Southern San Joaquin Valley

RESEARCH FORUM

6TH ANNUAL REGIONAL GATHERING

Annual Abstract Collection

May 22, 2025

Department of Medical Education

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Southern San Joaquin Valley

RESEARCH FORUM

6TH ANNUAL REGIONAL GATHERING

Welcome to the 6th Annual Southern San Joaquin Valley Regional Research Forum, organized and presented by Kern Medical!

We are proud to feature a wide range of research, case reports, simulation-based educational interventions, and quality improvement projects by our community of residents, fellows, faculty, medical students and research collaborators. This forum is a celebration of scholarship and innovation across the region. Its purpose is to foster a deeper understanding of research and to recognize meaningful contributions to clinical practice and medical education.

A panel of expert reviewers from the Kern Medical Research Committee reviewed all abstract submissions to the forum and accepted 109 abstracts, which is an increase from 94 abstracts the previous year. This reflects the continued growth and strength of the research culture across the region.

We extend our sincere appreciation to all participants, mentors, reviewers, and organizers who contributed their time, expertise, and enthusiasm to make this event a success. We invite you to explore this collection of abstracts and the link to the interactive **iPoster gallery** to learn from the innovative work being presented and be inspired to pursue your own scholarly endeavors.

Thank you for being a part of this important event and may the spirit of research continue to drive progress in our communities.

Sincerely,

Jeff Jolliff, PharmD, MBA, BCPS, BCACP, AAHIVP
Chair, Research Committee
Kern Medical

If you would like more information regarding any of the abstracts in our abstract collection, such as references, full-sized figures, tables, or images please contact researchforum@kernmedical.com.

Abstract 2025 – 01

Prolonged Neonatal Jaundice secondary to Gilbert Syndrome

Thiagarajan Nandhagopal, MD; Patrick De Luna, MD; Luz Perez, MS IV; Zihao Cai, MS III

Introduction: Gilbert syndrome (GS) is a hereditary condition caused by mutations in the UGT1A1 gene, leading to reduced activity of the enzyme uridine diphosphate glucuronosyltransferase (UGT). It typically results in mild unconjugated hyperbilirubinemia, often presenting during adolescence, and is considered benign. Severe neonatal presentations are rare and can mimic more serious conditions like Crigler-Najjar syndrome (CNII). We report a male neonate with persistent hyperbilirubinemia who tested positive for GS and responded well to phenobarbital, highlighting the importance of considering GS in neonates with prolonged hyperbilirubinemia and the potential role of phenobarbital in treatment.

Case Presentation: A Hispanic neonate, born at 41+1 weeks via NSVD, required NICU admission due to maternal complications. The patient had poor feeding followed by hyperbilirubinemia, treated with phototherapy. At discharge, his total serum bilirubin (TSB) was 9.8 mg/dL. He was readmitted with TSB of 17.5 mg/dL and treated again with phototherapy.

Over the next few weeks, his bilirubin remained elevated, peaking at 22.7 mg/dL by 13 days old, prompting further investigations. Workups for hemolysis, infection, and common jaundice causes were negative, and genetic testing for UGT1A1 polymorphisms was ordered. A phenobarbital trial was initiated, and by day 4, bilirubin showed a downward trend. Genetic results revealed a heterozygous UGT1A1*28 polymorphism, confirming GS. The patient continued improving with phenobarbital treatment, and by 4 months, his bilirubin was 2.6 mg/dL.

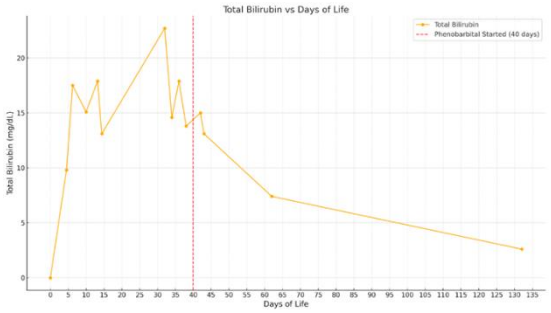

Figure 1. The graph depicts the patient's total bilirubin levels (mg/dL) plotted against days of life. The red dashed line marks the initiation of phenobarbital treatment on day 40. The chart highlights the initial fluctuations in bilirubin levels requiring multiple phototherapy sessions, followed by a downward trend after the introduction of phenobarbital. This pattern supports the efficacy of phenobarbital in reducing bilirubin levels over time, consistent with its role in promoting bilirubin conjugation and clearance.

Discussion: Neonatal jaundice is common and often benign, but severe or persistent hyperbilirubinemia requires further evaluation. GS is typically associated with mild hyperbilirubinemia and often presents in adolescence, while CNII results in severe jaundice due to complete or near-complete UGT deficiency. The patient's significant bilirubin levels initially raised suspicion for CNII, but genetic testing confirmed GS. The positive response to phenobarbital in this case, despite the severity of the hyperbilirubinemia, challenges the notion that GS is always a mild condition.

Literature suggests variability in GS presentation, with some neonates exhibiting severe jaundice despite the typical mild phenotype. The patient's response to phenobarbital suggests that the dose and duration of treatment may influence outcomes, and additional factors may explain the variability in bilirubin levels among individuals with GS.

This case also underscores the importance of considering GS in neonates with persistent jaundice, even when it is presumed to be benign. While GS is usually diagnosed in adolescence, severe neonatal hyperbilirubinemia is rare but not unheard of. Studies show that individuals with the heterozygous UGT1A1*28 polymorphism often have mild

hyperbilirubinemia, but the presence of other conditions can worsen bilirubin levels. This case highlights the need for individualized treatment and emphasizes that GS may, in rare instances, require intervention.

Conclusion: This case demonstrates a severe neonatal presentation of GS, showing that even mild conditions like GS can cause significant neonatal hyperbilirubinemia. It supports the role of phenobarbital in managing GS-related jaundice in neonates, challenging the perception of the condition as always benign. Further research is needed to explore the role of phenobarbital and the variability of clinical presentations in GS.

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Abstract 2025 – 02
Sweetobullosum with Valley Fever: A Case Report
Rachel Meach, OMS IV; Rick McPheeters, DO; Carol Tang, MD; Shikha Mishra, MD

Introduction: This case report delves into the rare coexistence of Sweet syndrome, an idiopathic neutrophilic dermatosis, and coccidioidomycosis, a fungal infection with increased morbidity and mortality in the southwestern United States. Case description: We present a case of a 60 -year-old female patient at Kern Medical Center in Bakersfield, CA, displaying a sudden onset of painful erythematous papules to palms, forearms, and chest. Initial clinical evaluation revealed fever and elevated inflammatory markers. Further testing revealed the patient had an underlying infection from coccidioidomycosis and was subsequently treated with fluconazole and prednisone. Patient has been improving with Prednisone taper on follow up visits.

Discussion: Coccidioidomycosis, also known as Valley fever, is fungal infection caused by the inhalation of spores from the Coccidioides fungus. The fungus is found in the soil of arid regions, particularly in the southwestern United States and some areas in Central and South America. Many people infected with the Coccidioides fungus are asymptomatic. However, symptoms can range from flu-like symptoms (fever, cough, fatigue) to more severe manifestations, including pneumonia. In some cases, the infection can disseminate to other parts of the body, such as the central nervous system, bones, joints, and skin. A less well known noninfectious cutaneous manifestation of coccidioidomycosis is termed erythema sweetobullosum. This rare manifestation is important to consider in the evaluation of patients with painful vesiculobullous skin lesions in areas endemic with coccidioidomycosis, such as Kern County. In 2020 and 2021, Kern County had the highest incidence of coccidioidomycosis in the state of California.

Conclusion: This case underscores the importance of considering Sweet syndrome in the differential diagnosis of patients presenting with atypical cutaneous manifestations associated with systemic symptoms. Enhanced awareness among healthcare professionals is pivotal for early intervention and improved outcomes in patients with Sweet syndrome and should be considered in areas with high prevalence for coccidioidomycosis, such as Kern County.

Abstract 2025 – 03
Silent Osseous Dissemination with Cutaneous Coccidioidomycosis: What You See and What You Don't See
Shikha Mishra, MD; Patrick Betadam, MS IV; Safa Mousavi, MD, MPH; Robert Collins, MS IV; Chirag Aulakh, RA; Bianca Torres, RA; Rupam Sharma, MD; Jigar Patel, MD; Michelle Fang, PharmD; Carlos D'Assumpcao, MD; Royce Johnson, MD; Rasha Kuran, MD

Introduction: Disseminated coccidioidomycosis (CM) is rare, comprising 0.5%–2% of all CM cases; cutaneous involvement has been reported in 15%–67% and osseous involvement in 10%–20% of the disseminated cases. Cutaneous CM usually manifests as painful nodules, ulcers, or abscesses and osseous CM presents as pain, swelling, or lytic lesions. To our knowledge, asymptomatic presentation of osseous disease hasn't been studied and wouldn't be readily recognized by routine medical care. We present a rare case of disseminated CM in a healthy young

individual who experienced cutaneous lesions with asymptomatic osseous involvement.

Case Description: A 24-year-old African American woman with no notable medical history was referred to Kern Medical for a suspected fungal infection after mold growth. Patient presented with a 7-month history of chronic cough with clear sputum, and a 2-month history of pustular lesions on her jaw, progressing to purplish lesions to her cheek, chest, shoulder, and mid-back. On examination, a 3×3 cm pustular mass was observed on the right upper chest, along with an erythematous pustular rash over the jaw and cheek. Chest X-ray at admission showed diffuse paratracheal and hilar soft tissue prominence with subsegmental left base airspace disease. Chest computed tomography (CT) revealed destructive pulmonary lesions, and CT of the abdomen and pelvis incidentally revealed lytic lesions of the left posterior 10th rib and the right anterior iliac bone (11 mm), along with multiple lytic lesions of bilateral pubic bone. Complete blood count with differential revealed microcytic anemia (MCV 73.6 fL, Hgb 8.6 g/dL) and eosinophilia (absolute eosinophils 600 cells/mcL). Sputum, tissue, and fungal cultures were all obtained, as well as Coccidioides antibody immunodiffusion with complement fixation (CF). Coccidioides IgM and IgG antibodies were reactive and CF titers ≥ 1:512. Histopathological examination of a skin biopsy disclosed sporulating spherules consistent with CM. CT- guided biopsy of the symphysis pubis revealed abundant spherules containing endospores in the bone marrow consistent with osseous CM. Bone and sputum cultures grew Coccidioides immitis. The patient was then subsequently discharged on fluconazole 800 mg qd. At the 2-week follow-up at the Valley Fever Institute in Bakersfield, the patient noted marked improvement of her skin lesions. But then developed pain in her left mid-back and left iliac bone. The patient was subsequently lost to follow-up when she lost her insurance.

Discussion: Osseous CM is an uncommon though insidious mode of dissemination that can be asymptomatic, impairing early diagnosis and treatment. This case ultimately questions whether routine osseous CM screening should be a common practice in patients with other forms of dissemination. Silent dissemination — particularly to the axial skeleton — can affect treatment strategies, such as antifungal choice and duration. Clinicians must consider even asymptomatic osseous involvement to best manage patient care.

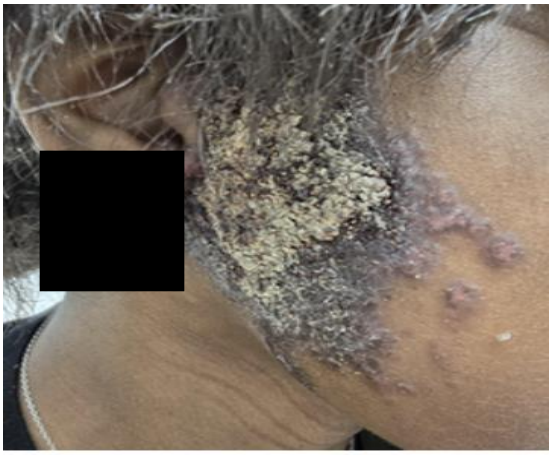

Figure 1: Cutaneous Manifestation

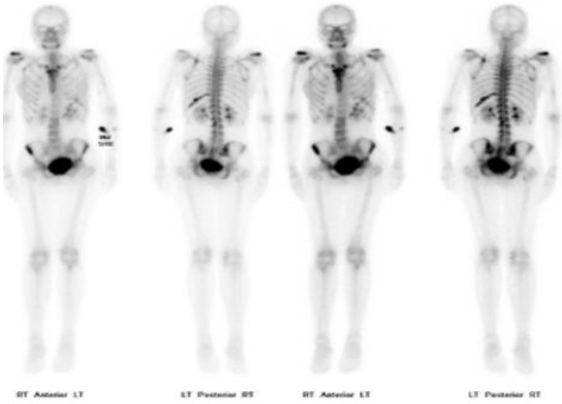

Figure 2: Whole Body Bone Scan

Conclusion: Although osseous CM is often diagnosed with the onset of painful symptoms, this case demonstrates its potential for asymptomatic presentation. Recognizing osseous involvement, early on, can dramatically change clinical management and suggests that a greater clinical suspicion is warranted in cases of disseminated CM.

Abstract 2025 – 04
Can Eosinophilia Aid in the Prediction of Coccidioidal Severity?
Shikha Mishra, MD; Asad Mohammad Jani MS IV; Liza Chen Wijaya, MS IV; Michelle Fang, PharmD; Safa Mousavi MD, MPH; Bianca Torres, RA; Kelly

Ayabe, BA; Jigar Patel, MD; Carlos D'Assumpcao, MD; Rasha Kuran, MD; Royce Johnson, MD

Objectives: The severity of disease in coccidioidomycosis, a potentially devastating infection endemic to the southwestern United States, is primarily determined by the host immune response. Previous studies suggest that eosinophils may play a role in this initial response, potentially affecting the acuity and chronicity of coccidioidal disease. The aim of this study is to analyze the relationship between initial eosinophilia and severity of coccidioidomycosis.

Methods: This IRB-approved retrospective cohort study evaluated patients treated at the Valley Fever Institute in Bakersfield, CA for a new diagnosis of non-miliary pulmonary coccidioidomycosis from 2020-2021. Diagnosis was made or confirmed by Coccidioides spp. IgG immunodiffusion tests at the Kern County Public Health Department. Patients were excluded if a complete blood count with differential and chest imaging from initial presentation (index date) were unavailable for review. Peripheral eosinophilia was defined as an absolute eosinophil count of ≥350 cells/microliter and further categorized as mild (350- 1000 cells/mcL), moderate (>1000-1500 cells/mcL), or severe (>1500 cells/mcL). The incidence of disseminated coccidioidomycosis diagnosed within 3 years of index was compared in patients with peripheral eosinophilia (PE) versus insignificant eosinophilia (IE) at index. Other endpoints included hospitalization, length of hospital stay (LOS), oxygen requirement, and intensive care unit (ICU) admission. Clinical categories (Table 1) were used to describe disseminated disease.

Results: Fifty-five patients with newly diagnosed pulmonary coccidioidomycosis from 2020-2021 were identified of these, 27 had peripheral eosinophilia at index. Mean age at index was 37 years (IE 34 years, PE 41 years); 58% were male (IE 50%, PE 67%); 24% had diabetes mellitus with a mean hemoglobin A1c of 9.0% (IE 25% HbA1c 10.0%, PE 22% HbA1c 7.7%); and mean body mass index was 30 kg/m 2 (IE 30 kg/m^2 , PE 30 kg/m^2). Disseminated coccidioidomycosis was diagnosed in 2 patients (IE) vs. 1 patient (PE). Both patients in the IE group had onset of dissemination within 3 months of index and included category 4B and 5A disease. In the PE group, dissemination with category 4B disease occurred at 2.9 years. In total, 20 patients (36%) were hospitalized at index (IE 29%, PE 44%); of these, mean LOS was 9 days (IE) vs. 4 days (PE), oxygen was required for 38% (IE) vs. 25% (PE), and ICU care was required for 13% (IE) vs. 0% (PE).

Conclusions: In this study, peripheral eosinophilia at initial presentation with pulmonary coccidioidomycosis appeared to be associated with higher frequency of acute severity requiring hospitalization, although patients with PE generally had a shorter and less complicated hospital course compared to those with IE. The early identification of and initiation of antifungal treatment for pulmonary coccidioidomycosis likely explains the low frequency of disseminated coccidioidomycosis in our study population, although the difference in onset of dissemination between the IE and PE groups is interesting and should be explored in a larger study. These findings support further investigation of the relationship between peripheral eosinophilia and coccidioidal disease, with the hope of discovering insights that eventuate an improved clinical understanding of disease progression.

Clinical Category	Category Designator	Subcategory	Detail
No prior Coccidioidomycosis[0]	0	0A	No prior coccidioidomycosis
		0B	Has never visited or lived in an area in which CM is endemic
Unrecognized CM in the past[1]	1		No clinical recognition of coccidioidal disease but evidence of prior infection
Uncomplicated Pulmonary CM[2] *No evidence of extrapulmonary dissemination*	2		Proven or probable coccidioidal lung disease with or without antifungal therapy. May have chest radiographic evidence of effusion or parenchymal disease, lymphadenopathy.
Complicated Pulmonary CM[3] *No evidence of extrapulmonary dissemination*	3	3A	Pulmonary Disease with simple cavitation
		3B	Fibrocavitary Lung Disease
		3C	Persistent Pulmonary Disease for ≥ 6 months despite therapy
		3D	Respiratory failure w/wo multisystem organ failure
Extrapulmonary dissemination of CM without meningitis or other CNS involvement[4]	4	4A	Extrapulmonary dissemination without meningitis And cutaneous disease only
		4B	Extrapulmonary dissemination without meningitis with foci other than skin e.g., osteomyelitis, infective arthritis
Coccidioidal Meningitis (or other CNS involvement of Coccidioidomycosis)[5]	5	5A	Meningitis; no other evidence of extrapulmonary dissemination
		5B	Meningitis with additional dissemination to skin (only)
		5C	Meningitis with extrapulmonary dissemination to skin and other organs
Death attributable to CM[6]	6	6	Death caused by Coccidioidomycosis

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Abstract 2025 – 05

Necrotizing Pneumonia with Pneumohydrothorax

Lawrence Okumoto, MD; Igor Garcia-Pacheco, MD; Cesar Aranguri, MD; Amrit Dhillon, MD; Kenneth Lam, MD; Arsen Mkrtchyan, MD; Chandpreet Singh, MD

Introduction: Necrotizing pneumonia is a severe and rare complication of pneumonia that is caused by abscesses in the lung that form cavitations. These are commonly caused by S Aureus, S pneumoniae, and K pneumoniae. These types of pneumonia are rare and can be life threating. Tension hydropneumothorax is an even more rare complication in which air and fluid causes collapse of the lung through a one-way-valve mechanism. Thus we present a case of a rare complication was initially overlooked in this case of necrotizing pneumonia with tension hydropneumothorax.

Case Description: Patient is a 51-year-old male with past history of diabetes and polysubstance abuse who presented to the ED on for worsening of shortness of breath, fatigue, and fevers. Patient left AMA 3 months prior after being admitted for the same symptoms, and was diagnosed with necrotizing pneumonia of the right lung. On admission, patient was tachypneic, tachycardic with hypoxia. Chest x-ray showed enlarged heavy lesion right upper lobe measuring 16 x 8 cm concern for lung abscess along with new left upper lobe pulmonary abscess measuring 7 x 5 x 2 cm; at the time no pneumothorax or pleural effusion was seen. Follow-up chest CT read by the radiologist reported a large right upper lobe abscess measuring 23 x 10 x 9 cm along with a new left upper lobe abscess measuring 5.4 x 3.9 x 5.6 cm with multiple multifocal consolidation bilaterally. The patient was started on broad-spectrum antibiotics but remained tachycardic and tachypneic; he was given high flow nasal cannula but the patient continued to decompensate. Respiratory status worsened and was emergently intubated on day 2. BP dropped from septic shock, pressors were started. Follow-up chest x-ray revealed a large right tension pneumothorax. Chest tube was placed successfully, large amounts of air and bloody pleural fluid was removed. Pleural fluid cultures negative including TB QuantiFERON and cocci serology, antifungal medications were discontinued. Patient was successfully extubated on day 7. CT post-extubation shows left upper lobe parenchymal abscess, right perihilar airspace disease questionable for bronchopulmonary fistula, loculated pleural effusion, suspicious for empyema. Chest tube had a persistent air leak. Cardiothoracic surgery was consulted with no surgical intervention recommended due to ongoing infection. On day 9 patient was able to start communicating his needs, and his septic shock resolved so Levophed was discontinued. A second chest tube was placed on day 10 due to the persistent air leak. On day 11 patient remained adamant that he wanted to leave, and as patient had capacity, he signed AMA.

Discussion: This case presents an overlooked critical diagnosis most likely from his previous history of necrotizing pneumonia which developed slowly over time. As he did not present in distress, tension hydropneumothorax was not high on differential diagnosis, the turning point being when the patient decompensated requiring intubation and a chest tube.

Conclusion: Necrotizing pneumonia forms from abscess that leads to cavitations. This can cause a rare complication of hydropneumothorax. Early intervention with chest tubes and cardiothoracic surgery is important for early management.

Abstract 2025 – 06

Interstitial Lung Disease in a Post COVID Patient

Lawrence Okumoto, MD; Harmanjeet Dhillon, MD; Chandpreet Singh, MD; Kasey Fox, DO; Augustine Muñoz, MD; Rasha Kuran, MD

Introduction: Emergence of the SARS-CoV-2 virus, new post-COVID disease complications have arisen, including interstitial lung disease (ILD), a sub-type of pulmonary fibrosis (PF). PF is a stage of normal physiologic response to the inflammatory process, mostly self- limiting and reversible; however, many patients with COVID pneumonia present post- acute with residual lung fibrosis. To diagnose is a combination of clinical evaluation along with imaging studies and selected laboratory tests are needed. Properly diagnosing patients allows for

treatment to slow the progression of ILD which is necessary to prevent further complications.

