 27 years later with undifferentiated dyspnea and no other clear etiology of symptoms. Computer tomography (CT) of the chest was remarkable for a large shift of mediastinal structures.

Discussion

Patient is a 28-year-old male with a past surgical history of right pneumonectomy (1994) who presented to the emergency department with dyspnea for 2-3 weeks. His dyspnea had been gradually worsening over time, creating functional limitations at his warehouse job. Patient denied fevers, chills, chest pain, nausea, vomiting, extremity swelling, or recent trauma. He

endorsed intermittent orthopnea and dysphagia, described as a sensation of food getting stuck in his throat, though symptoms generally resolved on their own. Patient does not know the original indication for his right pneumonectomy and has not had medical follow up in many years.

Vitals signs were within normal limits. Physical exam was notable for the auscultation of heart sounds appreciated in the right chest only, absent heart sounds in the left chest. Patient was in no respiratory distress and lung sounds were clear and asymmetrical with diminished sounds on the right. No JVD or lower extremity edema was noted.

CT chest with intravenous contrast revealed sequela of remote right pneumonectomy with complete deviation of the mediastinum into the right hemithorax with hyperinflation of the left lung and herniation of the superior portion of the right hepatic lobe into the right lower hemithorax. Given the constellation of symptoms and distinct CT chest findings, PPS was suspected. UCLA Thoracic surgery was consulted for further recommendations, who advised that given the patient is hemodynamically stable and in no respiratory distress, the patient may follow up in outpatient pulmonology and cardiology clinics.

Discussion

PPS is a rare postoperative complication characterized by the unilateral displacement of mediastinal structures that can occur within a time interval range of 1 month-49 years (*). Although it is a diagnosis of exclusion, it is important to consider this phenomenon in postpneumonectomy patients as consequences can be life-threatening from a cardiovascular, pulmonary, and gastrointestinal standpoint. Though some patients may remain asymptomatic, it is important to know that surgical management options are available.

Abstract 2023-75
An Incidental Finding of a Vaginal Arteriovenous Malformation
Karina Grinberg, MD; Katie Van Cleave, DO; Amin Ramzan, MD

Background

Acquired vaginal arteriovenous malformation (AVM) is a rare condition that requires timely diagnosis for safe and effective treatment to avoid life-threatening hemorrhage.

Introduction

Vascular anomalies can be found anywhere in the body and comprise of a wide spectrum of lesions, ranging from simple birthmarks to large, disfiguring tumors. Arteriovenous malformation (AVM) is one subtype of simple vascular malformations. It is defined as a malformation that consists of feeding arteries and draining veins without an intervening capillary bed (nidus) and which is composed of multiple dysplastic vascular channels that connect the arteries and veins. Differentiating between congenital and acquired AVMs can alter the diagnostic approach as well as treatment strategy. Acquired AVM of the female pelvis is a rare entity. Most commonly they are confined to the uterus, with fewer than 150 cases reported in the literature. Vaginal AVMs are even less common, with only three cases reported in the literature, two of which were congenital [2-4]. Vaginal AVM is a potentially a life-threatening condition, in which patients present with vaginal bleeding that may be intermittent or profuse and can cause hemodynamic instability.

Case Presentation

A 46-year-old woman was referred to the gynecologic oncology clinic for evaluation of a vaginal mass discovered on a routine well-woman exam. Pelvic ultrasound demonstrated a 1.3 cm hypoechoic lesion in the right vaginal canal, which appeared connected to the adjacent vessels and contained turbulent blood flow. The patient was healthy and asymptomatic from the lesion, denying any history of abnormal vaginal spotting, bleeding, or dyspareunia. She also denied post-coital bleeding or recent trauma. She had four prior uncomplicated vaginal deliveries. She had a history of pelvic organ prolapse, and in 2017 she had undergone total vaginal hysterectomy, anterior and posterior colporrhaphy, enterocele repair and perineorrhaphy. Based on review of the operative report, there were no complications or unexpected intra-operative findings.

Histopathology was negative for hyperplasia, dysplasia, or malignancy.

On general physical examination, all vital signs were within normal limits and there were no abnormalities. The external genitalia and vault appeared healthy with no active bleeding. On bimanual exam, there was a 1-cm pulsatile mass palpable on the right posterior vaginal wall, without any adnexal masses noted. A CT angiogram was performed, which demonstrated a 1.2 x 1.1 x 1.2 cm vascular structure at the right vaginal wall, with arterial supply from the vaginal branch of the right internal iliac artery, and with a vaginal branch draining vein of the right internal iliac vein (**Figure 1**, **Figure 2**). There was also a varicose dilatation of the right internal iliac vein as a consequence of arteriovenous shunting. A multi-disciplinary conference was held, and plan was made for image-guided embolization with coiling of the effected vessels. The risk of bleeding due to vaginal intercourse was discussed and patient was advised to observe strict pelvic rest.

The patient proceeded to the interventional radiology suite, where arteriography demonstrated a high flow arteriovenous fistula and pseudoaneurysm involving the distal branch of the anterior division of the right internal iliac artery (**Figure 3**, **Figure 4**). Coil embolization was performed from a distal to proximal approach to exclude the pseudoaneurysm and arteriovenous fistula. Completion angiography demonstrated a preserved vaginal perfusion via ipsilateral vaginal branches in addition to cross pelvic collateral vessels, without any evidence of non-target embolization.

Discussion

The presentation of a pulsatile vaginal mass is rare and the differential diagnosis included AVM (which can be venous, lymphatic, or arterial) and vascular tumors. Here we will discuss diagnostic imaging and management of AVMs.

AVMs are divided into congenital or acquired forms. Congenital AVMs result from a defect in the differentiation of the primitive capillary plexus during fetal angiogenesis and may not be evident until childhood or early adulthood. They present at multiple anatomical sites and have multiple feeding vessels. Although the term malformation may suggest a congenital etiology, acquired AVMs develop following an inciting event, differentiating them from congenital AVMs. Prior reports have described acquired pelvic AVM formation following trauma, surgical intervention, vasculitis, radiation therapy, and malignancies involving the uterus such as trophoblastic disease. Another important difference from its congenital counterpart, is that acquired AVMs have fewer arteriovenous communications and usually involve only one site or one anatomical region.

Initial evaluation for AVMs should include an ultrasound, which will show multiple tubular anechoic or hypoechoic channels without an associated mass. Color Doppler studies demonstrate these channels to have a mosaic turbulent appearance with high velocity and low impedance [4]. One prospective study demonstrated that measurement of peak systolic velocity (PSV) on ultrasound can help guide management. A PSV of ≤ 40 cm/s identifies AVMs that are likely to regress without intervention and may be managed expectantly with periodic sonographic follow-up in patients with stable hemoglobin. A PSV > 60 cm/s indicates a more concerning AVM with a low likelihood of spontaneous regression and potential risk of significant bleeding even in a currently stable patient. AVMs with PSV between 40 and 60 cm/s may be managed with close interval sonographic follow-up in patients without excessive bleeding, as they may regress or persist. CT angiography and contrast-enhanced MRI help identify the arterial feeders and venous drainage as well as the absence of an associated mass and help aid procedural planning [1]. The gold standard for AVM imaging is Digital subtraction angiography (DSA) but this is often reserved until treatment is administered in the same setting. The angiographic characteristics of AVMs are dilatation and lengthening of afferent arteries, with early opacification of enlarged vein. In our case, non-contrast MRI had inconclusive findings. This emphasizes the importance of proper imaging to optimize time to treatment and reduce cost of care.

Schobinger's classification system divides AVMs into four stages based on symptomatology and aids clinicians in determining whether treatment is warranted. In stage I, the arteriovenous malformation is present but causes no clinical symptoms, and no treatment is warranted. In stage II there is enlargement, pulsations, palpable thrill, and enlarged arterialized tortuous/tense veins. Stage III

features dystrophic skin changes (e.g. skin ulcerations that can be nonhealing, bleeding from ulcerated skin or mucosal surfaces, overt tissue necrosis). Stage IV involves congestive cardiac failure with increased cardiac output. Depending on symptomatology and after weighing risks and benefits, treatment could start at stage II for certain patients and is indicated at stages III and IV.

Management of pelvic AVMs requires careful planning and a multidisciplinary approach with access to modern imaging technology. When treatment is indicated, the aim of interventional therapy is to target the nidus of the vascular malformations and avoidance of proximal occlusion. Flow reduction technology options include feeding vessel transsternal embolization, direct puncture or resection, venous occlusion (with coil, plug device, glue, or ethanol), venous stent graft, and bovine pericardial patch to tamponade an eroding unresectable pelvic AVM. Embolization sessions should be performed every 6 to 8 weeks until significant devascularization and clinical improvement are obtained.

Follow-up for patients with Stage I Schobinger's AVM should occur every 5 years if there is no evidence of AVM growth. Patient with Stage II should be followed every year if there is no evidence of AVM growth. Stage III and IV patients should be followed closely between embolization procedures.

Although, our patient's interim history is unknown, given that she had a major pelvic surgery in 2017 and thereafter was found to have an AVM isolated to the vaginal wall, we can propose that our patient had an acquired form of AVM. On presentation the patient was asymptomatic but with a palpable pulsatile mass, thus was determined to be stage 2. Due to the location in the vaginal wall, the risk of future hemorrhage warranted treatment.

Surgical therapy for pelvic AVMs is often more complicated due to the typically complex network of arteriovenous communications and intimate association of the abnormal vessels to critical structures within the pelvis. Attempts at surgical excision is considered a more invasive approach, and carries an increased risk for significant intraoperative hemorrhage, damage to adjacent tissues, and incomplete removal of the AVM nidus. Therefore, endovascular therapy with various embolic and sclerosing materials, independently or combined with surgical treatment, has become an accepted therapeutic option for patients with AVMs. Our patient successfully underwent IR-guided embolization of the vascular lesion.

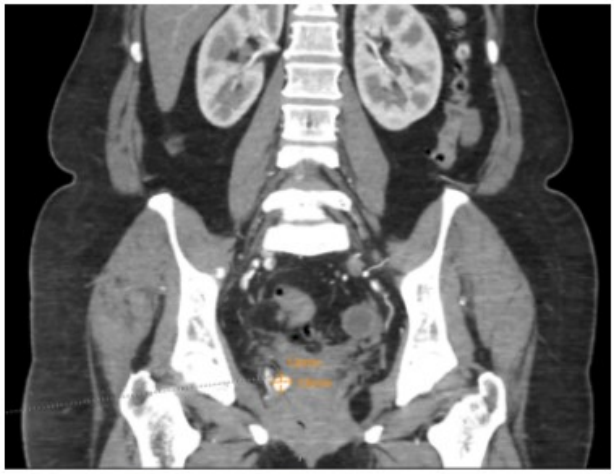


Figure SEQ Figure * ARABIC 1 *- Contrast-Enhanced CT in a coronal plane: At the right vaginal wall is a vascular structure, with arterial supply from the vaginal branch of the R-internal iliac artery, and with a vaginal branch draining vein of the R-internal iliac vein.*

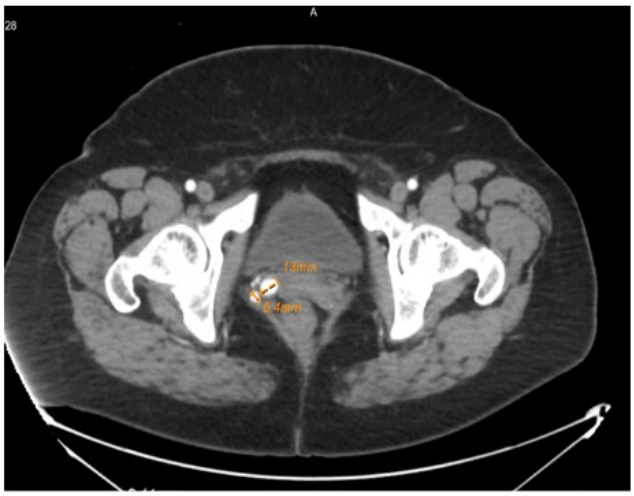


Figure SEQ Figure * ARABIC 2 *- Contrast-Enhanced CT in an axial plane: At the right vaginal wall is a vascular structure, with arterial supply from the vaginal branch of the R-internal iliac artery, and with a vaginal branch draining vein of the R-internal iliac vein.*

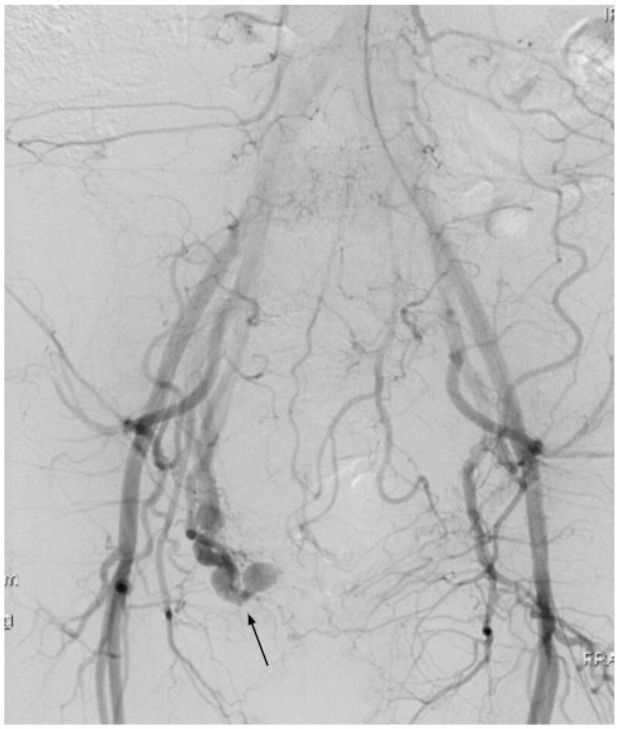


Figure SEQ Figure * ARABIC 3 - *Pelvic angiogram showing the vascular lesion (black arrow) in arterious phase injection.*

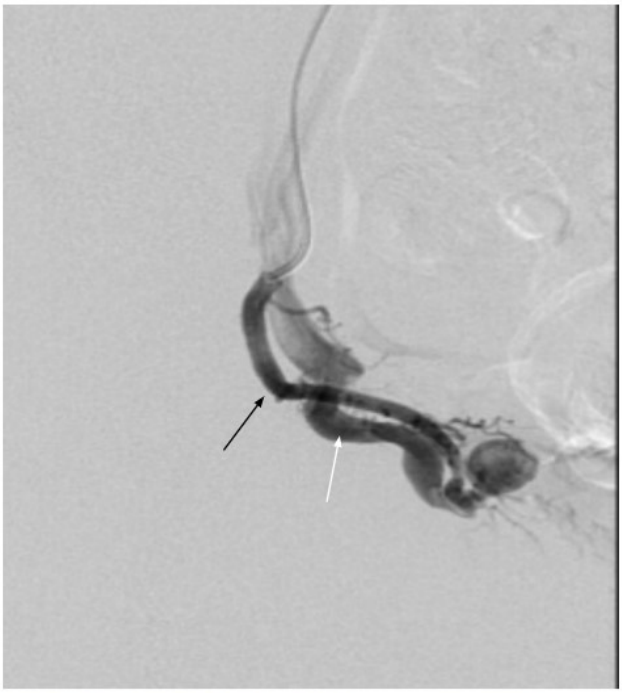
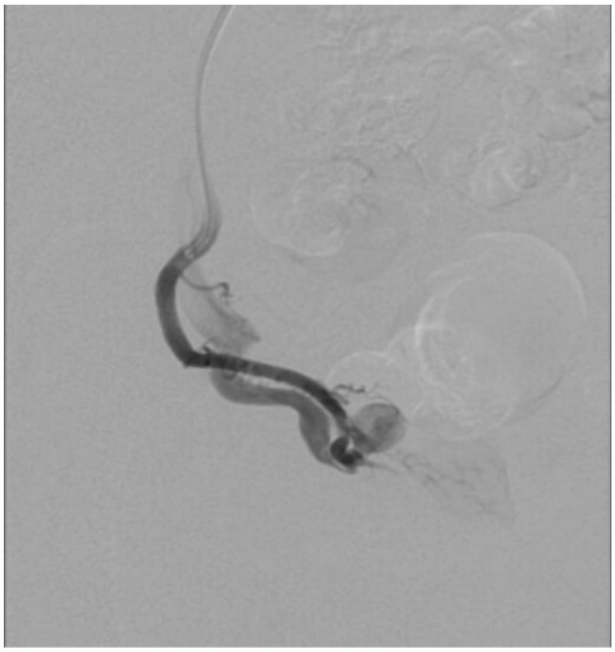
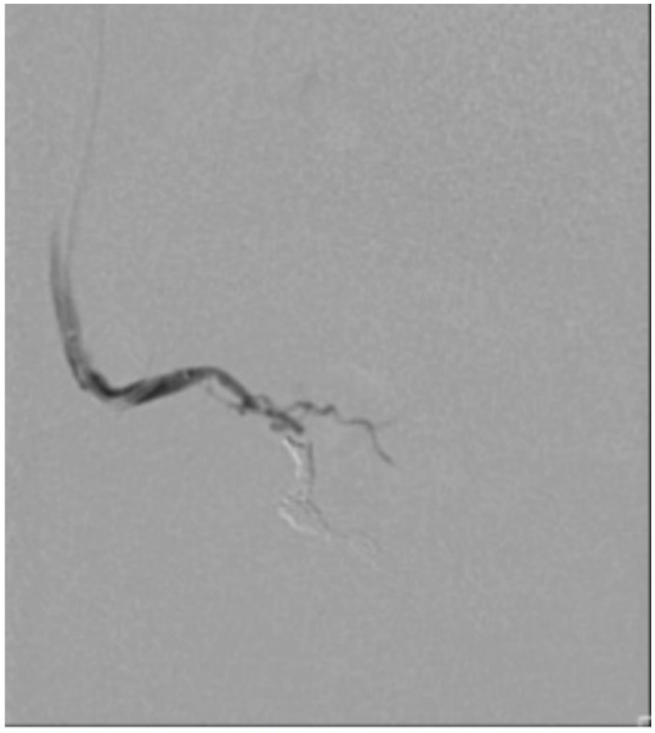


Figure SEQ Figure * ARABIC 4 - *Selective right vaginal angiography by 5Fr C2 catheterization of the anterior division of the R-internal iliac artery showing ectatic arterious vessels (black arrow) with concomitant ectatic and serpiginous direct venous outflow (white arrow).*



Video SEQ Video * ARABIC 1: *Selective right vaginal angiography by 5Fr C2 catheterization of the anterior division of the R-internal iliac artery showing ectatic arterious vessels with concomitant ectatic and serpiginous direct venous outflow.*



Video SEQ Video * ARABIC 2: *Post-embolization digital subtraction angiography demonstrating complete exclusion of the pseudoaneurysm and AVF.*

Abstract 2023-76

Eosinophilic Pneumonitis in Acute Severe Pulmonary Coccidioidomycosis

Carlos D'Assumpcao, MD; Ayham Aboeed, MD; Arash Heidari, MD

Introduction

Coccidioidal pneumonia are frequently diagnosed by bronchoscopy when seeking a diagnosis for severe chronic pneumonia. However, eosinophilic pneumonitis based on bronchoalveolar lavage fluid analysis in pulmonary coccidioidal infection has not been reported as widely in the literature. We describe a case acute severe pulmonary coccidioidomycosis with eosinophilic pneumonitis on fluid analysis of bronchoalveolar lavage.

Case Presentation

33-year-old Eastern Indian male presented with two weeks of subjective fevers, dyspnea, cough with yellow sputum and fatigue. He works as a cook and caterer and was attending an outdoor party prior to symptom onset.

On presentation he required 4L supplemental oxygen. Imaging found diffuse micronodular/ground glass airspace disease on both lungs with profound peripheral eosinophilia 10500/mcl. Bronchoalveolar lavage fluid analysis found 64% eosinophils among 1883 total nucleated cells. IgE level was 3534 kU/L. Bronchoscopy cultures grew *Coccidioides immitis*. Steroids were held until bronchoalveolar lavage found no evidence of *Strongyloides stercoralis* due to patient's travel history. Anti-tuberculosis medications were also started due to patient's travel history until respiratory cultures were negative for tuberculosis at 8 weeks. He was started on liposomal amphotericin B for one month with prednisone taper 21 day taper due to hypoxia and then transitioned to fluconazole 800mg daily. Interestingly, coccidioidal immunodiffusion IgM and IgG were weakly reactive and complement fixation titers were <1:2 at presentation, at one month, and at three-month follow up.

Discussion and Conclusion

Patient had significant eosinophilic response to coccidioidal infection in the form of eosinophilia in the periphery and in the lungs. It is likely both the fungal infection and the eosinophilic response contributed to the severity of his acute pulmonary coccidioidomycosis. Complement fixation titers did not correlate with disease severity. Physicians should be aware of coccidioidomycosis as a cause of eosinophilic pneumonitis.

Abstract 2023-77

The Effect of Simulation-Based Medical Education on Knowledge, Skills, and Attitudes of Medical Students and First-Year Residents Rotating in the Trauma Surgery Department at Kern Medical

Andrew Townsend, MS IV; Simran Ghuman, RA; Charles Anderson, MD; Maria Jose Araujo, MD; Laquanda Knowlin, MD; Amber Jones, DO; Sage Wexner, MD

Introduction

Professional identity formation (PIF) is a crucial element for the process in which a medical student transitions to becoming a physician. A challenge that many students have in developing their PIF is having the opportunity to set foot in a leading role where they can diagnose and manage their patient on their own, especially in roles that require more knowledge and skills such as a trauma surgery case. Due to safety and ethical reasons, a student or inexperienced intern is not placed into such a position with high-risk consequences. However, there is a need to bridge the gap between inexperience and professional identity. One pathway to develop this professional identity that is becoming more common is through simulation of medical cases. Simulation studies have proven to be effective in improving the knowledge, skills, and attitude (KSA) of physicians-in-training.

Purpose of the Study

The aim of this study is to investigate the effects of simulation-based medical education (SBME) on the knowledge, skills, and attitudes (KSA) of junior surgical team members (medical students, intern physicians). As opposed to students with limited exposure to SBME, we expect that students with greater exposure to SBME exhibit a greater improvement in knowledge, skills, and professional identity formation.

Methods Used

This is a mixed-methods, single-blinded cohort study. As part of a Surgery core clerkship or trauma rotation, junior learners were invited to take part in a curriculum that features simulation, book and article reading, and the

typical clinical experiences gained by taking part in a clinical surgical rotation. Participants were enrolled on a voluntary basis and randomly assigned into the control and intervention groups. Both the control and intervention groups completed an online knowledge assessment, simulation (skills), and online survey (attitudes) at the beginning and end of the rotation. 40 ATLS-style questions were used for the knowledge assessment, and 16 questions from the validated Patient Care Ownership Scale were used to evaluate changes in professional identity formation (Djulbegovic, Beckstead, & Fraenkel, 2019). The intervention group took part in a simulation in the middle of the rotation, while the control group was given reading materials on trauma resuscitations. Simulations were evaluated by a panel of 3-5 assessors for completion of critical actions.

All data collection followed IRB protocols. Surveys and assessments were stripped of identifiers. Participants were assigned numbered codes to link results between pre- and post- exams, surveys, and performance in simulation. Minimal risk was involved.