Clinical Course: 71-year-old female presented to the ED with worsening shortness of breath. She had a past medical history of hypertension, type 2 diabetes, and coronary artery disease, with a history of COVID disease approximately 3 years ago. A diagnosis of ILD was diagnosed 5 months prior to ED presentation. Patient requires 2 L of oxygen (O2) at home intermittently with activity, approximately 2-3 times per week. She became progressively short of breath, which interfered with her daily activities. In the ED, the patient was hypertensive, saturating at 70% on room air, with bilateral rhonchi. CXR showed cardiomegaly with bronchial cuffing. Infectious workup is negative. Given her history of COVID and ILD, the patient was started on steroids. Her response to treatment was slow, initially needing 2 days of high flow nasal cannula, before steadily improving the subsequent 3 days while on steroids. CT chest showed honeycombing with ground glass opacities consistent with ILD. Cardiac echo revealed new pulmonary artery hypertension. Patient was discharged on her baseline O2 needs, a tapering dose of prednisone, and instructions to follow up with cardiology for further diagnostic workup for pulmonary arterial hypertension.

Discussion: Patient who has a history of COVID and ILD needs to be treated for their condition in order to prevent the progression of ILD. It's important to follow patients who have a history of COVID as complications arise later, such as ILD and pulmonary hypertension,
and can be missed, which can cause increased morbidity and mortality. Patients with COVID can develop ILD just after discharge and up to several weeks later. Most patients will recover and the fibrosis resolves within 3 to 6 months post-COVID. There is a 10% chance of developing severe pathology that includes persistent fibrotic lung damage during the first 12 months after diagnosis of COVID in these patients. This patient had a diagnosis of COVID that required hospitalization for several days. The patient was not followed up, and it was not until several years later that it was discovered that she had ILD and pulmonary hypertension.

Conclusion: Early diagnosis of post-COVID ILD is important because patients need to be started on treatment to prevent the progression of the disease. Delay in diagnosis and treatment of this patient caused her to have increased morbidity. Early intervention can increase the quality of life of these patients, which includes delaying the need for continuous home oxygen therapy, other complications such as pulmonary arterial hypertension, and recurrent infections due to steroid immunosuppression.

Abstract 2025 – 07

Navigating the complication: Acute Mastoiditis causing Cerebral Venous Thrombosis in an adult

Kevin Trong Dao, MD; Elias Inga Jaco, MD; Edvard Davtyan, MD; Matthias Park, MD; Kasey Fox, DO; Igor Garcia-Pacheco, MD

Introduction: Acute mastoiditis is an infection of the air cells in the mastoid and is primarily seen in the pediatric population. This disease usually occurs after patients develop otitis media, which can result in acute mastoiditis as a complication. Most patients usually present with generalized symptoms of an infection; however, in some instances, cerebral venous thrombosis can occur. Such a rare complication has been described in children, although in rare instances it can happen in adults. Here a patient presented to the emergency department and developed cerebral venous thrombosis secondary to acute mastoiditis without evidence of thrombophilia.

Case Description: The patient is a 55-year-old female who presented with complaints of an 8/10 headache associated with photophobia and phonophobia. She notes that the headache is more prominent on the right side of her head. The patient conveyed tenderness to palpation over the right temporal region. Her initial tests showed an elevated C-Reactive Protein (CRP) and a complete blood count (CBC) showed bandemia and thrombocytopenia. A computed tomography (CT) scan of the brain and head without contrast showed right mastoiditis. The following day, the patient had developed bilateral upper extremity shaking as well as left side facial and

left upper extremity weakness. She was diagnosed with status epilepticus and was given lorazepam 4 mg twice. She was transferred to the intensive care unit with 24-hour electroencephalogram (EEG) monitoring and intubated as well as placed on mechanical ventilation with sedation. A CT brain and head without contrast was repeated due to concerns of stroke. The results showed multiple acute infarcts in the right frontal, parietal, occipital, and temporal lobes with dural venous sinus thrombosis. Hematology/oncology were consulted for concerns about a hypercoagulable state, and otolaryngology, as well as infectious disease, were consulted for the patient's mastoiditis. Despite being on treatment, the patient showed no significant neurologic improvement after one week, and the family decided to make the goals of comfort care only.

Discussion: Cerebral venous thrombosis is a rare complication of acute mastoiditis and occurs primarily in the pediatric population. However, there are some instances where such complications occur in adults. Studies have shown that patients with cerebral venous thrombosis tend to depict a wide range of signs. 90% of patients develop severe headaches that can progress to severe debilitating symptoms. In fact, 92.2% of patients develop neurological diseases such as seizures, altered mental status, coma/stupor, and/or aphasia. Due to the contiguous structure of the cerebral venous sinuses, localized infected areas can allow the development of complications around the cerebral venous sinuses. In this case, inflammation caused by mastoiditis resulted in a prothrombotic state, causing cerebral venous thrombosis. Yet, infections of the middle ear resulting in cerebral venous sinuses thrombosis tends to be rare due to the advancement of antibiotics.

Conclusion: Cerebral vein thrombosis is a very rare complication of acute mastoiditis, particularly in adults. Most cases have been associated with a hypercoagulable condition. Upon diagnosis, immediate treatment with heparin should be started to attempt to restore venous flow.

Abstract 2025 – 08

More than Meets the Eye: Charles Bonnet Syndrome

Sanjana Murdande, MD; Parmveer Kaloty, MS IV; Kasey Fox, DO

Introduction: Visual hallucinations in an elderly patient are often attributed as a feature of neurocognitive or psychiatric disorders, which leads to extensive workup. However, in patients with documented vision loss, another differential must be considered: Charles Bonnet Syndrome (CBS). CBS is a phenomenon observed in patients with visual impairment, specifically visual field and acuity loss and is characterized by complex visual hallucinations. It is often secondary to age related macular degeneration or glaucoma and is an underreported condition that may be incorrectly diagnosed as early dementia or psychosis. This case report describes one presentation of CBS in an elderly patient with macular degeneration.

Methods: A single patient case report was conducted after receiving IRB approval.

Case Presentation: A 94-year-old female with a past medical history of wet-type age related macular degeneration with complete vision loss of the left eye since 2013 and partial vision loss of her right eye since 2020, presented to the emergency room with three days of visual hallucinations. The hallucinations ranged from nonspecific patterns to animals and people. Initially, the care team was concerned about the possibility of delirium, given her age and disrupted sleep patterns. However, she did not exhibit an altered level of consciousness, disorganized thinking, or significant memory impairment. On physical exam, she was alert and oriented to person, place, and time. The patient was able to converse in a structured manner and was often aware she was actively hallucinating. A neurological exam was consistent with severe visual deficits, particularly in the left visual field. She did not exhibit signs of Parkinson's dementia, decreasing suspicion of Dementia with Lewy Bodies as well. In ruling out other causes of the hallucinations, a non-contrast CT scan of the brain showed no acute intracranial abnormalities, nor characteristics associated to dementia. An MRI of the brain/head

could not be performed due to the patient having an MRI-incompatible pacemaker. The patient's only medications were nebivolol and pantoprazole, and she denied use of other substances. The lack of delusions, disorganization, and negative symptoms made the diagnosis of a psychiatric disorder less likely. Overall, the absence of an inciting event, medication, psychiatric condition, or dementia, supports CBS as the cause of the visual hallucinations.

Conclusion: Charles Bonnet Syndrome is very common in patients who experience vision loss, but it remains underrecognized and misunderstood by physicians, which can lead to misdiagnosis. Elderly patients are also hesitant to admit to their hallucinations due to the coinciding stigma, thus contributing to underdiagnosis.

Other causes of hallucinations should be excluded, such as neurocognitive disorders, substance use, and medications. However, if this workup is negative, Charles Bonnet Syndrome must be considered as a differential diagnosis.

Abstract 2025 – 09
Splenic Artery Pseudoaneurysm: A rare complication of acute pancreatitis with pseudocyst

Vindhya Sridhar, MD; Rupam Sharma, MD; Ikleel Moshref, MD; Ishaan Kalha, MD

Introduction: A splenic artery pseudoaneurysm (SAP) is a rare but feared complication of chronic pancreatitis, more commonly than acute pancreatitis. It is life threatening when it ruptures and holds a mortality rate of almost 90%, irrespective of aneurysm size. We present a patient who survived SAP rupture as a complication of acute pancreatitis because of timely embolization.

Case description: The patient is a 38-year-old obese female who initially presented to our hospital with acute pancreatitis and respiratory failure in the setting of heat stroke. Her hospital stay was complicated by necrotizing pancreatitis, NSTEMI among others; culminating in multi-organ failure and DIC. The necrotizing pancreatitis was notably complicated by an infected pseudocyst which was partially drained by a cystoenterostomy and subsequently removed by necrosectomy. On one of the nights, the call team was notified that the patient was having increased work of breathing and was desaturating. Vitals at the time were oxygen saturation 95% on high flow nasal cannula, HR 121, BP 69/38 (MAP 48), RR 41. Patient looked diaphoretic, mild expiratory wheezes were heard on auscultation and abdomen was dull to percussion without guarding or rigidity. The G tube was noted to contain bright red blood. Labs showed lactic acidosis and a hemoglobin drop of 1.4 from the previous day. Additionally, the patient had also been on therapeutic anticoagulation for a DVT in the left leg. With this clinical picture, hemorrhagic shock was suspected. Anticoagulation was discontinued, labs were sent and a central line was inserted to start the patient on pressors. A CT Angio of the chest, abdomen and pelvis was ordered to locate the source of bleed. CTA chest was negative for pulmonary embolism. CT Angio of the abdomen showed a slightly increased size of peripancreatic fluid collection measuring 18.2 x 8.2 cm. Interventional radiology was consulted for emergent angiography with possible embolization given the findings concerning for active bleeding in the peripancreatic region. The patient was adequately resuscitated and taken to the angiography suite where a proximal to mid splenic artery pseudoaneurysm was found with active extravasation into the peripancreatic region which was embolized to stasis. The shock improved thereafter and on day 5 of the embolization, patient was off vasopressors.

Discussion: In a patient with a history of acute or chronic pancreatitis who develops hemodynamic instability, pseudoaneurysm bleed should be suspected, usually presenting as gastrointestinal bleeding, abdominal pain or even splenomegaly. Pancreatic enzymes cause erosion of the arterial wall near the pancreas and form a pocket of blood surrounded by adventitia. The blood vessels usually involved are splenic artery, gastroduodenal artery, pancreaticoduodenal artery.

Conclusion: Our patient presented acutely with hemodynamic instability and the imaging was

mistaken for a peripancreatic fluid collection. However, the expertise of the physicians involved in this case prompted urgent transcatheter embolization. The key takeaway from this case report is that a pseudoaneurysm should always be considered in patients who present with gastrointestinal bleeding or instability, as early detection and intervention can significantly improve patient outcomes, as demonstrated in this case.

Abstract 2025 – 10

A Case of Mixed Connective Tissue Disease with Autoimmune Cholangitis and wAIHA

Rupam Sharma, MD, Jose Garcia-Corella, MD; Harmanjeet Dhillon, MD; Bao Huynh, MD; Ishaan Kalha, MD; Stanley Kim, MD; William Stull, MD; Greti Petersen, MD

Introduction: Mixed connective tissue disorder (MCTD), warm autoimmune hemolytic anemia (WAHA), and autoimmune cholangitis (AC) are distinct autoimmune conditions, each with a unique pathophysiology and clinical presentation. The coexistence of these diseases within a single patient presents a rare and complex medical dilemma.

Case Report: 41-year-old female with history of cirrhosis of unknown etiology presented to the ED with fever, rigors, productive cough with brownish sputum for 1 week. She was also having severe fatigue, muscle wasting, unquantified unintentional weight loss, and yellowish discoloration of her skin over the last year prior to her presentation. Upon arrival to the ED patient was febrile to 39.4 F, tachypneic at 24 and hypotensive at 89/47 mmHg. PE showed a cachectic appearing woman with diffuse jaundice and scleral icterus. Diffuse calcium deposits were noted on bilateral lower extremities more in the inner thighs. Initial labs showed lactic acidosis of 3.5, ALP 281 units/L, AST 91 unit/L, ALT 29 units/L, total bilirubin 10.9 mg/dL, direct bilirubin 8.4 mg/dL. CT abdomen/pelvis showed moderate to marked splenomegaly. Patient was initiated on vancomycin and piperacillin/tazobactam. Further records revealed autoimmune panel positive for ANA titer of 1:320, P-ANCA titer 1:640, GGT level 202, total bilirubin 7.4mg/dL, Alpha-fetoprotein 2.8, ferritin level 145ng/mL, Apolipoprotein A1 49, haptoglobin 10, IgG level of 5319mg/dL, ceruloplasmin level 36. Patient was also noted to have hemoglobin 7.5g/dL, MCV 106.8fL, LDH 625 unit/L, total bilirubin 7.2mg/dL, direct bilirubin 5.8mg/dL and DAT positive for IgG. Patient's fibrosis score was 0.95 with NIA score 0.41 high, grade A1 to A2, F4 cirrhosis Subsequently patient was initiated on IVIG 1 g/kg/day for 2 days with plan for continuing prednisone and rituximab IV infusion upon discharge. Subsequently, patient underwent IF which revealed two separate M spike's IgG kappa 132.9mg/dL and IgG lambda 120.7mg/dL after which patient underwent CT-guided bone marrow biopsy to rule out underlying plasma cell dyscrasia. The bone marrow biopsy did not reveal any monoclonal plasma cells and only revealed increased erythrocyte series consistent with hemolytic anemia. On HD 18 patient was discharged home in stable condition with plan for outpatient follow-up.

Discussion: This patient presented with a myriad of symptoms, acutely with sepsis secondary to pneumonia, initially thought to be unrelated to past medical history of cirrhosis of unknown etiology. Mixed connective tissue disorder often presents with Raynaud's phenomenon, joint pain, and muscle weakness, along with the presence of anti-nuclear protein antibodies. However, this condition can affect multiple organs and become more severe, leading to complications in multiple organs. The reported hematological manifestations include leukopenia, anemia of chronic disease, generalized hypergammaglobulinemia, and a positive Coombs test without evidence of hemolysis. AIHA can sometimes be linked to other autoimmune disorders, making it crucial to recognize it within a broader diagnostic spectrum and consider various differential diagnoses.

Conclusion: This case illustrates the complex interplay between multiple autoimmune diseases, where overlapping symptoms and immunopathology create diagnostic difficulties and complicate treatment decisions. Effective management requires a multidisciplinary approach, balancing the risks of immunosuppressive therapy with the progression of each disease.

Abstract 2025 – 11

A rare co-recurrence of both primary and secondary PV in an elderly patient with COPD

Alejandra S. Lopez, MD; Verna Marquez, MD; Harnek Singh, MD; Carol Stewart-Hayostek, MD

Introduction: Polycythemia vera (PV) is a BCR::ABL1-negative myeloproliferative neoplasm characterized by an increased red blood cell (RBC) mass and increased risk for thrombosis, leukemic transformation, and/or myelofibrosis (MF). Almost all patients with primary PV have a mutation of the JAK 2 gene. Secondary polycythemia is caused by high EPO in the setting of chronic hypoxia or an EPO-secreting tumor. It is important to rule out primary PV prior to considering secondary polycythemia as the diagnosis as it changes risk stratification and management.

Case Presentation: A 78-year-old female with PMH of severe COPD (2-3L home O2) and former chronic smoking (40+ pack years), was referred to the clinic for incidental polycythemia. Labs revealed hemoglobin of 19.3g/dL, hematocrit of 63%, and platelets 783,000/mcL. Peripheral blood smear obtained depicted polycythemia with microcytosis, anisocytosis, and thrombocytosis. Testing for JAK2 V617 mutation was positive, and the patient was diagnosed with primary polycythemia vera. Patient was treated with low-dose aspirin, hydroxyurea, and weekly therapeutic phlebotomy with a hematocrit goal of 50% instead of 45% for permissive polycythemia in the setting of COPD. Patient's hemoglobin and hematocrit levels improved to goal and continued through day 77. After the 77th day, she was lost to follow up. Six months later, the patient presented to the ED for acute COPD exacerbation. Her hemoglobin was 16.0 and hematocrit was 55.7 at that time because of non-compliance with medications as previously prescribed. She was restarted on hydroxyurea and again lost to follow-up after discharge.

Discussion: Polycythemia vera presents a challenge for many physicians. The extensive symptomatology including fatigue, weakness, headaches, dyspnea, fevers, sweats, weight loss, and erythematous extremities can be mistaken for other conditions. This patient had acute hypoxic respiratory failure secondary to COPD exacerbation with underlying polycythemia vera. PV's incidence is 0.84 and prevalence rate is 22 cases per 100,000, more predominant among Eastern Europeans and Asians with a 2 to 1 male-to- female ratio. With prior history of COPD, her erythrocytosis was initially thought to be from secondary polycythemia with high WBC and platelets as a result of inflammatory status as well as steroid use for COPD. However, during hematology referral, the patient was discovered to have the JAK2 V617F mutation on genetic testing, confirming primary PV with a possible secondary component. As a clinician it is important to do the appropriate labs, genetic testing, and blood smear to confirm primary PV versus secondary polycythemia for risk stratification and treatment strategy. Treatment for PV includes hematocrit control through therapeutic phlebotomy; low-dose aspirin to alleviate vasomotor symptoms and reduce thrombosis risk; reduction of any cardiovascular risk factors including smoking cessation, blood pressure control, weight reduction, and lipid management; and potential cytoreductive therapy with hydroxyurea or interferon alfa. Management of secondary polycythemia focuses on ameliorating the underlying cause and contributing factors to alleviate symptoms and reduce the risk of thrombosis.

Abstract 2025 – 12

Nephrolithiasis in Congenital Pelvic Kidney

Maria Jose Araujo, MD; Ajit Panag, MD; Salma Arechiga, RA; Charlene Chua, RA

History of Present Illness: A 36-year-old female with a past medical history of asthma and diabetes presented to
the emergency department complaining of four weeks of lower abdominal pain and vomiting and concerns about being exposed to a sexually transmitted disease (STD). She declined empiric STD treatment and was discharged with cephalexin for a urinary tract infection. She returned two days later with worsening pain. She remembered she was born with one kidney "not in the right place," but had never had formal imaging nor followed up with a subspecialist.

Physical Exam: At both visits, the patient was tachycardic to 100-110, however was afebrile and maintained a normal blood pressure. Initial visit

examination significant for mild suprapubic tenderness and difficulty with ambulation due to pain. There was no vaginal discharge, cervical motion tenderness, or adnexal tenderness on pelvic exam. On the second visit, she appeared to be more uncomfortable.

Labs: A blood count (CBC), complete metabolic panel (CMP), urinalysis (UA) with culture, wet mount, and gonorrhea/chlamydia swabs were ordered. There was no leukocytosis on CBC. Her CMP did now show an elevated creatinine level. UA had many white and red blood cells and elevated leukocyte esterase with no bacteria. Culture later did not grow any organisms. Wet mount had many white blood cells with no trichomonas or yeast. Her gonorrhea and chlamydia swabs were negative.

Case discussion: Computer tomography (CT) of her abdomen and pelvis with contrast at the second visit revealed a pelvic kidney with a 1.7-centimeter stone at the ureteropelvic junction with associated moderate hydronephrosis. The left kidney was in its anatomically correct place with no pathology. Urology attempted ureteroscopy with laser lithotripsy, however was unsuccessful due to inability to torque the scope into the pelvic kidney. A stent was placed with the plan to undergo open or robotic pyelolithotomy.

An ectopic kidney occurs when the kidneys do not ascend to their normal position in the abdomen during the ninth week of gestation [2]. Incidence varies worldwide but is suspected to be around 1 in 1000.[1] While they may occur in isolation, they are also associated with other multisystem congenital disorders, such as CHARGE syndrome and VACTERL malformations. They are at a higher risk of sustaining traumatic injury and urological conditions such as urinary tract infections. Most patients will be asymptomatic, with the most common complications being vesicouretic reflex and hydronephrosis due to the tortuous course of the ureter. [1]. Nephrolithiasis is one of the most common urological conditions, with approximately 12% of the population being diagnosed during their lifetime [3]. As the crystals accumulate and stones migrate out of the kidneys into the ureters and bladder, they can present with colicky flank/abdominal pain, hematuria, oliguria, and nausea/vomiting. However, patients with congenital pelvic kidneys and renal transplants may have an atypical presentation. Point-of-care ultrasound and CT imaging without contrast are the tests of choice for diagnosing nephrolithiasis. This case highlights the importance of return precautions, along with broadening differentials and workup when a patient does not improve or has abnormality anatomy.

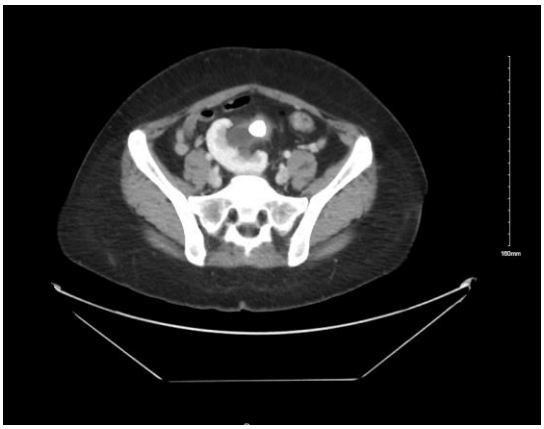

Figure 1: Pelvic kidney present showing marked distension of the renal pelvis with a 1.7cm pelvic calculus at the ureteral pelvic junction

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Abstract 2025 – 13

A Rare Case of Markedly Elevated CSF Protein in a Coccidioides Meningitis Case on Fluconazole, Query Fluconazole Failure?

Jenessa Olson, OMS III; Jigar Patel, MD; Shikha Mishra, MD; Michelle Fang, PharmD; Bianca Torres, RA; Carlos D'Assumpcao, MD; Rasha Kuran, MD; Royce H. Johnson, MD

Introduction: Coccidioidal meningitis (CM) is a rare but serious manifestation of Coccidioides infection, typically presenting cerebrospinal fluid (CSF) findings of lymphocytic pleocytosis, low glucose levels, and elevated protein. Levels of CSF protein may be markedly elevated in complications such as hydrocephalus, with levels reported previously as high as in the thousands. Here we report a rare case of CM complicated by hydrocephalus with CSF protein levels rising to 10,000 mg/dL, despite

therapy with fluconazole. We are unaware of any CSF protein reported at this or greater value. Methods: This case study was approved by the Kern Medical Institutional Review Board (IRB). Patient data was collected by chart review, and all identifying information was removed to ensure confidentiality.

Results: A 50-year-old male initially presented to the Emergency Department with a 14-day history of subjective fever, nonproductive cough, fatigue, with some mild chest discomfort, and was found to have a miliary pattern on chest X-ray and positive Coccidioides serology with positive immunodiffusion (ID) for IgM and IgG with compliment fixation titer (CF) of 1:32. The patient was discharged on fluconazole 400 mg daily with referral for outpatient follow up, but returned four months later with headaches after running out of medication three weeks prior. Lumbar puncture (LP) revealed an opening pressure (OP) of 480 mm H_2O, CSF protein of 311 mg/dL, a CSF Coccidioides IgG positive by ID and CF titer of 1:1 with cultures showing Coccidioides immitis. Fluconazole 1000 mg daily was initiated, and despite compliance, the patient had two additional admissions within the following month for worsening headaches, ataxia, and emesis. Symptoms improved post-LP with normal OPs of 140mm H_2O and 155 mm H_2O. Protein levels with these LPs markedly increased from 4100 mg/dL to 5700 mg/dL respectively. CT head without contrast showed mild periventricular hypodensities and prominent ventricles, concerning for now normal pressure hydrocephalus, but remained stable, requiring no intervention. Fluconazole was increased to 1200 mg daily, yet CSF protein continued to rise, reaching 10,000 mg/dL at outpatient follow-up five months later, which was interpreted as fluconazole failure. Fluconazole was discontinued, and Isavuconazonium 372 mg daily was initiated after the loading dose.

Three months after switching therapy, CSF protein levels significantly decreased to 2265 mg/dL, and the patient remained asymptomatic without signs of relapse.

Conclusion: This case highlights the importance of serial LPs in coccidioidal meningitis patients and monitoring CSF parameters even with normal OP. Increasing CSF protein may indicate treatment failure or new pathology which should be addressed promptly. Alternative azole therapy like Isavuconazonium may be beneficial in these cases and should be considered.

Abstract 2025 – 14

Trachelectomy as a Fertility-Sparing Alternative to Hysterectomy for Pelvic Organ Prolapse due to Cervical Elongation: A Case Report

Christine Peng, OMS-III; Karina Grinberg, MD; Yufan Brandon Chen, MD

Introduction: Cervical elongation leading to prolapse is traditionally managed with hysterectomy, which eliminates fertility and may not be the optimal choice for all patients. Trachelectomy, a procedure well-documented in oncologic settings for early-stage cervical cancer, offers a fertility-sparing and less invasive alternative. However, its application in benign gynecologic conditions remains underutilized.

Case Description: This is a case of a 44-year-old nulliparous, perimenopausal woman with a past medical history of polycystic ovary syndrome (PCOS), asymptomatic leiomyomas, and endometriosis presenting with complaints of a vaginal bulge and urge urinary incontinence. She reported that the bulge was most noticeable when standing and worsened with coughing. Initial conservative management, including pelvic floor therapy, yielded minimal benefit. The physical exam was notable for a 5 cm cervix that was protruding beyond the hymen upon Valsalva, and otherwise normal pelvic exam. After thorough counseling and shared decision-making, the patient elected to undergo trachelectomy instead of hysterectomy to preserve her uterus and reduce surgical morbidity.

The procedure was performed without complication and resulted in a reduction of the ectocervix to 1cm. The patient experienced mild postoperative bleeding, which resolved after silver nitrate application. At follow-up, the vaginal bulge was resolved, and urinary symptoms had improved. Histopathological analysis of the excised cervical tissue revealed benign findings.

Discussion: Cervical elongation with prolapse is typically managed with hysterectomy, yet fertility-sparing alternatives are gaining attention. Trachelectomy, while commonly used in oncologic settings, may be a viable surgical option for benign conditions as well. Existing literature has documented successful approaches to managing cervical elongation with prolapse. Excision anastomosis has been shown to restore pelvic support while preserving the uterus [2]. The Manchester operation, which combines cervical amputation with colporrhaphy, has been reported to provide effective anatomical correction and symptom relief [3]. Studies evaluating this procedure in young women indicate that it offers long-term pelvic support and symptom relief, reinforcing its viability as a uterine-preserving alternative [5]. Additionally, research on uterine-preserving procedures for prolapse suggests that while cervical elongation is often considered a contraindication, trachelectomy may be a feasible option when performed alongside other pelvic support procedures [4]. Systematic reviews and meta-analyses on surgical management of pelvic organ prolapse highlight that uterine-preserving procedures may offer comparable anatomical outcomes to hysterectomy while reducing surgical morbidity [6]. These findings underscore the need for further research and clinical reporting to refine selection criteria and establish standardized guidelines.

Conclusion: This case highlights trachelectomy as a viable alternative to hysterectomy for select patients with cervical elongation and prolapse. Further research and clinical reporting are necessary to establish guidelines for patient selection and long-term outcomes.

Abstract 2025 – 15

A Review of Hospitalizations for Coccidioidal Meningitis from 2020-2024

Michelle Fang, PharmD; Jigar Patel, MD; Bianca Torres, RA; Jenessa Olson, OMS III; Carlos D'Assumpcao, MD; Rasha Kuran, MD; Royce H. Johnson, MD; Shikha Mishra, MD

Introduction: Coccidioidal meningitis (CM) is a form of disseminated coccidioidomycosis that is associated with significant morbidity and mortality. Based on anecdotal observations of increased numbers and complexity of hospitalizations for CM by infectious diseases clinicians at Kern Medical (KM), a community teaching hospital in Bakersfield, CA, we sought to characterize recent hospitalizations at KM for CM.

Method: This retrospective review was approved by the KM Institutional Review Board and included hospitalizations for CM at KM from January 1, 2020 to December 31, 2024. Hospital admissions with associated International Classification of Diseases, tenth revision (ICD-10) codes related to coccidioidomycosis and CM (B38.0-B38.9) were extracted from the electronic medical record. These encounters were manually reviewed to exclude admissions unrelated to management of CM and to gather additional demographics and outcomes data. Characteristics of interest for both the overall population and the subgroup of hospitalizations for a new diagnosis of CM included length of stay (LOS), intensive care unit (ICU) admission, disposition, and trends over time.

Results: Across the five-year time frame at KM, 1702 hospital admissions were identified with coccidioidomycosis-associated ICD-10 codes, with 203 admissions (99 unique patients) specifically associated with the ICD-10 code for CM (B38.4). Of these, 120 admissions (73 unique patients) were determined to be primarily for management of CM, with 28 admissions for new CM diagnoses. Mean hospitalizations per patient during the specified time frame was 1.6 (range 1-6 admissions). Mean age at time of admission was 48 years, with male patients accounting for 101 hospitalizations (84%). Mean LOS was 10 days (range 1-80 days). Admission to the ICU was required during 35 encounters (29%), including 14 endotracheal intubations (12%). Discharge disposition included home (63%), rehabilitation/nursing care facility (23%), death/hospice (10%), and other (4%). Of the hospitalizations for a new diagnosis of CM, mean LOS was 15 days (range 2-66 days), 12 (43%) required ICU admission, and 7 (25%) required intubation. Discharge disposition of these patients included

home (50%), rehabilitation/nursing care facility (25%), death/hospice (21%), and other (4%). Trends in admissions for CM over time are described in Figure 1.

Conclusion: CM is a devastating manifestation of coccidioidomycosis, and this review highlights the burden of CM on clinical outcomes and healthcare resource utilization in an endemic setting. The apparent increase in hospitalizations for both new diagnoses and exacerbations of CM over a 5-year period is alarming and calls for further investigation to validate this trend and identify potential contributing factors.

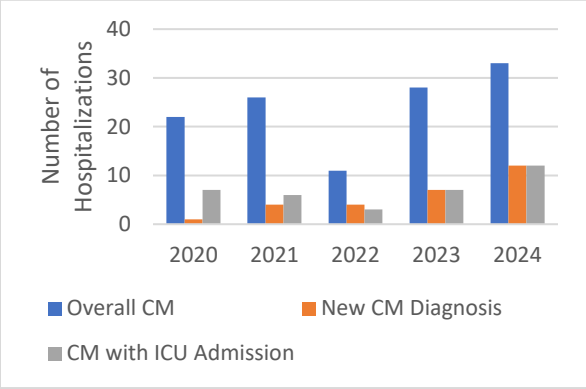

Figure 1. CM Hospitalizations at KM from 2020-2024

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Abstract 2025 – 16
Case Series of TAVR associated Infective Endocarditis: Clinical Insights and Outcomes.
Andy Xiao, OMS III; Sabrina Yip, OMS III; Cameron Carlisle, MS IV; Fowrooz Joolhar, MD

Introduction: Transcatheter Aortic Valve Replacement (TAVR) has been the main standard of care for patients with severe aortic stenosis (AS) who are at high surgical risk. However, infective endocarditis (IE) is a rare but deadly complication that can arise from multiple risk factors. Delays in diagnosing TAVR-associated IE are common as patient presentation is often nonspecific and atypical compared to classic IE symptoms. Outcomes for TAVR-associated IE are often poor and riddled with complications, with inpatient mortality ranging from 20-64 deaths per 100 people. Current treatment approaches include a combination of antibiotic therapy and surgical intervention to reduce morbidity and mortality. In this case report, we present 3 patients who developed IE following TAVR and were all treated with antibiotics and surgery. Discussions regarding this complication, clinical presentations, microbiological profiles, management strategies, and outcomes are included.

Case description:
Case 1: 53-year-old female with bicuspid aortic valve with severe stenosis status post (s/p) operative TAVR, hypertension (HTN), lupus presented with dyspnea and fever following middle cerebral artery stroke. Echocardiogram revealed deteriorating TAVR with marked increased velocity and gradient across the valve. Blood cultures grew cardiobacterium hominis.

Case 2: 53-year-old female with heart failure reduced ejection fraction (HFrEF), severe AS s/p TAVR, complete heart block s/p permanent pacemaker, HTN, paroxysmal supraventricular tachycardia, recurrent deep vein thrombosis, and class III obesity presented with dyspnea, lower extremity (LE) edema, and weight gain. Echocardiograms showed worsening AS of bioprosthetic valve with dehiscence, and vegetations. Blood cultures grew coagulase-negative Staphylococcus.

Case 3: 65-year-old male with coronary artery disease, HFrEF, atrial flutter, AS s/p TAVR presented with dyspnea, LE edema, and nocturnal dyspnea. Echocardiogram revealed severe aortic regurgitation and vegetations on the bioprosthetic valve, with blood cultures confirming Streptococcus intermedius.

Discussion: TAVR- associated IE presents with unique challenges due to prosthetic valve involvement, atypical presentations, and high surgical risk. Our cases illustrate diverse clinical presentations, ranging from embolic stroke to progressive heart failure. All patients exhibited premature prosthetic valve dysfunction including stenosis, regurgitation, and dehiscence, emphasizing the rapidly destructive nature of the infection. The most common causative organisms include Staphylococcus aureus and coagulase-negative staphylococci; however,

Cardiobacterium hominis and Streptococcus intermedius were identified in our patients, highlighting the microbiological heterogeneity of TAVR associated IE. Once patients meet criteria for diagnosis, multifaceted management becomes critical. Management remains challenging, particularly in high-risk surgical candidates. Although guidelines recommend prolonged IV antibiotics for these populations, surgical intervention remains necessary but is limited by procedural risk. These cases underscore the need for early recognition, and multidisciplinary management to mitigate post-TAVR associated IE risk.

Conclusion: Early recognition and timely intervention are crucial in managing TAVR-associated IE, as its presentation can be nonspecific and easily overlooked. Prompt diagnosis, including blood cultures and echocardiography, followed by a multidisciplinary treatment approach is key to optimizing patient care and preventing further severe complications. Due to the increasing use of TAVR, there is a need for heightened clinical suspicion, improved prevention strategies, and further research to optimize early detection and treatment outcomes.

Abstract 2025 – 17
Use of Degarelix in DIC secondary to Prostate Cancer
Mariano Rubio Garcia, MD; Harnek Singh, MD; Cathy Vu, MD; Basiru Omisore, MD; Alexa King, MS III; Samhrutha Sripathi, MD

Introduction: Disseminated Intravascular Coagulation (DIC) is one of the most common coagulopathies in prostate cancer. The objective of this clinical case report is to highlight the presentation of DIC secondary to prostate cancer in outpatient settings and the treatment options in the hospital.

Case description: A 48-year-old male presented with ecchymosis and hematuria at our community clinic. He had a personal history of T2DM and a strong family history of cancer on the maternal side. Based on the initial CBC findings of anemia and thrombocytopenia, which were suspicious for coagulopathy, the patient was referred to the hospital. Further tests showed prolonged PT/PTT, low fibrinogen, and increased D-Dimer, consistent with DIC. An MRI of the pelvis found sclerotic lesions on osseous structures, likely representing metastatic disease. Additionally, a T2 hypointense lesion along the left peripheral gland of the prostate and enlarged iliac chain lymph nodes were reported. A PSA level of 1005 ng/dl was noted, consistent with metastatic prostate cancer. The patient was immediately treated with transfusions of PRBC, platelets, cryoprecipitate, and FFP. Bone lesion biopsy was positive for Metastatic Prostate Carcinoma. Since DIC was secondary to prostate cancer, the patient was started on Casodex. Although a GnRH agonist (Leupron) is usually used in conjunction, it can take a longer time for a proper response, so a GnRH antagonist (Degarelix 240 mg) was given on 09/18/2024. A PSA level of 319.7 ng/dl was noted on 09/20/2024, with subsequent improvement in coagulation studies, thus decreasing the need for transfusions.

Discussion: This case highlights the variety of signs and symptoms that DIC can produce. Per USPSTF, men who are 55-69 years old should make individual decisions about being screened for Prostate Cancer, it is important to maintain a high clinical suspicion when a patient with risk factors presents to our practice. As noted in this case, it is crucial to know the different options available, as treating the same disease with different therapies can impact therapeutic response and decrease complications.

Abstract 2025 – 18
Sustained Remission Following Lung Resection of Late Recurrence of Epithelioid Trophoblastic Tumor
Alena Cave, MD; Megan Lewis, MS IV; John Schlaerth, MD, Samhrutha Sripathi, MD

Introduction: Epithelioid trophoblastic tumor (ETT) accounts for 1.0-2.0% of all of gestational trophoblastic neoplasia (GTN) and is the rarest subtype of GTN. Hysterectomy and metastatic lesion resection are essential in the treatment of ETT as ETT has a high chemo-resistance to single-agent chemotherapy. As cases with metastatic disease and/or deemed to have a poor prognosis can have a mortality rate of 10-24%, the current standard of care focuses on total hysterectomy with bilateral salpingo-oophorectomy (TAH/BSO),

lymphadenectomy, and resection of residual disease sites followed by multi-agent chemotherapy in metastatic disease. Regardless of stage at time of diagnosis, patients with onset of disease greater than 48 months after antecedent pregnancy had a mortality rate of 20%. This case report highlights a late recurrent ETT with sole site metastasis to the lower lobe of her left lung, successfully managed with primary surgical resection without adjuvant chemotherapy, leading to sustained remission in a premenopausal woman desiring future fertility.

Case Description: This is a case of a 34-year-old G2P1011 found to have Stage III ETT after patient was referred for a persistently, low level elevated beta HCG documented since 2019 that began to increase in 2023 with antecedent pregnancy delivered at full term via Cesarean section twelve years prior in 2011. Pelvic ultrasound at this time was unremarkable, and patient was initially treated with 3 doses of methotrexate at Cedars Sinai in May 2023 for presumed gestational trophoblastic neoplasia without resolution of beta HCG. Peak documented beta HCG of 738 occurred on 5/23/23. On 5/31/23 patient was found to have sole site metastasis with two hypermetabolic lung nodules in the left lower lobe on PET-CT scan and subsequently underwent a left lower lobe resection at USC on 8/10/23 with pathology suggestive of ETT. Since this procedure and without further chemotherapeutic treatment, patient's beta HCG quickly normalized to an undetectable level. Due to this rapid drop in beta HCG after resection of sole site metastasis, adjuvant chemotherapy was held, and subsequent beta HCG levels have remained undetectable for over 1 year.

Discussion: As the current standard of care in the treatment of metastatic ETT focuses on both surgical resection with TAH/BSO, lymphadenectomy, and resection of residual disease sites followed by multi-agent chemotherapy in metastatic disease, this case where extrauterine ETT was primarily treated with surgical resection of pulmonary lesion without hysterectomy or chemotherapy shows that sustained remission can be possible in stage III ETT through surgery alone. In women of reproductive age with persistently elevated beta HCG levels of unclear origin, ETT should remain a consideration. While surgical management may be a viable treatment option for recurrent tumors, close postoperative monitoring is essential

Conclusion: While more research is needed, this case shows that it is possible to treat stage 3 ETT with sole site metastasis extrauterine pulmonary disease through resection alone while foregoing chemotherapy and hysterectomy. This could potentially spare the patient from side effects from chemotherapy and invasive surgery while preserving fertility and still obtaining sustained remission of ETT.

Abstract 2025 – 19

Disseminated Cutaneous Coccidioidomycosis in a Renal Transplant Patient, 24 Years of Hiding

Konstantino Papatheodorou OMS III; Arash Heidari, MD

Introduction: The risk of coccidioidomycosis is increased in patients with solid-organ transplantation, this risk is even greater within the first year of transplantation as immunosuppression is maximal. Individuals undergoing transplantation should receive pre- and post-transplantation screening along with donor screening to minimize the risk of endemic mycoses. We present a case of an individual with treated pulmonary coccidioidomycosis 24 years ago who underwent recent renal transplantation and developed disseminated cutaneous coccidioidomycosis.

Case Description: A 65-year-old Hispanic male from the Central Valley of California with a previous right kidney transplant 26 years ago, pulmonary coccidioidomycosis 24 years ago, and end-stage renal disease previously on dialysis, status post left kidney transplant 8 months ago on immunosuppressive therapy who developed disseminated cutaneous coccidioidomycosis 24 years after primary infection. Four weeks before the presentation, he developed a painful, nonpurulent, oozing skin lesion on his superoposterior right shoulder (Figure 1) with a similar lesion on his nose and headache shortly thereafter. At outpatient evaluation, he was diagnosed with presumptive shingles that failed to respond to empirical treatment in the following days. He presented to our institution with an enlarged right shoulder lesion, a crusted nasal lesion (Figure

2), and a worsened headache. His wound cultures came back positive for coccidioides immitis confirmed by MALDI-TOF (ARUP). His coccidioidomycosis serology showed reactive IgM immunodiffusion and negative IgG and complement fixation titer of <1:2 (ARUP). Due to headache and the location of infection on his nose, a lumbar puncture was performed which was essentially entirely negative. Nuclear medicine bone scan demonstrated 2 nonspecific, small foci of osteoblastic activity in the left iliac bone that raised suspicion for disseminated coccidioidomycosis. Upon questioning, the patient had a left pelvic fracture due to a car accident in the past and his MRI showed no evidence of infection. His condition improved within days of initiating fluconazole 400 mg, a dose to target therapeutic serum level due to drug-drug interactions with his immunosuppressive therapy. He was discharged and followed up in the clinic with significant improvement of his lesions. The duration of treatment is unknown but at least 3 years and until continuation of immunosuppression.

Discussion/Conclusion: Coccidioidomycosis can manifest in various forms, either as primary or as disseminated form. Although the patient has a history of pulmonary coccidioidomycosis treated approximately 24 years ago, there was no documentation for pre-transplantation screening of Coccidioides as the transplantation was done in a nonendemic region. Clinicians should remain vigilant regarding this infection where the fungus is endemic, given the diverse presentations associated with coccidioidomycosis and the chance of reactivation due to immunosuppression.

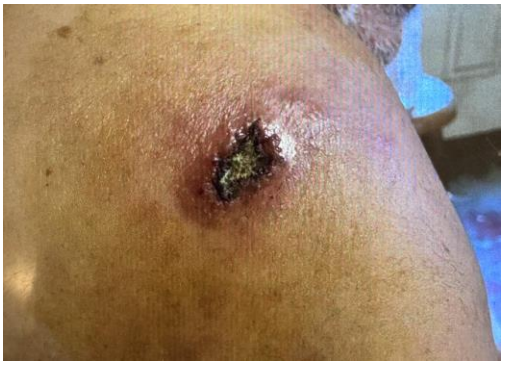

Figure 1: oozing skin lesion on right shoulder.

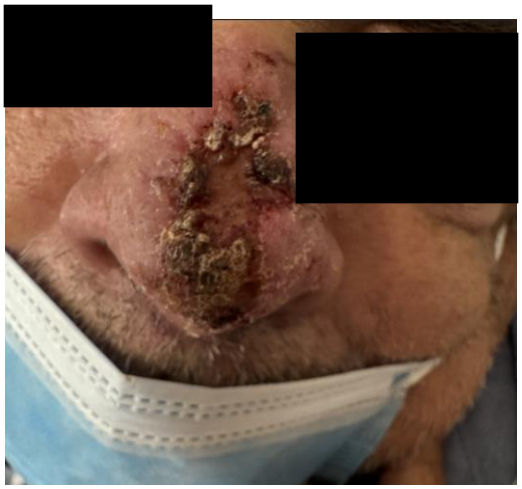

Figure 2: crusted nasal lesion.