Expected Results

Preliminary data analysis shows an improvement in skills (simulation) and attitudes (professional identity formation) in the intervention group compared to the control group. Assessment of changes in knowledge (written exam) are pending larger cohort analysis. At the conclusion of this study, we expect learners who received additional simulation experience will demonstrate an improvement in knowledge, skills and attitudes compared to learners who received regular educational materials on trauma resuscitations.

Discussion/Conclusion

In their meta-analysis of Simulation-based trauma education (SBTE), Borggreve (2017) noted that medical students often do not feel prepared to manage emergency situations after graduation; however, found evidence that SBTE appears to be an effective, useful and enjoyable method to prepare medical students for trauma resuscitation. The results of this study will show if incorporating SBME will improve the quality of medical education offered at Kern Medical, as evidenced by an improvement in knowledge, skills, and attitudes in the intervention group. Findings can be extrapolated to inform curriculum development for the Surgery core clerkship, as well as other clerkships such as Emergency Medicine, Internal Medicine, and more.

Abstract 2023-78

Treatment Refractory Catatonia in a Community Hospital Setting without Access to Electroconvulsive Therapy

Shahzeb Shaheen, MD; Tyler Torrico, MD; Ranjit Padhy, MD; Towhid Salam, MD, PhD

Introduction

Catatonia is a psychomotor syndrome resulting from an underlying psychiatric or medical disorder commonly observed in inpatient psychiatric units. While benzodiazepines and electroconvulsive therapy (ECT) are effective treatment options, the unavailability of ECT in many community psychiatric hospitals in the United States negatively affects patient outcomes.

Case Presentation

A 25-year-old African American male with a psychiatric diagnosis of schizophrenia complicated by malignant catatonia was admitted to a community psychiatric hospital. He required intensive medical stabilization with supportive management, and transfer requests to ECT-equipped hospitals were initiated. While awaiting transfer for 148 days, the patient's symptoms did not fully remit with lorazepam (even with 36mg daily in divided doses) and other psychotropic medication trials, including antipsychotics and mood stabilizers. After nearly five months of inpatient stay, he was successfully transferred, received ECT treatment, and experienced rapid resolution of catatonia. After discharge, to obtain three monthly sessions of maintenance ECT, he had 5-hour one-way ground transportation arranged to an out-of-county ECT-equipped facility. There was no relapse in catatonia by the 2-year follow-up.

Discussion

This report highlights a significant healthcare disparity when attempting to manage severe catatonia within community hospital settings without access to ECT in the United States. Alternative treatments, including antipsychotics, had minimal impact on symptoms and possibly increased morbidity in this case while awaiting ECT. There remains an opportunity to improve access to appropriate and evidenced-based psychiatric treatments, specifically with ECT, as many patients with severe

mental illness and catatonia would benefit from such access to this treatment modality.

Community psychiatrists, without the ability to administer or quickly transfer patients for ECT, are placed in difficult situations balancing clinical obligations to help patients, recognizing system-based resource limitations, and watching their patients experience health care disparity. This case report suggests that aripiprazole may have less risk of converting catatonic patients to malignant catatonia than other antipsychotics. Additionally, lorazepam 36mg daily could not successfully treat catatonia in this patient, whereas ECT could, and attempts to deliver maintenance ECT revealed further treatment barriers in the community setting.

Conclusion

This case highlights the urgent need for ECT availability in more community hospitals to treat patients with refractory conditions, including catatonia.

Abstract 2023-79

IO Challenge: Learning Intraosseous Insertion with a 3D Model

Stephanie C. Garcia, MD; William Naworski, MS II; Sage Wexner, MD

Introduction

Intraosseous (IO) insertions for rapid resuscitation can be a life-saving skill to have in an emergent, urgent or medically necessary situation when intravenous (IV) access is unobtainable. There is a policy in effect at Kern Medical that permits medical students to perform IO insertions in the proximal tibia. Using this as a foundation, the IO Challenge was created to use gamification to teach learners how to place an IO using a reasonably priced 3D printed tibia model with changeable inserts.

Purpose of the Study

The purpose of this report is to determine if the gamification of IO insertions is enjoyable and useful based on Kirkpatrick's hierarchy in teaching IO techniques to learners in simulation based medical education (SBME).

Methods Used

This is a mixed methods study. Medical students rotating at Kern Medical were invited to participate on a voluntary basis. Prior to training on the model, learners completed an online pre-test to introduce learners to IO insertions and examine baseline knowledge regarding the procedure. Then, learners were invited to participate in an in-person training that follows a modified Walker-Peyton four-step approach: (1) a procedural run through with a standardized checklist, which allows learners to recap the steps; (2) verbalization of the steps by the learner, which incorporates innovative knowledge into existing knowledge; (3) a trial of IO placement in a game setting under a five-minute timer to simulate procedural pressure. Then, learners were asked to complete an online post-test to examine knowledge acquisition of the skills taught during the training session. Lastly, learners were asked to fill out a brief feedback survey to determine the enjoyability and usefulness of the training session.

Expected Results

A preliminary analysis of results shows a knowledge improvement of twenty-five percent between pre- and post- assessments. Verbal and digital feedback overall have indicated a positive response to the IO challenge. Representative quotes are as follows:

"I appreciated the step-by-step instruction on how to complete this procedure. I feel better prepared should I need to do this procedure in the future."

"n/a- very streamlined approach to teaching a skill in a fun and efficient manner!"

"Very fun and informative practice. Stephanie was a great instructor and explained things clearly. It would be great for medical students to get this kind of experience early on during their clerkships."

Although more data is required for quantitative analysis, results indicate that the IO Challenge may be effective in improving knowledge acquisition, memory retention, and motivation to learn through gamification.

Discussion & Conclusion

Gamification may be a useful educational tool to improve motivation to learn step-by-step procedures, like intraosseous insertion. We aim to recruit and enroll 150 or more learners to look for significant changes in knowledge acquisition before and after training on the IO challenge. To help meet this aim, we have expanded this study and partnered with Texas Christian University.

Abstract 2023-80

DRESS Syndrome During the Drug Consolidation Phase for Treatment of Adult B-Cell ALL

Marah Sukkar, MD; Mary Lourdes Erlichman, MS III; Rohini Bilagi, MD; Theodore Chun, MD; Thomas Magurany, MS III; Wendy Collins, MS III; Baldeep Mann, MD

Introduction

Drug reaction with eosinophilia and systemic symptoms (DRESS) syndrome is a rare but known disease that can occur with commonly used medications. First discovered to be associated antiepileptic medications but now DRESS syndrome has been found to be associated with numerous medications. This report presents DRESS syndrome diagnosed in a 27-year-old man on consolidation therapy with methotrexate for B cell Acute lymphoblastic Lymphoma (ALL).

Case Presentation

A 27-year-old Hispanic male presented with hematemesis and a diffuse rash that began 3 days prior to presentation. He had recently received consolidated chemotherapy with methotrexate and leucovorin (folinic acid/ 5-formyl derivative of tetrahydrofolic acid) for B-cell ALL diagnosed 6 months prior. The patient had been taking allopurinol since his diagnosis with B-cell ALL and had tolerated induction therapy with no adverse reactions. His symptoms included a diffuse spreading pruritic maculopapular rash with small erosions on scalp, retroauricular folds, flexural aspect of neck, and upper back, oro-genital mucosal erosions, violaceous macular hyperpigmentation of face and neck, anterior and posterior cervical lymphadenopathy, and scattered petechiae on trunk. His last treatment of Methotrexate with leucovorin ended 3 days prior to symptom onset. He was admitted for suspected epidermal necrosis due to methotrexate idiosyncratic adverse drug reaction and started on intravenous leucovorin. The patient developed a fever with a pancytopenia and was treated with neupogen, platelet and whole blood transfusions. His fevers were unresponsive to acetaminophen and his absolute neutrophil count (ANC) dropped to 200. He was started on vancomycin and piperacillin-tazobactam for an empirical coverage of neutropenic fever. Methotrexate level drawn on the day of presentation was < 0.2 which indicated normal levels. Despite treatment with leucovorin the patient's condition was not improving. The combination of eosinophilia 45%, mucocutaneous erosions, cervical lymphadenopathy and skin color changes along with lack of improvement led to the consideration of DRESS syndrome. Patient was then started on dexamethasone with rapid improvement of his symptoms and allopurinol was held as it's a common cause of DRESS as well. Regiscar score was calculated as 4 points, a probable case of DRESS.

Discussion

DRESS syndrome is a rare drug related adverse effect. Due to the longevity of already tolerated treatment with allopurinol, methotrexate was considered a more likely cause, though both methotrexate and allopurinol can be considered as culprit drugs in this case. Methotrexate has been recorded as a very rare cause of DRESS syndrome. It is critical to recognize DRESS associated with methotrexate use that can be masked by epidermal necrosis (presents with only mucocutaneous erosions), a type of idiosyncratic serious adverse drug reaction commonly linked with methotrexate. The treatment of epidermal necrosis is conservative, but DRESS needs treatment with systemic glucocorticoids.

Conclusion

This case presentation emphasizes the significance of recognition of DRESS in the presence of important clues such as fever, lymphadenopathy, peripheral eosinophilia and pruritus as opposed to epidermal necrosis associated with methotrexate. Early usage of systemic steroids is vital in the management of DRESS and holding systemic glucocorticoids can be lethal.

Abstract 2023-81

Plasmablastic Lymphoma in a HIV Negative Patient

Shikha Mishra, MD; Elaine Deemer, DO; Mahum Zahid, MD; Alinor Mezinord, MS III; Sagar Mehta, MS III; Genaro Morales, MS III

Introduction

Plasmablastic lymphoma (PBL) is a rare and highly aggressive subtype of diffuse large B-cell lymphoma. It typically affects the oral mucosa, gastrointestinal system, lymph nodes, and skin, often associated with immunosuppression, particularly in HIV patients. Interestingly, PBL tends to occur more frequently in male HIV-positive patients, or in female HIV-negative patients. We report a unique case of PBL diagnosed in a HIV-negative, immunocompetent male. These patients have poor response to chemotherapy and shorter survival compared to HIV-positive patients, surviving 9 months versus 14 months. Early diagnosis and treatment are critical in improving the prognosis for patients with plasmablastic lymphoma.

Case Description

Patient is a 57-year-old man presented to our hospital for increased swelling and redness of the left face post resection of a fungating mass at the left maxillary area by maxillofacial surgeon 1 month prior to admission.
In the Emergency Room (ER), Vitals were stable, physical exam revealed poor dentition, left upper mandible swelling around molars with pus-like drainage, without blood. Molar appeared split down middle. Labs were significant for leukocytosis of 17.6, hemoglobin of 6.3, uric acid of 14, blood urea nitrogen of 145 and creatinine of 18.7. Started on intravenous ampicillin-sulbactam for cellulitis over the surgical area. Magnetic resonance imaging (MRI) demonstrated opacification of left maxillary, ethmoid, sphenoid sinuses extending from left zygomatic arch to left mandible regions.

Pathology was consistent with plasmablastic lymphoma and negative for CD20, CD56, BCL-1, HHV-8, EBV ISH and positive for CD138, MUM1, ALK, Ki-67, c-myc. HIV was negative. AKI was secondary to light chain deposition related to malignancy with SPEP showing m-spike of gamma globulin, uric acid resolved with rasburicase. The patient underwent successful placement of a right internal jugular Port-a-cath and was eventually transported to HLOC.

Discussion

Plasmablastic Lymphoma (PBL) is a rare subtype of diffuse large B-cell lymphoma characterized by the proliferation of large, abnormal plasma cells. Normally associated with immunosuppression, particularly in HIV(+) patients. PBL commonly affects the oral cavity, gastrointestinal tract and lymph nodes but can involve other organs. Additionally, PBL has been found to cause kidney injury through multiple mechanisms, including paraproteinemia, hypercalcemia, immune mediated glomerulonephritis, and amyloidosis.

The case of a HIV(-), immunocompetent male with PBL is a unique presentation, as this type of lymphoma is typically seen in patients with HIV or other forms of immunosuppression. However, there have been a few reported cases in HIV(-) patients, suggesting that other factors are involved in the development of this lymphoma.

It's been suggested that chronic inflammation and immune dysregulation may play a role in the pathogenesis of PBL in HIV(-) patients. One study found those with PBL had higher levels of inflammatory cytokines compared to healthy controls, suggesting that chronic inflammation may contribute to development of lymphoma.

Early diagnosis and treatment are critical in improving the prognosis for patients with PBL. The standard treatment for PBL is combination chemotherapy with regimens used for other types of non-Hodgkin lymphoma. Stem cell transplantation may also be considered in select cases.

Abstract 2023-82

Effectiveness of Empowering Behavior Health Patients to be Participants in their Treatment

Kori Gomez, RN; Guadalupe Trevino, RN

A review of the effectiveness of empowering Kern Medical Behavioral Health patients involuntarily detained for grave disability and/or danger to others to decrease

length of hospitalization by being active participants in their treatment.

PICOT question

For involuntarily detained patients that are gravely disabled and/or a danger to others hospitalized on the Behavioral Health Unit, how does empowering them to set daily goals related to activities of daily living, dietary intake, therapeutic group participation and involvement with treatment planning affect the length of hospitalization for patients hospitalized after March 1, 2023. Comparing lengths of hospitalization from May 1, 2022 to March 1, 2023 to lengths of hospitalization post March 1, 2023 after patients were actively encouraged and empowered to set daily goals related to activities of daily living, dietary intake, therapeutic group participation and involvement are explored. A review of the literature on patient health engagement and the length of hospitalization was completed and this project explores whether active participation in treatment results in a decreased length of hospitalization.

Abstract 2023-85
Increasing Hand Hygiene Effectiveness
Vanessa Coria, RN; Vianey Rodriguez Espinoza, RN; Jasmine Rodriguez, RN; Nathalin Xutuc, RN; Clarissa Nieto, RN; Brytni Cook, RN; Nina Walker, RN

The NICU's patient population consists mainly of low birth weights and premature birth dates. The patient population is fragile and do not have health defenses developed to protect from nosocomial infections. These infections are associated with a high mortality and morbidity. Proper hand hygiene is recognized as the single most effect way to prevent the spread of diseases. Heath care workers contaminated hands are related to the spread of microorganisms in the hospital setting. The amount of opportunities for proper hand hygiene in the hospital setting are abundant, up to 100 times per day according to the CDC. Hand hygiene should not only be defined as the number of times completed but also the effectiveness of the result. Effectiveness is achieved using hospital approved solutions, friction, nail etiquette, to name a few. Nosocomial infections can be prevented with proper hand hygiene being a main focus of all health working staff, including non-clinical personnel. The NICU's data for the month of February 2023 shows zero compliance. February 2023 will be used as a baseline. A hand hygiene investigation was completed and the results showed staff were not following the proper hand hygiene process. The NICU team, has decided to improve these scores with education on the proper process of hand hygiene. This education will reach all persons welcomed into the NICU including bedside staff, multidisciplinary teams and non-clinical personnel. The education will include verbal communication of the hand hygiene policy and procedure, along with updating posted signs. An evaluation will be performed after two months of implementation of reeducation to evaluate the effectiveness with a goal of 100% compliance.

Abstract 2023-86
Gartner Duct Cyst in Pregnancy Posing as Inevitable Abortion: A Case Report
Timiiye Yomi, MD; Verna Marquez, MD; Hannah Haughn, OMS III; Krustina Lal, OMS III; Jennifer Lai, OMSIII

Introduction

Gartner duct cysts are remnants of the mesonephric that form as a result of the dilatation of an imperfectly obliterated mesonephric duct. They are typically benign, small with an average diameter of 2 cm, asymptomatic and rarely seen in adulthood. When present in pregnancy, the main stay of treatment is surgery for large and symptomatic cysts. We describe the case of a 35-year-old G4P3 who presented at our clinic with a Gartner duct cyst masquerading as inevitable abortion at 8 weeks gestation.

Case presentation

Our patient was a 35-year-old G4P3 Hispanic woman who presented at our clinic for hospital discharge follow up after being diagnosed with an inevitable abortion at 8 weeks gestation. Patient had initially presented to the ER of another facility complaining of intermittent mild sensation of pressure in her vagina. Pregnancy test was positive and following evaluation, she was diagnosed with an inevitable abortion. However, upon presentation at our clinic, vaginal examination revealed a large purple mass in the vagina. Cervix was closed and patient had no signs of active bleeding. A transvaginal US was done which confirmed a viable intrauterine pregnancy at 8 weeks, and the presence of a mass in the posterior vagina. Patient was referred to MFM for specialist evaluation and was determined to have a Gartner duct

cyst originating from the vaginal vault posterior to the cervix (Figure 1). It was agreed that the most appropriate course of treatment was expectant management.

Discussion

Gartner duct cysts have been reported in studies to mimic vaginal prolapses/cystoceles. While cases in these studies presented in the third trimester, our patient presented at 8 weeks, masquerading as an inevitable abortion. Evaluation via vaginal exam and transvaginal ultrasound confirmed a Gartner duct cyst. Surgical excision remains the mainstay of treatment for symptomatic and large cysts. The decision to manage our patient expectantly was made as patient's symptoms were not constant with cyst shrinkage as pregnancy advanced. Salete et al in a 2016 case series report stated this can be a safe option for asymptomatic patients. We recommend that Gartner duct cyst be considered as a differential in patients presenting in early first trimester with symptoms suggestive of inevitable abortion.

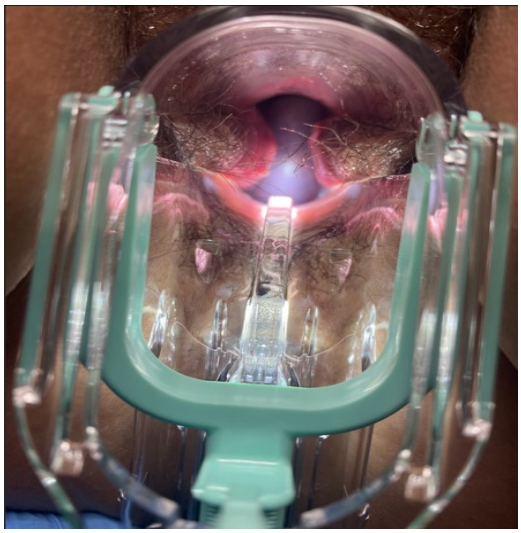


Figure 1. Gartner duct cyst posterior to the cervix originating at the vaginal vault.

Conclusion

Overall, the case described above helps guide identification of cyst early in pregnancy as well as management of Gartner duct cysts through pregnancy. A Gartner duct cyst should be considered in pregnant patients presenting with prolapsing pelvic mass or findings suggesting an inevitable abortion.

Abstract 2023-88

A Rare Case of Hepatocellular Carcinoma Presenting as Atraumatic Hip Pain

Cheyenne McKee, MS III; Isabelo Bustamante, MD; Michael Eagan, MD

Introduction

Hepatocellular carcinoma (HCC) is a common malignancy in the United States, tripling in incidence over the past four decades. Dietary aflatoxin, alcohol use and hepatitis B and C are common causes of HCC. The most frequent sites of metastasis are the lungs and regional lymph nodes and initial presentation as bone pain due to bony metastasis is rare and has been reported to occur in less than 1% of patients. When bony disease is present the most common locations are the spine, pelvis, ribs and skull. Here, we present a rare case of a patient initially presenting with hip pain and metastatic HCC to the proximal femur requiring prophylactic nailing. Surgical disturbance of the lesion was complicated by significant unexpected hemorrhage, which may be of interest to surgeons managing such patients.

Case description

This is a 66-year-old male farmer with diabetes mellitus, hypertension, hyperlipidemia, and previously treated hepatitis C who was referred to the orthopedic clinic at our institution for complaints of new onset left hip pain that began while riding a tractor. Initial radiographic exam revealed a small avulsion fracture of the lesser trochanter and subsequent computed tomography (CT) of the left femur with contrast revealed a lytic lesion in the inferior aspect of the femoral neck with an associated soft tissue mass. Needle biopsy of the soft tissue component was consistent with carcinoma and CT scan of the abdomen and pelvis with contrast showed multiple masses within the liver and underlying cirrhosis. Alpha fetoprotein level was 8,918. A diagnosis of Hepatocellular Carcinoma, Stage IV was made. Risk of pathologic proximal femur fracture was calculated using the scoring system described by Mirels, and the patient was indicated for prophylactic femoral nailing. Intraoperatively, rapid high-volume bleeding was noted upon initially disrupting the lesion with the femoral reamer, requiring immediate bone and wound packing and transfusion. The patient received 500cc of packed red blood cells and 250cc of fresh frozen plasma and

blood loss diminished after prolonged packing. He was subsequently discharged with a plan for postoperative radiation and immunotherapy treatment.

Discussion

The most common site of metastasis of all cancers is bone, but in HCC it is estimated to occur in just 3-20% of patients, and only a small proportion of these involve the proximal femur. The literature has very few reports of significant bleeding from these lesions and to our knowledge it has never been reported during prophylactic femoral nailing. Vascular endothelial growth factor (VEGF) has been shown to play a role in the pathogenesis of HCC, and this may explain the highly vascular nature of the lesion that we encountered.

Conclusion

With increasing incidence of HCC, more orthopedic surgeons are likely to encounter undiagnosed patients presenting for musculoskeletal complaints due to metastasis. Knowledge of appropriate preoperative evaluation is necessary to successfully treat these patients, and we hope that this case report provides useful information for surgeons who may encounter patients like ours.

Abstract 2023-89

A Case Report of Suspected Polyglandular Autoimmune Syndrome II Schmidt's Disease

Jesslin Abraham, MD; Valerie Espinoza, MD; Sevak Nersesyans, MS IV; Greti Petersen, MD; Arash Heidari, MD

Introduction

Polyglandular Autoimmune diseases (PGA) is a multifactorial condition characterized by association with at least two or more organ specific autoimmune endocrinopathies. There are two main types: PGA type I and type II. PGA type I is more commonly diagnosed in childhood, whereas PGA type II is more common in women and in the third and fourth decade of life. Adult type PGAD II is a subtype of the disease which is more common in females and involves the adrenals and thyroid mainly. Here we present a case of suspected PGAD type II in a female.

Case Presentation

Pt is a 33-year-old Hispanic female w history of left ureteral stenting 1 year ago, who presented to ED for dysuria and left abdominal/left flank pain. Patient was diagnosed with emphysematous pyelonephritis and was discharged with nephrostomy tube placed.

During this hospitalization, labs revealed TSH <0.008 with free T4 of 1.9. Upon further questioning, it was revealed that patient was recently diagnosed with hyperthyroidism, when she presented to ED few months ago complaining of palpitations. Patient was not able to comment further on what workup was done at the hospital but was discharged with Methimazole 5mg three times daily. US of the thyroid was obtained which showed prominent, heterogeneous, nodular thyroid with bilateral multiple nodules as above. Dominant nodule in left lobe appears moderately suspicious. After consulting with endocrinologist, patient was diagnosed with hyperthyroidism and was continued on Methimazole 5mg three times daily. Further workup also revealed patient had elevated Thyroid Stimulating Ig (TSI) to 281 and elevated TSH Receptor Antibody (TRAB) to 5.41.