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Abstract 2025 – 20
Let's Cut to the Chase: A Low Cost C-Section Simulation Model for Medical Learners
Hadit Nicole Magana, MS IV; Shelby Hamilton, MS IV; Yufan Brandon Chen, MD

Introduction: At Kern Medical we have identified a need for cesarean section education in the student population. Providing a safe and controlled simulation can provide benefit for the learner and increase preparedness when responding to these obstetric emergencies. There are currently no workshops or simulation sessions for this procedure available at KMC.

Purpose of Study: Simulation-based training provides a risk-free environment to help improve technical skills and clinical knowledge. C-section simulators are less widely available due to the high cost and complicated nature of the procedure. The purpose of the study is to evaluate the usefulness of our low-cost model in an education/workshop session. The workshop is aimed at helping participants improve their understanding of several topics related to c-section procedures. The goal is to accomplish this while simultaneously creating a realistic clinical environment as much as possible. The abdominal model is low cost due to the use of store-bought materials such as ballistic gel, fabrics of different thickness, foam, and plastic that are

designed to mimic the textures of each abdominal layer. The total cost per model comes to under $25.

Research Methods: This is an ongoing study that is held in sessions in the simulation center at Kern Medical Center. The workshop is advertised and offered to learners at different levels of training. There is minimal risk involved, and it is a questionnaire-based study. The workshop consists of a short presentation followed by a simulation at which point each participant uses the abdominal model to perform the procedure independently. There are visual diagrams available for learner reference as well as opportunities to pose questions to Dr. Yufan B. Chen, M.D who is in attendance. Participants will use pre and post-tests to evaluate the benefit that the workshop provided them. Responses are anonymous and each participants tests are linked only by an identifier code they know (first 3 digits of phone # and last 2 digits of zip code). The pre-test is completed 24 hours before the workshop and post-test immediately after the workshop. No personal identification will be collected to link surveys. The main categories evaluated were knowledge of the procedural steps, surgical instruments, indications for the procedure, and abdominal wall anatomical layers. Participants were asked to rank on a scale of 1-5 (5 being strongly agree) their understanding of these concepts at baseline and again post-workshop. The participants' will also be assessed on their impression of the realistic nature of the simulation and the abdominal model. We then request feedback on overall impressions and areas of improvement for future workshops. We hypothesize that use of our model will improve knowledge in the categories evaluated on the surveys. We expect participants will report higher scores on post-surveys.

Summary of Results: Two workshops have been held with a total of 18 participants- x2 2nd years, x12 3rd years and x4 4th year medical student. Most students had completed or were in the process of completing their 6-week OBGYN clerkship. A total of 8 responses (6 from pre-test, 2 from post-test) were unable to be used for data analysis due to the inability to link a pre and post survey to one another. 100% stated they had never taken part in a c-section simulation. Pre-workshop surveys showed a mean of 3.07 in knowing steps of a c-section, 3.57 for indications, 1.93 for surgical instruments, and 2.79 for anatomy. Post surveys showed a statistically significant increase in the mean responses in all of the categories- 4.57 in steps (p=0.00094), 4.64 in indications (p= 0.0001), 3.71 in surgical instruments (p= 0.0014), and 4.43 in anatomy (p=0.0003).

Discussion: The mean responses for all categories evaluated show a statistically significant increase in the responses. This shows that learners found the workshop and model to be supplemental to them knowledge of c-sections. These results in combination with the feedback from participants allow us to ascertain that the purpose of the study was achieved. And we have obtained useful feedback from participants.

Conclusions: This workshop and model can continue to be developed and improved with the feedback received in surveys. It is a cost-effective option that can be routinely offered to students rotating at Kern Medical. A recommendation on how to achieve this is by making it a component of the OBGYN clerkship at this institution.

Abstract 2025 – 21
Disseminated Coccidioidomycosis in an African American Woman with Invasive Ductal Carcinoma, Dichotomy of Double Demons
Konstantino Papatheodorou, OMS III; Arash Heidari, MD

Introduction: There is a heightened risk of opportunistic coccidioidomycosis in the immunocompromised, but the severity of infection in solid-organ cancer patients may not be as well described. Although risk remains heightened in regions endemic to Coccidioides, disseminated infection may be overlooked by the presumption of malignancy metastasis. In this case report we highlight the course of a 50-year-old African American woman with invasive ductal carcinoma who developed extensive pulmonary coccidioidomycosis with osseous dissemination.

Report: A 50-year-old African American female with a history significant for hypertension, right breast

invasive ductal carcinoma, status post two right breast lumpectomies. She presented to our institution with severe dyspnea, fatigue, and altered mental status. She was recently offered to be placed on hospice due to extensive pulmonary metastasis with a lack of response to treatment.
She was admitted and intubated due to respiratory failure. Computed tomography (CT) head showed bilateral lytic lesions in the frontal and parietal regions (Image 1). The CT chest showed inflammatory left breast malignancy and extensive bilateral infiltrates, ground glass, and cavitary nodules consistent with atypical pneumonia and acute respiratory distress syndrome (ARDS) (Image 2). Her serum coccidioidomycosis turned positive for IgM and IgG Immunodiffusion with complement fixation of 1:8. (ARUP). Her lumbar puncture was essentially negative. Sputum and bronchoscopy samples both grew Coccidioides immitis. identified by MALDI-TOF. (ARUP). She was started on Liposomal amphotericin B (LAmB) for severe pulmonary coccidioidomycosis with presumption for osseous dissemination to the skull, and methylprednisolone for 21 days with taper due to ARDS. After obtaining records, previous PET/CT one year prior showed new peripheral consolidation with hypermetabolism in the right middle lobe with suspicion of pneumonia versus post-radiation changes. She moved to the Central Valley of California during that time and presumptively was indicative of her infection with pulmonary coccidioidomycosis. The patient is still in the intensive care unit on LamB with slow clinical response.

Discussion & Conclusion: The diagnosis of coccidioidomycosis in patients with malignancy is difficult as both may present similarly on PET-scan as metastasis. Clinicians in the endemic area should be vigilant about the chance of coexistence, particularly among African Americans and Filipinos who have an increased risk for dissemination of coccidioidomycosis.

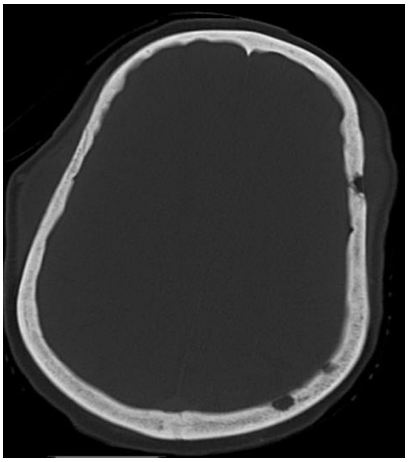

Image 1: CT head showed multiple lytic lesions.

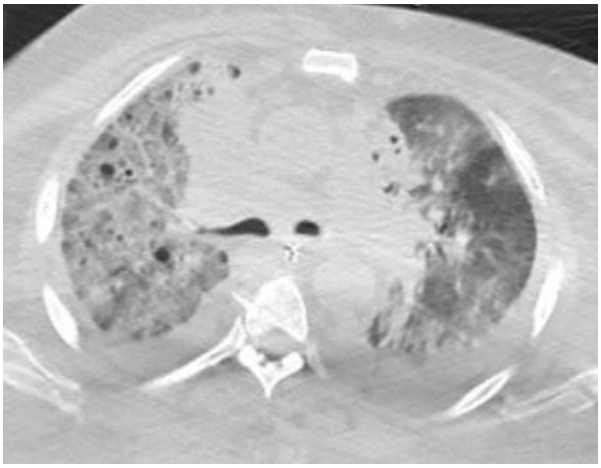

Image 2: CT chest shows ground glass and alveolar extensive infiltration and cavitary nodules particularly in upper lobes.

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Abstract 2025 – 22

Disseminated Cocci with Triplet Gestation: A Case Report

Christine Peng, OMS III; Gabriella Busco, OMS III; Jigar Patel, MD; Shikha Mishra, MD; Jenessa Olson, OMS III; Rohini Bilagi, MD; Carlos D'Assumpcao MD

Introduction: Coccidioidomycosis is a fungal infection caused by Coccidioides spp. While most infections are self-limited, severe or disseminated disease can occur, particularly in immunocompromised individuals and pregnant women. The management of coccidioidomycosis

during pregnancy is well documented. However, optimal treatment for high-risk pregnancies, such as multifetal gestations, remains poorly studied and lacks standardized guidelines. We present a case of a 30- year-old woman with disseminated axial skeleton coccidioidomycosis who became pregnant with triplets while on fluconazole.

Case Description: A 30-year-old African-American woman initially presented to an outside hospital with a persistent left-sided headache for one week following a ground-level fall with head trauma. CT head without contrast revealed multiple calvarial lytic lesions, and she was discharged the same day. One month later, persistent headaches led her to seek care at Kern Medical. Lumbar puncture (LP) showed normal opening pressure with no evidence of meningitis. MRI brain with contrast revealed pachymeningeal enhancement and osseous calvarial lesions. A biopsy confirmed granulomatous inflammation with spherules and endospores consistent with coccidioidomycosis. Serology was positive for Coccidioides with immunodiffusion-reactive IgM/IgG and a complement fixation (CF) titer of 1:256. She was discharged on fluconazole 800 mg daily but faced social barriers preventing timely infectious disease (ID) follow-up. Two months later, CT chest/abdomen/pelvis showed right upper lobe nodular consolidation with miliary dissemination, mediastinal lymphadenopathy, and lytic lesions in the 8th rib and left posterior iliac bone. She developed worsening boils on her head, back, buttock, and right arm. A back abscess culture grew Coccidioides immitis. Seven months after diagnosis, she was finally able to follow up with the ID clinic, reporting compliance with fluconazole. Due to disease progression despite therapy, she was transitioned to liposomal amphotericin B (AmBisome). One month later, she was found to be pregnant with triplets. She is currently receiving liposomal amphotericin B at an infusion clinic with weekly ID follow-ups. A recent ultrasound at 19 weeks showed a dichorionic triamniotic triplet gestation with no gross fetal anomalies. Her CF titer remains at 1:256.

Discussion and Conclusion: The Infectious Diseases Society of America (IDSA) recommends coccidioidomycosis management based on fetal maturity. For women diagnosed prior to pregnancy, azole therapy should be discontinued during the first trimester due to teratogenic risks, with liposomal amphotericin B as an alternative. However, no guidelines specifically address management in high-risk pregnancies, including multifetal gestations. This case underscores the need for further research on coccidioidomycosis in high-risk pregnancies. It also highlights the importance of patient education regarding fluconazole use during pregnancy and the necessity of contraceptive counseling. Continued follow-up of this patient will contribute to our understanding of optimal treatment strategies in complex cases.

Abstract 2025 – 23
Unknown Uterine Didelphys Results in Pregnancy with Intrauterine Device in Situ
Courtney Cirks, MD; Yasser Mrad, MD

Abstract: Concurrent pregnancies with IUD in situ have been reported, however they are rare in patients with uterine anomalies. This case report presents a patient with unknown uterine didelphys diagnosed by an ultrasound with an intrauterine pregnancy and IUD. This leads to discussion of the proper counseling, history, physical examination, and imaging necessary prior to IUD placement. It also encourages research on contraception use in patients with uterine anomalies.

Background: The incidence of Mullerian anomalies ranges from 1 in 10 to 1 in 1500. Uterine didelphys, one of the rarer anomalies, is defined as incomplete fusion of the Mullerian ducts leading to two separate uterine horns and two cervices. Women with uterine anomalies benefit from contraception, however there are contraindications to IUD placement. The distortion of the uterine cavity leads to an increased risk of painful insertion, uterine perforation, device expulsion, or decreased contraception effectiveness.

Case: Patient is a 25-year-old G1P0 who became pregnant with an IUD in place. On her 6-week ultrasound a didelphic uterus was discovered with the concomitant IUD in the right uterine horn and gestational sac in the left horn. The patient was counseled on the risks of spontaneous abortion,

preterm labor, fetal malpresentation, and cesarean delivery. Since the IUD strings were unable to be visualized, it was agreed to continue the desired pregnancy with the IUD in situ. At 39 weeks gestation, she presented to labor and delivery after rupture of membranes and was taken for a cesarean section due to breech presentation. Patient was found to have two uterine horns that were separated by a complete septum. After delivery of the fetus from the left horn, the IUD was identified and removed from the right horn. The patient's postpartum course was uncomplicated, and she was discharged on hospital day three.

Discussion: IUD placement in a primigravida presents risks of failure in patients with unknown Mullerian anomalies. Prior to placement of an IUD, a detailed and focused gynecological history should be completed, including symptoms of dyspareunia, dysmenorrhea, or infertility that may provide insight to an anomaly. A pelvic exam should be documented, including the number of cervices and the position of the uterus. It is reasonable to consider diagnostic imaging prior to placement of an IUD, especially in a primigravida with suspicious clinical findings. Alternatively, imaging can be considered in a multigravida if they have a history of preterm delivery, spontaneous abortions, recurrent pregnancy loss, or fetal malpresentation in previous pregnancies.

Conclusion: Intrauterine devices have proved to be reliable, long-term, and safe forms of contraception, but patients should be counseled on the complications, including misplacement or failure in the setting of uterine anomalies. A focused history and physical in primigravid patients should precede IUD placement. Further imaging can be considered in patients with high clinical suspicion of uterine anomalies. Standardization of examination and imaging prior to IUD placement is needed to provide excellent contraceptive care to patients with uterine anomalies. Future research is needed to compare contraception methods in patients with Mullerian anomalies.

Abstract 2025 – 24

Two Cases of Severe Pulmonary Coccidioidomycosis Concomitant with Cardiovascular Diseases, Anchoring on One, Forgetting the Other.

Konstantino Papatheodorou, OMS III, Muhammad Ashraf-Alim, MD; Arash Heidari, MD

Introduction: Our institution is located in the Central Valley of California endemic to coccidioidomycosis (CM). Pulmonary CM is the most common manifestation of infection, which makes the identification of concomitant cardiovascular disease increasingly difficult. We present two cases of severe pulmonary coccidioidomycosis masking cardiovascular disease to highlight the significance of thorough evaluation to prevent overlook of concurrent disease.

Case Descriptions

Case 1

A 66-year-old Hispanic female with hypertension, coronary artery disease, status post MitralClip, and transcatheter mitral valve (MV) replacement one month prior presented to our institution for dyspnea, cough, and fever. Workup revealed left lobe consolidation with pleural effusion (Image 1) and CM serology positive for IgM and IgG immunodiffusion with complement fixation (CF) of 1:16 (ARUP). She was initiated on Liposomal amphotericin B (LAmB) due to hypoxemia, transitioned to fluconazole due to acute kidney injury (AKI). Upon discharge, she followed up with her primary care center, found to have MV thrombosis on transesophageal echocardiography (TEE). Three weeks later, she presented back to our institution, found to be in septic shock. Blood cultures revealed Enterococcus faecalis for which she started ampicillin. She was transferred to her original institution for concern of MV vegetation and complicated clinical history. TEE visualized thickened prosthetic MV leaflets, presumed vegetation, and prosthetic valve endocarditis (PVE) given bacteremia. Treatment included ampicillin and ceftriaxone for 6 weeks, with lifelong amoxicillin suppression for PVE. She will remain on fluconazole and follow up at our institution for management of her pulmonary CM.

Case 2

A 56-year-old Hispanic male with polysubstance abuse who developed cough, night sweats, fever, and ten-pound weight loss for two months presented to our institution as stroke alert with left-sided facial droop. MRI revealed bilateral punctate acute ischemia within the frontal/parietal/occipital lobes. CT chest showed ground glass opacities with pleural effusion (Image 2). His CM serology returned positive for IgM and IgG immunodiffusion with CF of <1:2. He was initiated on LAmB due to hypoxemia, replaced with fluconazole after developing AKI. There was suspicion of accompanying pulmonary edema seen in previous CT, with ejection fraction of 35% and BNP of 2,397 pg/mL. The patient developed non-ST segment myocardial infarction associated with cardiogenic shock which warranted cardiac catheterization, found to have 90% stenosis of the left circumflex and 99.99% of the D1 and D2 of left anterior descending arteries. The patient required multiple intubations for several failed extubations, thought to be originally only due to pulmonary coccidioidomycosis. His tracheal aspirate grew Coccidiodes immitis identified by MALDI-TOF (ARUP). There was shared decision with the family to proceed with comfort care if there was no major clinical improvement. The patient succumbed to his illness.

Discussion & Conclusion: When patients have severe pulmonary CM in an endemic area, clinicians may anchor on the management of CM. This may delay or overlook diagnosis of other concomitant diseases, particularly cardiovascular that could mimic similar symptoms and radiological findings. This includes receiving a detailed history, completing a thorough physical examination, and considering several differential diagnoses during workup.

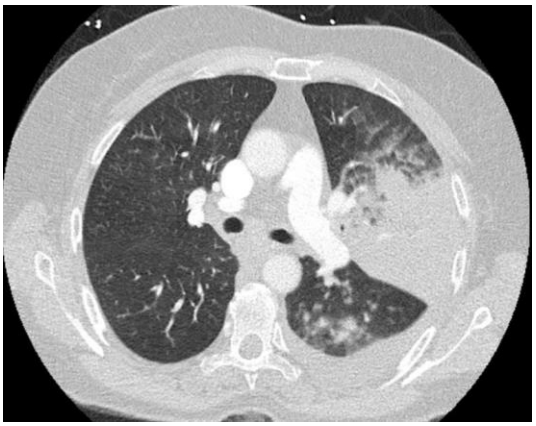

Image 1: From case one, CT chest shows left upper and lower lobe consolidation with pleural effusion.

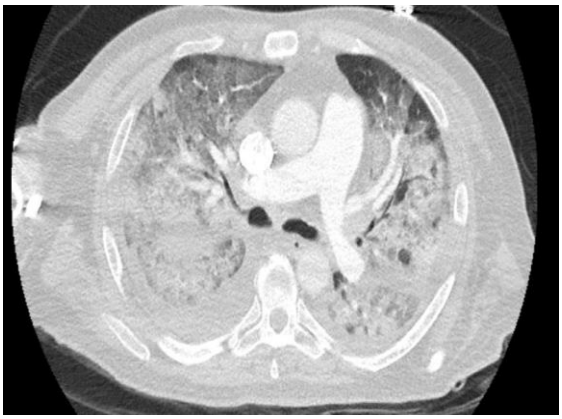

Image 2: From case two, CT chest shows bilateral airspace infiltration and ground glass opacities with pleural effusions.

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Abstract 2025 – 25

A Subtle Presentation of Streptococcus infantarius Endocarditis

Shravya Dharambhat, Kevin T Dao, Jose Garcia-Corella, Breeanna Carlson, Hina Khanzada, Arin Orogian, Kasey Fox

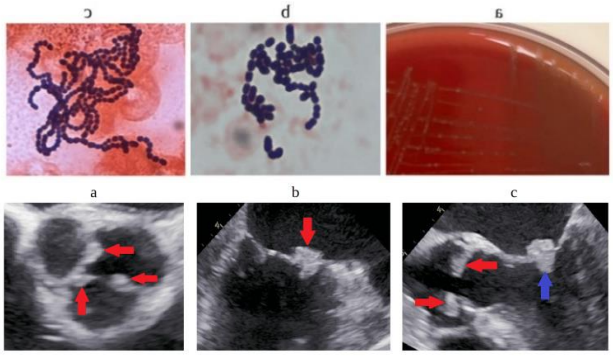
Introduction: Streptococcus infantarius, a member of the *Streptococcus bovis* group, is a less common but significant cause of infective endocarditis [1]. While often presenting with symptoms like fever, fatigue, and night sweats, findings can sometimes be more subtle and easily overlooked [2]. This case highlights the importance of maintaining a high level of clinical suspicion, particularly when evaluating

patients with non-specific signs, such as pitting edema, which in this instance ultimately led to the correct diagnosis.

Case Description: A 64-year-old man with alcohol dependence presented with progressive bilateral pedal swelling and mild abdominal distension for the past week, without medication use or prior issues. On exam, vitals were normal. Cardiac exam revealed a grade 3/4 diastolic murmur and a grade 2/6 pansystolic murmur. No jugular venous distension was noted. Abdominal exam showed mild ascites, and bilateral lower extremity 3+ pitting edema was present. The rest of the exam was unremarkable.

Initial labs revealed elevated white blood cell count without bands, and blood cultures were ordered which grew alpha-hemolytic Streptococcus. Bedside transthoracic echocardiogram done following increased BNP showed a normal ejection fraction (>65%). Abdominal ultrasound revealed severe hepatocellular disease, hepatic cysts, and small-volume ascites. The patient was started on ceftriaxone, but repeated blood cultures confirmed *Streptococcus infantarius.* A formal transthoracic echocardiogram showed severe aortic regurgitation, and a transesophageal echocardiogram revealed large mobile vegetations on the aortic and mitral valve cusps. Despite these findings, the patient remained asymptomatic, except for the pitting edema.

Given the correlation between *S. bovis* endocarditis and colon cancer, a colonoscopy revealed tubular adenomas in the cecum, ascending colon, and transverse colon. The patient was started on six weeks of IV antibiotics with cardiology management.



Discussion: Bacterial infections are often linked to carcinogenesis through the production of carcinogenic metabolites and chronic inflammation, with some bacteria inducing mutations in tumor suppressor genes like TP53 [3,4]. While *Streptococcus bovis* (S. bovis) is not a common cause of bacteremia and endocarditis, studies have shown that *S. gallolyticus* (a related species) can cause pathologies such as colorectal cancer, bacteremia, and endocarditis [5]. Further research supported this association, and members of the *S. bovis* genotype have been linked to colon polyps [2]. It is rare for *Streptococcus bovis* biotype II, particularly *S. infantarius* to cause bacteremia and infective endocarditis through colon polyps. In cases of infective endocarditis with severe aortic regurgitation, patients usually present with more severe symptoms.