Furthermore, patient was persistently found to have low blood pressure with a low MAP. However, patient was perfusing adequately given lack of evidence of end organ damage. Patient was asymptomatic throughout the hospitalization. All other causes of hypotension were ruled out including hypovolemia, acute blood loss, and cardiogenic. In addition, patient was also persistently hypoglycemic on daily labs. Adrenal insufficiency was considered and am cortisol was ordered. Am cortisol returned at 20, however, the blood was collected past 0900 am. A random cortisol level was drawn which came back 11.5. Patient was discharged before further work up could be done. Patient is pending cosyntropin study currently and an endocrinologist appointment for further work up.

Discussion

This patient had evidence of both thyroid dysfunction and possible Addison's disease given hypotension and hypoglycemia. Although diagnosis is not confirmed at this time, PAG type II should be considered in this patient and further work up needs to be completed.

Conclusion

Schmidt's syndrome is a subtype of PGA type II, which is a rare auto immune disorder. When multiple endocrine gland dysfunction is present or suspected polyglandular autoimmune (PGA) syndromes should be considered.

Abstract 2023-90

A Case Report on Diabetic Lumbosacral Plexopathy

Kevin Dao, MD; Leepakshi Johar, OMS III; Jesslin Abraham, MD; Cesar Aranguri, MD; Matthew Clarke, MD; Hari Kunhi Veedu, MD; Britney Ly, RA

Introduction

Diabetic lumbosacral radiculoplexus neuropathy (DLSRPN) is a type of proximal diabetic neuropathy caused by a variety of mechanisms. It is a very rare and is normally a disease of exclusion characterized by neuropathy, autonomic dysfunction and in some cases weight loss. Here we present a case of a 50 yr male who presented with DLSRPN.

Case Presentation

50-year-old Caucasian male with a past medical history of type 2 diabetes, perineal abscess, and bilateral lower and upper extremity weakness with pain who comes into the ED following a neurology clinic visit. A stat lumbar puncture was requested by the neurology clinic as well as treatment with IVIG 400 mg/kg/day due to possible Guillain-Barré syndrome. Patient had been going to a neurologist due to a progressive bilateral LE weakness, starting with his left leg and slowly progressing to his right. Upper extremity weakness followed. His symptoms had worsened, requiring the use of a wheelchair. He experienced approximately 60 lbs. weight loss and increased fatigue. He denied any bladder or bowel symptoms.

Vitals were stable, and a physical exam revealed mildly atrophic bilateral lower extremities. Further examination revealed that the bilateral upper extremities were +4/5 in terms of motor functions, and the bilateral lower extremities had impaired sensation with +3/5. Both proximal and distal muscle groups had limited range of motion due to pain. Deep tendon reflexes were absent in both the bilateral upper and lower extremities.

Patients' CBC, autoimmune titers and urine toxicology screen were unremarkable. HbA1c was 6.5 % with a glucose level of 151 mg/dL. An X-ray of the chest showed no evidence of active cardiopulmonary disease. A lumbosacral spine X-ray showed no evidence of fractures. MRI of the pelvis demonstrated increased signal in the paraspinal muscle and bilateral abductor muscles. CSF findings showed slightly elevated glucose levels of 84 mg/dL and an elevated protein level of 148 mg/dL. Prior EMG findings revealed moderate to severe active denervation in the bilateral tibialis anterior, peroneus longus, and left vastus medialis, with no recruitment. Minimal recruitment was noted in the left rectus femoris, with moderate chronic denervation in the bilateral gastrocnemius and right vastus medialis.

Diagnosis of DLSRPN was made with initiation of gabapentin (1200 mg TID) for the management of his bilateral leg pain and continuation of IVIG treatment for 5 days. Physical therapy was continued with noticeable improvement. Patient was discharged home with mycophenolate mofetil 250 mg BID and an outpatient neurology follow-up.

Discussion

DLSRPN is typically diagnosed by exclusion of other diseases. It has a nonspecific clinical presentation. The incidence of DLRPN is 2.79 per 100,000 people per year affecting 1 % of diabetic patients. Regardless, physicians should be aware of how to recognize and treat this disease. A detailed history and physical with appropriate lab analysis and imaging studies will assist in narrowing the differential.

Conclusion

Treatment goals of DLRPN involve alleviating the neurological symptoms. DLRPN patients improve but restoration of full function is not always observed.

Abstract 2023-91

Hemoglobin Rothschild: A Low Oxygen Affinity Hemoglobinopathy

Akriti Chaudhry, MD; Rupam Sharma, MD; Ayham Aboeed, MD; Everardo Cobos, MD

Purpose

Hemoglobin is an important chemical structure, consisting of two alpha and two beta chains forming a tetramer, that delivers oxygen throughout our body's tissues. Mutations can occur on these alpha chains that impact hemoglobin's oxygen affinity. Herein presented is a rare case of hemoglobin Rothschild of hemoglobin Rothschild seen at our institution for the first time.

Methods

This study was approved by the Institutional Review Board of Kern Medical. A retrospective review of both the patient's record was performed. Literature search was conducted on PubMed and Google Scholar. The following search terms were applied: rothschild variant, hemoglobinopathies and oxygen affinities.

Summary of Results

41-year-old male presented to our clinic with a low pulse oxygen level. He was seen during a routine follow-up and was found to have continued pulse oximetry level ranging from 82-88%. Patient denied any symptoms of cough, fever, chest pain and shortness of breath. Patient was found to have an arterial oxygen level of 94, and continued pulse oximetry level of 82. He explained that his mother has hemoglobin rothschild and sickle cell trait. A complete blood count was done that showed a normal hemoglobin and hematocrit level. His methemoglobin level was normal. Hemoglobin electrophoresis was completed that showed Hemoglobin of 52%, and 42.9% of an unknown beta globin variant. Patient's p50 was 55.0 mm Hg suggesting a low affinity hemoglobinopathy. Beta globulin gene sequencing was positive for hemoglobin Rothschild variant.

Conclusions

In summary, low SpO2 values in asymptomatic patients without clinical evidence of hypoxia should raise suspicion of a hemoglobinopathy with decreased oxygen affinity. Unnecessary tests and prompt diagnostic methods are further warranted.

Abstract 2023-92
Mediastinal and Pericardial Coccidioidomycosis
Carlos D'Assumpcao, MD; Arash Heidari, MD

Introduction

Dissemination of coccidioidal infection to mediastinum and pericardium is rare. We report a case of mediastinal and pericardial coccidioidomycosis in a 31-year-old Hispanic male without underlying immunodeficiency or steroid exposure.

Case Presentation

31-year-old Hispanic male without any previous medical diagnosis had three months of 32 lbs. weight loss and overall fatigue.He was diagnosed with coccidioidomycosis three months prior at an outside institution and was prescribed fluconazole 200mg twice a day as well as ferrous sulfate 325mg for anemia. Two months later, he continued to have a fever and persistent cough. Repeat chest imaging found pericardial effusion with a large right paramediastinal mass measuring 5cm x 3cm. He also had multiple enlarged paratracheal, retrotracheal, and infra-carinal effusions. He was sent to our institution for a higher level of care.

A cardiac echocardiogram found a reduced ejection fraction of 45% without tamponade. Coccidioidal complement fixation titer was 1:128. Mediastinal biopsy grew *Coccidioides immitis*. Pathology found necrotizing granulomatous inflammation with spherules with endospores. Peripheral eosinophilia was 900/MCL. He was started on liposomal amphotericin B and completed a 3-month course. He transitioned to fluconazole 800mg daily. Coccidioidal complement fixation titer at azole transition was >1:512. A follow-up echocardiogram is scheduled.

Discussion and Conclusion

Mediastinal and pericardial dissemination of coccidioidomycosis is rare, especially without underlying immunocompromising conditions. Iron replacement in setting of active fungal infection is generally discouraged.

Abstract 2023-93
A Rapidly Enlarging Uterine Mass: A Case Report of an Unusual Presentation of a Uterine Adenomyoma
Kajal Patel, MS III; Arian Ashrafi, MS III; Nicole Nikolov, MS III; Sudha Ranganathan, MD

Introduction

Adenomyosis is caused by the proliferation of endometrial glands from the decidua basalis in the myometrium. This pathophysiological presentation can extend to all uterine structures, including fibroids, polyps, and the cervix. Adenomyosis can also present focally as adenomyoma with endometrioid-type glands proliferating in an isolated segment of the uterine myometrium.

Case Presentation

This patient was a 44-year-old woman with a two-year history of abnormal uterine bleeding, abdominal pain, and anemia. The patient was initially diagnosed with a 1.2 cm pedunculated polyp from the uterine fundus via ultrasound. One year later, she received a Pap smear at which time no abnormalities in her vaginal canal were noted. 3 months later, the patient completed work-up for abnormal uterine bleeding, including a endometrial biopsy that found benign endometrial tissue. 4 months after that, she received an abdominal MRI that showed a 7.3 cm x 4.3 cm mass that had prolapsed through the cervical os and filled the upper two-thirds of her vaginal canal, abutting the anterior wall of the rectum, which was suspicious for cancer. The patient was subsequently referred for a gynecology-oncology appointment. Her physical exam revealed a mass with smooth edges and no adhesion to the vaginal wall.

Differential diagnoses included leiomyoma, endometrial polyp, and endometrial cancer. The patient underwent an elective total transvaginal hysterectomy. The postoperative pathological report demonstrated diffuse adenomyosis with benign endometrioid-type glands throughout the endometrial myoma. The polyp was covered in endometrial mucosa and had a necrotic center. There was no atypical squamous metaplasia. The patient's abnormal vaginal bleeding was ultimately attributed to the focal necrosis in the polyp. She was diagnosed with polypoid adenomyoma. This patient made a complete recovery post-hysterectomy and experienced complete resolution of her symptoms.

Discussion

Uterine lesions, such as adenomyoma, in the myometrium can cause focal polypoid-like growth. This is an extremely rare pathology with a 2.27% prevalence rate. A review of the literature revealed only four cases of polypoid adenomyoma in a 10-year period and 84 cases in a 15-year period. There has been no demonstrable association between an endometrial polyp growth rate and a woman's demographics or the polyp's morphology. The annual median growth rate for a uterine polyp is 1.0%. This patient's growth rate is considerably higher and is compounded with the rarity of a benign mass growing at such a fast rate. This appears to be the first reported case in the literature of a benign uterine mass growing at this rapid rate.

Abstract 2023-94

Assessing Bone Mineral Density in Fabry Disease

Mania Mgdsyan, OMS III; Grace Lee, MS, LCGC; Nadia Sadri; Kelsey Valentine; Virginia Kimonis, MD

Objective

To assess the prevalence of low bone mineral density in a cohort of Fabry patients.

Background

Fabry disease is a rare multi-systemic lysosomal storage disease that affects the heart and kidneys most significantly. Other common symptoms may include peripheral neuropathy, hearing loss, and anhidrosis. An underappreciated manifestation of Fabry disease is reduced bone mineral density. A limited number of studies have shown a high prevalence of low bone mineral density in Fabry disease. Bone mineral density is affected by multiple factors including but not limited to renal dysfunction, BMI, and secondary hyperparathyroidism. Treatment of osteopenia and osteoporosis in Fabry patients must take into consideration possible renal dysfunction.

Methods

We studied DEXA scans obtained as part of routine care from our cohort of 24 individuals followed at the UC Irvine Medical Center. 32 DEXA scan results were collected from 11 males and 13 females with a mean age of 51.4 years (± 15.4 years). T-scores were analyzed from the spine, femoral neck, and hip. Quality-of-life measurements using the SF-36 health survey were collected, with reports of physical function, social function, physical role, emotional role, mental health, energy, pain, and general health perception.

Results

Of 15 spine, femoral or hip T-score measurements reported, 47% had osteopenia, defined as a T-score between -1.0 and -2.5 and 33% had osteoporosis defined as T score < -2.5. Of 11 individuals with a femoral neck T-score reported, 63.6% of participants had abnormal results that categorized them as osteopenia or osteoporosis. Of 12 individuals with a hip T-score reported, 66.7% had abnormal results that categorized them as osteopenia or osteoporosis. There was a positive correlation between lowest T-score and BMI (r=0.564), and lowest T-score and calcium levels (r=0.572). We did not find correlations between T-scores and renal markers, vitamin D, and SF-36 quality-of-life measurements.

Conclusion

The effects of Fabry disease on bone mineral density is not yet fully understood. Possible mechanisms to explain osteoporosis/osteopenia in Fabry patients include the effects of renal failure leading to secondary hyperparathyroidism, altered ability to metabolize vitamin D, decreased plasma calcium and lipid deposition in bone. These findings highlight the prevalence of low bone mineral density in Fabry disease and the need for additional research on the etiology, as well as prevention and treatment strategies.

Abstract 2023-95
A Case of Disseminated Coccidioidomycosis with Multiple Cutaneous Lesions in an Immunocompetent Host
Carlos D'Assumpcao, MD; Arash Heidari, MD

Introduction

Erthema nodosum is the most common dermatological sign of coccidioidomycosis and are generally immunogenic. It is rare that pox-like lesions are the presenting sign of disseminated coccidioidomycosis. We present a case of miliary coccidioidomycosis initially presenting with multiple raised lesions on erythematous base all over the body.

Case Presentation

27-year-old male with prior marijuana use developed fever, chills, cough with white sputum, dyspnea, myalgias, headache and fatigue three weeks prior to presentation. He also had multiple nonpruritic, nonpainful scatter vesicular lesions develop around this on scalp, chest, arms, torso, legs . There was associated 20lbs weight loss as well. He was given amoxicillin and doxycycline at outside hospital without improvement.

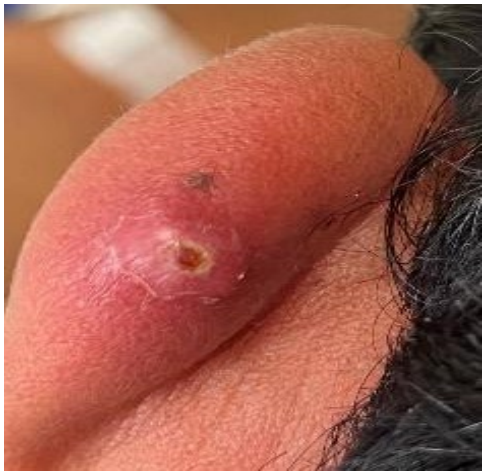


Image 1: Sample skin lesion at presentation at our institution.

Presenting then to our institution, he was found to have peripheral eosinophilia 1500/mcl. He did not require supplemental oxygen. Chest imaging found diffuse miliary nodules with small alveolar consolidation in left lower lung. He was also found to be COVID-19 Ag positive without prior vaccination history. He completed 5 days of Remdesivir. Coccidioidal immunodiffusion IgM and IgG were reactive and complement fixation was 1:16. Skin biopsy was attempted without adequate sample. He was started on liposomal amphotericin B for 1 month with radiographic improvement. He was transition to fluconazole 800mg daily. Complement fixation at time of azole transition was 1:64.

Discussion and Conclusion

Physicians should be aware of atypical dermatological presentations of disseminated coccidioidomycosis in the right clinical context.

Abstract 2023-96
Unusual Presentation of Necrotizing Fasciitis: A Case Report
Marah Sukkar, MD; Stephanie Summers, MS IV; Amber Jones, DO

Introduction

Necrotizing fasciitis is an infection of the deep soft tissues that results in progressive destruction of the muscle fascia and overlying subcutaneous fat [1]. This infection causes fulminant tissue destruction & may lead to mortality if treatment is delayed and/or if the patient has preexisting comorbidities. The most commonly affected site is the extremities. However, in rare cases, the head & neck region may be affected, but usually secondary to breech mucous membranes or in the setting of odontogenic infections [2]. This case highlights the unusual appearance of necrotizing fasciitis in the anterior neck in an elderly woman without any identifiable inciting event.

Presentation

We report a case of a 73-year-old woman with uncontrolled diabetes & laryngeal cancer status post chemoradiation in the 1980s, who initially presented to an outside hospital with the chief complaint of neck pain associated with erythema & edema. No specific injury or inciting event was reported. Erythema & edema progressively worsened over 2 weeks & the patient developed an anterior neck wound with necrotic tissue & foul-smelling drainage. Additionally, she developed progressively worsening dysphonia which prompted her to eventually present to the outside hospital. When attempting to speak or cough, the patient had subcutaneous air & purulent expression from the neck wound. Due to the evidence of airway compromise, the patient was endotracheally intubated. CT scan of the neck showed gas within the supraglottic larynx extending to the midline of the thyroid cartilage with further involvement of the overlying subcutaneous soft tissue structures. The patient was subsequently transferred the next day to this higher level of care hospital where ENT could evaluate the patient.

On arrival, the patient presented with diabetic ketoacidosis. ENT was promptly consulted and recommended ICU admission for treatment optimization prior to going to the operating room.

The next day, the patient had resolving diabetic ketoacidosis & ENT proceeded with the debridement. Prior to debridement, the necrotic area of the anterior neck was measured as 10 cm x 5 cm. The procedure included extensive debridement, as well as a partial laryngectomy. The larynx was found to be necrotic, specifically the thyroid & cricoid cartilage. She underwent a second debridement to completely remove the necrotic tissue. A third procedure was done which was placement of a tracheotomy & application of the skin graft. She continues to follow ENT for management.

Discussion

Necrotizing fasciitis of the anterior neck is a rare occurrence. However, if the clinical picture is consistent with this infection, prompt intervention must be made to prevent mortality. As per case(s) review, if the head & neck region is involved, the source usually comes from an odontogenic infection or compromise in the mucous membranes. No such factors were identified in this patient. The patient did have uncontrolled diabetes thus leading to diabetic ketoacidosis. Diabetes is a very important risk factor for development of this infection, as this can create an immunocompromised state & be the precipitant & aggravator for this infection.

Abstract 2023-97
Shorter Procedure Time of Intrauterine Device Placement with Ultrasound Guidance
Na Young Sung, MD; Verna Marquez, MD

Introduction

The fear of pain during intrauterine device (IUD) insertion is one of the reasons patients are reluctant to choose IUD as contraceptives. Several attempts to reduce the pain have been tried including ultrasound (US) guided IUD insertion. Uncomfortable and painful pelvic exam and uterine sound can be placed by measuring uterine size and shape with transabdominal US.

Purpose of Study

We aim to investigate if US-guided IUD insertion can decrease the time and pain compared to traditional IUD insertion with pelvic exam and uterine sound at family practice clinic.

Methods Used

This is a prospective study. A total of 50 IUD insertion cases at Clinica Sierra Vista East Nile Community Health Center were enrolled. Patients were randomly selected for US guided or traditional IUD insertion. The US guided group had IUD insertion under transabdominal ultrasound guidance without uterine sound and the

traditional group had the procedure after uterine sound without the US. 3 cases were excluded: one case was done by a resident who had no experience, and a dilator was used in two cases. The procedure time of IUD insertion was measured as seconds. Pain was assessed after the procedure by 11-point numerical rating scale: 0 is no pain and 10 is worst imaginable pain.

Summary of Results

A total of 47 patients were analyzed. The mean age was 29.96 years in the US-guided IUD insertion group and 32.45 in the traditional IUD insertion group. There were no differences in age, obstetrics history and BMI between the groups. In the US-guided group, 38.5% (10/26) had a history of IUD and 36.4% (8/22) in the traditional group (P=0.881). The procedure time of IUD insertion with US-guide was significantly shorter than traditional IUD insertion (364.73 ± 176.13 vs 282.80 ± 120.67, P=0.033). The pain scale was not different between the groups (US guided and traditional, 4.35 ± 2.94 vs 3.73 ± 2.69, respectively, P=0.228). The procedure time was not correlated with pain (r=-0.071, P=0.511).

Discussion

There was no difference in the pain after IUD insertion between the groups. However, US-guided IUD insertion group had significantly shorter procedure time as compared to traditional group.

Conclusions

Transabdominal US guidance during IUD insertion can decrease the time of the procedure by saving the time of uterine sound and visualizing uterine shape and size.

Abstract 2023-98

Impact of COVID-19 on Surgical Outcomes in Acute Care Service in a Community Hospital

Alexis Love, MS IV; Sacha Scott, MS III; Mania Mgdsyan, OMS III; Cheyenne McKee, MS III; Essam Hashem, MS IV; Rebecca Minas-Alexander, RA; Amber Jones, DO; Philip Karuman, MD

Introduction

SARS-CoV-2 (COVID-19) has infected over 100,000,000 million people in the United States (US)1. During the "first wave" in the US, medical facilities were advised to limit operative exposure, stratify operative cases by both risk and urgency and cancel elective procedures.

With over 60% of the US population considered fully vaccinated2, elective surgeries have resumed amid periodic outbreaks allowing for continued insight into the impact of COVID-19 on the postoperative recovery process. However, relative to the volume of data on active infections, there is far less concerning the sequelae of previous infections. Therefore, the purpose of this study is to analyze a safety net hospital's experience regarding postoperative complications in patients that underwent any surgical procedure within a year of testing positive for COVID-19.

Purpose of Study

The aim of this study is to evaluate the complications and identify risk factors associated with an increased risk of mortality in patients who had surgery within a year of testing positive for COVID-19 in a community hospital.

Methods Used

This is a retrospective study from a high-volume tertiary referral center and safety net hospital in the US. After approval by the Institutional Review Board, the electronic medical record (EMR) was queried for all positive COVID-19 patients that underwent a surgical procedure of any kind requiring general anesthesia from 5 May 2020 to 31 December 2022. Individual chart review allowed for subclassification based on symptomatology, admission status, length of admission, American Society of Anesthesiologist Physical Status Classification System (ASA), qSOFA and GCS rating along with COVID-19 and surgical complications. Patients were required to have a COVID-19 diagnosis within one year of surgery.

Summary of Results

Among 188 subjects with confirmed COVID-19 detected preoperatively, 74 (39.2%) were asymptomatic and 106 (56.1%) were symptomatic. The 30-day surgical mortality rate for symptomatic COVID-19 patients was 4.7%, and the 30-day surgical mortality rate for asymptomatic COVID-19 patients was 1.4%. Serious postoperative complications were identified in 24.5% of symptomatic patients versus 20.0% of asymptomatic patients. Cardiac arrest, septic shock, pneumonia, ARDS and DVT/PE being more common among symptomatic patients.

Discussion

To date, there is limited data on the long-term surgical outcomes for COVID-19 patients. Within our cohort, a higher percentage of symptomatic patients were found to be at higher risk for postoperative morbidity or mortality. Similarly, a study of 2 hospitals in New York City showed that within their cohort of 19 COVID-19 positive patients, 58% had serious postoperative complications and a 17% mortality rate3. The poor outcomes for symptomatic COVID-19 patients have important clinical implications. Since surgical interventions seem to exacerbate the course of COVID-19, physicians should be mindful of the clinical history of the patient, especially when performing elective procedures. Thus far, data shows that symptomatic patients experienced higher mortality and complication rates, however, given the multisystem effects and potential confounding factors, further investigation is still needed. We are still in the preliminary stages of data analysis and anticipate that more information will be elucidated as we continue to refine the data.

Conclusions

The outcome of this study suggests symptomatic COVID-19 patients may be predisposed to postoperative mortality and morbidity. This information should be considered in preoperative risk-benefit assessment for better patient optimization prior to surgery and postoperative care.

Although the sample size is small, the higher postoperative 30-day mortality, increased postoperative complications, prolonged hospitalization, additional surgeries and repeat admission is of relevance to surgeons and patients alike. Additional research is needed to understand and further clarify the association between symptomatic COVID-19 patients and postoperative complications. In the future, we plan to compare the mortality and morbidity rates with a control group of non-COVID-19 patients who required surgery during the same time period.

Abstract 2023-99

Neurosyphilis: A Case Report

Jennifer Lai, OMS III; Colby Kulyn, MD; Leila Moosavi, MD

Introduction

Neurosyphilis is infection of the CNS with Treponema pallidum and can occur at any stage of syphilis infection. Neurosyphilis is further subdivided into two classes: early (asymptomatic, meningeal, meningovascular), and late (general paresis and tabes dorsalis). Early neurological manifestations typically occur within months to years and later manifestations occurring over a decade later. Meningovascular disease involves endarteritis affecting the spinal cord vessels, causing spastic weakness, particularly in lower extremities, sensory loss, and muscular atrophy. Tabes dorsalis is degeneration of the posterior columns of the spinal cord leading to ataxia, lancinating pains, bladder dysfunctions, paresthesia, vision changes, Argyll Robertson pupils, and proprioceptive impairments. Here we present a case with possible combination of both meningovascular and tabes dorsalis in a patient with unknown knowledge of prior infection.

Case Description

A 63-year-old man with history of myocardial infarction s/p stent, stroke without residual deficits, hypertension, uncontrolled diabetes presents with recurrent syncopal episodes and lightheadedness with unknown etiology for the last year. Associated symptoms included gait instability, lancinating lower extremity pain with sensory dysfunction, blindness for two months, and incontinence. Physical exam demonstrated orthostatic hypotension, pupillary defects, left eye blindness, positive Romberg sign, diminished sensation in lower extremities with multiple healed scars from prior falls. Initial treatment was with midodrine for autonomic dysfunction with mild improvement but was discontinued secondary to hypertension following readmission for pulmonary congestion.

EKG was negative for arrythmias. Echocardiogram showed no valvular or wall abnormalities. Carotid U/S showed 50-69% stenosis of left ICA. MRI of the brain was not obtained secondary to metal pellets in thorax. Neurosyphilis was considered given ataxia, lancinating pains, and blindness. Serum RPR positive with titer 1:2, FTA-AB positive, with CSF significant for elevated protein and negative for VDRL. Per Public Health, patient received 1 dose Penicillin G in 2021, however patient denied any prior knowledge of infection. Infectious disease was consulted, with recommendations for 2-weeks of IV Ceftriaxone completed during hospital stay.

Patient reported mild improvements in his gait stability and vision and was discharged home.

Discussion

The rates of syphilis overall have been increasing, particularly in Kern County [11][12][13]. Because the consequences of untreated neurosyphilis can be irreversible and fatal, early consideration and screening are important. Diagnosis may be difficult, as its presentation can mimic other diseases. Our patient's symptoms of incontinence, syncope, neuropathic pain, and blindness were thought to be complications of uncontrolled diabetes.

The diagnosis for neurosyphilis is not straightforward through labs or clinic exams. Although a positive CSF-VDRL is considered gold standard for neurosyphilis, it is not diagnostic. While a negative CSF-VDRL is considered specific to rule out neurosyphilis, a nonreactive test does not exclude the diagnosis of neurosyphilis. CSF-VDRL has been found to be negative in up to 50% of the samples collected. This case demonstrates a unique instance where neurosyphilis is diagnosed in the absence of a positive CSF-VDRL. Given his negative CSF-VDRL, a neurosyphilis diagnosis could have overlooked, but given his clinical picture, his most likely diagnosis remains neurosyphilis that mimic uncontrolled diabetes.

Abstract 2023-100
A Case of Coccidioidal Meningitis Treated with SUBA-Itraconazole
Michelle Fang, PharmD; Arash Heidari, MD

Case Report

Itraconazole is an azole antifungal that has been used to successfully treat coccidioidal meningitis (CM), although the use of this agent is limited by highly variable bioavailability due to pH-dependent absorption resulting in interactions with food and other drugs, particularly antacids. Recently, a super bioavailable formulation of itraconazole (SUBA-ITR) that exhibits more reliable absorption, including increased exposure with concomitant proton pump inhibitor (PPI) therapy, has become available for clinical use. To our knowledge, no cases have been published reporting successful treatment of CM with SUBA-ITR. We describe a case of CM complicated by toxicities to multiple azoles, ultimately treated with SUBA-ITR.

Methods

Retrospective case review after IRB approval

Summary of Results

A 25-year-old man with CM diagnosed 2 months prior at another facility presented to the hospital with worsening headache, blurred vision, and general weakness. At initial diagnosis, treatment was started with fluconazole 800 mg daily, with only mild symptom improvement, so the dose was intensified to 1200 mg daily. However, he experienced vomiting attributed to fluconazole, resulting in nonadherence to therapy. At this presentation, primary admission diagnosis was CM/leptomeningitis and arachnoiditis, and he had an initial lumbar puncture with opening pressure 330 mm H2O, 532 WBC/mcL, glucose 26 mg/dL, and protein 693 mg/dL, with CSF coccidioides complement fixation (cocci CF) titers at 1:128. Fluconazole was discontinued due to lack of tolerability and he was discharged on isavuconazole for CM.

He developed severe transaminitis requiring readmission within 2 weeks, which resolved quickly upon discontinuation of isavuconazole. In an effort to use an azole antifungal with lower potential for hepatotoxicity, itraconazole was started, with improvement in CSF findings while on antifungal therapy. However, he developed severe gastritis requiring chronic PPI therapy from corticosteroid use for arachnoiditis. Due to the major drug-drug interaction between itraconazole and PPIs resulting in decreased itraconazole levels, he was switched to SUBA-ITR (Tolsura) 65 mg twice daily. Most recent follow-up approximately 16 months later revealed consistent improvements in CSF findings (opening pressure 110 mm H2O, 21 WBC/mcL, glucose 36 mg/dL, protein 125 mg/dL) and cocci CF titer (1:4), and itraconazole levels were consistently within therapeutic range while on pantoprazole 40 mg twice daily.

Conclusion

While clinical evidence supports the use of itraconazole for treatment of CM, limited pharmacokinetic or clinical data is available regarding the use of SUBA-ITR for CNS

disease. This is the first reported case of CM treated successfully with SUBA-ITR.

Abstract 2023-101
Therapeutic Drug Monitoring of Antifungal Agents for Coccidioidomycosis
Michelle Fang, PharmD; Bianca Torres, RA; Lovedip Kooner, MD; Jessica Redgrave, CLS; Rasha Kuran, MD; Arash Heidari, MD; Royce H. Johnson, MD

Introduction

Coccidioidomycosis, is a fungal infection that can vary widely in presentation and severity, often requiring chronic treatment with triazole antifungals. Therapeutic drug monitoring (TDM) has historically been implemented to optimize use of drugs with narrow therapeutic indices and has not been common practice for most azole antifungals.

Purpose of Study

Given the complexity of assessing treatment response in coccidioidomycosis, which can be impacted by medication adherence, pharmacokinetics, host immune response, and fungal response, TDM of azole antifungal therapy has been proposed to improve clinical evaluation of such variables. Consistent TDM is anticipated to ultimately increase the probability of a successful outcome in the treatment of coccidioidomycosis.

Methods

This is a retrospective review of patients with coccidioidomycosis who received adjunctive antifungal TDM at Kern Medical from May 2011 to December 2022. Approval and a waiver of consent were obtained from the Institutional Review Board. The combination of a patient and azole antifungal was considered a unique therapy regimen, with each azole course evaluated separately for patients who received multiple azoles over the course of their coccidioidomycosis treatment. Data extracted from electronic health records included demographics, baseline comorbidities, clinical presentation and dissemination, routine Coccidioides serologies, cerebrospinal fluid analysis, antifungal medication treatment (dosage, frequency, and start date), and outcomes.

Summary of Results

We reviewed the electronic records of 1015 patients with coccidioidomycosis and azole drug levels. Fluconazole comprised the majority of these courses (89%), with the remainder divided between itraconazole, posaconazole, voriconazole, and isavuconazole. Of the serum azole levels obtained, 32% were within the therapeutic range, 66% were subtherapeutic, and 2% were supratherapeutic.

Conclusion

Therapeutic drug monitoring is a useful tool that advantages the care of patients with coccidioidomycosis. This tool assists clinicians in better ascertaining when patients were nonadherent, or in case of under or overdosing on their azoles. This would assist in preventing misdiagnosis as a failure of therapy and potential side effects.

Abstract 2023-102
Thyroid Switch Postpartum: Hashimoto's to Graves'
Elias Inga Jaco, MD; Mary Lourdes Erlichman, MS III; Sangeeta Chandramahanti, MD

Introduction

Graves' disease and Hashimoto's thyroiditis are two autoimmune diseases on opposite ends of the spectrum of the thyroid. Graves' disease is usually associated with hyperthyroidism, while Hashimoto's thyroiditis is usually associated with hypothyroidism. Conversion of hypothyroidism to hyperthyroidism and vice versa has been reported except in the immediate postpartum period. This phenomenon may not be as rare as previously thought and the physicians should be aware of this possibility.

Case Description

A 44-year-old woman presented to clinic for asymmetric increasing eye prominence. She had a previous diagnosis of hypothyroidism and was stable on Levothyroxine replacement for over six years. Three months after the birth of her child, she noticed increasing prominence in her right eye. On presentation, she admitted palpitations, diarrhea and weight loss. Physical exam showed enlarged thyroid gland, lid lag with proptosis, exophthalmos, and increased stare with asymmetry of the eyes (R>L). Labs were notable for suppression of

thyroid stimulating hormone (TSH) of 0.155 (normal 0.554 - 4.780 mlU/mL), normal free thyroxine (T4) of 1.3 (normal 0.9-1.8 ng/dL) and total triiodothyronine (T3) of 99 (normal 0.9-2.3 ng/dL). The above laboratory levels persisted on repeat evaluation after discontinuing levothyroxine. Further laboratory work showed elevations of thyroid-peroxidase (TPO) antibody (22 IU/mL, normal <9 IU/mL), thyroid stimulating Immunoglobulin (TSI) (315 %, normal <140 %), and thyroid stimulating hormone receptor antibody (TRAb) (4.02 IU/L, normal <2.0 IU/L). Given eye asymmetry, CT of the orbits was obtained to rule out orbital tumors. She was subsequently advised to start on Methimazole. She was referred to Ophthalmology and was initiated on teprotumumab infusions to decrease orbital fibroblast production. The patient continues to follow up for further management of her stable condition.

Discussion

Antibodies responsible for Hashimoto's and Graves' are thyroid-stimulating antibodies and thyroid-blocking antibodies, respectively. Switching between TBAb and TSAb (or vice versa) occurs in unusual patients. These changes involve differences in TSAb versus TBAb concentrations, affinities and/or potencies in individual patients. Pregnancy related immunosuppression reduces the levels of TRAbs in most cases. Hence the switch has not been reported post pregnancy. It is important to recognize the change in symptomatology for prompt and adequate treatment before further manifestations arise. Diagnosis requires careful clinical and biochemical assessment. otherwise, Hashimoto's to Graves' switch can be easily confused for over-replacement of levothyroxine. This switch, which was once felt to be rare, is becoming increasingly common. The occurrence of "switching" emphasizes the need for careful patient monitoring and management.

Abstract 2023-103

Serum Procalcitonin Level in Pulmonary Coccidioidomycosis

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Introduction

Procalcitonin, the peptide precursor of calcitonin, was first studied as a biomarker in acute severe bacterial infections in 1993 and has been deemed helpful in differentiating between bacterial and viral infections. Procalcitonin has been useful as an adjunct to clinical judgment for guiding antibiotic therapy and its discontinuation. It has been best studied in distinguishing between viral and bacterial lower respiratory infections. The relationship between serum procalcitonin levels and primary coccidioidomycosis was initially studied by Sakata et al. in 2014 and did not reveal a relationship between elevated procalcitonin and coccidioidal infection. The purpose of this study was to determine any association between serum procalcitonin levels and primary pulmonary coccidioidomycosis.

Methods

We conducted a retrospective chart review study using the Valley Fever Institute database between 2017 and 2021. This study was approved by the Kern Medical Institutional Review Board. The literature search was conducted on PubMed and Google scholar using coccidioidomycosis; community-acquired pneumonia; procalcitonin levels as keywords. Coccidioidomycosis infection was confirmed by serology, the microbiology of sputum or broncho-alveolar lavage, and radiological evidence of pneumonia. Bacterial infections were excluded by reviewing the results of sputum and blood cultures.

74 patients were enrolled during in-patient care. We identified 52 patients with acute infection and 22 patients with chronic infection. Acute infection was defined as new symptomatic primary pulmonary coccidioidomycosis of < 6 weeks' duration. Chronic infection was defined as either a proven previous coccidioidomycosis infection or pneumonic symptoms of ≥ 6 weeks' duration. The first value of the procalcitonin assay, with a cutoff of > 0.10 µg/L is positive.

Results

Of all patients with acute infection 34 (65.38%) had a positive test for Procalcitonin as compared to 12 (54.54%) for the Chronic patients. The odds ratio is 1.57 suggesting a greater incidence of positive procalcitonin among acute patients; however, the finding is not statistically significant (p = 0.3811).

Conclusion

This study did not find the clinical value of procalcitonin in the diagnosis of pulmonary coccidioidomycosis or differentiating acute from chronic infection. Procalcitonin does not distinguish bacterial pneumonia from Coccidioidal pneumonia. Clinicians should continue to use clinical judgment and laboratory as well as imaging to distinguish pulmonary coccidioidomycosis vs. bacterial pneumonia.

Abstract 2023-104

The Case of an Isolated Scapular Fracture

Elias Inga Jaco, MD; Emily Cleveland, OMS III; Nausheen Hussain, OMS III; Alaleh Bazmi, MD; Timothy Yanni, MD

Introduction

Historically, prostate cancer diagnosis was steadily increasing before the previous decade, with the introduction of prostate-specific antigen (PSA) screening, diagnosis has additionally increased. On the other hand, before introduction of PSA screening, men were more likely to present with widespread prostate cancer metastasis in the axial skeleton: skull, spine, ribs, sacrum, and coccyx.

Case Report

63-year-old Hispanic male, presented to the internal medicine outpatient clinic with right upper back pain and deformity. Pain started about two months prior to presenting to our clinic. He recalled a forceful mechanical movement as the inciting factor. Initially, he visited an outside network emergency department where x-ray showed scapular fracture; laboratory work, including PSA and Alkaline phosphatase levels were all within normal limits as well. Over time, pain and deformity over the scapula deteriorated, he suffered restrictive right shoulder motion. By the time he presented to our clinic, he reported mild knee and hip pain as well. Patient was closely followed up. Follow-up CT of the chest showed enhancing destructive soft tissue masses eroding posterior arch of left sixth and seventh rib, bilateral hilar lymphadenopathy, spread lung densities and nodularity with no masses, and destructive mass centered in the right scapula measuring 12.4 x 9.3 x 12.3 cm. X-rays of the hip and knee were normal. Repeated PSA level again was normal. AlP level was slightly above normal. Within 4 weeks, the patient's medical status abruptly deteriorated, manifested by urinary frequency, bowel and urine incontinence, and lower extremities weakness. He was admitted to hospital with a diagnosis of acute spinal cord compression. During hospital admission, right scapular biopsy showed positive CD99, CD10, vimentin, NKX 3.1 cytokeratin 81/83 leading to diagnosis of prostate cancer metastasis. Spine MRI showed enhancement through T11-S1, pathological compression fractures at L2, L3, and enhancement in sacrum and iliac wings. Patient was started on Bicalutamide, zoledronic acid, and followed by cGy radiation fraction. Additionally, the patient suffered a left femur fracture with corresponding biopsy pointing to prostate cancer metastasis as well. After stabilization, the patient was discharged with urology follow-up for prostate biopsy, and oncology for continuation of chemotherapy.

Discussion

Prostate cancer has multiple spectrum of disease at detection time. The majority of patients report a previous history of urinary obstruction, UTIs, hematuria , etc. as part of the lower urinary tract symptoms (LUTS). After the development of PSA screening, the majority of patients diagnosed with prostate cancer present with localized cancer, and a minority of patients present with distant axial pain indicating an already state of metastasis. In the case of prostate cancer metastases, pain involved in the axial skeleton is, in most cases, already associated with hematuria or any LUTS. This patient's presentation, with an isolated scapular pain and mass, no LUTS, and no past medical history, including smoking, is an example of a multiple and rare spectrum of metastatic prostate cancer presentation that needs to be taken into consideration when proposing prostate cancer diagnosis.

Abstract 2023-105

Retrospective Analysis of Pancreatic Injuries and Treatment Outcomes

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Introduction

Pancreatic injuries are associated with high morbidity, mortality and reoperation rates. Approximately 4% of all patients who sustain abdominal injuries have associated pancreatic trauma. This is the experience of a community hospital in a resource poor and high violence county. We present our strategies associated with the best outcomes in this difficult situation.

Purpose of Study

The aim of this study is to present our experience in the management and associated outcomes of both blunt and penetrating pancreatic trauma, focusing on factors related to complications and death.

Methods Used

Retrospective trauma registry-based analysis of 30 patients with both penetrating and blunt pancreatic injuries during a 6-year period at a community hospital in a high violence county. Following approval by the Institutional Review Board, the electronic medical record (EMR) was queried for all patients experiencing pancreatic injuries following hospitalization for tier 1 and 2 trauma activations. Injury severity score (ISS) was used to assess overall injury severity. The American Association for the Surgery of Trauma (AAST) Organ Injury Scaling (OIS) was used to grade pancreatic trauma.

Summary of Results

Sixteen penetrating and nine blunt pancreatic trauma-injured patients were assessed in our study. Of these cases, 50% were secondary to gunshot wounds. Pancreatic duct and/or anastomotic leak was seen in 35% of cases with a total reoperation rate of 78% when correcting for and excluding patients who expired within the first 48 hours of admission. Associated GI injuries were observed in 88% of the studied cases (22 of 25 patients). Death ensued in 22% pancreatic injuries.

Discussion

Mortality and morbidity from pancreatic trauma is attributed to both associated injuries as well as and their complications due to pancreatic injury. Chief of these associated injuries is the anastomotic leak and the subsequent consequences that ensue. We observed high reoperation rates as well as associated gastrointestinal injury.

Conclusions

High morbidity and mortality associated with pancreatic injury is additive. We clearly show there is an association between patient outcome and prompt surgical diagnosis of pancreatic injury, control of pancreatic leak, and high index of suspicion for subsequent surgical failure from the associated injuries.

Abstract 2023-106

A Rare Case of Incomplete Kawasaki Disease in a 2-Month-Old Infant

Nicole Nikolov, MS III; Mary Lourdes Erlichman, MS III; Joshua Woods, MS III; Thomas Magurany, MS III; Isabelo Bustamante, MD; Thiagarajan Nandhagopal, MD

Introduction

Kawasaki Disease (KD) is one of the most common vasculitides of infancy and the leading cause of acquired heart disease in children. However, up to 10 percent of patients who develop cardiac complications never meet full diagnostic criteria for KD. This report describes a unique case of incomplete Kawasaki Disease (IKD) in a 2-month-old infant who presented with only two principal clinical symptoms of typical KD and subsequently developed multi-vessel coronary artery aneurysms.

Case Presentation

A previously healthy full-term 2-month-old female infant developed a fever of 103F on the same day she received her 2-month vaccinations. She presented to the emergency department on day 3 of illness with sustained fever, rash, irritability, poor feeding, and decreased urine output. Physical exam revealed fever (102.4F), tachycardia, tachypnea, fussiness, decreased umbilical skin turgor, and a diffuse erythematous maculopapular rash involving the torso. Sepsis workup was remarkable for bands on CBC as well as elevated CRP, ESR, procalcitonin, and IT ratio. The patient was subsequently admitted to the pediatrics department for suspicion of sepsis. Her viral panel on admission was negative, and

ampicillin and ceftriaxone were started for empiric treatment. Complete metabolic panel was normal. Blood, urine, and CSF cultures were also negative. Chest x-ray was within normal limits. The patient developed a new-onset cardiac murmur on day 4 of illness in the setting of fever and tachycardia. A stat echocardiogram demonstrated normal coronary arteries and normal biventricular systolic function. She continued to have persistent fever with elevated inflammatory markers over the next several days, so a repeat echocardiogram was performed on day 8 of illness, which demonstrated aneurysms of the left main coronary artery, left anterior descending artery, and right coronary artery. The patient was then diagnosed with atypical Kawasaki Disease due to her prolonged fever, positive lab findings, and aneurysms of the coronary arteries. She was promptly initiated on high-dose aspirin and intravenous immune globulin (IVIG) therapy, which she tolerated well. The patient was discharged on day 13 on low-dose aspirin following complete resolution of her symptoms.

Discussion

Incomplete Kawasaki Disease presents with non-specific clinical features, increasing the likelihood that these patients are initially misdiagnosed and delayed in receiving the appropriate treatment. Nevertheless, IKD carries the same risk of developing all of the complications of typical KD, which highlights how vital it is for physicians to maintain a high index of suspicion for IKD in order to ensure a timely and accurate diagnosis of the disease. Despite an incomplete presentation, physicians should promptly make the diagnosis of IKD in children younger than 6 months with persistent fever and elevated inflammatory markers, so treatment can be initiated within 9 days of symptom onset to avoid complications. This case report raises awareness of a rare presentation of IKD and emphasizes the importance of early recognition in patients who do not fulfill the clinical criteria for the diagnosis of typical KD. Proper diagnosis will allow for appropriate intervention and administration of IVIG to prevent life-threatening cardiac complications and other sequelae of untreated KD.

The disease usually presents with sustained fever and at least four other manifestations of systemic vasculitis. Rarely, patients may present only with a fever or a combination of signs and symptoms that do not fit the diagnostic criteria of KD.

Conclusion

Delayed treatment of Kawasaki disease is associated with an increased risk of future complications. This case highlights the importance of maintaining high clinical suspicion for IKD in infants with a persistent fever who do not meet all of the criteria for KD.

Abstract 2023-107

Case Series of Thyrotoxicosis: Unique Presentations and Challenges of Thyroid Storm Management

Marah Sukkar, MD; Ratha Kulasingam, MD; Elias Inga Jaco, MD; Sangeeta Chandramahanti, MD; Sukhmani Singh, MD; Ralph Garcia-Pacheco, MD; Theingi Tiffany Win, MD; Fowrooz Joolhar, MD; Matthew Clarke, MD

Introduction

Hyperthyroidism is defined as inappropriately high production and release of thyroid hormones. The development of symptoms is called thyrotoxicosis while thyroid storm (thyroid crisis) is the acute and life-threatening state of exacerbated hyperthyroidism. The presentation of thyrotoxicosis and thyroid storm is wide and the resultant complications are unpredictable. The mortality of thyroid storm is estimated at 8 to 25% despite modern advancements, early recognition and supportive measures. In this case series, three different patient cases are presented with varied manifestations and outcomes, such as cardiogenic shock, stroke and cardiac arrest as a result of thyrotoxicosis and thyroid storm.

Case Description

A 37-year-old Hispanic male with no known medical history who initially presented to the hospital with shortness of breath and abdominal pain, was found to have acute heart failure with ejection fraction (EF) less than 10%. Thyroid studies were significant for thyroid stimulating hormone (TSH) < 0.008 (normal 0.554 - 4.780 mlU/mL), and free thyroxine (T4) > 7.6 (normal 0.9-1.8 ng/dL). Patient was on mechanical ventilation for acute respiratory failure secondary to acute cardiogenic shock due to thyroid storm and he eventually expired.