Conclusion: Streptococcus infantarius endocarditis remains a diagnostic challenge, particularly when presenting with subtle signs such as pitting edema. This case emphasizes the need for thorough physical exam and the role of echocardiography in identifying endocarditis in patients with unexplained inflammatory markers as well as the importance of screening for gastrointestinal malignancy in cases of *Streptococcus bovis* group bacteremia. Early intervention and appropriate antimicrobial therapy are essential for optimal patient outcomes. Ultimately, the key takeaway of the case is to provide awareness of the importance of the history of the present illness and physical examination so that physicians will be able to catch more critical cases.

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Abstract 2025 – 26

Renal Cell Carcinoma Metastasis 13 years Following Nephrectomy

Giliene Campbell, OMS III; Hanna Lavassani, OMS III; Tanya Eftekhari, MD; Sanjana Murdande, MD; Kasey Fox, DO

Introduction: Renal cell carcinoma (RCC) is a highly vascularized malignancy arising from the lining of the proximal convoluted tubules within the kidney. Nephrectomy is the definitive treatment of choice for cases of localized renal cell carcinoma. Even after resection of the primary tumor, RCC has been known to recur (1) Most cases of recurrence typically occur within 5 years of nephrectomy with 80% having metastases diagnosed within 3 years after

nephrectomy (2). No current guidelines recommend follow up patients beyond 10 years post nephrectomy. We present a case report of a patient who was cleared from her oncologist 5 years after her nephrectomy, yet presented 13 years later with recurrence and metastasis to the femur and lung.

Case Presentation: A 65 year old Hispanic female from central California presented to the Emergency Department complaining of left flank and lower back pain radiating down the leg leading to difficulty ambulating and a 12 lb. weight loss over 2 months. Patient history included left renal cell carcinoma status post nephrectomy and bowel resection in 2011. She followed with an oncologist for 5 years and was discharged in 2016 from oncology and declared to be in remission. In the hospital, the patient had a CT LLE done showing an expansile soft tissue lesion measuring 3.2 x 2cm in the proximal left femoral shaft. A chest CT showed multiple bilateral nodules in the lungs. A lung mass biopsy of the right upper lobe mass was consistent with primary renal cell carcinoma. She underwent IR embolization of the left femoral tumor followed by an ORIF and adjuvant radiotherapy. The patient later was then started on pembrolizumab and Aredia followed by several doses of axitinib.

Discussion: Currently, RCC recurrence after adequately performed nephrectomy has been reported in 20-40% of patients with localized RCC. Current guidelines state follow up is not necessary for RCC patients without relapse for more than 5 years because recurrences usually develop within the first 3 to 5 years after surgical treatment. (3) The majority of recurrent disease is detected by surveillance laboratory, radiographic studies, and work up of patient symptoms. Laboratory tests include serum calcium level, alkaline phosphatase level, liver transaminases, and imaging includes plain chest radiographs and CT scans. Typical surveillance includes a general protocol starting 1 month after nephrectomy that consists of history, physical exam, and laboratory tests and chest radiography every 6 months for 5 years, as well as an abdominal CT scan at 12, 24 and 28 months. (4) The patient's recurrence brings up potential reconsideration of current guidelines of surveillance past 10 years of nephrectomy considering there are treatment options available to patients who present with recurrence. Nephrectomy is a consideration when complete local excision is possible therefore earlier detection before disseminated disease might prove to be beneficial (2). Immunotherapy such as immune checkpoint inhibitors and IL-2 inhibitors as well as surgery are first line treatments for metastatic RCC.

Abstract 2025 – 27

Impact of Intraoperative Intact Parathyroid Hormone Levels on Readmission Rates Following Outpatient Total Thyroidectomy: A Retrospective Review

Kirsten Alsua, OMS III; Elise Krippaehne, OMS IV; Allyson Randall, OMS III; Tung Trang, MD

Introduction: Outpatient total thyroidectomy has become increasingly common, yet the optimal approach to managing postoperative hypocalcemia remains debated. While some protocols permit same-day discharge despite low intraoperative intact parathyroid hormone (iPTH) levels, provided they receive appropriate outpatient calcium and vitamin D repletion, others advocate for inpatient observation to prevent hypocalcemic events. This study evaluates the correlation between intraoperative intact PTH levels and readmission rates to assess the safety and efficacy of an existing discharge protocol at a general acute care hospital.

Methods: A retrospective chart review was conducted for patients who underwent total thyroidectomy at Kern Medical Center between November 2019 and November 2024. Clinic demographics, operative reports, intraoperative iPTH levels, calcium and calcitriol orders, readmission related to hypocalcemic events, and postoperative complications were collected. At our institution, patients with intraoperative iPTH levels <25 pg/mL receive calcium carbonate 1000 mg TID, and those with iPTH <10 pg/mL receive both calcium carbonate and calcitriol 0.5 mcg daily. Descriptive analysis was performed to evaluate the proportion of patients with low iPTH levels, adherence to protocol, and readmission rates. Chi-squared tests were used for categorical variable analysis.

Results: A total of 50 patients who underwent total thyroidectomy were included in the preliminary analysis, with a mean age of 49 ± 15 years. The most common diagnosis was thyroid nodules classified as Bethesda III or higher (40%). Eight patients (16%) had intraoperative iPTH levels between 10 and 25 pg/mL. All but one patient received postoperative calcium carbonate 1000 mg TID, and four also received calcitriol 0.5 mcg daily. Three patients (6%) had levels <10 pg/mL, and all three patients received combination therapy. Among the 11 patients with intraoperative iPTH <25 pg/mL, only one (2%) was readmitted on POD1 for muscle spasms (intraoperative iPTH = 7, postoperative iPTH <6, ionized calcium = 0.85 mmol/L). The patient's calcium and calcitriol doses were increased, and they were discharged safely on hospital day 3. No significant association was found between intraoperative iPTH levels less than 25 and readmission rates, χ^2 (1, N = 50) = 3.62, p = 0.06, however, there was a significant correlation with levels less than 10 χ^2 (1, N = 50) = 16.0, p < 0.001.

Conclusion: This study provides preliminary evidence on the safety of same-day discharge after outpatient total thyroidectomy despite low intraoperative iPTH levels. These findings suggest that patients with significantly low iPTH levels may be at higher risk for postoperative complications, such as hypocalcemia, warranting closer monitoring or consideration for inpatient observation. However, the small sample size limits the generalizability of these results. Further studies with larger cohorts are needed to confirm these findings. Our results may help refine discharge protocols and improve postoperative management to minimize hypocalcemia-related complications in thyroidectomy patients.

Abstract 2025 – 28

Renal Colic with Ileus

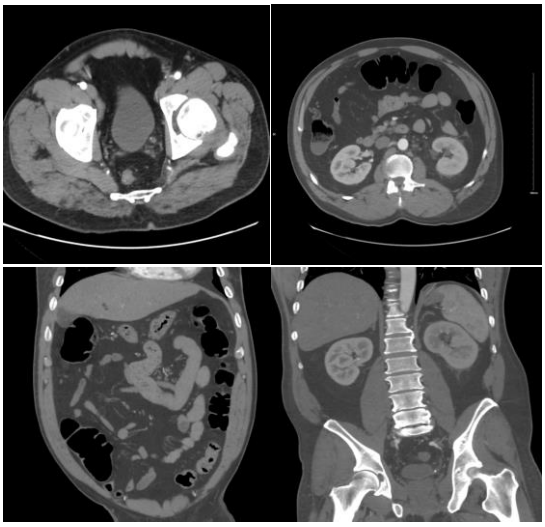
Daniel Quesada, MD; Kelsey Schrage, DO; Uchechi Okey-Dike, RA; Gurleen Bhangoo, RA

Abstract: This is a case report of an unusual presentation of renal colic with associated ileus. Patient presented with acute onset of pain, but with mixed signs and symptoms of both renal colic with flank pain radiating to the groin as well as abdominal distention and lack of flatus. Patient found to have evidence of renal stone with associated dilated bowel loops indicative of ileus. This case describes an interesting presentation of both renal colic and acute GI obstruction symptomatology. Adynamic ileus has been described in several situations where there is cessation of peristalsis. Causes are listed as peritonitis, renal colic, biliopancreatic diseases, metabolic disturbances, retroperitoneal or intraperitoneal hematoma, intestinal ischemia, drugs, or other critical illnesses. [6]. The mechanism behind the ileus described in this case is an acute functional paralysis, where the intestine fails to transmit peristaltic waves causing a transient obstruction. The stasis then causes accumulation of gas and fluid within the bowel, causing distention, decreased bowel sounds, and vomiting. [8]. The patient here had mixed symptoms of both renal colic and bowel obstruction, and thus advanced imaging was indicated revealing both diagnoses. It is likely that this occurs possibly more often but is not caught on imaging at the time.

Introduction: Acute flank pain, along with abdominal pain, is a very common presenting complaint in the emergency department. There are 1.2 million ER visits annually for renal colic [1], and approximately 15% of all ER visits annually are for intestinal obstructions. [2]. With both presentations it is important to take a through history and physical as generally speaking the symptoms, pain profile, differ. Classically, renal colic causes a sudden severe radiating flank pain, which flank tenderness can be appreciated on exam, generally a focally tender abdomen and distended abdomen is not. Renal colic can cause nausea and vomiting and while often it is thought to be because of the intensity of the pain, this is not true, and however occurs because of the common innervation pathway between the kidneys and the GI tract [3]. Ileus and bowel obstruction typically causes a gradual abdominal distention, slow onset pain, and exam showing a diffusely tender distended abdomen [7]. In the literature there has been a documented case report of a large bowel obstruction caused by a benign colonic stricture formed secondary to extravasation of a staghorn calculus [4], there also have been reports of dynamic ileus after extracorporeal lithotripsy in a diabetic patient who had the procedure for treatment of

renal nephrolithiasis [5]. There have not been any case reports of initial ER presentation of first renal colic episode with associated dynamic ileus as we present today.

Case: Patient is a 50-year-old male, with past medical history of treated hepatitis C, who presented to the ER for evaluation of left sided abdominal pain, described as sharp, acute onset, waxing and waning in intensity. Associated nausea, vomiting, and did have one bowel movement earlier but since that time has developed bloating and distention and has not had the ability to pass flatus. No fever, no chills. Vitals showed afebrile, normal HR, hypertensive with BP 166/100, and oxygenating normally on room air with normal respirations. Exam was notable for moderate distress due to pain, abdominal exam shows a distended, but soft abdomen, left sided abdominal tenderness to palpation, voluntary guarding, no rebound. Left sided CVA tenderness. Laboratory studies were obtained as well as CT imaging. CBC showed a leukocytosis to 15.5, no anemia, and normal platelets. Chemistry panel showed normal electrolytes, a Cr of 1.32 with normal BUN 18 and GFR of 57. Normal AST/ALT, bilirubin. No metabolic abnormalities. Lactic acid elevated to 2.9. Troponin negative. EKG without ischemia or concerning pathologic q waves. UA shows moderate blood with 5-10 RBCs on microscopy, no bacteria, no leukocyte esterase or nitrite. CT showed a normal caliber aorta without dissection or aneurysm, with moderate colonic gaseous distention with air fluid levels with reactive colonic ileus pattern, as well as a 3.5mm distal left ureter calculus at the UVJ with mild periureteric stranding and mild reactive hydronephrosis on the left side. Impression of ureterolithiasis with ileus pattern. The patient was given IV fluids, pain control, and anti-emetic. He was observed in the ER, lactic acid improved on repeat, now 2.3, and pain now with pain controlled, ambulatory, tolerating PO, passing gas, no nausea or vomiting. Patient was stable for discharge from the emergency department and given follow up referrals, and strict return precautions.



Discussion: This case describes an interesting presentation of both renal colic and acute GI obstruction symptomatology. Adynamic ileus has been described in several situations where there is cessation of peristalsis. Causes are listed as peritonitis, renal colic, biliopancreatic diseases, metabolic disturbances, retroperitoneal or intraperitoneal hematoma, intestinal ischemia, drugs, or other critical illnesses. [6]. Most commonly, it is seen because of abdominal or retroperitoneal surgery, about 3-5 days post operative intervention. The exact mechanism of ileus is not completely understood, but it is thought to occur in two phases: the early neurogenic phase due to the autonomic nervous system nerve fibers and then the inflammatory phase of cytokines and inflammatory neuropeptides. [7]. The mechanism behind the ileus described in this case is an acute functional paralysis, where the intestine fails to transmit peristaltic waves causing a transient obstruction. The stasis then causes accumulation of gas and fluid within the bowel, causing distention, decreased bowel sounds, and vomiting. [8]. The patient here had mixed symptoms of both renal colic and bowel obstruction, and thus advanced imaging was indicated revealing both diagnoses. It is likely that this occurs possibly more often but is not caught on imaging at the time. This patient was otherwise first time renal colic presentation, and treatment in this patient was aimed at the underlying condition being the renal colic. The patient did well, improved while in the ER, did not have recurrence of symptoms, and subsequently able to be discharged home.

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Abstract 2025 – 29

Reduction of Blood Culture Contamination Rates and Associated Healthcare Costs Through Implementation of Certified Phlebotomist-Drawn Blood Cultures at a Community Teaching Hospital

Shikha Mishra, MD; Asad Mohammad Jani, MS IV; Jigar Patel, MD; Safa Mousavi, MD, MPH; Michael Valdez, MD; Danna Mejia, CLS, MLS, ASCP; Adonica Vickers, MHS, CLS MT, ASCP; Royce Johnson, MD; Carlos D'Assumpcao, MD; Rasha Kuran, MD; Michelle Fang, PharmD

Background: Blood culture contamination (BCC) is a drain on healthcare resources, with clinical implications such as delayed diagnosis. At Kern Medical (KM), a safety net teaching hospital in Bakersfield, CA, BCC in some areas had continually exceeded the 3% recommended maximum, with 59% of new positive blood cultures per patient representing contamination in early 2023. In response, a quality improvement initiative was launched in 2023 to reduce BCC through certified phlebotomist-drawn blood cultures (PDBC).

Methods: A retrospective cohort study was conducted to assess the clinical and financial impact of BCC reduction through PDBC. Any blood culture with growth of a common commensal organism during the first 2 months of 2024 was reviewed for attributable hospital length of stay (LOS) and ED, laboratory, procedure and pharmacy resources associated with BCC. Patients were excluded if blood culture growth was indicative of true infection or if the patient was still admitted at the time of review or transferred to another hospital. Costs were calculated based on literature and institution-specific charges.

Results: BCC was identified in 35 patients over the study period, with coagulase-negative Staphylococcus (CoNS) species isolated in 71% of patients and polymicrobial growth in 34% of cases. Forty percent of patients had been admitted with a non-infectious principal diagnosis, and 14% of patients had been discharged at the time of blood culture positivity and were readmitted or called back to the ED for management of possible bacteremia. Transthoracic echocardiogram had been performed for assessment of infective endocarditis in 34% of all patients and 40% of patients with CoNS prior to final identification of the blood culture isolate(s), which required 5.5 days on average. Sixty-six percent of patients received vancomycin, including 43% of patients admitted for noninfectious diagnoses. Twenty-three percent of patients had new or additional LOS due to BCC, with an average of 1.4 days. The average additional cost associated with a BCC event at KM was $2931.

Conclusion: Given that BCC rates decreased at KM from 4.6% with non-certified phlebotomy staff collection compared to 1.2% with certified phlebotomist collection, introduction of PDBC resulted in an estimated cost avoidance of $778,596 per year.

Abstract 2025 – 30

Paralysis Associated with Coccidioidal Meningitis: A review of 12 cases

Safa Mousavi, MD, MPH; Bianca Torres, RA; Shikha Mishra, MD; Jigar Patel, MD; Michelle Fang, Pharm D; Rasha Kuran, MD; Royce Johnson, MD; Carlos D'Assumpcao, MD

Introduction: Disseminated coccidioidomycosis occurs in approximately 1% of coccidioidomycosis cases and can affect the skin, bone and central nervous system (CNS). Coccidioidal meningitis (CM) is a severe form and represents one third to one half of cases. CM typically presents with neurological symptoms, such as headache or altered mental status. In severe cases, CM can result in paralysis which could be due to vasculitic infarction or arachnoiditis. Hemiplegia is often due to vasculitic infarction. Paraplegia and quadriplegia are most often due to arachnoiditis. This study explores neuroradiology findings, and outcomes in patients with CM who develop paralysis. The purpose of this study is to provide insights into diagnosis evaluation and treatment of these patients.

Methods: This retrospective study reviewed the medical records of patients diagnosed with CM and associated paralysis seen by Infectious Disease (ID) physicians at the Valley Fever Institute in Bakersfield, CA. Institutional approval was obtained from Kern Medical's Institutional Review Board and patient consent was waived. Patients were included in the study if they had a compatible clinical illness, compatible cerebrospinal fluid (CSF), serum and CSF immunodiffusion and complement fixation or microbiologic evidence of Coccidioides and neuroimaging. Where available, data was analyzed at three key time points, time of CM diagnosis, onset of paralysis and time of the patients most recent outcome assessment.

Results: A total of 12 patients were included in this review, all of whom developed paralysis associated with CM despite antifungal therapy. Three of the patients did not have data at the time of CM 2 IRB#24143_3.3.2025_V10 diagnosis. Data was not available for two of the patients at onset of paralysis. The mean age was 51.8 years (range: 30 to 67 years old), with 8 males and 4 females. The majority of patients were of Hispanic ethnicity (66.7%, 8/12). Comorbidities included hypertension (33.3%, 4/12), diabetes mellitus type 2 (25%, 3/12) out of which, 1 was controlled (A1C: 6.6) and 2 uncontrolled (A1C: 7.6, 11), depression (25%,3 /12), and HIV (8%, 1/12). Eight patients had Ventriculoperitoneal (VP) shunt (66.6% (8/12), two patients at CM diagnosis, two at paralysis onset, and four after paralysis. Neuroradiology findings at the onset of paralysis revealed basilar leptomeningeal enhancement (58.3%, 7/12), hydrocephalus (41.6%,5/12), vasculitic infarctions (58.3%, 7/12), arachnoiditis (41.6%, 5/12), syrinx (8%, 1/12), and subarachnoid hemorrhage (8%, 1/12). No patients had mass lesions in the brain. One patient had a right middle cerebral artery aneurysm, etiology uncertain. Neurologic findings corresponded to the infarction location. Patients with vasculitic infarction received antifungal therapy and dexamethasone. Majority of patients with arachnoiditis received antifungal therapy and glucocorticoids. Ten patients showed partial neurological improvement, while two patients died.

Conclusion: This study highlights the profound morbidity associated with CM in patients with paralysis due to vasculitic infarctions or arachnoiditis that is amendable to antifungal therapy with judicious use of glucocorticoids.

Abstract 2025 – 31

Repeated Remote Ischemic Preconditioning Improves Muscular Strength by Neuromuscular Adaptations

Jesse Okoli; Martin Navarro, BS; Jahyun Kim, PhD

Purpose: Remote ischemic preconditioning (RIPC) is 3 or 4 cycles of brief blood flow blockage followed by blood flow restoration. Previous limited studies showed that repeated RIPC improves muscular strength in healthy young adults inconsistently. Moreover, these studies did not explore the underlying mechanisms in these improvements. Since neuromuscular adaptation plays a key role in early strength gain during resistance training, strength gain from repeated RIPC may be explained by neuromuscular adaptation. Additionally, it is possible that applying more RIPC sites could induce greater strength gain due to larger ischemic areas. The goals of this study were to test whether muscular strength improvements were due to neuromuscular adaptations and whether increasing the number of RIPC sites would result in greater strength gains.

Methods: 30 healthy young adults without cardiovascular disease risk factors were recruited from the local community (n=30; 18 M, 12 F). Participants were randomly assigned to a control, one-site, and two-site group (10 per group). RIPC training was applied for 1 week (7 consecutive days) using 4 cycles of 5 mins of occlusion with 200 mmHg of pressure followed by 5 mins of reperfusion. Lower limb strength was assessed by isometric knee extension (ISOKE) using the Biodex System 4 before and after 1 week of RIPC. Electromyography (EMG) was measured during ISOKE and used to calculate neuromuscular efficiency (NME). Two ways mixed-model ANOVA and a Tukey post hoc analysis comparing before and post RIPC were used to analyze the data.

Results: One week of repeated RIPC improved ISOKE/BW and EMG (ISOKE/BW: 197.1 ± 41.9 vs. 235.6 ± 67.6 Nm, p<0.001; EMG: 0.36 ± 0.16 vs. 0.62 ± 0.26, pre vs. post, 1 site, p=0.003). However, the two site RIPC did not further improve (ISOKE/BW: 235.6 ± 67.6 vs. 233.3 ± 52.9 Nm, p=0.802; EMG 0.62 ± 0.26 vs 0.60 ± 0.29, 1site vs. 2 sites, p=0.319). NME (p=0.137) did not increase after 1 week of RIPC between groups over time. Conclusion: One week of one-site RIPC improved muscular strength, but two-site RIPC did not result in greater strength improvements compared to one-site RIPC. Although EMG increased after one week of repeated RIPC at both one and two sites, NME did not change in any of the groups. These results suggest that repeated one-site RIPC is sufficient to elicit muscular strength improvement by neuromuscular adaptations. However, one week is not sufficient time to elicit neuromuscular synchronization.