A 31-year-old Korean male with no known medical history presented to hospital with hoarseness of voice and left sided hemiplegia and was found to have a right middle cerebral occlusion. He has no evidence of atrial fibrillation. Labs were significant for TSH < 0.008 and free

T4 of 8.5. Patient underwent thrombectomy complicated by post thrombectomy bleeding with acute brainstem neurological change and eventually expired.

A 19-year-old female with recently diagnosed Grave's disease, on methimazole therapy presented to the hospital with tachycardia and was found to have acute respiratory infection in face of agranulocytosis. Found to have a TSH level of < 0.017 and free T4 of 4. Patient was started on treatment for thyrotoxicosis, including esmolol drip and the patient subsequently went into cardiac arrest with return of spontaneous circulation (ROSC). Her management was further done with use of lithium as anti-thyroid drugs could not be used. Her condition subsequently stabilized and was discharged with consideration of thyroidectomy once more stable.

Discussion

Thyroid storm is a medical emergency with multisystem involvement and carries a high mortality rate. It is important to consider diagnosis of severe thyrotoxicosis in the young population as atypical presentations such as cardiogenic shock, stroke, and even cardiac arrest are possible with no prior history of hyperthyroidism. In this case series, extensive discussion in regards to the cardiovascular and cerebrovascular conditions secondary to thyrotoxicosis and thyroid storm are noted. It is important to identify the factors associated with increased mortality.

In our case series, each case had an atypical presentation and had a varied outcome.

Abstract 2023-108
Minimally Invasive Robotic Hysterectomy and Vaginal Extraction of a 2.3 kg Fibroid Uterus in a Class III Obese and Anemic Patient

Cheyenne McKee, MS III; Amira Sheikh, MS IV; Soorena Fatehchehr, MD

Study Objective

To evaluate feasibility and perioperative surgical outcomes of robotic-assisted total laparoscopic hysterectomy with vaginal extraction in a large leiomyomatous uterus

Design

Case report.

Setting

Teaching hospital.

Patient

39-year-old African-American female with class III obesity (BMI 42), symptomatic anemia secondary to menorrhagia, and deformed enlarged extra pelvis fibroid uterus

Interventions

Robotic assisted total laparoscopic hysterectomy with bilateral salpingectomy and combined robotic and manual morcellation via vaginal route

Measurements and Main Results

Endometrial biopsy pathology was benign. Pre-operative magnetic resonance imaging displayed a significantly enlarged and retroflexed uterus measuring 29.3 cm craniocaudal, 11.5 cm anteroposteriorly, and 12.2 cm transverse with multiple necrotic fibroids, the largest measuring 16.7 x 10.6 cm without malignant characteristics. The patient received 2 units of packed red blood cells intraoperatively due to preexisting anemia. Total blood loss during the operation was 100 ml. Intraoperative evaluation revealed an enlarged and deformed extra pelvis fibrotic uterus, occupying into the upper abdomen with omental adhesion. Surgical specimens were extracted via the vaginal route with a combination of robotic and manual morcellation. This process increased the operative time significantly due to the size of the specimen without occurrence of any complications. Intraoperatively the specimen weighed 2369.5 g, and the pathology report revealed uterus, cervix, fibroids and bilateral fallopian tubes. Postoperatively, the patient was discharged home on day 2 and was followed for 6 months without any major complications.

Conclusion

Minimally invasive robotic hysterectomy for significantly enlarged and deformed fibroid uterus in patients with major risk factors including morbid obesity and anemia is feasible and safe with excellent perioperative outcomes. Combined robotic and manual morcellation via the vaginal route can be successfully performed for enlarged fibroid uterus with benign characteristics. Despite

increasing operative times, minimally invasive robotic surgical approach and vaginal extraction should be offered to all patients in appropriate settings.

Abstract 2023-109
Diabetes Outcomes in a Restrictive Formulary versus a Non-Restrictive Formulary
Tinh Duong, PharmD; David Lash, PharmD; Jeff Jolliff, PharmD; Alan Duvall, PharmD

Introduction

On January 1, 2022, Medi-Cal moved all pharmacy benefits coverage from managed care plans to fee-for-service Medi-Cal Rx, which has a more expansive formulary and fewer restrictions than previous managed care formularies. This allowed patients with diabetes on Medi-Cal to have access to newer non-insulin therapies such as glucagon-like peptide receptor agonists (GLP-1 RA) or sodium-glucose cotransporter 2 inhibitors (SGLT-2i), which were previously not covered or restricted through prior authorizations or step-therapy.

Purpose

To evaluate the impact of a less restrictive formulary on diabetes outcomes among type 2 diabetes mellitus patients with Medi-Cal at Kern Medical Diabetes Clinic

Methods

This is a retrospective cohort study of Medi-Cal patients seen in a diabetes clinic at Kern Medical between January 2021 and December 2022. Non-pregnant patients 18 years of age or older with type 2 diabetes mellitus were eligible for inclusion. Subjects must have had a baseline hemoglobin-A1c (A1c) above 7% and had at least one follow up A1c to be included. The study evaluated two groups of patients: new patients enrolled between January 2021 to December 2021 that were under a restrictive formulary (2021 group) and new patients enrolled between January 2022 to December 2022 who had a non-restrictive formulary (2022 group). Our primary endpoint is the difference in diabetes control between the two formulary groups evaluated by comparing mean change in baseline pre-A1c and post-A1c. Changes in weight and BMI were assessed as secondary endpoints along with obtainment of controlled A1c defined as A1c less than 7%. Diabetes-related visits to Kern Medical's emergency room and hospitalizations due to diabetes were evaluated as safety endpoints. Two sample t-tests and chi-squared tests were performed on continuous and nominal data respectively.

Results

A total of 59 out of 97 patients met inclusion criteria in the 2021 group, and 57 out of 86 patients in the 2022 group met inclusion criteria. Eligible patients were primarily Hispanics (70.7%) and non-English speakers (52.0%). The mean starting A1c was significantly higher in the 2022 group compared to the 2021 group ($p = 0.0005$). In the primary outcomes, the 2022 group had a greater mean A1c reduction of -2.73 ± 2.43 compared to -0.746 ± 2.09 in the 2021 group ($p = 0.00001$). In the secondary outcomes, the mean change in weight and BMI were not significantly different ($p = 0.62$ and 0.59, respectively). The number of people who achieved A1c of less than 7 was 28 (49.1%) in the 2022 group and 13 (22.0%) in 2021 group ($p = 0.018$). The 2021 group had 3 patients who each had 1 diabetes-related ER visit due to hyperglycemia and the 2022 group had 1 visit due to hypoglycemia ($p = 0.33$). No patient had a diabetes-related hospitalization during the study period.

Discussion

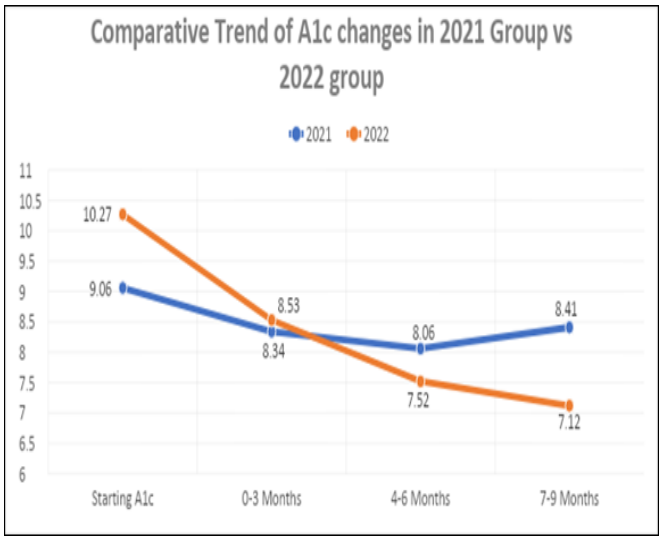
The results show that the 2022 group had significantly greater A1c reduction and better A1c control than the 2021 despite having a higher mean starting A1c. This finding is similar with findings from previous clinical trials on GLP-1 RA and SGLT-2i, which showed that these agents had higher A1c reduction in addition to cardiovascular and renal benefit compared to traditional oral agents. Unfortunately, this study does not show weight loss and BMI reduction benefits that are also seen in previous clinical trials. A limited sample size in our study may have been contributing to this finding. Another explanation for this could be the inability to fully titrate patient to target doses seen in clinical trials.

Conclusion

Compared to diabetic patients enrolled during a restrictive formulary, diabetic patients enrolled during an open, non-restrictive formulary had a significantly

greater A1c reduction and better A1c control. Although the open formulary resulted in improved diabetes control, it is unknown if this open formulary would result in improved diabetes-related morbidity, mortality, and health care costs.

Results			
	2021 Group N= 59	2022 Group N = 57	*P*-Value
Starting A1c	9.06 ±1.70	10.27 ± 1.88	0.00048
Ending A1c	8.25 ± 1.65	7.34 ± 1.59	0.003
Mean change in A1c	-0.746 ± 2.09	-2.73 ± 2.43	0.00001
Mean follow up time (days)	174.6 ± 54.2	154.7 ± 47.7	0.034
Mean difference in Wt	-1.23 ± 4.38	-1.64 ± 4.13	0.62
Mean difference in BMI	-0.453 ± 1.60	-0.607 ± 1.50	0.59
A1c less than 7	13 (22.0)	28 (49.1)	0.018



Abstract 2023-110

Divalproex Sodium Dose-Dependent Acute on Chronic Hyponatremia: A Proposed Mechanism

Kajal Patel, MS III; Loren Wines, MD; Angad Kahlon, MD

Introduction

Schizoaffective disorder, bipolar type, is a debilitating psychiatric illness causing significant challenges in daily living. Divalproex sodium (Depakote) is an effective treatment with a typical therapeutic range of 50-125ug/mL. Hyponatremia is classified as serum sodium of <135mEq/L, mild hyponatremia is 130-134mEq/L, moderate is 120-129mEq/L, and severe is <120mEq/L. Severe hyponatremia can cause lethargy, seizures, and coma with some studies showing up to a 51% mortality rate. Dose-dependent hyponatremia due to divalproex sodium remains a rare side effect with only approximately 100 cases reported to the World Health Organization since its FDA approval. We report a case of divalproex sodium dose-dependent acute-on-chronic severe hyponatremia in a patient with schizoaffective disorder, bipolar type, in the inpatient setting and propose a potential mechanism for this medication induced adverse event.

Case Presentation

This patient is a 65-year-old male who was previously on 750mg daily of divalproex sodium for 18 years. The patient had chronic hyponatremia with a baseline serum sodium level of 129mEq/L. Upon admission, his non-fasting serum sodium level was 137mEq/L with a serum divalproex sodium level of 46ug/mL. Following a divalproex sodium dosage increase to 1000mg daily, the patient's serum divalproex sodium level was 70ug/mL. The following day, the patient's serum sodium decreased to 126 mEq/L. The patient's serum sodium continued to trend downwards and 3 days later the level was 116mEq/L. Due to the development of profound hyponatremia, divalproex sodium was discontinued. Despite the serum sodium level, the patient developed no identifiable symptoms of hyponatremia. This is thought to be due to cerebral adaptations from a chronic hyponatremic state. Considering divalproex sodium's 14-hour half-life, a washout period of 4 days was initiated with subsequent improvement in serum sodium to 124mEq/L. The initial maintenance dose of 750mg daily was then restarted. However, the following day the patient's serum sodium decreased to 120mEq/L. The patient was determined to have dose-dependent euvolemic hypotonic hyponatremia resulting in permanent discontinuation of divalproex sodium use. The patient was started on sodium tablets daily and given a 1L per day fluid restriction.

Conclusion

We propose the following divalproex sodium dose-dependent mechanism. Divalproex sodium is the stable coordinated compound of sodium valproate and valproic acid. Valproic acid has multiple mechanisms of action, one of which blocks sodium voltage-gated ion channels leading to elevated extracellular sodium. We suspect this increased osmolality is sensed by the macula densa in the kidneys which activates the renin-aldosterone-angiotensin system stimulating antidiuretic hormone release. The increased free water retention then leads to hyponatremia. The maintenance treatment of sodium tablets and fluid restriction help to restore this balance of osmolality and sodium levels. This case highlights the importance of having baseline serum sodium measurements for patients prior to starting divalproex sodium or any dose changes for patients on chronic therapy. A known baseline helps to trend for possible hyponatremia-related adverse effects in patients that have not adapted to a chronic hyponatremic state or any acute worsening.

Abstract 2023-111
Findings from Kern County Coroner's Death Records 2019-2020: Substance Use Prevalence in Suicidal vs. Accidental Deaths

Kajal Patel, MS III; Tyler Torrico, MD; Nicole Nikolov, MS III; Ranjit Padhy, MD; Towhid Salam, MD, PhD; David Weinstein, MD

Introduction

Death by suicide is increasing in the United States and worldwide. Risk factors for suicide include substance use, psychiatric disorders, previous suicide attempts, military service, general medical conditions.

Purpose of Study

We utilized Coroner reports from Kern County for 2019 and 2020 on deaths with blood toxicological reports to examine if the prevalence of substances in suicidal and accidental deaths varied.

Methods Used

Coroner's reports from 2019 and 2020 provided data for the mode of death, sex, age, race, zip code, and substances found in blood at the time of death. Mode of death included accidental deaths, homicide, suicide, natural deaths, and pending. For our study purposes, substances and their metabolites were consolidated into stimulants, opioids, cannabis, hallucinogens, sedative-hypnotics, and psychiatric medications. The initial sample size was 1486 but after excluding pending modes of death and including only adults, there were 1243 records remaining. Further, we compared those who died by suicide (n=93) to those who had accidental death (n=803) to investigate any differential substances presence in bloodstream. Accidental deaths were chosen as the reference mode of death due to the natural death sample size being low (n=179). We utilized logistic regressions to investigate the associations of these factors with the study outcome.

Summary of Results

In a multivariate model adjusted for age, race, sex, and ethnicity, and mutually adjusted for substances, individuals who died by suicide were less likely to have cannabis, stimulants, or opioids in their bloodstream compared to those with accidental deaths (cannabis: OR 0.44 95%CI 0.25-0.79, stimulants: OR 0.15, 95%CI 0.09-0.27, and opioids: OR 0.13, 95%CI 0.07-0.23). Furthermore, in this multivariate model, we found that Hispanics had lowered odds of suicide than homicide compared with whites (OR 0.45 95%CI 0.25-0.82).

Discussion

For 2019 and 2020, accidental deaths in Kern County were more likely to have illicit substances present (cannabis, stimulants, opioids) than those who died by suicide. Further, Hispanics were less likely to die by suicide than whites, indicating that Hispanics were more likely to have accidental death than whites.

Conclusion

These findings will need further analysis and study of multiyear data to investigate trends of substance use over time by mode of death and investigate if there are higher prevalence of psychotropic medications among those who die by suicide. More research is warranted to investigate risk factors of suicide to develop public and clinical health interventions to reduce suicide rates.

Abstract 2023-113

Comparison of Substance Use Prevalence in Adults Between Homicidal and Accidental Deaths in Kern County, 2019-2020

Nicole Nikolov, MS III; Tyler Torrico, MD; Kajal Patel, MS III; Ranjit Padhy, MD; Towhid Salam, MD PhD; David Weinstein, MD

Background

Presence of illicit and prescription medications are quite common in unnatural deaths. We analyzed the data from Kern County Coroner's Office from 2019 to 2020 to compare prevalence of substances in individuals with homicidal and accidental deaths.

Methods

We obtained data on mode of death, cause of death, sex, age, race, zip code, and substances found in blood at the time of death from the Coroner's reports from 2019 and 2020. For the purposes of this study, substances found were consolidated into the following categories: stimulants, opioids, cannabis, hallucinogens, sedative-hypnotics, and psychiatric medications. Of the total 1486 deaths in these two years in the dataset, modes of death were categorized as accidental, homicide, suicide, natural, undetermined, and pending. We excluded cases that were undetermined or pending on mode of death and those who were under 18 years old at the time of death. After exclusion criteria, there were 1243 subjects for analysis. In this study, we restricted to those who died by homicide (N =169) or by accidents (N = 803) to examine if there are different profiles of substances in blood between these two modes of death. We utilized logistic regressions to investigate the associations of these factors with the study outcome.

Results

In the univariate analysis, presence of cannabis was 2.15 times more likely than those with homicidal deaths, but this finding did not retain statistical significance in multivariate model. In multivariate model adjusting for age, sex, race/ethnicity, opioids were significantly less likely to be associated with homicidal compared to accidental death (OR: 0.18, 95%CI 0.11-0.29). Also, men had over 2-fold higher odds (OR: 2.41, 95%CI 1.36-4.26) of homicidal deaths than accidental deaths. Individuals with Hispanic, Black and Asian racial/ethnic backgrounds had 4- to 7-fold higher odds of being a victim of homicide in multivariate model than accidental deaths.

Discussion

Comparison between homicidal and accidental deaths in Kern County from 2019 and 2020 showed that male gender, non-white racial/ethnic background are more likely to be associated with homicidal deaths compared to accidental deaths. Furthermore, more accidental deaths were due to opioids than homicides in these two years. We did not utilize natural deaths as a reference category in this analysis as sample size was low (N=179) and would have yielded imprecise odds ratios. Further analysis of data in coming years will allow to examine trends of prevalence in substances to guide appropriate public health interventions to reduce risk of homicidal and accidental deaths.

Abstract 2023-114

A Case of Kaposi Sarcoma Involving Bilateral Eyelids

Akriti Chaudhry, MD; Melanie Khamlong, MD; Janpreet Bhandohal, MD

Introduction

Kaposi sarcoma is a cancer of the cells that line the lymphatic system and the blood vessels caused by human herpesvirus-8. The most common organs affected are the skin, oral mucosa, gastrointestinal tract, lymph nodes and the lungs. We describe a case of bilateral eyelid swelling caused by lymphatic obstruction due to the Kaposi Sarcoma. Literature has described Kaposi Sarcoma involvement of the conjunctiva. However, few clinical findings of eyelid swelling have been described in the literature.

Case presentation

Patient is a 41-year-old male, with recently diagnosed human immunodeficiency virus (HIV), who presented with bilateral orbital swelling for one month. Patient was hospitalized one month prior for skin rash on his trunk and chest, during which he was diagnosed with HIV. After discharge, he developed progressive swelling of his upper and lower eyelids. Swelling was not relieved with allergy medications. This progressed to where his eyelids were closed shut, prompting him to the emergency

department. He denied any eye pain, eye discharge, eyelid or eye pruritus. Labs were significant for positive HIV and CD4 lymphocyte count of 7. Physical exam showed bilateral cervical and axillary lymphadenopathy. CT scan of neck and maxillofacial showed severe pan-facial cellulitis with submandibular, cervical chain, supraclavicular lymphadenopathy including a partially necrotic left submandibular lymph node. He then underwent excisional core biopsy of left cervical and axillary which confirmed Kaposi Sarcoma. It was believed that his bilateral eyelid swelling was from lymphatic obstruction from the Kaposi Sarcoma. He was started on IV dexamethasone for three days, with reduction of swelling. He was then started on chemotherapy with IV liposomal Doxorubicin, which subsequent sessions scheduled in the outpatient setting.

Discussion

Through literature review, few reports have described a presentation of bilateral eyelid swelling in patients with Kaposi sarcoma. Given as this is an uncommon presentation, other etiologies of eyelid edema had to be ruled out, including allergic reaction. As this patient presented with diffuse lymphadenopathy with biopsy confirming Kaposi sarcoma, his presentation was likely due to lymphatic obstruction from Kaposi sarcoma. Treatment for this patient included symptomatic relief with IV dexamethasone, which improved after three doses. Definitive treatment for Kaposi sarcoma was initiated with IV liposomal Doxorubicin.

Conclusion

Bilateral eyelid swelling is an uncommon presentation in a patient with Kaposi sarcoma. Treatment for this case included IV dexamethasone for symptomatic treatment of edema with initiation of chemotherapy with IV liposomal doxorubicin for Kaposi sarcoma.

Abstract 2023-115

A Rare Case of Disseminated Sternal Coccidioidomycosis with Fistula Formation in an Adolescent

Joshua Woods, MS III; Manpreet Kaur, MS IV; Lulua Mandviwala, MD; Arash Heidari, MD

Introduction

Coccidioidomycosis (CM) is a dimorphic mycosis that is endemic to the southwestern United States, and its presentations vary widely. CM usually presents as a pneumonic infection; however, a minority of infections present as meningitis, osteoarticular, or integumentary disease [A]. CM is disseminated by way of hematogenous or lymphatic spread [A]. This report describes an adolescent patient who presented with a one-month history of a lesion over her sternum with no known medical history and was subsequently diagnosed with disseminated osseous and soft tissue CM with fistula formation with a prolonged course of the disease.

Case Presentation

A 16-year-old female from the middle-east presented to the outpatient pediatric clinic with a painful lesion over the sternomanubriam that had grown over the course of a month. The lesion had scabbed borders, localized erythema, and was tender to palpation without fluctuance or drainage. She had no known medical history, was not on any medications, had no history of trauma, and was not sexually active. Initial chest x-ray and laboratory findings were unremarkable, and she was initially prescribed cephalexin and ibuprofen. She returned to the clinic with radiation of pain and purulent drainage, to which the antibiotics were escalated to clindamycin. After the failure of antibiotics and negative wound culture, the workup was expanded and due to suspicious of living in the endemic area, she was tested and found to have positive coccidioidomycosis immunodiffusion serology IgM and IgG with a complement fixation titer of 1:32. She was initiated on fluconazole 10mg/kg per day. Her chest computed tomography with contrast showed a 6.5 CM abscess overlying the manubrium with sternomanubriam osteomyelitis. The whole-body bone scan ruled out other foci of infection. Her fluconazole was eventually increased to 15mg/kg daily. Over the course of 3 years of therapy, she responded slowly and her fistula slowly closed without further episodes of purulent drainage. Her CF titers slowly improved to 1:2 and she lost to follow due to moving out of state.

Discussion

The location of her disseminated disease is unique and perhaps was the result of a localized invasion from the pulmonary source to the mediastinal lymph node via lymphatics. It is speculated that the lymph node became supportive and created an abscess which eventually eroded the sternum and fistulized through the skin. The extension of her disease and slow response to therapy

suggest an underlying immunogenetic factor that has not been studied yet.

Conclusion

In the endemic area clinicians should be aware of unusual presentation of coccidioidomycosis in all ages. Prompt diagnosis and initiation of effective and adequate antifungal dose and duration is paramount in the resolution or prevention of dissemination and subsequent complications.

Abstract 2023-116

Acute Mental Health Utilization Trends among the Pediatric Population in Kern County, California. A 5-year Cross-sectional Study from 2017 to 2023.

Nandhini Madhanagopal, MD; Michael Ntim, MD; Brad Davis, LMFT

Importance

Mental health utilization trends can assist mental health systems to streamline services, undertake effective planning measures, anticipate, and plan for upcoming surges of utilization, and direct the effective allocation of scarce resources. It can also provide valuable information in times of natural disasters or a pandemic in assessing changes in utilization trends.