Abstract 2025 – 32

Sacral Neuromodulation as Treatment for Neuromyelitis Optica Related Neurogenic Bladder: A Case Report

Zihao Cai, MS III; Eneti Tagaloa, MD; Vikas Nookala, MD; Daniela Amodio, MD; Yufan Brandon Chen, MD

Introduction: Neuromyelitis optica spectrum disorder (NMOSD), known for affecting the optic nerves and spinal cord, is not a common cause of neurogenic bladder (NB). [1] Uncommonly, NMOSD can result in urinary dysfunction with urinary retention and detrusor overactivity as the most common symptoms. [2] Urodynamic assessments in NMOSD patients confirm these symptoms as indicative of neurogenic bladder patterns. [3] This case report supports sacral neuromodulation (SNM) as a safe and effective treatment of neurogenic bladder secondary to NMOSD.

Case Presentation: We present a 60-year-old female with a 1.5 year history of urge urinary incontinence. Patient was diagnosed with neuromyelitis optica (NMO) two years prior to urinary symptoms onset. On presentation, she complained of increased urinary frequency, urge incontinence, decreased perineal sensation and episodes of fecal incontinence. On initial urodynamic evaluation, the patient voided 475 mL with PVR 105mL. Detrusor overactivity was observed without detrusor overactivity incontinence. The differential diagnosis included overactive bladder and neurogenic detrusor overactivity secondary to NMO. A trial of oxybutynin patch was initiated and the patient was counseled on pelvic floor muscle exercises and fluid management. After six months, the patient reported minimal improvement in incontinence and complained of skin irritation from the patches. The patient tried six weeks of vibegron with no effect on urinary incontinence and complained of xerostomia. At this time, the patient underwent a peripheral nerve evaluation (PNE). During the PNE trial, the patient reported significant improvement in symptoms. Based on the positive response, a SNM device was implanted and the patient had near complete resolution of her urinary symptoms.

Discussion: NMOSD is an inflammatory condition of immune-mediated demyelination and axonal injury typically involving spinal cord and optic nerves. [5] One of the clinical features of NMO is transverse myelitis, which can present with limb weakness, sensory loss and bladder dysfunction. One study demonstrated that 52.4% of NMO patients with neurogenic detrusor overactivity (NDO) also had detrusor-sphincter dyssynergia (DSD). [2] This finding supports the urodynamic abnormalities in NMOSD, consistent with the urodynamic findings of our patient. The treatment for urge urinary incontinence includes timed voids, pelvic floor physical therapy, medications, bladder botox, peripheral tibial nerve stimulation and SNM. [2] However, SNM proved to be a highly effective alternative for our patient. SNM is a well-established treatment for various lower urinary tract dysfunctions, particularly non-neurogenic conditions. SNM is FDA-approved for OAB/UUI, urinary retention and fecal incontinence with emerging studies showing its effectiveness for patients with neurogenic bladder from causes such as MS [6]. Therefore, the success of SNM in this case underscores its potential as an intervention for select NMOSD patients.

Conclusion: While SNM is not the traditional treatment for neurogenic bladder, its established efficacy in managing refractory overactive bladder symptoms underscores its potential utility in select

neurogenic cases, especially when detrusor overactivity is a prominent feature. This case suggests that SNM can provide a viable and effective alternative for managing complex neurogenic bladder conditions associated with NMOSD. Further studies exploring the role of SNM in neurogenic bladder secondary to NMOSD could help refine its application and broaden therapeutic options for these patients.

Abstract 2025 – 33
Acute Pain Management in a Patient with Chronic Pain and Opioid Use Disorder
Leslie Wofford, NP; Sarah Gonzalez, MD

Introduction: Managing acute pain in patients with chronic pain and Opioid Use Disorder (OUD), on Medication-Assisted Treatment (MAT), presents distinct challenges such as opioid tolerance, withdrawal prevention, and effective pain control. This case illustrates a multidisciplinary approach to managing acute pain in a patient with both OUD and chronic pain, who sustained traumatic stab wounds requiring surgical intervention and hospitalization.

Case Description: A 44-year-old male with a history of chronic wrist pain, due to previous injury, treated with Hydrocodone/Acetaminophen 10/325mg twice daily and OUD in early remission managed with MAT (methadone 100mg daily), presented to the emergency department after sustaining multiple stab wounds to his chest and abdomen. He underwent exploratory laparotomy with diaphragm and abdominal wall fascia repair. Postoperatively, the patient experienced severe uncontrolled pain despite receiving IV opioids, oral opioids, and non-opioid pain medication. The addiction medicine team was consulted for pain optimization, while minimizing relapse risk. A multimodal pain management plan was developed, which included scheduled split dosing of methadone at a reduced dose, IV hydromorphone, oral oxycodone, additional non-opioid analgesics (Methocarbomol and Gabapentin), and local anesthesia (Lidocaine patches) with special attention to avoid respiratory depression. Over three days, methadone was gradually titrated to the patient's home dose, while IV opioids were discontinued, and oral opioids were transitioned back to Hydrocodone/Acetaminophen 10/325MG twice daily, as well as optimization of non-opioid analgesics. The patient's pain was effectively controlled and he demonstrated adherence to MAT without opioid misuse or withdrawal symptoms.

Discussion: This case highlights the complexities of acute pain management in a patient on MAT and with chronic pain, where baseline opioid requirements must be maintained while addressing increased analgesic needs due to opioid tolerance. A multidisciplinary approach of re-starting methadone, integrating opioid and non-opioid therapies, careful opioid titration, and addiction-informed pain management, was essential for optimizing outcomes and minimizes complications such as Central Nervous Center (CNS) depression.

Conclusion: Patients with OUD on MAT with chronic pain require individualized pain management strategies that balance effective analgesia, withdrawal prevention, and addiction risk mitigation. This case demonstrates the importance of multimodal pain management and collaboration with addiction medicine in the acute care setting. Further research is needed to develop standardized protocols for managing opioid-tolerant patients requiring acute pain management.

Abstract 2025 – 34
Suspected Penile Squamous Cell Carcinoma with Possible Metastasis: An Elderly Male Presenting with Persistent Penile Bleeding
Cameron Carlisle, MS IV; Carol Avila Hernandez, MD; Nariman Almnini, MD; Hector Arreaza, MD

Introduction: In the United States, primary malignant penile cancer accounts for only 0.3% to 0.5% of all male cancers. Human Papillomavirus (HPV) is associated with at least 40% of penile malignancies, with squamous cell carcinoma making up over 90% of invasive penile cancers. Additional risk factors include smoking, lack of circumcision or circumcision performed later in childhood, phimosis, balanitis, lichen sclerosis, exposure to psoralen plus ultraviolet A (PUVA) therapy, and low socioeconomic status. This disease predominantly affects elderly men, with a peak incidence of around 80 years. Metastasis to

distant organs such as the lungs, liver, bone, or brain is rare but typically indicates advanced disease, which carries a poor prognosis and an average survival of approximately two years. We present a case of an elderly male with suspected penile squamous cell carcinoma and possible metastatic disease, highlighting the diagnostic challenges and management considerations in such cases.

Case Description: An 82-year-old male with atrial fibrillation managed with Eliquis, diabetes, hypertension, and stage III chronic kidney disease presented with respiratory distress, weakness, and persistent bleeding from a tumor on the glans of the penis. The patient's symptoms began five months prior with a painless lump on the head of the penis and later developed swelling and bleeding. Initial foreskin biopsy was reportedly negative, and he underwent circumcision. However, the bleeding persisted. CT imaging showed multiple lung nodules, with cavitary lesions and a complex penile mass (13 x 4 cm). Pathology from a smear of the penile lesion revealed poorly differentiated malignancy, suspicious for squamous cell carcinoma. Given the patient's deteriorating condition, surgical options were deferred. The patient was transitioned to comfort care and subsequently passed away.

Discussion: Penile squamous cell carcinoma, although rare, can present with persistent bleeding and pain, with distant metastasis in advanced stages. Delayed diagnosis and disease progression led to suspected metastatic spread, as suggested by lung findings on imaging. The presence of pulmonary nodules raised differential diagnosis considerations, including metastatic malignancy versus infection, but malignancy was favored due to poor response to antibiotics. This case highlights the importance of timely diagnosis to prevent metastasis and underscores the challenges of managing advanced disease in elderly patients with significant comorbidities. Prophylactic HPV vaccination and neonatal circumcision are essential strategies to reduce the burden of penile malignancies. Early urologic evaluation and oncologic workup are crucial for improving outcomes.

Conclusion: Early recognition and timely intervention are essential for managing penile squamous cell carcinoma, especially in high-risk populations. Preventive measures such as HPV vaccination and neonatal circumcision can significantly reduce the incidence of this disease. Healthcare professionals should maintain a high index of suspicion for penile malignancies in at-risk patients and promptly initiate diagnostic evaluations, as early intervention can enhance survival and outcomes. Palliative care is vital for improving the quality of life for patients with advanced disease. Future approaches should focus on preventive strategies and early urologic evaluation to improve patient care.

Abstract 2025 – 35

Juvenile Granulosa Cell Tumor in An Adolescent: A Case Report

Susan Hong La, DO; Omar Popal, MS IV; Daniel Hanna, MS III; Amin A. Ramzan, MD

Introduction: Juvenile granulosa cell tumor (GCT) is a rare subtype of ovarian sex cord-stromal tumors. It is most commonly found in children and young women and accounts for approximately 5% of granulosa cell neoplasms. Juvenile GCTs are commonly diagnosed in premenarchal girls, with a median age of diagnosis of 7-8 years. They often present with symptoms of hyperestrogenism, such as precocious puberty, premature thelarche, or menstrual irregularities. These tumors are usually unilateral and may present as large masses with mixed solid and cystic components. The primary treatment for juvenile GCT is surgical resection, often involving unilateral salpingo- oophorectomy and fertility-sparing staging. The prognosis, although excellent for stage I tumors, requires close postoperative surveillance due to the possibility of late recurrences. We present a rare case of juvenile GCT.

Case Description: A 12-year-old female presented to the emergency department with a one-day history of acute onset left lower quadrant pain radiating to the left flank with associated vomiting. Her parents also endorsed that she had lost twenty pounds over the past 3 months. Computed tomography of the abdomen and pelvis with contrast revealed a 7.6 cm cystic and solid ovarian mass. The patient was hemodynamically stable. Inhibin B tumor marker was found to be elevated at 1046 pg/mL (normal for her age is <86). The patient was urgently referred to gynecologic oncology. The patient was then expeditiously scheduled for excision of the adnexal mass and fertility sparing surgical staging. An

exploratory laparotomy, left salpingo-oophorectomy, and omentectomy was performed. Frozen section was consistent with sex cord stromal tumor. Specialty gynecologic pathology consultation was requested, and the diagnosis of juvenile granulosa cell tumor was made. The malignancy was confined to the left ovary and was thus found to be stage IA. Due to the early stage of the tumor, patient is continuing to be closely monitored with tumor markers and imaging. Her Inhibin B levels normalized within 6 weeks of surgery. This patient's most recent computed tomography of the abdomen and pelvis with contrast showed complete resolution of previously seen mass.

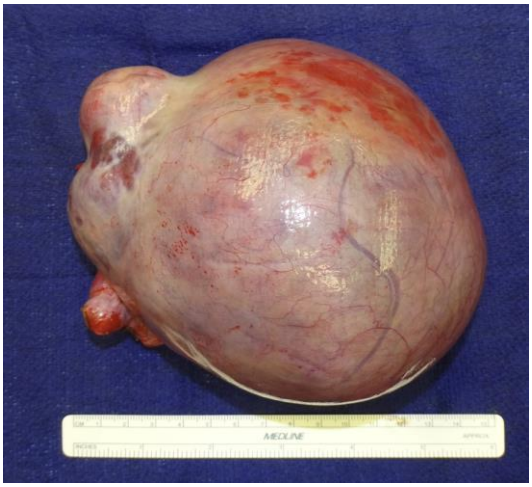

Figure 1: Gross specimen; Left Ovarian Mass

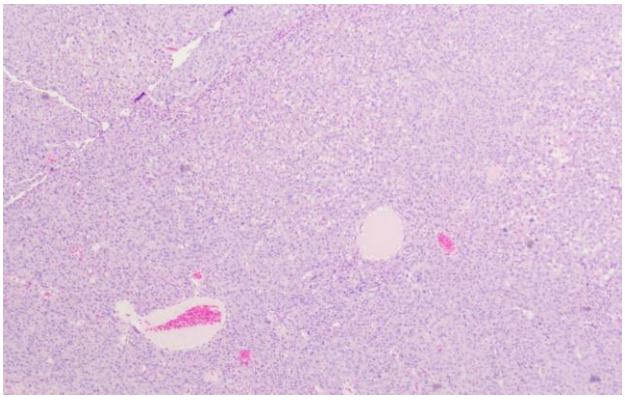

Figure 2: Juvenile GCT features: Scattered or interspersed follicles of varying size with irregular contours, often containing basophilic secretions as shown above.

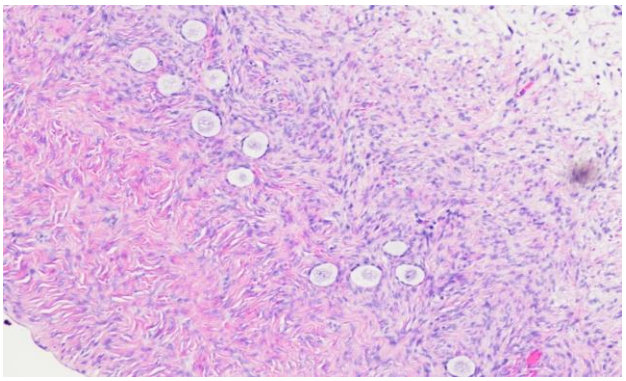

Figure 3: Normal follicles of the patient

Discussion: Ovarian granulosa cell tumor is a rare malignant tumor with two histopathologic types: adult GCT and juvenile GCT. Most patients diagnosed with adult GCT have a favorable prognosis, while juvenile GCT has favorable prognosis in stage I disease. However, outcomes are substantially worse in more advanced stage juvenile GCT, with a 5-year survival of 22%. Thus, it is important for clinicians to quickly identify, diagnose, and manage juvenile GCT. It is important to expedite care for patients with this suspected malignancy since it is aggressive but able to be managed surgically and with surveillance if caught at an early stage.

Conclusion: In this case, we were able to quickly identify this patient's potential risk for malignancy, collect tumor markers, refer to appropriate care teams, and expedite this patient's care.

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Abstract 2025 – 36

Percutaneous Tibial Nerve Stimulation Improves Peripheral Neuropathy and Incontinence

Cameron Carlisle, MS IV; Karina Grinberg, MD; Yufan Brandon Chen, MD

Introduction: Urinary urgency incontinence (UUI) and lower extremity neuropathy are common complications following pelvic radiation therapy, significantly affecting patients' quality of life. UUI is frequently caused by radiation cystitis, which results from damage to the bladder following radiation treatment. Additionally, peripheral neuropathy can

develop due to radiation-induced damage to nerves. This case report aims to explore the use of percutaneous tibial nerve stimulation (PTNS), a minimally invasive neuromodulatory technique, to treat both UUI and neuropathy in a patient with a history of endometrial cancer. The dual benefit observed in this case suggests that PTNS may have broader applications for managing radiation-induced complications and warrants further investigation.

Case Description: A 60-year-old woman with Stage IA FIGO Grade 3 endometrial adenocarcinoma, treated with hysterectomy, chemotherapy, and pelvic radiation, developed UUI and lower extremity neuropathy, which included numbness, tingling, and weakness in her legs. Despite taking Mirabegron for bladder control, she continued to experience urinary leakage, frequent urination, and mild dysuria. The neuropathy symptoms were significantly impairing her daily activities. The patient started biweekly sessions of PTNS, a treatment known to modulate nerve signals related to bladder function. After several PTNS sessions, the patient experienced significant improvements: her urinary incontinence episodes were reduced, her bladder control improved, and her lower extremity neuropathy symptoms, including numbness and tingling, were alleviated. The patient expressed an interest in further treatment options, including sacral neuromodulation, for additional symptom relief.

Discussion: UUI is a frequent complication of radiation cystitis, which can result in significant impairment of daily life. PTNS, effective in treating UUI by modulating the tibial nerve and influencing the sacral micturition center, has been shown to improve bladder function. This case illustrates PTNS's potential benefit beyond bladder dysfunction, as it also alleviated neuropathic symptoms, which is not widely recognized. Studies have suggested that PTNS may have broader effects on the peripheral nervous system, potentially alleviating neuropathic symptoms. The improvement in both urinary symptoms and neuropathy in this patient points to a potential neuromodulatory effect that could benefit patients with overlapping symptoms of radiation-induced complications. Although more research is needed to better understand the mechanisms behind PTNS's effects on neuropathy, this case provides an important insight into its broader therapeutic potential.

Conclusion: This case underscores the potential of PTNS as a dual-purpose treatment for both urinary urgency incontinence and lower extremity neuropathy, particularly in patients with a history of radiation therapy for pelvic cancers. The observed improvement in both symptoms suggests that PTNS could be a valuable option for managing complex, overlapping symptoms in cancer survivors. Further research is needed to confirm the mechanisms behind the observed benefits and to expand the clinical applications of PTNS in treating radiation-induced complications. Healthcare providers should consider PTNS as a potential option in treating patients with radiation-induced UUI and neuropathy, as it may offer a holistic approach to symptom management.

Abstract 2025 – 37

Twin Pregnancy with Complete Hydatidiform Mole and Coexisting Live Fetus

Shelbie Walters, DO; Amin Ramzan, MD; Petre Motiu, MD

Introduction: Molar gestations occur with an incidence of 1-2 per 1,000 pregnancies in North America. While molar pregnancies are themselves rare, it is even more rare that it is coupled with a genetically normal coexisting live fetus. The incidence is thought to be 1 in 22,000 – 100,000.

Case Description: A 36-year-old G6P5 was seen by a maternal fetal medicine specialist at 18 weeks gestation and diagnosed with a molar pregnancy and a coexisting live fetus. Pelvic ultrasound revealed an active fetus and a 12 x 8 cm cystic uterine mass consistent with the "snowstorm" sign. An amniocentesis was performed and revealed the fetus had a normal karyotype. The human chorionic gonadotropin (hCG) level was significantly elevated at 674,000 IU/mL. The patient was counseled on the risks associated with this condition and ultimately decided to continue the pregnancy. The patient presented in labor at 25 weeks gestation. She was delivered via cesarean section due to fetal distress. A viable male infant with APGARS 2/3/6 weighing 825g

was delivered. Complete hydatidiform mole was confirmed on pathology. Her hCG levels were closely monitored following delivery. At 19 weeks post-partum, she was diagnosed with post-molar gestational trophoblastic neoplasia (GTN) based on increasing hCG levels. Her FIGO score was 1 and she was treated with single agent methotrexate (0.4 mg/kg on days 1-5 of a 14 day cycle). Her hCG levels normalized after 1 cycle and she received two consolidation cycles. The patient was monitored for 12 months with serial hCG values. 18 months after completion of surveillance, she went on to have a normal term pregnancy delivered via repeat cesarean section.

Discussion: There are 2 types of molar pregnancy, complete and partial hydatidiform mole. These abnormal gestations are the result of fertilization errors. A partial mole is triploid and develops following fertilization of an ovum with 2 sperm. A complete mole is diploid and results from fertilization of an empty ovum. In most cases of complete molar pregnancy there is duplication of the paternal DNA and less commonly fertilization with 2 sperm. Risk factors for molar pregnancies include extremes of age and prior molar pregnancy, with each subsequent molar pregnancy conferring increasingly higher risk of recurrence. The significance of molar pregnancy with a co-existing live fetus lies in the risk that they confer to the pregnant patient both during and after pregnancy. During pregnancy, these patients are at higher risk of conditions such as pre-eclampsia, vaginal bleeding/hemorrhage, anemia, hyperthyroidism and preterm labor. Following delivery, there is a risk of developing GTN, which is a malignant entity that is most commonly treated with chemotherapy. The outcomes are favorable, with most patients being cured even in the presence of metastatic disease. The rates of GTN after a molar pregnancy with a co-existing live fetus approach 50% in most studies, including both patients who terminated the pregnancy and those who carried the pregnancy beyond viability. As is the case with molar gestations without a co-existing live fetus, the risk of GTN is greater in those with higher hCG levels prior to the evacuation of the molar gestation.

Conclusion: Molar pregnancy with a co-existing live fetus poses significant maternal and fetal risk. It is imperative to diagnose this condition early and provide management options to the patient. Favorable outcomes for both the patient and fetus are possible when there is careful management amongst a multi-disciplinary team of obstetricians, perinatologists and gynecologic oncologists.

Abstract 2025 – 38
Primary Uterine Rhabdomyosarcoma
Megan Lewis, MS IV; Amin Ramzan, MD

Introduction: Rhabdomyosarcoma is one of the most common malignant soft tissue tumors in children but is rare in adults. When it presents in the uterus, it manifests as an aggressive cancer with a poor prognosis. Due to its rarity, treatment strategies for uterine rhabdomyosarcoma in adults are largely based on pediatric studies, as no specific therapeutic guidelines or genetic insights have been established. The pediatric oncology literature supports adjuvant use of vincristine, dactinomycin, cyclophosphamide/vincristine and irinotecan (VAC/VI). The paucity of data on uterine rhabdomyosarcoma emphasizes the need for further research to improve detection, optimize treatment strategies, and enhance outcomes for this rare and aggressive tumor.

Case Description: A 39-year-old woman was referred to our hospital with a six-month history of abnormal uterine bleeding. A cervical biopsy had identified a malignant mesenchymal neoplasm, favoring embryonal rhabdomyosarcoma. Magnetic resonance imaging (MRI) revealed a large, T2 hyperintense soft tissue mass measuring 6.3 × 6.2 × 4.8 cm, involving the cervix and protruding into the upper vaginal canal. The patient underwent a total abdominal hysterectomy, bilateral salpingectomy, and omentectomy, leading to a final pathological diagnosis of stage IB uterine sarcoma with predominantly rhabdomyosarcoma and focal leiomyosarcoma differentiation. Adjuvant chemotherapy with VAC/VI was initiated. The patient also received concurrent pelvic radiation therapy. She has tolerated the first four months of treatment

well and there is no evidence of recurrent disease based on physical exam and imaging.

Discussion and Conclusion: This case presentation highlights the rarity and aggressive nature of adult uterine rhabdomyosarcoma, emphasizing the challenges in diagnosis and treatment due to the lack of established guidelines. This patient's management with a multimodal approach, including surgery, adjuvant VAC/VI chemotherapy, and radiation therapy, aligns with current pediatric-based protocols and underscores the potential for improved outcomes. However, further research and clinical trials are necessary to refine treatment strategies and establish evidence- based guidelines specific to adult patients with primary uterine rhabdomyosarcoma.

Abstract 2025 – 39

CNS Under Siege: Meningoencephalitis as a Manifestation of Behçet's Disease

Sheila Toro, MD, MSc; Jacqueline Garcia, MS IV; Stephanie Garcia, MD; Yvette Singh, MD; Verna Marquez, MD

Introduction: Behçet syndrome is a rare, systemic vasculitis characterized by recurrent oral and genital ulcers, ocular involvement, and multisystem complications. Neurological manifestations, known as Neuro-Behçet syndrome (NBS), occur in 5–10% of cases and can mimic central nervous system (CNS) vasculitis, demyelinating diseases, or ischemic stroke. This case report describes a young male presenting with neurological symptoms, oral ulcers, and meningo-vasculitis, raising suspicion for NBS.

Case description: A 27-year-old male presented to the emergency department with a 6-month history of unintentional weight loss, frontal and bilateral temporal headaches associated with nausea, intractable hiccups, painful oral ulcers, subjective fevers, and a recent onset of right-sided weakness. The patient had been previously evaluated at multiple institutions and was treated for gastroesophageal reflux symptoms without relief. Initial imaging, including a chest X-ray and a CT scan of the head, revealed no acute findings. However, MRI of the brain demonstrated left periventricular areas of vague diffusion restriction, suggestive of subacute ischemia with differential diagnoses including vasculitis and demyelination. Cerebrospinal fluid (CSF) analysis revealed a hazy, colorless appearance with a WBC count of 968, RBC count of 8, glucose level of 49, and elevated protein at 86.8 mg/dL. Extensive laboratory workup, including tests for infectious and autoimmune etiologies, was largely negative. Notably, EBV IgG was positive. Imaging studies, including CT of the chest, abdomen, and neck, were unremarkable except for submandibular adenopathy on the right. A deep cervical lymph node biopsy was performed, with results pending. Testicular ultrasound showed microlithiasis, a right testicular cyst, and a small left hydrocele. Given the patient's neurological symptoms, oral and genital ulcers, and a vasculitis-like presentation, Behcet's disease was considered, although diagnostic criteria were not fully met. A pathergy test was negative. The patient was initiated on high-dose prednisone (60 mg daily) for 4-6 weeks, followed by a tapering regimen. Additional medications included colchicine and supportive therapies for hiccups and dysphagia. The management plan involved close follow-up with rheumatology, gastroenterology, and neurology.

Discussion: This case illustrates the diagnostic complexity of Neuro-Behçet syndrome, which can mimic other inflammatory or demyelinating CNS conditions. The combination of neurological symptoms, oral ulcers, and inflammatory CSF findings made NBS a primary consideration, despite the absence of a definitive diagnosis. The patient responded well to corticosteroids and colchicine, highlighting the potential for immunosuppressive therapy to manage suspected NBS. This case underscores the importance of considering Behçet syndrome in patients with unexplained CNS symptoms and mucocutaneous lesions, even when classic diagnostic criteria are not fully met. Multidisciplinary follow- up and ongoing monitoring are essential for managing disease progression and potential complications.

Conclusion: This case emphasizes the need for clinical vigilance in recognizing Neuro-Behçet syndrome, even in the absence of definitive diagnostic criteria. Early consideration and prompt

immunosuppressive therapy can lead to favorable outcomes, highlighting the importance of a multidisciplinary approach in managing complex CNS inflammatory conditions.

Abstract 2025 – 40
Withdrawal Extrapyramidal Symptoms and Catatonia Following Abrupt Haloperidol Discontinuation
Tam Doan, MD; Sanha Lee, DO; Sarayu Vasan, MD

Introduction: After long-term use, withdrawal from antipsychotics can manifest as dyskinesia due to dopamine hypersensitivity in nigrostriatal pathways [1]. For haloperidol, withdrawal onset can occur within 24 to 48 hours of discontinuation, with symptoms persisting for up to 14 days [2]. Previous reports show dyskinesia leading to tremors and lip smacking after discontinuation of short-term intravenous haloperidol [3] and increased global dyskinesia following oral haloperidol discontinuation in patients previously on antipsychotics [4]. Additionally, haloperidol-induced withdrawal catatonia is not well-documented [5]. We present a case of extrapyramidal symptoms (EPS) and catatonia resulting from abrupt discontinuation of a high dosage of oral haloperidol in a medication-naïve patient.

Case Description: This case features a 31-year-old male with no past psychiatric or medical history admitted on an involuntary hold for danger to self and danger to others after irrationally threatening to kill his family members while responding to internal stimuli. Urine toxicology screen was positive for marijuana and benzodiazepines. Patient's medication regimen on discharge was 7.5 mg haloperidol three times a day (total 22.5 mg daily) and lorazepam 3 mg daily. One week later, patient presented to the emergency department for not eating or drinking, not speaking, drooling, not moving, and posturing. Patient had a Bush-Francis score of 20. After lorazepam challenge of 2 mg IV, patient appeared more relaxed but was not speaking. Psychiatry consult and liaison service evaluated the patient who was only speaking in one to five word phrases and exhibited much speech latency. Per collateral, three days after discharge, the outpatient psychiatric team had decreased lorazepam dose to 0.5 mg oral and haloperidol dose to 2.5 mg PO twice daily, and patient was started on paroxetine. Bush Francis score was 9, so lorazepam 1 mg oral three times daily was started. Patient was readmitted to the psychiatric unit.

The following day, the patient was speaking slowly and drooling, and patient revealed that haloperidol had been discontinued entirely. Suspecting extrapyramidal symptoms, 2 mg IM benztropine was administered, after which patient was able to chew and swallow graham crackers and was not speaking as slowly as before. Patient agreed to start benztropine 1 mg orally twice daily. On day of discharge, patient noted further improvement, denied drooling and tremors, and reported being able to move at an appropriate speed. Per collateral, patient was able to converse normally and appeared close to baseline. Patient was discharged with final medication regimen of lorazepam and benztropine.

Discussion: Haloperidol withdrawal can include EPS and catatonia, even if haloperidol is used briefly. This patient was medication-naïve prior to initiating haloperidol, and patient's usage of oral haloperidol was short-term rather than long-term. Notably, the patient reached near-complete symptom resolution following benztropine administration, indicating that both catatonia and EPS were interplaying in patient's presentation.

Conclusion: Psychiatrists should be aware that EPS and catatonia can occur from abrupt haloperidol discontinuation even with short-term usage. Caution should be exercised when tapering haloperidol and should not be done abruptly, with benztropine being a consideration if patient presents with EPS.

Abstract 2025 – 41
Transverse Myelitis with Negative MRI
Andy Wu, MS III; Chandni Sakthi, MS III; Zat Akbar Shaw, MS III; Leopoldo Hartman, MD; Basiru Omisore, MD; Nariman Almnini, MD; Harnek Singh, MD

Introduction: Transverse myelitis (TM) involves severe focal demyelination of the spinal cord. The

pathophysiology is attributed to autoantibodies attacking the myelin sheath and immune cells triggering an inflammatory cascade that damages motor neurons of the anterior horn of the spinal cord and sensory neurons of the posterior cord. Clinical manifestations include motor, autonomic, and sensory deficits. Many diagnostic tests such as CSF analysis and blood tests are effective in ruling in TM and expediting further management, but MRI is the main confirmatory diagnostic test. This report presents a case of TM where the patient experienced symptomatic relief, despite unremarkable thoracic and lumbar spine MRI findings.

Methods: A 41-year-old female with a history of ovarian cancer and partial gastrectomy was admitted for paraplegia and loss of sensation below the T2 dermatome. Two months prior, she was hospitalized for bilateral lower extremity weakness, nausea, and vomiting, with an unremarkable cervical and lumbar spine MRI. ANA and ANCA tests were negative. One month later, she was readmitted with paraplegia and sensory loss up to the xiphoid process. MRI of the brain, thoracic, and lumbar spine remained negative, but CSF IgG was elevated at 21 and elevated CSF proteins at 58.1. She was diagnosed with Guillain-Barré Syndrome and completed a 5-day IVIG course without improvement.

During the current admission, the patient was bed bound with urinary and bowel incontinence and severe foot pain. Physical exam showed 5/5 strength in the upper extremities but 0/5 in the lower extremities, with decreased pinprick sensation below T2. Lumbar puncture revealed elevated CSF IgG (9.9), while ANA, anti-aquaporin-4, and MOG antibodies were negative. Repeat MRIs were again unremarkable. The patient underwent a 5-day course of high-dose solumedrol, resulting in minor motor improvement, with strength increasing to 2/5 in most areas of the bilateral lower extremities. She then underwent plasmapheresis, which led to mild further recovery of strength and sensation, though sensation remained decreased below the T10 dermatome.

Discussion and Conclusion: This case highlights a 41-year-old female with an extensive medical history who was diagnosed with transverse myelitis despite an atypical presentation and negative MRI findings. While the elevated CSF IgG and CSF protein supported the diagnosis, the multiple negative MRIs did not. This case illustrates the challenges of diagnosing TM when imaging is inconclusive, emphasizing the need to integrate clinical presentation, physical exam, and additional diagnostic markers. Relying solely on MRI for TM diagnosis presents a challenge as subtle or early-stage cases may be missed.

One key limitation was the lack of continuity of care which restricted long-term assessment of the treatment response. Additionally, the initial evaluation did not fully rule out infectious etiologies or paraneoplastic syndromes, which both could mimic TM in a patient with a history of ovarian cancer. Given the complexity of the case, TM should be strongly considered based on clinical symptoms and neurological exam, while systematically ruling out other etiologies such as Guillain-Barre syndrome. Ultimately thorough, multimodal approaches are crucial for diagnosing TM, ensuring timely intervention, and improving patient outcomes despite inconclusive imaging.

Abstract 2025 – 42

A Case of Marburg Variant Multiple Sclerosis Treated with Rituximab

Melanie Khamlong, MD; Aishwarya Saripalli, MD; Noah Yan, MS III; Anthony Bettencourt, MS III; Katayoun Sabetian, MD

Introduction: Marburg variant is a rare form of multiple sclerosis in which symptoms are rapidly progressive, causing disability within weeks to months. MRI typically shows multiple focal T2 lesions. Pathology shows massive macrophage infiltration, demyelination, hypertrophic astrocytes, and severe axonal injury. We present a case of a 59 year old female diagnosed with Marburg variant MS and treated with rituximab.

Case Presentation: Patient is a 59 year old female with diabetes mellitus who presented with progressive forgetfulness for 6 weeks and 20 pound weight loss in 6 months. Initial exam showed MMSE score 29/30 with 1 out of 3 word recall, absent

reflexes, and normal gait. MRI brain showed right basal ganglia FLAIR/T2 hyperintensity extending across midline with a slight enhancement in the right thalamus. Due to receiving aspirin and Plavix, the plan was for outpatient follow up for neurosurgery evaluation and lumbar puncture. LP showed opening pressure of 10, WBC of 44 with 85% lymphocytes, glucose 68 and protein 34. Autoimmune encephalitis panel was negative. She returned one week after with worsening memory, left hand incoordination, impaired gait. MRI brain showed mildly increased FLAIR/T2 signal in bilateral thalami and right basal ganglia. Patient was transferred to higher level of care for brain biopsy. Repeat LP had normal findings, with negative flow cytometry and cytology. CSF showed 3 oligoclonal bands. She received 5 days of IV methylprednisolone 1g. She then developed decreased muscle strength in left extremities. Repeat MRI showed expansion of the lesions. After brain biopsy was performed, she was transferred back. Physical exam then showed muscle strength 0/5 in the left extremities. Pathology of biopsy showed demyelination, with CDS+ lymphocytes, presence of macrophages, vessels with perivascular inflammation, possibility of Marburg's variant. After multidisciplinary discussion, she was started on rituximab 1g IV. After 5 days, strength in left hand grip and foot dorsiflexion improved. The second dose of rituximab was given 2 weeks after. Patient was discharged home with family. Patient was able to attend neurology clinic seven weeks after her discharge. She reports resolution of left sided weakness and ambulates independently. Per family, she continues to remain forgetful. Patient is scheduled for a third round of rituximab six months after her last dose.

Discussion: Marburg's variant MS is a rapidly progressive disease, which requires aggressive treatment. Most reported cases initiated treatment with IV steroids, then plasma exchange without improvement. Our patient had received 5 days of IV steroids then had worsening condition. In patients without improvement with steroids or plasma exchange, immunosuppressants have been the next line of treatment. Reports have shown use of cyclophosphamide or mitoxantrone with good response. Two cases have reported use of rituximab. Our patient had received a total of two rounds of rituximab with complete resolution of left hemiplegia. Given our patient's response, rituximab should be considered for treatment in patients diagnosed with Marburg variant MS.

Abstract 2025 – 43

A Case of Vibrio Cholera from Central California

Sukhjinder Sandhu, RA; Arash Heidari, MD; Harsukh Nidhan Dhillon, MD

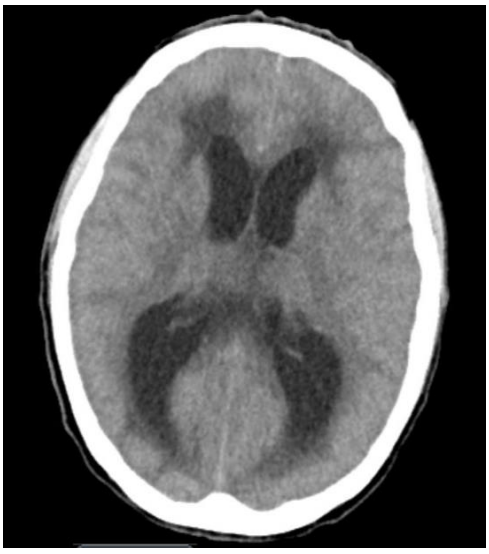
Case Report: Cholera is rarely reported in the United States and is associated with a returning traveler ingesting contaminated water or food. Acquired cases in the United States are typically related to the ingestion of raw shellfish such as shrimp or crab. This is a case report of a 28-year-old Hispanic female with no known medical history presented to our institution with onset 2 days of progressive abdominal pain associated with nausea vomiting and excessive watery diarrhea. She purchased shrimp from a local store a day before her illness and during the cooking process tasted it when it was half-cooked for the proper seasoning. Upon arrival, she was febrile to 38.2 centigrade with a heart rate of 110 beats per minute. Her physical exam did not show lethargy, sunken eyes, or decreased skin turgor but was consistent with hyperactive bowel sounds, epigastric, and right upper quadrant tenderness to palpation. She had more than 10 episodes of diarrhea with fish odor associated during her first day of admission. She received intravenous hydration and was empirically placed on piperacillin/tazobactam. Her stool multiplex PCR test panel came back positive for vibrio cholera PCR. Her antibiotics were changed to 300 mg of doxycycline. She improved clinically after 24 hours of hydration and was able to tolerate food and drink. She was discharged with a local public health follow-up. Her stool culture subsequently grew V. cholerae which was confirmed at the Public Health State laboratory. No other associated cases were reported in this incident. Her family members perhaps did not get infected as they ingested fully cooked shrimp. This case reminds clinicians to obtain a thorough history of recent travel and any exposure to raw shellfish when cholera cases are suspected.

Abstract 2025 – 44
Steroid in a Case of Coccidioidomycosis Meningoencephalitis with Complicated Hydrocephalus, When the Left and Right Stopped Talking.
Sukhjinder Sandhu, RA; Konstantino Papatheodorou OMS III; Arash Heidari, MD

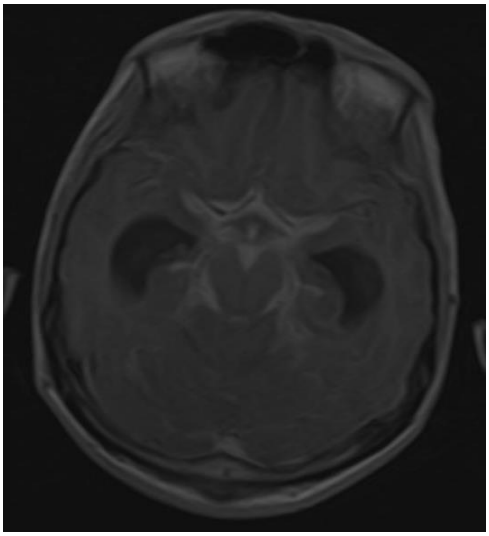
Introduction: Disseminated coccidioidomycosis occurs in only 1-5% of cases and spinal and meningoencephalitis by far are the most severe form of dissemination. We present the case of a 24-year-old Hispanic male with 4 years of fentanyl abuse and malnutrition who was diagnosed with pulmonary coccidioidomycosis with spinal epidural abscess, meningoencephalitis, complicated non-communicating hydrocephalus who avoided bilateral shunting using steroids.

Case Report: A 24-year-old Hispanic male with 4 years of fentanyl abuse and severe malnutrition presented to our institution after 5 months of weight loss, cough, headache, recent onset ataxia, and 3 days of daily seizures. Urgent computed tomography (CT) of the head showed severe hydrocephalus with transependymal resorption that was followed with immediate insertion of right frontal ventriculostomy (EVD). The ventricular fluid had 46 cells/mm 3 . Further work-up included CT chest that showed bilateral pulmonary infiltration with a left upper lobe cavitary lesion. Coccidioides serology returned positive for IgM and IgG immunodiffusion (ID), with complement fixation (CF) of 1:512. (ARUP). He was initiated on 1000 mg of fluconazole. Lumbar puncture revealed yellow fluid, WBC count of 13 cells/mm 3 , glucose of < 10 mg/dL, protein of 1,974 mg/dL, coccidioides IgM and IgG ID with CF of 1:4. Magnetic resonance imaging (MRI) of brain and spine showed severe basilar leptomeningeal enhancement and an epidural abscess posterior to the thecal sac extending from the first thoracic vertebrae to the S1. Due to the inoperable epidural abscess, Liposomal amphotericin B (LamB) was added. The right Ventriculoperitoneal (VP) shunt was placed. The patient briefly improved but in the following days developed lethargy and left cranial sixth nerve palsy. CT of the head showed worsening hydrocephalus more on the left leading to revision of the right frontal VP shunt and placement of a new left EVD. MRI brain showed worsening of basilar leptomeningeal enhancement, so fluconazole was changed to isavuconazole. The neurosurgery team has changed the setting of the EVD and the VP shunt without success due to perhaps low-pressure hydrocephalus and severe basilar leptomeningeal enhancement creating a new functional noncommunicating between left and right ventricles. He was placed on 20 mg of dexamethasone and responded clinically. Left EVD was clamped and eventually removed and bilateral shunting was avoided. The patient was de-escalated from the neurology intensive care unit. After 7 days of dexamethasone 20 mg the plan is to taper by 4 mg every 4 days. He will remain in the hospital until he is stabilized for outpatient management at least 12 weeks of LAmB concomitant with lifetime isavuconazole.

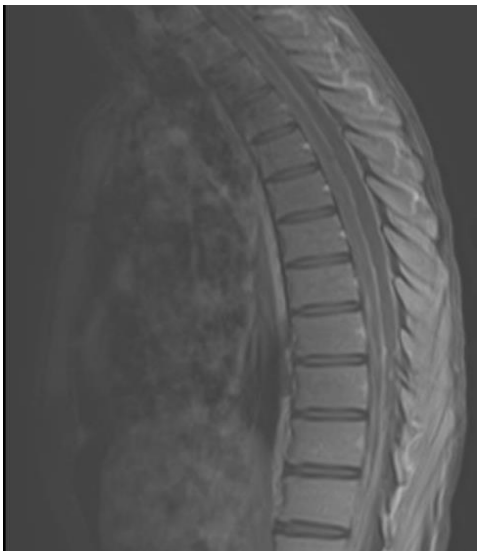
Conclusion: There are multiple publications about the utilization of steroids in disseminated CNS coccidioidomycosis. To our knowledge, this is a unique case of hydrocephalus that steroids assisted in avoiding extra shunting.



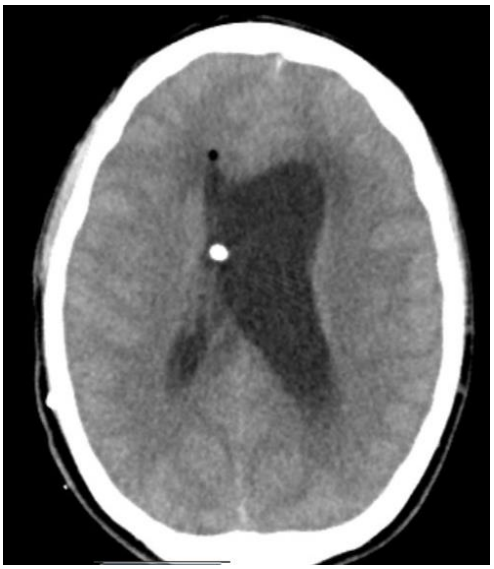
CT brain showed severe hydrocephalus, transependymal resorption



MRI brain shows extensive basilar enhancement



MRI T spine shows epidural abscess posterior to the thecal sac extending from the first thoracic vertebrae to the S1.



CT brain shows right VP shunt after revision and left ventricle hydrocephalus before left EVD.

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Abstract 2025 – 45
Is Immunogenic, Immunodestiny? A Case of Severe Pulmonary Coccidioidomycosis with Osseous Dissemination in a Host with Chromosomal 13q Deletion.