Objective

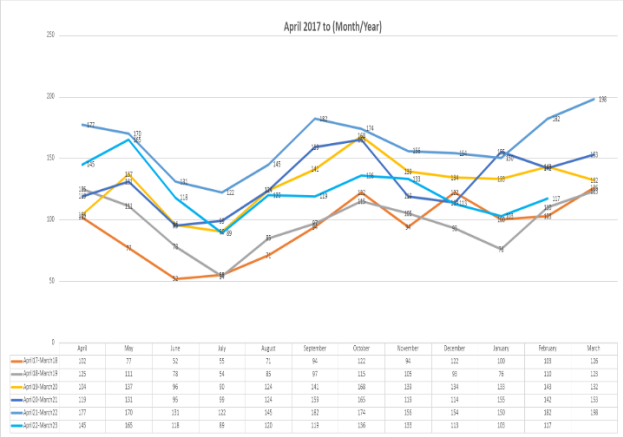
To examine and trend the demand for mental health services in the pediatric population across Kern County including Emergency department visits and mental health crisis response teams for mental health conditions, suicide attempts, self-harming behaviors, overdoses, and substance abuse crises over a 5-year period.

Design, Setting, and Participants

This cross-sectional study used de-identified data collated from requests for Youth Wrap Around services across Kern County to quantify emergency mental health utilization among the pediatric population. Request for services included requests at the Emergency department at Kern Medical, Psychiatric Emergency Center at Mary K Shell, and CSU Ridgecrest and any crisis step down or request for linkage to an outpatient team from March 2017 to February 2023 (data collection is ongoing).

Main Outcomes and Measures

The main outcome measures were requests for Youth Wrap Around services for pediatric mental health conditions (PMHCs), LPS holds, suicide attempts, and self-harming behaviors. Requests for services were de-identified and collated by month.



Please contact researchforum@kernmedical.com for a larger copy of this figure.

Results

The total number of monthly patient visits was analyzed from April to March of the subsequent year. The pattern of increase and decrease in patient visits compared to the previous month's total patient visits was documented in the context of the school calendar.

Exactly similar patterns were detected for the months of June, August, and November of each of the six years documented. The patient visits decreased from the month of May to June which correlates with the summer break in June for schools in California. There was a notable increase in patient visits from July to August when school reopens for the new academic year in Fall. There is a consistent drop in patient visits in November compared to October across all the years in this study. This combined with the decreasing trend seen in December and January (see below) is likely in line with the December winter break at schools.

The trend of decrease in patient visits during June was noted in July in all except one year similar to the increasing trend in August that was also observed during the months of September and October in all except one year. The pattern of decrease in total visits seen in

November continues into December and January in all except one year.

Another notable pattern that emerged was the gradual increase in the total number of patients accessing emergency services from 2017 to 2023. However, the visits disproportionately increased from April 2021 to March 2022. It is worth noting that the schools reopened in March 2021 after closing for the COVID-19 pandemic and this back-to-in-person instruction at school could be contributing to the spike in patient visits.

Unexpectedly, April 2020 to March 2021 period which correlates with the onset of the COVID-19 pandemic (in March 2020) did not show any variation in total patient visits from the previous year.

Conclusions and Relevance

These findings suggest that the stressors experienced by the pediatric population during the school calendar year possibly contribute greatly to the incidence of mental health outcomes that were measured. This association was also observed during the COVID-19 pandemic shutdown, indicating that the stressor is likely more linked to the rigor of academia than to the location or being in the school environment. However, the disproportionate increase in visits noted after the return to school in March 2021 is a counter point. Interestingly, no variation was seen in total patient visits between the COVID-19 pandemic year (April 2020- March 2021) and the preceding year.

Abstract 2023-117

Presentation and Management of Early-Onset Catatonia in an Adolescent

Raahem Zafar, MS III; Elizabeth Evers, MS III; Nicole Nikolov, MS III; Thiagarajan Nandhagopal, MD

Introduction

Catatonia is a neuropsychiatric syndrome that presents with abnormal movements, including posturing, mutism, echolalia, rigidity, and a varying degree of unresponsiveness to external stimuli. Catatonia in the pediatric population is more common in pubertal ages and presents more frequently in males. Schizophrenic disorders are the most common psychiatric disorder related to child and adolescent catatonia, but medical causes cannot be ruled out. Medical causes of catatonia include infection, autoimmune disease, NMDA receptor encephalitis, toxic-induced states, and metabolic or genetic causes.

Case Presentation

A 14-year-old Hispanic female was brought to the emergency department by her father due to several weeks of social regression, odd behavior, and progressive inability to perform activities of daily living. The patient had no previous psychiatric history or work-up for her altered mentation but had a positive family history of schizophrenia in her mother. She also had a personal history of cannabis use disorder. Furthermore, she had recently experienced a traumatic event and never returned to her baseline. On initial presentation, she was gravely disabled with urinary and fecal incontinence, mutism, anorexia, flat affect, obtundation, and inability to meaningfully engage about her condition. She refused meals and subsequently required total parenteral nutrition (TPN). MRI of the brain, CT abdomen/pelvis, lumbar puncture, EEG, urine toxicology, and autoimmune encephalitis panel revealed no abnormalities. The patient was then challenged on lorazepam with partial response including increased appetite and was periodically assessed using the Bush-Francis rating scale. In the following weeks, lorazepam was slowly up-titrated, yet she continued to only have partial response. Risperidone was initiated during this time due to concern for an underlying thought process disorder and was well-tolerated. Amantadine was added a few weeks later for adjunctive treatment of her catatonia. While the patient began showing partial responsiveness to the medication by increasing oral food intake, participating in physical therapy, and minimally engaging with staff, she remained incontinent. She was able to discontinue TPN after increasing her food intake, allowing her to safely continue care at an inpatient psychiatric facility.

Discussion

This case is remarkable for early catatonia-like symptoms in an adolescent. The onset was earlier than the expected age, and the patient presented with symptoms of negativism as well as symptoms of incontinence, creating a difficult diagnosis to narrow down and manage. This report contributes to the limited existing literature on this topic by examining the ways first-episode psychosis may present, demonstrating the workup that led to the diagnosis of catatonia, describing the steps taken to rule out other conditions, and

discussing effective management strategies. This patient's case demonstrates some of the difficulties faced in deciphering the underlying causes of adolescent neuropsychiatric syndromes and approaches taken to improve care for those who only have partial response to medication management of their disease. Symptoms of underlying psychiatric disorders in children with catatonia may only be identifiable after improvement of catatonic symptoms in some cases, such as this one. The patient's limited ability to engage in conversation and limited collateral information factor into the ability to accurately diagnose.

Abstract 2023-118

Late Onset Heart Failure in 64-Year-Old Female with Congenitally Corrected Transposition of the Great Arteries

Vishal Narang, MD; Gurpal Singh, MD; Fowrooz Joolhar, MD; Edvard Davtyan, MD; Jesslin Abraham, MD; Haidar Hajeh, MD

Introduction

Congenitally corrected transposition of the great arteries (CCTGA) is a rare congenital heart defect that occurs when the positions of the pulmonary artery and the aorta are switched, but the ventricles are in their normal positions. The right ventricle pumps blood to the body, while the left ventricle pumps blood to the lungs. The life expectancy of patients with CCTGA can vary depending on several factors, such as the degree of associated heart defects, the presence of heart rhythm abnormalities, and the development of heart failure. Here we describe a case of a patient in her late 60s who presented with late onset- heart failure found to have CCTGA.

Methods

Single patient chart review was conducted.

Case Report

A male patient in his middle-60's presented to the hospital with shortness of breath, orthopnea, and lower extremity edema, worsened over one month. Patient only medical history was notable for hypertension and reported adherence to medication and consistent outpatient follow up. Prior to presentation, patient had been in normal state of health and able to walk over 2-miles a day. He was admitted to the hospital and underwent echocardiogram which demonstrated evidence of congenitally corrected transposition of great arteries. He was found to severely dilated left ventricle with estimate ejection fraction of 20% and severe mitral and tricuspid regurgitation. He reported no prior history of heart failure prior to presentation. He was started on medical therapy with diuretics, afterload reduction, and beta blockers. During hospital stay and he continued to improve and was discharged with outpatient follow up.

Conclusion

Patients with congenitally corrected transposition of the great arteries (CCTGA) are at increased risk of developing complicating factors, such as associated heart defects, heart rhythm abnormalities, heart failure, aortic regurgitation, and surgical complications. To manage CCTGA and minimize the risk of complications, regular medical care and close follow-up with healthcare providers are essential. Effective management of these complicating factors can improve patients' quality of life and potentially increase their life expectancy. It's important to note that the estimated survival rate for patients with CCTGA is lower than the expected survival rates for the general population, with approximately 80% survival rate at age 40 and approximately 60% at age 60. However, life expectancy can vary significantly depending on individual factors and medical management. Therefore, patients with CCTGA should receive regular medical care and follow their healthcare provider's recommendations to manage their condition and improve their quality of life.

Abstract 2023-119

Physical Function After Total Knee Replacement: Relationship with Balance Confidence and Movement Reinvestment

Mayra Medina, BS; Brian Street, PhD

This study focused on the correlation between functional mobility, balance, and movement confidence in total knee replacement patients. There were three correlations tested. One was between functional mobility and balance confidence. Two was between functional mobility and movement-specific reinvestment. Lastly the correction of functional mobility and a subgroup of Movement specific reinvestment (CM-P & MSC). The study consisted of eleven participants including seven females and 4 males. The ABC scale, Movement Specific

Reinvestment Scale, and the TUG test were all measurements.

Abstract 2023-120
Unusual Presentation of Cholangitis in a Patient with IgG4-RD and Extreme Hypereosinophilia
Vishal Narang, MD; Cesar Aranguri, MD; Gurpal Singh, MD; Shikha Mishra, MD; Ishaan Kalha, MD

Introduction

Cholangitis is an inflammation of the bile ducts that can be caused by a variety of factors, including infections, obstructions, and autoimmune conditions. IgG4-related disease is a chronic inflammatory condition that can affect multiple organs, including the bile ducts, and is characterized by elevated serum IgG4 levels and histological features of inflammation and fibrosis. Hypereosinophilia is the presence of an abnormally high number of eosinophils in the blood, and can be associated with various conditions, including autoimmune disorders. Here we describe a case of a patient presenting with right upper quadrant pain found to have IgG4- positive and marked eosinophilia on serum studies.

Methods

IRB approval was obtained. Single patient chart review was conducted.

Case Report

A young male in his late 30's presented with right upper quadrant pain. Laboratory testing revealed hypereosinophilia with absolute eosinophil count of 43,000 and positive serum IgG4 levels. He underwent ultrasound abdomen which demonstrated no acute pathology within gallbladder, and normal caliber bile duct. Due to persistent symptoms, he underwent magnetic resonance cholangiopancreatography and was found to have multiple luminal irregularities. During his admission he was found to have histological evidence of IgG4-related disease and hypereosinophilia on liver biopsy. Before any further intervention patient decided to leave against medical advice and would state he would follow up for workup including bone biopsy. Patient was signed out from the hospital against medical advice.

Conclusion

There is some evidence to suggest that there may be a relationship between hypereosinophilia and IgG4-related disease in patients with cholangitis. Eosinophilia is the presence of an abnormally high number of eosinophils (a type of white blood cell) in the blood, which can be associated with various conditions, including parasitic infections, allergic reactions, and autoimmune disorders. In some cases, hypereosinophilia has been reported in patients with IgG4-related disease, which is a chronic inflammatory condition that can affect multiple organs, including the bile ducts. Cholangitis is an inflammation of the bile ducts, which can be caused by various factors, including infections, obstructions, and autoimmune conditions. In some cases of cholangitis, patients may have hypereosinophilia and also exhibit histological features of IgG4-related disease. While the relationship between hypereosinophilia and IgG4-related disease in cholangitis is not fully understood, some researchers suggest that eosinophils may play a role in the pathogenesis of IgG4-related disease by releasing cytokines and other inflammatory mediators. Additionally, some studies have reported that patients with IgG4-related disease and hypereosinophilia may have more severe disease and a higher risk of relapse compared to those without hypereosinophilia. Overall, further research is needed to fully understand the relationship between hypereosinophilia and IgG4-related disease in patients with cholangitis.

Abstract 2023-121
Challenging Management of Coexisting Spontaneous Bacterial Peritonitis and Empyema in a Patient with Cirrhosis
Vishal Narang, MD; Cesar Aranguri, MD; Gurpal Singh, MD; Shikha Mishra, MD

Introduction

Patients with hepatic hydrothorax are at increased risk of bleeding complications during chest tube insertion due to coagulopathy from liver dysfunction, and the presence of pleural fluid can also make the procedure more challenging and increase the risk of complications such as lung injury. Despite these challenges, chest tube insertion may still be necessary in certain situations. We present a case of a patient with spontaneous bacterial peritonitis who was found to have empyema, requiring chest tube drainage for management. Although the

patient had underlying hepatic dysfunction and coagulopathy, careful management and supportive care were able to minimize the risks of the procedure and ensure a successful outcome.

Methods

IRB approval was obtained. Single patient chart review was conducted.

Case Report

Patient is a male in his late 40s who presented to the hospital with abdominal distension and shortness of breath. While in the emergency room he was found to have right side pleural effusion and abdominal ascites. He underwent therapeutic and diagnostic tap of pleural and ascites fluid. Patient later found to have history of cirrhosis secondary to alcoholic cirrhosis. Upon further history patient had stopped consumption of ethanol 1 year prior to presentation, however was not on medication for fluid maintenance. Further studies demonstrated spontaneous bacterial peritonitis and empyema. He was started on antibiotic therapy. Due to presence of empyema, patient underwent chest tube insertion. Afterwards, patient continued to have daily output of 2200cc from chest tube. Chest tube was clamped and patient continued to remain stable while inpatient. During hospital course he became encephalopathic as blood urea nitrogen increased to 102 and serum ammonia level increased to 80. Despite control of chest tube output, he was started on laxative therapy for hepatic encephalopathy. His mental condition did not improve, however BUN continued to rise. He was started on dialysis and ultimately had improvement of overall outcome. Patient completed antibiotic therapy while inpatient, returned to baselines, and discharged with outpatient dialysis.

Conclusion

Relative contraindications to chest tube insertion in hepatic hydrothorax include coagulopathy, loculated fluid, underlying lung parenchymal disease, severe hypoxemia, and patient preference. Despite these challenges, chest tube insertion may still be necessary in certain situations, such as in patients with empyema. In such cases, chest tube drainage is essential for effective management and is typically accompanied by a course of antibiotics to treat the underlying infection. Close monitoring and supportive care are also important for minimizing complications and ensuring a successful outcome.

Abstract 2023-122

Facial Asymmetry of a Newborn After Forceps-Assisted Delivery

Cheyenne McKee, MS III; Sacha Scott, MS III; Nicole Nikolov, MS III; Lulua Mandviwala, MD

Introduction

Facial asymmetry is an important finding in a neonate that may be secondary to traumatic, congenital, or genetic factors. When it occurs in the setting of forceps-assisted delivery, the presumed diagnosis is facial nerve palsy (FNP) due to nerve compression, which presents as paralysis of the entire affected side. In neonates with physical exam findings inconsistent with FNP, rare and overlooked etiologies should be considered.

Case Description

This is a case of a full-term male neonate born at 3915g to a mother with advanced maternal age and history of uterine perforation via forceps-assisted cesarean section. The pediatrics team was consulted due to facial asymmetry and jaw tilt with crying noted by the NICU nursing team. Examination of facial muscles, eyes, and tear production were unremarkable aside from notable asymmetric movement of the lower lip exacerbated by crying. The left lower lip was noted to move freely downward and laterally; however, the same could not be observed on the right. The neonate moved all limbs spontaneously, and palmar and plantar grasp reflexes were intact. Lungs were clear to auscultation bilaterally, and heart sounds had normal rate and rhythm with no audible murmurs. Following an unremarkable assessment, the patient was discharged and instructed to follow up outpatient for continued monitoring, however, was lost to follow-up with our services.

Discussion

Facial asymmetry may be an isolated anomaly due to defective muscle development, a transient manifestation of nerve compression, or a marker for the presence of coexisting anomalies. Standard practice of neonatal care includes an exam within the first 24 hours of life to identify and investigate any abnormal findings. In cases

of facial asymmetry, further workup may include genetic, electromyographic, and imaging studies. FNP rarely poses a risk to the neonate, requires no medical intervention, and has symptomatic resolution within 24 days after birth2. Congenital hypoplasia of the depressor anguli oris muscle (CHDAOM) is a rare cause of facial asymmetry in the crying newborn1. The exact cause of CHDAOM is unknown1. An autosomal dominant inheritance pattern with variable expressivity has been reported6. It normally presents as one corner of the lip unable to depress, especially noticeable during crying. In mild cases, effects are limited to a cosmetic concern, which are typically outgrown by adulthood. If severe, reconstruction may be considered. CHDAOM can be detrimental if left unnoticed since it is often found with coexisting cardiac, head and neck, musculoskeletal, gastrointestinal, and genitourinary malformations. Facial asymmetry may also be a syndromic finding. Syndromes of importance include Cayler, DiGeorge, Mobius, CHARGE (coloboma, heart defects, atresia choanae, retardation of growth, genital abnormalities and ear abnormalities) and VACTERL (vertebral abnormalities, anal atresia, heart defects, tracheoesophageal fistula, esophageal atresia, kidney, radius and other limb abnormalities).

Conclusion

The aim of this report is to reinforce the importance of a thorough newborn assessment and assist clinicians in navigating neonate facial asymmetries where one differential diagnosis may require no treatment, and another may require further imaging, labs, and possibly surgical intervention.

Abstract 2023-123

Best Practices in Diversity, Equity, and Inclusion Training for Surgical Residency Programs

Sumita Mitra, OMS III; Vu Luu, OMS III; Amber Jones, DO

Introduction

Following heightened awareness of systemic health and racial inequality due to the disproportionate effect of the Covid-19 pandemic on minority communities and the tragic death of George Floyd, an unarmed Black man in police custody in 2020, the American College of Surgeons Committee on Ethics and the Board of Regents issued a call to action that recognized racism as “a public health crisis, resulting in health care inequities” and asked "members of the organization to treat all patients—regardless of race, ethnicity, religion, or sexual preference—with compassion, skill, and fidelity”. Within this movement to better mitigate disparities in healthcare, medical institutions across the country are developing and implementing diversity, equity, and inclusion, henceforth abbreviated as DEI, curricula into existing medical education. Appreciating the need for DEI education in all medical fields, the Kern Medical general surgery residency program scheduled for launch in 2025 will develop a surgery-specific DEI curriculum.

Case Description

This project is the first part of a series of projects aimed at creating a surgery-focused DEI curriculum and evaluating the success of this curriculum. In order to establish a successful curriculum, this study seeks to conduct a comprehensive review of existing literature to understand key components of DEI education, review evidence-based evaluations of successful and unsuccessful initiatives, and finally develop and implement a multi-year curriculum to train future surgeons who can provide high-quality care to an increasingly diverse patient population.

Discussion

Numerous studies over decades have shown that patients with underrepresented ethnic backgrounds and lower socioeconomic positions are more likely to receive lower quality of care as well as experience greater morbidity and mortality from various chronic diseases than non-minorities (Egede, 2006). While inequities in health care are the result of a multi-faceted set of structural and systemic causes, physicians can play a significant role in mitigating these inequities by providing high-quality care to all patients. A recent study has shown that 50% of white residents employed at least one false belief about biological differences between Black and white people (Tesfaye, 2022). This exemplifies the undeniable reality that physician bias can directly and negatively affect the safety and quality of patient care. Addressing the needs of a diverse patient population requires health care providers who can work on diverse teams and understand distinct health challenges and barriers to care faced by individuals and communities. In order to prepare physicians to meet these challenges, one approach is the integration of formal DEI curriculum into medical education at all levels.

As medical institutions are adopting DEI curriculum, there has been an emergence of studies evaluating the effectiveness, pearls, and pitfalls of curriculum development. Our research finds that successful curriculum design includes incorporating students, faculty, and administration in the development of lectures, examples of diverse patients such as showing different skin colors in medical pictures, use of inclusive language, and providing social context to the prevalence of diseases in minority communities in order to prevent stereotyping (Verbree, 2023). Other authors suggest the inclusion of all faculty in curriculum activities and including interprofessional, team-based, and experiential activities focused on addressing bias and developing self-awareness across all years of residency (Eliot, 2021). Additional studies include a patient-centered approach incorporating data and case studies from the local community and presenting cases about bias in an M&M format (Boatright, 2022).

Lastly, while assessing the strength of the curriculum, it would be naive to warrant its success without a global support from the institution. Creating a safe interdepartmental environment with zero tolerance policy for microaggression is crucial for optimal learning. Trainees also benefit from access to resources addressing equity and inclusion within the cohorts. Such actions at an institutional level will best exemplify the core values the DEI curriculum attempts to achieve.

Conclusion

In conclusion, our ultimate long-term goal is to develop an integrated DEI curriculum to train future surgeons who are better able to understand and address the health challenges of a diverse population and improve patient outcomes. We call for surgical residency programs to create specific aims, through implementation of a DEI curriculum, holistic review of applicants and a diverse faculty panel, to improve the numbers of underrepresented members in surgery.

Abstract 2023-124

Open versus Laparoscopic Appendectomy: A Literature Review

Nicole Nikolov, MS III; Hanna Reimer, MS III; Alvin Sun, MS III; Benjamin Bunnell, BS; Zachary Merhavy, MS III

In the United States, over 300,000 cases of acute appendicitis require surgery each year, making appendectomy the most common emergency abdominal surgery. Open appendectomy and laparoscopic appendectomy are the two primary types of surgical procedures used to treat this condition. Open appendectomy has been the standard procedure for decades, whereas laparoscopic appendectomy is a newer, less-invasive method of removing the appendix. This literature review intends to elucidate the similarities and differences between these two procedures as well as explore the benefits and drawbacks of each approach. Herein, we also discuss different considerations that need to be made across various types of clinical scenarios and patient demographics and how this impacts outcomes. Overall, laparoscopic appendectomy has a shorter hospital stay and recovery time, requires less analgesics, and results in better postoperative outcomes. However, there are situations in which open appendectomy may be necessary, especially in cases of complicated appendicitis. While there is nuance to this discussion, a review of the literature suggests that laparoscopic appendectomy is the preferred operation.

Abstract 2023-125

Atypical Presentation of Suspected Hypopituitarism in a Patient with IgA Nephropathy

Vishal Narang, MD; Cesar Aranguri, MD; Shikha Mishra, MD; Sabitha Eppanapally, MD; Matthew Clarke, MD

Introduction

The treatment of IgA nephropathy with steroids typically involves the use of oral corticosteroids, which can help to reduce inflammation and slow the progression of kidney damage. Steroid treatment can be associated with significant side effects, such as weight gain, increased risk of infection, and even psychosis. We present a patient who presented with psychosis secondary to corticosteroid use for IgA nephropathy. He was admitted for further management and on admission he was found to have features and suspected of hypopituitarism since birth.

Methods

IRB approval was obtained. Single patient chart review was conducted.

Case Report

Patient is a male in his late 20s who presented to the hospital for acute onset psychosis. Patient was in normal state living with family member when he began to endorse suicidal attempts. He was brought to the hospital found to be on prednisone taper for last five months due to IgA nephropathy. While he was inpatient, he continued on prednisone taper however outside records obtained demonstrated patient demonstrated from childhood hormone deficiency. Closer physical exam led to suspect further hormone deficiency. He underwent laboratory workup which demonstrated low levels of luteinizing hormone, follicle stimulating hormone, testosterone. His ACTH and dexamethasone suppression were abnormal however patient remained on prednisone therapy. He was found to be suffering from adrenal insufficiency and transitioned to hydrocortisone twice daily. During hospital stay he continued to improve with plan to continue further workup outpatient.

Conclusion

Steroid treatment is commonly used to manage IgA nephropathy and panhypopituitarism, but it can also lead to significant side effects and complications, including psychosis and rare cases of hypopituitarism. Therefore, it is crucial to closely monitor and manage potential complications when using steroids to treat any medical condition. Our patient with IgA nephropathy demonstrated the possible complications of steroid use, and further evaluation revealed suspected hypopituitarism since birth. This highlights the importance of thorough monitoring and evaluation for potential underlying conditions when using steroids in the treatment of any medical condition.

Abstract 2023-126

Challenging Management of DKA Due to Persistent Hypokalemia in a Patient with Suspected RTA

Jon-Ade Holter, MS IV; Vishal Narang, MD; Nishan Mangat, MD; Igor Garcia-Pacheco, MD; Ralph Garcia-Pacheco, MD

Introduction

Renal tubular acidosis (RTA) is a rare disorder that leads to a normal anion gap metabolic acidosis due to an imbalance in bicarbonate caused by dysfunction in the renal tubules. On the other hand, diabetic ketoacidosis (DKA) is a rapidly progressing condition that commonly occurs in patients with diabetes mellitus, leading to hyperglycemia and ketoacidosis, which results in a high anion gap. In this report, we describe a case where a patient presented with DKA and was found to have persistent hypokalemia despite multiple efforts of correction. The patient was suspected to have RTA, which likely contributed to their clinical presentation.

Methods

IRB approval was obtained; single patient chart review was conducted.

Case Presentation

A young female in her early 20s with medical history of diabetes mellitus type 2 (DM II) who presented to the emergency department for nausea and non-bilious, non-bloody vomiting for several days. She also complained of worsening symptoms including lethargy, dyspnea, dry mouth and intermittent palpitations during this time frame. Laboratory tests showed that the patient was in DKA due to glucose >350 and beta-hydroxybutyrate >4.4 but due to severe hypokalemia down to 1.4, patient was admitted to the intensive care unit prior to DKA treatment. After aggressive potassium repletion both intravenously and PO, patient's hypokalemia remained significant despite closure of anion gap. Nephrology was consulted and per recommendations, spironolactone was added due to potassium wasting in the urine. Subsequent improvement to potassium levels was observed and insulin drip was able to be initiated. With continued potassium repletion and addition of spironolactone, patient's condition was resolved. Conclusion: This case report presents a patient with diabetic ketoacidosis (DKA) who was also suspected to have renal tubular acidosis (RTA). In DKA, elevated serum glucose and acidosis can cause electrolyte imbalances, resulting in various laboratory findings. The patient in this case had high serum glucose and beta-hydroxybutyrate levels, along with a high anion gap, which pointed to DKA. However, the patient also had severe hypokalemia and low phosphate levels, which are not commonly observed in DKA cases. After further investigation, the patient was suspected to have Fanconi syndrome, a type of proximal RTA. Identifying RTA in a

patient with electrolyte imbalances caused by DKA was a challenge. Despite aggressive potassium repletion, the patient's hypokalemia remained resistant until spironolactone treatment was initiated. Additionally, the patient had significant hypophosphatemia and hypouricemia, indicating the possibility of other underlying conditions. Previous research has shown a link between Fanconi syndrome and DKA in patients taking diabetes treatments like sodium glucose transporter 2 inhibitors. However, little research exists regarding concurrent DKA and previously unrecognized RTA type 2. This case highlights the relationship between DKA and RTA, demonstrating how DKA can mask renal dysfunction caused by underlying RTA. It underscores the importance of considering RTA in patients with electrolyte imbalances and DKA, particularly in those who have hypokalemia that is resistant to correction.

Abstract 2023-127

Cardiac Amyloidosis A Tale of Two Patients and Impact on Treatment Strategies

Vishal Narang, MD; Haidar Hajeh, MD; Jesslin Abraham, MD; Theingi Tiffany Win, MD

Introduction

Amyloidosis is a rare disease characterized by the abnormal deposition of amyloid protein in various tissues and organs throughout the body. The presentation of amyloidosis can vary widely and depends on the organs involved and can range from asymptomatic to multi-organ dysfunction. Cardiac involvement in amyloidosis is common and can lead to heart failure or arrhythmias. Here we describe two patients who presented with different cardiac symptoms, one with heart failure and the other with arrhythmias, and were ultimately found to have cardiac amyloidosis after further workup. We will discuss the diagnostic process, management, and prognosis for these patients.

Methods

IRB approval was obtained. Single patient chart review was conducted.

Case Presentation

Case #1 **-** A female in her early 60s with a history of hypertension, type 2 diabetes, mixed dyslipidemia, chronic kidney disease, and hypothyroidism presenting with grade 1 diastolic dysfunction. During the interview, the patient reported sporadic chest pain at rest, mild dyspnea, and numbness of the right arm, mostly when laying down. The patient was taking diuretic, ARB, and beta-blocker therapy and maintained a controlled blood pressure at home. Despite being compliant with diet and medications, her recent A1c was 7.2. A kidney biopsy was negative for amyloidosis, but she underwent pyrophosphate scintigraphy for amyloidosis and diagnosed with ATTR cardiac amyloidosis.

Case #2 - A female in her late 40's, presented to the ED with persistent dizziness with ambulation and multiple syncopal episodes. She underwent echocardiogram which revealed left ventricular ejection fraction of 50% with left ventricular diastolic dysfunction. She was started on diuretic therapy to manage acute heart failure exacerbation. During her hospital stay she continued to improve, and was never started on other medical therapy with ARB or beta-blocker. EKG during admission demonstrated low voltage with bradycardia and amyloidosis was suspected. She underwent nuclear scan with PYP tracer which confirmed amyloidosis.

Conclusion

These cases demonstrate the importance of a thorough evaluation and management approach in patients with chronic conditions and the need for specific therapy for amyloidosis. Both patients were started on and managed outpatient by starting medical therapy specific for cardiac amyloidosis.

Both patients presented with different cardiac symptoms but were ultimately diagnosed with cardiac amyloidosis after further workup. While symptomatic management was necessary for their initial presentations, specific therapy for amyloidosis was required to manage the underlying disease. The prognosis for amyloidosis can vary widely depending on the extent of organ involvement and the response to treatment. Early diagnosis and appropriate management are crucial in improving outcomes for patients with amyloidosis. Further research is needed to better understand the pathogenesis and optimal treatment strategies for this rare disease.

Abstract 2023-128

A Case of Nasal Vestibulitis as Source of Septic Thrombophlebitis of Left Ophthalmic Vein in 28-year-old Female

Roshun Rahimi, MS IV; Lindsay Braden, MS IV; Sabah Hamidi, BS; Bahar Hamidi, MS IV; Ngon Trang, MD; Shikha Mishra MD

Introduction

Superior ophthalmic vein thrombosis (SOVT) is a rapidly progressive and potentially fatal incident requiring emergent intervention. Secondary to both septic and aseptic causes, SOVT is considered extremely rare, with a maximum number of recorded occurrences totaling 75 cases to date (3-4 cases/million/year), making it difficult to identify clinically. In this study, we discuss a topic of septic origin we detected through nasal vestibulitis rapidly succeeded by orbital cellulitis, followed by suspected septic cavernous thrombosis with MSSA-positive cultures.

Case Description

A 28-year-old African American female with a history of obesity and Diabetes Mellitus type 2 presented to the emergency department (ED) with two days of left-sided headaches. Patient was administered fluids for migraine/dehydration before being discharged. Two days later, patient returned to the ED for worsening frontotemporal headache, with new onset diplopia, lightheadedness, fatigue, nausea, and vomiting. Physical exam showed Kaussmaul breathing, tachycardia, and tachypnea.

Patient was admitted to Intensive Care Unit for diabetic ketoacidosis. Otolaryngology was consulted for left nasal vestibulitis, which initially started as a “pimple.” Patient mentioned tampering with her blemish before the onset of symptoms. Bedside I&D revealed purulent discharge and left eye ptosis, orbital edema, left lateral gaze palsy, and binocular diplopia suggesting cranial nerve VI palsy involvement was noted on exam.

MRI revealed infected thrombophlebitis of her left upper ophthalmic vein (image 1). Clinical team suspects cavernous sinus involvement, which was not captured during MRI. She was incidentally found to have MSSA positive on blood (table 1), and cerebral spinal fluid (table 2) with suspected source arising from nasal vestibulitis. MRI of thoracic and lumbar spine remained without signs of abscess or other sources of bacteremia/meningitis. TEE was recommended to abolish endocarditis as a source of infection; however, all findings were within normal limits. Serial lumbar punctures were done to monitor elevated opening pressure and leukocytosis of CSF on admission (table 3). Patient was started on nafcillin for six weeks and Lovenox for infected thrombophlebitis but transitioned to dual oral anticoagulation therapy at discharge.

Image 1: Infected thrombophlebitis of her left upper ophthalmic vein

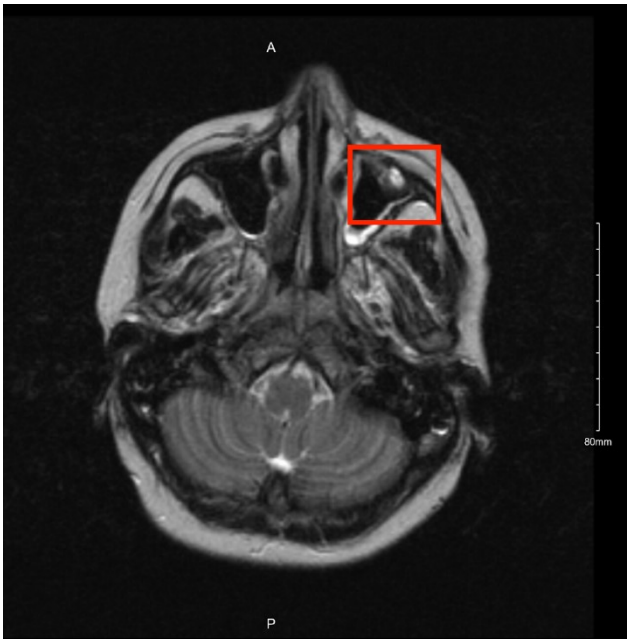


Table 1: Methicillin Sensitive Staph Aureus Blood Culture and Sensitivities

2/2 Bottles Positive Staphylococcus Aureus	
Drug	**MIC Interpretation**
Clindamycin	S
Erythromycin	S
Oxacillin	S

Trimethoprim/Sulfa	R
Vancomycin	S

Table 2: Methicillin Sensitive Staph Aureus CSF Culture and Sensitivities

Positive for Very Rare Staphylococcus Aureus	
Drug	**MIC Interpretation**
Clindamycin	S
Erythromycin	S
Oxacillin	S
Trimethoprim/Sulfa	R
Vancomycin	S

Table 3: Lumbar Puncture Opening Pressure and WBC

Hospital Admission Day	Opening Pressure Value	WBC
1	30 cm H2O	2050/mcl
6	29 cm H2O	95/mcl
9	21 cm H2O	45/mcl
11	Unsuccessful LP	42/mcl

Discussion

Prompt treatment of nasal vestibulitis aims at the prevention of seeding to surrounding vulnerable structures. To assess the nasal cavity in this patient a flexible laryngoscopy I&D helped identify purulent material. Sudden worsening of proptosis directly associated with extension of SOVT may occur, but symptoms often vary and do not significantly contribute to exam findings [2]. Due to this, orbital imaging is of pinnacle importance in identifying SOVT. Definitive diagnosis can be best made using iodinated MR venography to enhance the orbital venous system and accentuate location of the thrombus within the superior ophthalmic vein. Secondary to septic CSF, patients often demonstrate symptoms associated with elevated Dural sinus pressures. Until anticoagulation and systemic antibiotic therapies begin to take effect, therapeutic lumbar punctures may be required due to markedly elevated opening pressure to relieve associated headaches.

Conclusion

In conclusion, the notorious “triangle of death” still poses a rather large threat. As seen in the patient above, a simple nasal vestibulitis spiraled into a suspected SOVT causing diplopia, lateral gaze palsy, and even possibly meningitis.

Abstract 2023-129
Improving Get with The Guidelines®- Resuscitation Recognition Measures for Qualified In-Hospital Cardiopulmonary Arrests at Kern Medical
Eunice Hartsock, MSN, APRN, FNP-C, CPHQ

Purpose

Background **-** Data suggests that 375,000 to 400,000 people die from a Cardiopulmonary Arrest (CPA) event in the United States every year. Kern Medical utilizes the American Heart Association’s Get With The Guidelines®-Resuscitation (GWTG-R) program to optimize patient outcomes through benchmarking and quality improvement initiatives. At this time, Kern Medical is below standard on two (2) of the four (4) recognition measures currently determined by GWTG-R to have the most impact on patient outcomes during an in-hospital CPA event.

Problem Statement **-** As of Quarter 4 2022, Time to First Shock ≤ 2 Minutes for Ventricular Fibrillation (VF)/Pulseless Ventricular Tachycardia (VT) as the First Documented Rhythm (aka the Shock Measure) was at zero (0)% compliance and Confirmation of Airway Device Placement in the Trachea (aka the Airway Measure) was at 41.7% compliance among Kern Medical patients that met the GWTG-R inclusion criteria.

AIM/Goal **-** Our goal is to improve both the Shock Measure and Airway Measure to at least 85% among Kern Medical patients that meet the GWTG-R inclusion criteria by the end of Quarter 4 2023.

Methods

Root Cause Analysis - Various quality improvement methodologies such as "The 5 Whys" and Gap Analysis were utilized to determine the root cause of the problem. Analysis showed that all fallouts in 2022 were primarily due to two reasons: 1) unfamiliarity with the measure guidelines/rationales and/or 2) improper documentation of the code event.

Plan - Findings were presented to a multi-disciplinary Code Blue Committee, Physician Stakeholders, Nursing Stakeholders, and Nursing Residents. Through a collaborative effort, the following interventions were developed: 1) Educate stakeholders on the purpose and rationale of the GWTG-R measures, 2) Educate nursing and physician stakeholders on the common documentation issues and collaborate on a plan to resolve them, 3) Draft and approve a new Code Blue Sheet to helps ease documentation burden, capture accurate data, and increase regulatory compliance, and 4) Test the approved Code Blue Sheet in SIM Lab prior to final wide-spread implementation. To date, education on the measure rationales and resolving documentation issues have been completed. A plan for re-education will occur once a final version of the draft Code Blue Sheet has been approved and testing of the sheet begins.

Summary of Results/Anticipated Results

Preliminary Quarter 1 2023 data has already shown improvement in the Airway Measure – this has increased significantly from 41.7% to 100% in less than 3 months of interventions. For now, there is no available data for the Shock Measure – currently, no Kern Medical patient that meets the GWTG-R inclusion criteria has had VF or Pulseless VT as the first documented rhythm in Quarter 1 2023.

Conclusions/Implications

It is too early to conclude the outcome of the project as it is still ongoing. However, preliminary analysis suggests that the implemented interventions are having a positive effect on the available data. If measure goals of at least 85% can be met by the end of Quarter 4 2023, a sustainability plan will need to be developed to help maintain measure compliance. Not only would the success of this project have a positive impact on patient outcomes and regulatory compliance, Kern Medical would be eligible for the Silver Award from GWTG-R. This award would give us the opportunity to have a competitive edge in the community by providing tangible evidence of our commitment to quality patient care.

Abstract 2023-130
Improving VTE Prophylaxis Compliance Among Cesarean Section Patients at Kern Medical
Eunice Hartsock, MSN, APRN, FNP-C, CPHQ

Purpose

Background - Data suggests that 60,000-100,000 people die from venous thromboembolism (VTE) a year, and it is the leading cause of preventable hospital death in the United States. Hospitalized patients at risk for VTE include those who recently had surgery, such as a cesarean section (c/section). Kern Medical currently participates in the Quality Incentive Pool (QIP) Program, where funding is tied to quality outcomes of required and elective measures. VTE Prophylaxis, one of various QIP measures, can generate a minimum of $1,000,000 dollars of funding a year if the measure goal of at least 85% is met.

Problem Statement - As of Quarter 4 2022, VTE Prophylaxis compliance among c/section patients at Kern Medical was 67.9%.

AIM/Goal - Our goal is to improve our VTE Prophylaxis compliance rate among c/section patients at Kern Medical to at least 85% by the end of Quarter 4 2023.

Methods

Root Cause Analysis/Plan - Findings of the data have been discussed with Performance Improvement, Population Health, Staff Development, and Labor & Delivery (L&D) Nursing Residents. Various quality improvement methodologies such as "The 5 Whys" and Gap Analysis will be utilized to determine the root cause of the problem. Interventions are pending on completion of analysis.

Summary of Results/Anticipated Results

Pending completion of Root Cause Analysis and implementation of potential plan.

Conclusions/Implications

Although this project is in its infancy, there are clear implications on the importance of its success, both from a patient safety and financial perspective. If the measure goal of at least 85% can be met by the end of Quarter 4 2023, a sustainability plan will need to be developed to help maintain measure compliance.

Abstract 2023-131

A Case of Potty's Puffy Tumor

Lawrence Liu, MD; Larissa Morsky, MD

Introduction

Pott's Puffy tumor is a subperiosteal abscess and osteomyelitis of the frontal bone. It is more commonly observed in children and is often due to a complication of frontal sinusitis or trauma.

This case is unique considering that our patient is an otherwise healthy adult who developed Pott's Puffy tumor secondary to periorbital cellulitis.

Case Description

This is a case of a 67-year-old female who presented to the Emergency Department with pain, swelling and erythema of the left eye. According to the patient, the symptoms had been present for a few weeks and she had recently been evaluated by both her primary care physician and at another emergency department. She was prescribed oral azithromycin and topical ciprofloxacin for one week however she did not have improvement in her symptoms. In the ED she noted subjective fever, chills and rhinorrhea but denied headache or vision changes. Vital signs were significant for tachycardia. Physical exam revealed erythema and fluctuance over left eyelid as demonstrated in Figure 1. Upon examination of the eye, extraocular movements were intact without pain and there were no conjunctival erythema or pupillary abnormalities.

Significant findings on blood chemistry included a leukocytosis with neutrophil predominance and elevated inflammatory markers. Computed tomography of the maxillofacial bones and soft tissue was concerning for frontal sinus mucocele with erosion through the wall of the anteromedial left orbit and lateral displacement of the globe. CT of the brain did not show any intracranial abscess. She received one dose of vancomycin and piperacillin-tazobactam in the emergency department however she left against medical advice prior to admission or evaluation by otolaryngology. The patient did follow up with her primary care physician and received an extended course of IV antibiotics via home health care which led to significant improvement of her symptoms.

Discussion

Although Pott's Puffy tumor is most commonly described in children, it should be included in the differential diagnosis of swelling in the forehead of adults as well. Symptoms may include headache, periorbital or forehead swelling, fever, purulent rhinorrhea, vomiting and can progress to signs of meningitis or encephalitis. MRI is the modality of choice for diagnosis however if unavailable CT scan may demonstrate sinusitis, frontal bone erosion, subperiosteal abscess and even intracranial extension of the infection. Broad-spectrum antibiotics should be initiated as the infection is often poly-microbial. Most common bacterial etiology include staphylococcus aureus and streptococcus, however there have been cases reporting anaerobic and gram-negative sources as well. Definitive treatment of this condition often requires consult with neurosurgery or otolaryngology for surgical intervention and an extended course of IV antibiotics.

Conclusion

Given the severity of the complications if left untreated, it is important to consider the diagnosis of Pott's Puffy tumor in any patient presenting with forehead swelling and erythema. This is even more essential if the patient has a history of sinusitis or recent facial trauma.

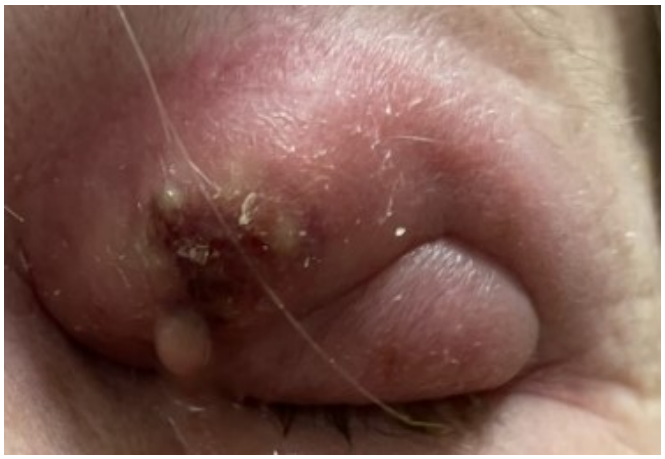


Fig. 1. Left periorbital cellulitis and subcutaneous abscess

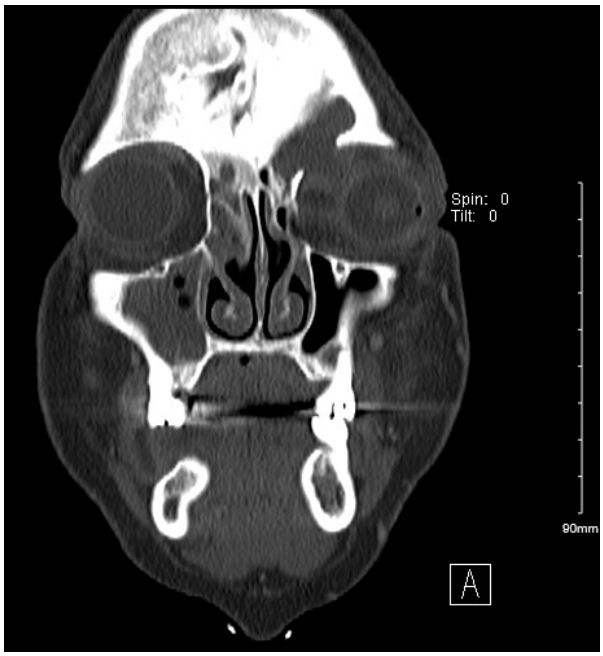


Fig. 2. Computed tomography scan of the maxillofacial demonstrating frontal sinus mucocele with contiguous extension through bone erosion through the wall of the anteromedial left orbit.

Abstract 2023-132

Surgical Correction of Renal-duodenal Fistula Due to Recurrent Pyelonephritis

Vishal Narang, MD; Amber Jones, DO; Shahab Hillyer, MD

Introduction

Renal-duodenal fistula is a rare phenomenon that often arises from untreated chronic pyelonephritis, typically precipitated by the obstructing renal staghorn calculi. It occurs more commonly in women than in men . Other causes include duodenal ulcer disease, ureteric calculi, roundworm infestation, iatrogenic injury, trauma, or ingestion of foreign objects. When present, the renal-duodenal fistula tends to form between the renal pelvis and posterior duodenum due to their proximity and the duodenum's relatively fixed position. Patients typically experience a combination of fever, leukocytosis, lower urinary tract infection symptoms, including flank or abdominal pain, dysuria, increased urinary frequency, and urgency. Because the symptoms of a renal-duodenal fistula are often masked by the underlying disease, its finding is often incidental. We report a case of renal-duodenal fistula caused by chronic pyelonephritis secondary to unilateral obstructing staghorn calculi in a 72-year-old male who undergoes surgical intervention with an excellent outcome.

Methods

Single patient case report was conducted.

Case Presentation

A 72-year-old male with a history of hypertension, nephrolithiasis, NSTEMI, appendectomy, recurrent urinary tract infection, and right nephrostomy presented to the hospital with dyspnea and left upper extremity pain. The patient reported experiencing dyspnea on exertion for the last 3 days and left arm pain up to his neck that was exacerbated with movement. The patient was initially on TPN through PICC line due to renal-duodenal fistula, and CT of abdomen showed right renal staghorn calculi and right mid-ureter with hydroureter/hydronephrosis. The patient was placed on NPO for 1 week with TPN and recommended eventual nephrectomy of the right kidney.

Upon admission, CT angiogram of the chest was completed with contrast due to suspicion for PE; results revealed severe deep soft tissue infection along the left upper extremity PICC line insertion, extending into the anterior mediastinum, with mild anterior mediastinal emphysema, concerning for mediastinitis. Cardio-thoracic surgery recommended no surgical intervention unless evidence of destruction of the mediastinum, abscess formation, or mass-effect. CT abdomen/pelvis revealed a fistulous connection between the third

portion of the duodenum and the right postural ureter with oral contrast and pooling inferiorly in mid-distal right ureter. Due to severe aortic stenosis, balloon valvuloplasty was performed prior to right nephrectomy and duodenal ureteral fistula repair. During the surgery, the patient was found to have multiple fistulous connections, which were sharply dissected followed by right nephrectomy. The duodenum was repaired, and fistulous tracts were debrided. Postoperative prognosis was satisfactory, and the patient was discharged on day 10 after surgery.

Conclusion

Chronic urinary tract obstruction by renal calculi can create a niche for bacterial overgrowth, thus precipitating pyelonephritis. Without proper treatment, inflammatory milieu can lead to tissue destruction and remodeling, forming fistular tracts. All patients with staghorn calculi should undergo immediate evaluation followed by removal of the stone. In an event where a fistula is present as a complication of chronic pyelonephritis, surgical repair in conjunction with nephrectomy should be recommended if the kidney is deemed non-functional.

Abstract 2023-133

A Case of Severe Pulmonary Hypertension Exacerbated by Compression of the Inferior Vena Cava

Vishal Narang, MD; Hena Yagnik, MD; Fowrooz Joolhar, MD; Theingi Tiffany Win, MD

Introduction

Pulmonary hypertension (PH) is a disease defined by increased pressure in the pulmonary vasculature. It is usually accompanied by various pathophysiologic mechanisms including vascular remodeling and hypoxic pulmonary vasoconstriction and classified into five groups based on etiology. Symptoms are typically nonspecific, with most common complaint being dyspnea on exertion, and easily attributable to other conditions. Physical examination may provide some context, however usually the condition has progressed and is associated with increased mortality by then. Severe pulmonary hypertension accompanied by physical compression of the inferior vena cava is an uncommon finding. Here we present a patient receiving work-up for atrial fibrillation and found to have severe pulmonary hypertension. Incidentally, he was noted to have an extra-hepatic mass compressing the inferior vena cava. When followed up outpatient for further evaluation, repeat Echo showed no evidence of IVC compression. This was accompanied by drastic improvement in his condition.

Methods

IRB approval was obtained, single patient case report was conducted.

Case Presentation

A 53-year-old Caucasian male with a 20-pack year smoking history, renal cell carcinoma, and HTN s/p left nephrectomy presented to our institution for elective hernia repair. During the operative procedure, the patient was observed to be in atrial fibrillation with occasional fast ventricular response and pharmacologically converted to sinus rhythm. Post-operatively the patient remained in sinus tachycardia and was admitted for further evaluation.

A cardiology consult was placed and further history revealed patient was diagnosed with an “unknown murmur” during adolescence and endorsed intermittent episodes of “fluttering” in his chest, typically associated with stress or increased physical work. He otherwise denied any fatigue, shortness of breath, episodes of exertional syncope, chest pain, weight gain, and swelling. Physical exam was unremarkable. A transthoracic echocardiogram (TTE) was ordered to evaluate for a left atrial appendage thrombus. Upon imaging, no apparent thrombus was visualized but instead he was found to have moderate tricuspid valve insufficiency with a PAP of 78 mmHg and maximum tricuspid velocity of 4.4 m/s, consistent with severe pulmonary hypertension. Incidentally, he was seen to have an extrahepatic cystic structure measuring 6 x 8 cm compressing to the IVC. Further imaging was advised to primary team to evaluate mass however patient was discharged prior to further workup. Six-months later patient was seen in cardiology clinic for follow up. During his visit he reported no new complaints. He continued to endorse intermittent fluttering in his chest but denied any exertional syncope, fatigue, dyspnea, chest pain, swelling or weight gain. Repeat Echo was ordered to reevaluate his pulmonary hypertension. Results continued to show tricuspid insufficiency; however, PAP and maximum velocity had significantly decreased to 34 mmHg and 2.8 m/s,

respectively. These findings were consistent with borderline pulmonary hypertension. Remarkably there was no longer any evidence of IVC compression/mass.

Conclusion

It can be concluded our patient has pre-existing pulmonary hypertension which was exacerbated by extra-hepatic compression on the inferior vena cava. He currently exhibits good functional capacity with no clinical symptoms. Echocardiogram provides evidence of residual pulmonary hypertension. While confirmatory testing with RHC remains to be performed it is imperative for more frequent follow up visits to assess symptoms of right heart failure, exercise tolerance, and resting and ambulatory oximetry.

Abstract 2023-134
A Rare Case of Cryptococcus Gattii Meningitis in Advanced HIV Disease, Sagittal Thrombosis, and Immune Reconstitution Syndrome, Resolved with Isavuconazonium
Vishal Narang, MD; Valerie Civelli, MD; Royce H. Johnson, MD; Arash Heidari, MD

Introduction

This case presentation describes a patient with Cryptococcus gattii meningitis, a species known to cause meningeal disease in both immunocompetent and immunosuppressed hosts. The patient had advanced HIV disease due to nonadherence, which led to several complications including immune reconstitution inflammatory syndrome and superior sagittal sinus thrombosis. The case presented diagnostic and therapeutic challenges as the patient's primary symptom, headache, overlapped with multiple conditions.

Methods

IRB approval was obtained, single patient chart review was conducted.

Case Presentation

A 45-year-old Caucasian man was diagnosed with HIV and was found to be non-adherent to antiretroviral therapy. One month after diagnosis, he presented to a different institution with a severe headache and vomiting for two days. On examination, his general physical exam was unremarkable except for mild meningismus. A neurologic examination revealed normal mental status, cranial nerves, motor, gait, and balance. The patient's vital signs showed a slightly elevated temperature, mild tachycardia, and slightly elevated blood pressure, while the oxygen saturation was normal. Blood work revealed lymphocytopenia and mild transaminitis, and the absolute CD4+ cell count was low. A lumbar puncture showed high opening pressure, high white cell count, and low glucose levels, indicating Cryptococcus species. Chest radiographs showed pulmonary cryptococcoma, and bronchoalveolar lavage confirmed Cryptococcus. The patient was started on intravenous liposomal amphotericin B and oral flucytosine for induction therapy.

After a 14-day course, he was discharged home on consolidation therapy with fluconazole and antiretroviral therapy. However, the patient was hospitalized nine times over a 12-month period for recurrence of fever, headache, and elevated intracranial pressure (ICP). The patient was declared a therapeutic failure on fluconazole after a follow-up MRI of the brain showed the development of cryptococcomas in the cerebellum and temporal region. Sensitivity testing showed isolate sensitivity to all antifungal medications, but the patient's condition did not improve with voriconazole. The patient was subsequently switched to Isavuconazole (ISA) therapy. His condition significantly improved, and his headache and ICP improved. His absolute CD4+ cell count was high, and the HIV-1 RNA polymerase chain reaction was not detected. The superior sagittal sinus thrombosis also resolved as demonstrated by magnetic resonance venography.

The patient remains adherent to ISA maintenance therapy and antiretroviral therapy 12 months after the ninth hospital discharge. In conclusion, cryptococcal meningitis with pulmonary cryptococcoma is a severe complication of HIV. Despite aggressive induction therapy and consolidation therapy with antifungal medications, patients may experience a recurrence of symptoms and elevated ICP. In such cases, sensitivity testing should be conducted to determine the optimal antifungal medication regimen. Isavuconazole is a promising treatment for cryptococcal meningitis that may be considered in patients who are non-responsive to other antifungal therapies. Close monitoring and

adherence to antiretroviral therapy are also essential in managing this condition.

Conclusion

Patients with complex cryptococcal disease can experience various complications, including increased intracranial pressure (ICP), hydrocephalus, cerebral venous thrombosis (CVT), and immune reconstitution inflammatory syndrome (IRIS) which is more common in HIV patients. The clinical presentation of these symptoms can significantly overlap, making it challenging to determine the most appropriate therapeutic intervention to achieve resolution. Therefore, significant effort is required to carefully evaluate and manage these patients, taking into account their individual medical history and the severity of their symptoms.

Abstract 2023-135

Uncovering Dry Beriberi in a Patient with Catatonia

Carmen Ruby, MS III; Chelsea Dunn, MS III; Edvard Davtyan, MD; Rupam Sharma, MD; Kasey Fox, DO

Introduction

Dry Beri-Beri involves severely decreased thiamine levels and can lead to issues affecting the central and peripheral nervous systems. Demyelination of the neurons occurs when thiamine, Vitamin B1, reaches critically low levels subsequently affecting neuronal conductivity and causing peripheral neuropathy. Catatonia is a neuropsychiatric syndrome characterized by motor and behavioral abnormalities, such as immobility, stupor, and mutism. There can be diagnostic confusion when uncovering a neuromuscular condition such as Dry Beri-Beri in the setting of a patient with catatonia.

Case Presentation

A 43-year-old woman with medical history of schizoaffective disorder and methamphetamine use presented to the emergency department from a local community behavioral health hospital due to poor oral intake for two days and severe catatonia. On arrival, the patient was mute, stuporous, immobile, and resistant to instructions, meeting DSM-5 criteria of catatonia. Initial labs were notable for Thiamine <7. LP performed showed elevated protein of 110 and normal white blood cell count supporting diagnosis of Guillain-Barre. Patient received IVIG x7 days with no resolution of symptoms. Nerve conduction study demonstrated normal F waves, making Guillain-Barre less likely. Nerve conduction significant for diffuse sensory neuropathy, severe in lower limbs and moderate in upper limbs and moderate bilateral tibial motor axonal and mild bilateral peroneal motor demyelinating neuropathy.

On physical exam the patient continued with facial and lower extremity weakness with absent reflexes and decreased positional sense. Based on the aforementioned labs and diagnostic studies, diagnosis of Dry Beri-Beri was established and the patient was subsequently started on Thiamine therapy. Patient continues to remain stable.

Discussion

Thiamine deficiency leads to beriberi, further classified as dry or wet. Dry Beri-Beri is characterized by neuropathy with the duration and magnitude of the thiamine deficiency correlating to the severity of its presentation. The presenting symptoms of both Dry Beri-Beri and Guillain-Barré syndrome are similar and difficult to distinguish due to the overlap of their signs, symptoms, and diagnostic features. Our patient presented with lower extremity weakness and cerebrospinal fluid (CSF) findings consistent with Guillain-Barré prompting treatment with IVIG. CSF in patients with beriberi can also show a mild elevation in protein, furthering the difficulty in diagnosis. Distinguishingly, neuropathic pain is not usually a symptom of GBS, as in beriberi neuropathy. Additionally, GBS is characterized by demyelinating features like conduction blocks and prolonged F waves with preserved sensory responses. This is unlike our patient who had sensory and motor neuropathy on electromyography and normal F waves. These clinical features are helpful in determining GBS from Dry Beri-Beri, especially in patients at risk for thiamine deficiency.

Conclusion

This particular case of Dry Beri-Beri is remarkable as the patient presented with catatonia obscuring the patient's significant neuromuscular deficits and ultimately delaying appropriate treatment. The complexity of differentiating Dry Beri-Beri from Guillain-Barre syndrome in a patient with catatonia emphasizes the

need for a multidisciplinary approach involving psychiatrists and neurologists in patient care.

Abstract 2023-136

A Case of Disseminated Coccidioidomycosis Treated with Olorofim

Bianca Torres, RA; Michelle Fang, PharmD; Carlos D'Assumpcao, MD; Arash Heidari, MD

Introduction

Olorofim is a novel antifungal currently under review by FDA for the treatment of invasive fungal infections. We describe a case of disseminated coccidioidomycosis treated with Olorofim after fluconazole and Itraconazole failure.

Methods

Retrospective case review with IRB approval and patient consent.

Results

A 37-year-old woman with recently diagnosed pulmonary coccidioidomycosis (cocci) was referred to Valley Fever Institute (VFI) at Kern Medical due to a lack of response and dissemination. Five months prior, she had been diagnosed with acute pulmonary cocci at an outside facility with recurrent episodes of hypoxia after the failure of symptomatic management for presumptive viral etiology. Upon diagnosis, her cocci complement fixation (CF) titer was 1:16 and she was started on 600 mg of fluconazole daily. Two months later she had severe complaints of productive cough, chest pain during deep inspiration, subjective fevers, night sweats, chills, body aches, and arthralgias of both hands and bilateral lower extremities. Fluconazole was increased to 1000 mg daily resulting in a therapeutic level at 63.5 mcg/mL; however, her body aches, and arthralgias continued to worsen resulting in significant impacts to her activities of daily living including difficulty walking, difficulty maintaining employment, and (inability to spend quality) time with family. When sero-reactivation of her cocci CF titer to 1:128 raised concern for dissemination, treatment was changed to itraconazole 200 mg three times daily. Over the next 4 months, her symptoms did not improve and she was referred to VFI. A whole-body bone scan showed increased foci in left ninth and right eighth ribs representing osseous dissemination.

Given the failure of therapy with fluconazole and itraconazole and limited therapeutic options due to insurance coverage, she was initiated on treatment with Olorofim through a clinical trial (NCT03583164), with dose titration to 120 mg twice daily. While on Olorofim monotherapy, improvements were noted in the trend of her cocci CF titers down to CF of 1:4, with complete resolution of her previously debilitating symptoms. As of February 2023, she has been receiving Olorofim for 14 months and is able to exercise, cook, and spend quality time with family.

Conclusion

Olorofim monotherapy resulted in significant improvement in serology, clinical symptoms, and quality of life in a case of disseminated coccidioidomycosis. Clinicians should be aware of novel antifungals in the treatment of this debilitating disease.

Abstract 2023-137

A Progressive Case of Eosinophilic Myocarditis Due to Eosinophilic Granulomatosis with Polyangiitis in a Caucasian Male

Vishal Narang, MD; Valerie Civelli, MD; Rupam Sharma, MD; Janpreet Bhandohal, MD; Leila Moosavi, MD; Everardo Cobos, MD

Introduction

Eosinophilic Granulomatosis with Polyangiitis (EGPA) is a systemic vasculitis that may demonstrate cardiovascular manifestations. EGPA, formerly Churg-Strauss Syndrome, follows a chronological course that is challenging to diagnose in the earlier stages of disease. In already progressed disease, patients tend to decline rapidly due to multisystemic involvement. Symptoms may be overlooked as isolated events rather than a cluster of symptoms which originate from EGPA. This is a case of EGPA-induced eosinophilic myocarditis in the progressed thrombotic stage. Key features of disease are demonstrated. Diagnosis complexity and treatment herein are described.

Methods

Single patient chart review was conducted.
Case Presentation: A 62-year-old man with well-controlled asthma presented to his primary care

physician (PCP) for routine care. One month later, he returned for follow-up lab results which showed an increased absolute eosinophil count, hyperlipidemia, and normal troponin levels. Five months later, he presented to the emergency department (ED) with chest pain and right-sided weakness, which was confirmed to be a non-ST segment elevation myocardial infarction (NSTEMI) through an electrocardiogram (EKG). The patient's CT scan of the head showed a small non-hemorrhagic infarct of the posterior left parietal lobe and his echocardiogram revealed a 2 cm thrombus in the left atrial F with an ejection fraction of 58%.

The patient continued to experience chest pain and serial echocardiograms revealed cardiac decompensation without an identifiable cause. He was transferred to the critical care unit where he experienced new onset of bilateral weakness, aphasia, and decreased alertness. Multiple pleural effusions, pericardial effusion, petechial rash, splenic infarction, and renal infarctions developed. The patient's absolute eosinophils remained elevated and inflammatory markers were elevated as well. A cardiac MRI was suggestive of infiltrative disease of unknown etiology, and endomyocardial biopsy (EMB) confirmed a diagnosis of eosinophilic myocarditis with myofiber necrosis. The patient was diagnosed with eosinophilic granulomatosis with polyangiitis (EGPA) based on his symptoms, EMB findings, and hypereosinophilia. Despite initial treatment failures, the patient's condition improved with the addition of cyclophosphamide to his treatment regimen.

This case highlights the importance of routine care and follow-up on lab results, as well as the need for a comprehensive work-up when patients present with multiple organ system involvement. It also underscores the challenges in diagnosing and treating rare diseases such as EGPA. Early diagnosis and appropriate treatment are essential in improving patient outcomes.

Conclusion

EGPA induced myocarditis is challenging to diagnose but remission is achievable with prednisone and cyclophosphamide or prednisone and mepolizumab. Improved diagnostic markers and eosinophil targeted therapies are needed for more direct pathways to diagnosis and overall better treatment options.

Abstract 2023-138

A Case of Testicular Granulomatous Inflammation Mistaken for Malignancy: Tuberculosis Identified Post Orchiectomy

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Introduction

Testicular disease can be divided into malignant and nonmalignant causes, which determine the need for surgical excision or medical management. Each year in the US, there are approximately 10,000 cases of testicular carcinoma diagnosed, with diagnosis confirmed postoperatively. When pathology reveals granulomatous inflammatory disease, the differential diagnosis can be categorized into rheumatologic, infectious, and malignant causes, and careful review of pathology is required to exclude coexisting malignancy. We describe the case of a 41-year-old Hispanic male, inconsistently adherent to visits due to socioeconomic challenges, presented with a right testicular mass, leading to a right orchiectomy. Pathology revealed granulomatous disease with no malignancy detected.

Methods

Single patient chart review was conducted.

Case Presentation

A 41-year-old Hispanic male with a history of diabetes and hypertension presented with right testicular pain and swelling that progressed over a month. He was treated for epididymitis with doxycycline but the swelling progressed, leading to a right inguinal orchiectomy. Pathology reports showed granulomatous disease with no malignant evidence. Six months later, he presented with left testicular swelling and tenderness. Examination showed erythema and a hard mass involving the entirety of the left testicle. He was treated for bacterial epididymitis but with no effect. The patient was not a candidate for the tuberculin skin test, but tests for brucellosis, syphilis, gonorrhea, chlamydia, myeloperoxidase antibodies, and proteinase 3 antibodies were negative. The clinical diagnosis of tuberculous epididymo-orchitis was made based on suggestive evidence, past medical history, geographical history, and failed antibiotic treatment. The patient was treated with the standard 4-drug antitubercular therapy and vitamin B6 for 6 months, and his pain and mass resolved within

weeks and months, respectively. He was followed up for 8 months with no evidence of active disease.

Discussion

This case highlights the importance of proper diagnosis and management of tuberculous epididymo-orchitis. The patient's history of diabetes and hypertension, combined with the histopathologic evidence and failed antibiotic treatment, led to the clinical diagnosis of tuberculosis. Despite the challenges of acquiring interferon-γ release assays and the patient's inconsistent adherence, the patient received the standard 4-drug antitubercular therapy and vitamin B6 for 6 months, which successfully resolved the pain and mass. The patient was followed up for 8 months with no evidence of active disease. This case also emphasizes the need for proper follow-up and adherence to medical treatment. The patient's nonadherence to follow-up visits postoperatively may have delayed the diagnosis and treatment of his left testicular swelling. The patient's socioeconomic challenges may have also contributed to his inconsistent adherence to visits and laboratory orders. Healthcare providers must consider the social determinants of health and provide appropriate support to ensure proper management of the disease.

Abstract 2023-139

Echocardiographic Findings in Heart Failure Patients with Methamphetamine Use: A Case-Control Study

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Purpose

The purpose of our study was to characterize various echocardiographic findings, including ejection fraction, right ventricular systolic pressure, cardiac mass index, and left ventricular end-diastolic volume amongst heart failure patients with and without a history of methamphetamine use.

Methods

After obtaining institutional review board (IRB) approval, we performed a retrospective chart review. We screened patient charts from November 1, 2019, to November 1, 2020, using heart failure related International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10 CM) codes that showed 1410 records. Our inclusion criteria included patients aged 18 years and above with clinical heart failure and active and recent methamphetamine use (in the last six months) based on history provided or urine toxicology, along with patients who underwent echocardiography during the index admission. We excluded patients who either left the hospital or expired before an echocardiogram was obtained. The final case group included 254 patients (Figure 1). Controls were screened using the same criteria except that patients were negative for methamphetamine on urine toxicology and history. Charts were also reviewed for a history of methamphetamine use. Patients were included in the case group if they were actively using methamphetamine based on history, even if urine toxicology was negative.

Results

The final case group included 254 patients after the application of inclusion and exclusion criteria. The final control group included 268 patients. Majority were males, 178 (70%) and 180 (67%) in the case and control group respectively which was not statistically significant (odds ratio = 1.1450, p = 0.4735) (Table 1). The results for RVSP, LVEF, LVMI, EDVI and age are based on a two-sample one-tailed t-test, whereas diastolic dysfunction was reported using odds ratio and chi-squared test of independence. Age was found to be statistically significant with the younger population in the case group (p = 0.0000). The mean value LVEF in the control group was higher than in the case group (p= 0.0000), suggesting better left ventricular systolic function in patients without methamphetamine use. LVMI, which signifies the mass of left ventricle as per body surface area, was significantly higher in the case group (p= 0.0000). So was the EDV Index (p=0.0000), signifying greater left ventricular dilatation in methamphetamine users. In patients where RVSP value was available (179 patients, 211 controls), mild statistical significance (p-value = 0.0540) was observed in the difference in RVSP between case and control groups (cases having higher RVSP). Given that not all the patients had RVSP reported, results may have been impacted by a smaller sample size.

Discussion

Methamphetamine use can lead to cardiomyopathy, with typical echocardiographic findings of dilated cardiomyopathy and reduced left ventricular systolic

function. Echocardiograms can provide information on wall motion abnormalities, cardiac chamber enlargement, and left ventricular ejection fraction, which can help diagnose and assess prognosis. Patients with methamphetamine-related cardiomyopathy tend to be younger and have worse echocardiogram parameters than those with cardiomyopathy without methamphetamine use, including increased left ventricle mass index, worse systolic dysfunction, and increased chances of developing right heart failure. Further studies are needed to confirm these findings.

ABSTRACT INDEX

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z