Sukhjinder Sandhu, RA; Arash Heidari, MD

Introduction: Immunogenic plays major role in pathophysiology of coccidioidomycosis (cocci). Chromosomal 13q may present with a spectrum of severity of symptoms related to size and location of the deletion on 13q. To the best of our knowledge there has been no report of severe pulmonary cocci with osseous dissemination in chromosomal 13q deletion and the association is unknown. Here we are reporting a case.

Case Report: This is a 19-year-old Polynesian ancestry male (parents born in Island Tonga) who was diagnosed with chromosomal deletion 13q at age of 5 due to developmental delay, was in his usual state of health and moved to endemic are of cocci a year from another state. He developed influenza-like illness with cough and fever 7 weeks prior to presentation slowly got worse up to 3 days prior to admission when he developed dyspnea on exertion

and came our institution and found to have multi-lobar left-sided pneumonia and mediastinal and hilar adenopathy (Figure 1). He had leukocytosis with 20600/uL predominantly neutrophilic. He initially treated with antibiotics until his cocci serology came back positive with both IgM and IgG immunodiffusion and complement fixation of 1:2028 at ARUP. His treatment was change to Liposomal Amphotericin B due to persistent fever up to 39.3 Celsius, tachypnea, hypoxemia and tachycardia up to 155 beats per minute. His bone scan showed uptake in his 8th left rib consistent with osseous dissemination via either contiguous or hematological spread (figure1). He clinically slowly improved over 3 weeks and eventually discharged home on a beta blocker, 800 mg of fluconazole and oxygen. His cocci treatment is projected to be at least for 36 months long.

Conclusion: There are several studies published regarding role of immunogenetics in pathophysiology of cocci from acquisition to clinical manifestations and dissemination. The role of chromosomal genetic disorder in immunogenic of cocci has not been studied widely and there are paucity of reported cased. Clinicians in the endemic area should play an extra attention in patients with chromosomal disorder suspicious for cocci in prompt diagnosis and aggressive treatment to avoid dissemination and sequela.

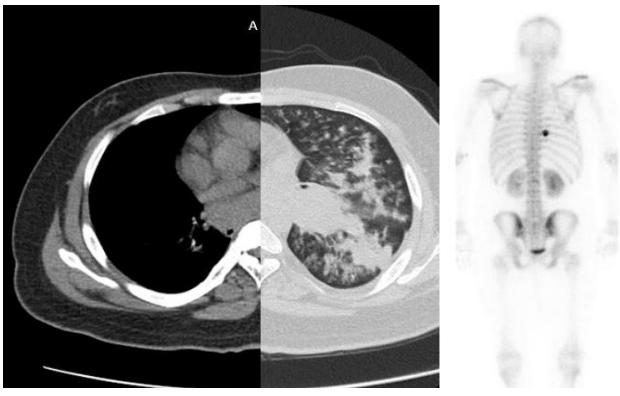

Figure 1: CT chest mediastinal and pulmonary window showing hilar and mediastinal lymphadenopathy and bone scan showing left 8 th rib uptake.

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Abstract 2025 – 46

Steroid A Potion or Poison, A Case of Severe Cardiopulmonary Coccidioidomycosis.

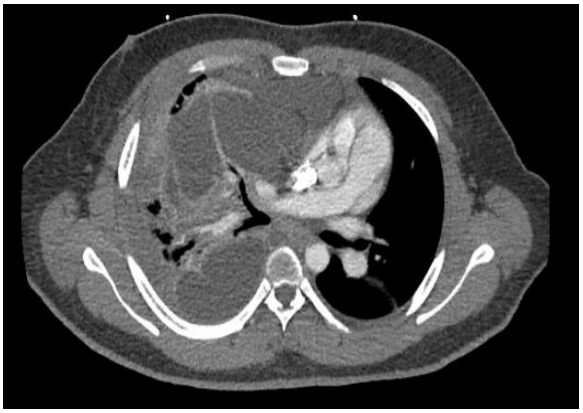
Sukhjinder Sandhu, RA; Aldrin C. P. Alpuerto, MD; Arash Heidari, MD

Introduction: Corticosteroids have been widely used in alleviating symptoms of respiratory illnesses in emergency rooms and urgent cares. In the endemic regions of coccidioidomycosis (cocci) this becomes a risky practice as rather than a mild self-resolving disease it can create severe forms with serious complications. We are reporting a case of severe cardiopulmonary disease after utilization of high dose steroid for “viral pneumonitis”.

Case Report: This is a 17-year-old Hispanic male in usual state of health developed right-sided chest pain without any upper air ways symptoms 10 days prior to presentation to our intuition. He came to an emergency room when his pain progressed and accompanied with nausea and vomiting. He was diagnosed with “viral pneumonitis” after obtaining chest x-ray and placed on a 7 days course of 50 mg of prednisone. He went to another urgent care while on steroid and this time was told that he has pneumonia and placed on 3 days of ceftriaxone without any help and sent to our institution. Upon evaluation found to be in respiratory distress, tachypneic, hypotensive, hypoxic and tachycardic. He had 26100/uL WBC with neutrophilic predominance. CT chest showed large multi-loculated pleural effusion on the right with right lung compressive atelectasis (figure 1). His echocardiogram showed compression of his vena cava contributing to his hemodynamic instability in addition to pericardial effusion. Emergently he was placed on empirical antibiotics and a chest tube was placed and fluid was sent for cultures. His point of care test for cocci followed by IgM immunodiffusion at ARUP came back positive with indeterminate complement fixation. He was placed on fluconazole. His pleural fluid was consistent with empyema and grew Coccidioides spp. He was placed on Liposomal Amphotericin B. His pericardial fluid enlarged, his respiratory distress and WBC worsened to 47600/uL. He was scheduled for thoracotomy and pericardial aspiration. However, due to need for pediatric

postoperative need he was transferred to a pediatric tertiary hospital where 2 extra pigtail drainages have been placed temporarily with mild clinical improvement, under close observation.

Conclusion: There have been a large body of evidence that utilization of corticosteroids prior to diagnosis and proper treatment of cocci contributes to severe forms of primary and dissemination and should be all avoided if clinical suspicions exist particularly in endemic area. The utilization of corticosteroids in management of cocci is controversial and might be beneficial in specific conditions such as ARDS and complicated forms of meningitis/encephalitis. However, this is always with conjunction with aggressive antifungals.



CT chest: Large multi-loculated empyema with cardiac involvement

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Abstract 2025 – 47
Staggering Strides: Sudden and Severe Gait Ataxia in a 57-Year-Old Man
Sonam Sidhu, OMS III; Erinna Thai, OMS III; Alaleh Bazmi, MD

Introduction: Gait ataxia is a chief complaint with a myriad of etiologies from emergent to malignant to substance induced. The National Hospital Ambulatory Medical Care Survey in 2022 documented that 25.1% of all ED visits were related to falls, which ataxia can cause. Given the commonality of the complaint and the large variability in etiology, we aim to describe a case that highlights the importance of systemic evaluation and interphysician reliability of neurological assessment with the goal of creating an Ataxia Assessment Protocol for Kern Medical Center.

Case Description: We present a 57-year-old man with a 15 pack-year smoking history and 40 year history of near daily alcohol use with sudden onset and progressive gait ataxia associated with dysarthria, dysgraphia, and anorexia resulting in 50 lb weight loss for approximately two months. Initial physical exam in the emergency department was remarkable for positive Rhomberg, difficulty with heel-to-shin, and inability to tandem walk. Differentials included cerebellar stroke, alcoholic cerebellar degeneration, thyroid dysfunction, vitamin deficiencies, autoimmune conditions, and paraneoplastic syndromes.

CTA showed left vertebral artery atherosclerosis without stenosis and non-contrast MRI showed mild-to-moderate cerebellar atrophy. All other vitals, labs, and imaging studies were unremarkable. Over six months of outpatient follow-up, the patient's symptoms progressively worsened, leading to more than six falls, increasing dysarthria, developing dysphagia, and the eventual inability to stand unassisted. Low-dose CT scan to assess for malignancy given significant smoking history was unremarkable and lumbar puncture was notable for elevated protein only.

Discussion: Given the consistently unremarkable results across multiple studies, the history and physical examination became increasingly pertinent to determining the etiology of his complaints. However, as multiple specialties evaluated the patient over several months, the description and documentation of his symptomatology varied greatly. Given the chronicity of his presentation, a reliable and valid measure of his ataxia, such as the Scale for the Assessment and Rating of Ataxia (SARA), would have allowed for clear tracking of disease progression [1-2]. In addition, the Head Impulse, Nystagmus, and Test of Skew (HINTS) exam should be included to delineate between central and peripheral causes of ataxia while also documenting essential oculomotor movements [3]. Furthermore,

as the Purkinje cells of the cerebellum are especially susceptible to hypoxic injury, the initial assessment should include an evaluation of environmental toxins, such as heavy metals, alongside screening for drug abuse [3-4]. With these three recommendations, providers can reliably track symptom progression while also ruling out common, treatable, yet often overlooked causes of ataxia.

Conclusion: This case highlights the need for a reliable scale for the work-up of ataxia at Kern Medical Center. Given that a quarter of national ED visits are related to falls, a clear protocol should be implemented to increase interphysician reliability as patients are treated in both the inpatient and outpatient settings. We provide three evidence-based recommendations that can be easily implemented into Kern Medical Center to improve patient quality and care for the treatment and diagnosis of ataxia.

Abstract 2025 – 48

The Devastating 1%: A Potential Case of Neuroinvasive West Nile Virus

Sabrina Yip, OMS III, Nathan T.L. Bui, OMS III; Di Tran, MS IV; Ranbir Sandhu, MD; Ahamed El Azzih, MD; Hector Arreaza, MD; Alejandro Gonzalez Perez, MD; Nariman Almnini, MD

Introduction: West Nile Virus (WNV) is a commonly acquired arbovirus in the United States, and most cases are asymptomatic. A rare but potentially devastating sequelae is neuroinvasive WNV (NWNV), which occurs in fewer than 1% of WNV cases and has a 10% mortality rate. Diagnosis of NWNV is often challenging, especially in immunocompromised patients, due to nonspecific clinical presentations and limitations in diagnostic testing. In this case report, we present an interesting case of a 54-year-old immunocompromised patient with clinical features resembling NWNV but inconclusive diagnostic testing.

Case Presentation: 54-year-old male with a history of extensive alcohol use disorder and left lower extremity hardware presented to the emergency department (ED) for a 1-week history of fevers, chills, abnormal hand movements, abnormal gait, and altered mental status. In the prior months, patient had upper respiratory infection symptoms that progressively worsened. Initial ED workup was significant for elevated troponin but was otherwise negative. Patient was admitted, and intravenous (IV) thiamine and CIWA protocol were initiated.

Lumbar puncture (LP) was obtained, and the patient was started on Solumedrol 1000mg IV daily and acyclovir 850 mg IV q8h empirically for autoimmune and herpes encephalitis. Patient's neurologic status worsened, Solumedrol was held, and a repeat LP was performed for further analysis. Empiric ampicillin 2g IV q4h was started for Listeriosis. 24-hour continuous video electroencephalogram (EEG) revealed mild encephalopathy without seizures, and repeat EEG was similar. Initial autoimmune encephalitis panel and BioFire were negative, and empiric medications were discontinued. Coccidioidomycosis IgG was positive with titers <1:2, repeat was negative.

Throughout the hospitalization, patient had waxing and waning responsiveness. Ativan challenge with 2mg IV was attempted with mild improvement. Repeat MRI 14 days after initial MRI revealed extensive diffuse bihemispheric confluent and symmetric white matter T2 hyperintensities that were significantly more prominent compared to prior MRI brain (Figures 1 & 2). Serum WNV IgG and IgM elevated at 2.78 and 1.60, respectively. A third LP was performed with elevated white blood cells. CSF was positive for WNV IgG (1.51) and negative for oligoclonal bands. PCR for serum WNV RNA, CSF cultures, and metal-induced encephalopathy workup were also negative. Q fever serology was positive, and the patient was started on doxycycline 100mg IV q12h and intravenous immunoglobulin 40g daily for 2 days. Ultimately, the family opted for the patient to be placed on hospice due to his continuing neurological deterioration without notable improvement.

Discussion and Conclusion: This patient had clinical features reflecting three of five most common presenting symptoms of NWNV, and MRI findings resembled that of those who had confirmed NWNV. Although the patient had positive serum WNV IgG and IgM and CSF WNV IgG, his CSF IgM and PCR

were negative. However, given the patient's immunocompromised state and symptoms, NWNV cannot be definitively ruled out as a possible cause of his altered mental status and subsequent neurological deterioration. Other sources of neuroinvasion considered include Q fever and hardware infection. Overall, further research into enhanced diagnostic techniques and standardized treatment of immunocompromised patients is needed to better address this potentially lethal neurologic complication.

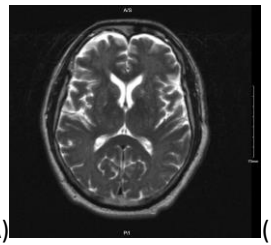
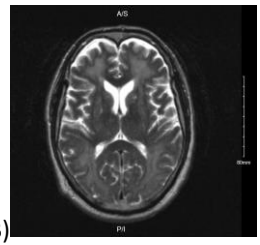
(A)  (B) 

Figure 1 T2 Axial View: (A) Initial MRI with nonspecific white matter changes; (B) Repeat MRI with extensive diffuse bihemispheric confluent and symmetric white matter T2 hyperintensities.

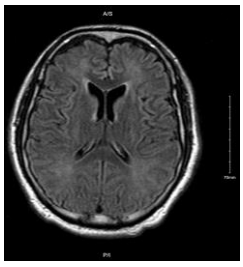
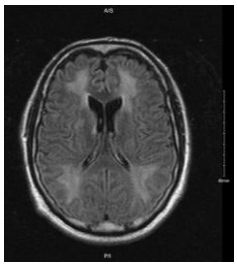
(A)  (B) 

Figure 2 FLAIR: (A) Initial MRI FLAIR with nonspecific white matter changes; (B) Repeat MRI with extensive diffuse bihemispheric confluent and symmetric white matter T2 hyperintensities.

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Abstract 2025 – 49

Blast from the Past: A Forgotten Disease, Scurvy

Cameron Carlisle, MS IV; Zat Akbar Shaw, MS III; Yvette Singh, MD; Gagan Kooner, MD; Harnek Singh, MD

Introduction: Scurvy, a disease caused by severe vitamin C deficiency, is often thought to be obsolete in developed nations. However, it remains a relevant and underdiagnosed condition in at-risk populations, including those with poor dietary intake, substance use, or a history of bariatric surgery. Vitamin C is essential for collagen synthesis, wound healing, and immune function. Though rare, U.S. data suggest a vitamin C deficiency prevalence of approximately 6–8% among adults. This case highlights scurvy in a 52-year-old woman with a history of gastric sleeve surgery, malnutrition, and chronic skin ulcerations.

Case description: A 52-year-old female presented with painful, non-draining ulcers on her arms, legs, and buttocks for the past three months. The lesions began as small vesicles that progressed into shallow ulcers. She had multiple scars from previously healed lesions and denied systemic symptoms such as fever or chills. She received multiple courses of oral antibiotics during prior emergency department visits without significant improvement. Her medical history included gastric sleeve surgery, 8-pound unintentional weight loss, and poor oral intake. She endorsed prior inhaled methamphetamine use and is a current smoker. She reported fatigue and difficulty maintaining nutrition due to early satiety and limited access to fresh food. She denied gingival bleeding or joint pain. On examination, she appeared cachectic, with multiple superficial ulcers and no signs of active infection or inflammation. Laboratory studies—including CBC, inflammatory markers, autoimmune panels, and infectious testing—were unremarkable. Given her presentation and risk factors, serum vitamin C was obtained and found to be severely low. She was started on oral vitamin C 500 mg daily, resulting in complete resolution of her skin lesions within days.

Discussion: Scurvy remains underrecognized in modern clinical practice. Vitamin C deficiency impairs collagen production, leading to skin breakdown, poor wound healing, and microvascular fragility. While gum bleeding and fatigue are classic features, skin ulcerations may be the only presenting sign. This case illustrates how scurvy can closely mimic pyoderma gangrenosum or cellulitis, resulting in misdiagnosis and unnecessary antibiotic or immunosuppressive treatment. The patient's repeated presentations and failure to respond to antibiotics reflect this common diagnostic pitfall. In today's fast-paced clinical environments, nutritional

deficiencies may be overlooked—particularly when imaging and labs are unrevealing. Yet, a simple dietary and social history can be the key to diagnosis. Risk factors such as gastric bypass, poor intake, weight loss, and substance use should prompt clinicians to consider vitamin C deficiency, even in the absence of classic findings. Importantly, scurvy is rapidly and completely reversible with supplementation. Early recognition can prevent unnecessary interventions and dramatically improve patient outcomes.

Conclusion: This case reinforces that scurvy, although uncommon, remains a clinically important and reversible condition in nutritionally at-risk individuals. Providers should maintain a high index of suspicion in patients with chronic, unexplained skin ulcerations—particularly those with a history of poor intake, weight loss, substance use, or bariatric surgery. A targeted dietary history, coupled with appropriate micronutrient testing, can facilitate prompt diagnosis. Timely recognition and treatment with vitamin C can lead to rapid symptom resolution, minimize unnecessary interventions, and improve patient outcomes.

Abstract 2025 – 50
Chronic Right Arm Swelling in a Diabetic Weightlifter: An Unusual Etiology
Cameron Carlisle, MS IV; Lovedip Kooner, MD; Gagan Kooner, MD; Alex Casey, DO; Harnek Singh, MD

Introduction: Pyomyositis is typically caused by Staphylococcus aureus, presenting with localized muscle pain, swelling, and systemic symptoms. However, immunocompromised individuals may experience atypical infections mimicking pyomyositis, including fungal infections. Coccidioidomycosis, caused by Coccidioides species, is endemic to the western United States and can lead to disseminated disease in at-risk populations, particularly individuals with diabetes or other forms of immunosuppression. This case illustrates disseminated coccidioidomycosis initially presenting as bacterial cellulitis and pyomyositis in a diabetic weightlifter.

Case Description: A 50-year-old male with non-insulin-dependent diabetes mellitus and a history of strenuous weightlifting presented with a 10-day history of progressive right arm pain and swelling. He had previously been treated for presumed cellulitis with oral antibiotics, but symptoms worsened. He presented to the Emergency Department with tachycardia and hypertension. Laboratory evaluation revealed an elevated lactic acid of 2.4 mmol/L, a WBC count of $10.1 \times 10^3/\mu L$, and a marked left shift with 27% bandemia. Imaging revealed subcutaneous edema in the right arm and reticulonodular opacities in the lungs. He was admitted for presumed cellulitis, sepsis, and possible pneumonia, and started on IV Zosyn. Hematology-oncology noted bilateral pulmonary nodules. Infectious disease confirmed disseminated coccidioidomycosis with positive coccidioidomycosis IgM and fungal wound cultures. He received fluconazole 800 mg daily for one week, then 400 mg daily, along with incision and drainage of abscesses by orthopedic surgery. Blood cultures were negative. He is now nearing completion of a 12-month antifungal course. Liver function tests and serologies have remained stable. Repeat CT scans show no progression of pulmonary nodules. He has regained near-baseline strength and function through physical therapy and continues rehabilitation with plans to return to weightlifting. Monthly orthopedic and infectious disease follow-up ensures safe recovery and monitoring.

Discussion: This case emphasizes the importance of considering fungal pathogens in patients from endemic regions who present with atypical or refractory soft tissue infections. Disseminated coccidioidomycosis is a rare but serious condition that can mimic more common bacterial processes such as cellulitis or pyomyositis. The patient's uncontrolled diabetes likely contributed to immunosuppression, while his strenuous weightlifting may have caused localized tissue stress, creating a portal for infection. These risk factors facilitated fungal dissemination. Early recognition through serologic testing and imaging was critical for initiating appropriate therapy. A multidisciplinary approach—including infectious disease, orthopedic surgery, and physical therapy—was essential for optimal management. This case reinforces the value of maintaining a broad differential diagnosis and

tailoring treatment based on regional epidemiology and host risk factors.

Conclusion: This case highlights the importance of maintaining a broad differential when evaluating persistent soft tissue infections in diabetic patients, particularly in coccidioidomycosis- endemic regions. When symptoms fail to improve with standard antibiotic therapy, early recognition, timely antifungal therapy, and appropriate surgical intervention are critical to achieving favorable outcomes. It also underscores how strenuous physical activity, combined with underlying diabetes, can increase susceptibility to severe fungal infections—reinforcing the need for comprehensive evaluation in atypical presentations.

Abstract 2025 – 51

Hepatic Dissemination of *Aspergillus tubingensis* in a Young Type 1 Diabetic: A Case Report

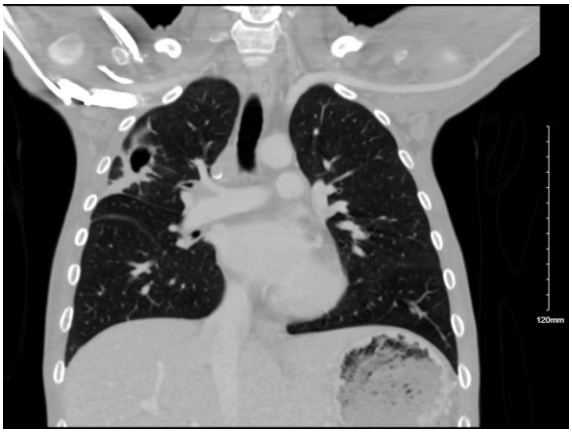
Nathan T.L. Bui, OMS III; Sabrina Yip, OMS III; Di Tran, MS IV; Ranbir Sandhu, MD; Rupam Sharma, MD; Kevin Dao, MD; Augustine Muñoz, MD; Hector J. Arreaza, MD; Nariman Almnini, MD

Introduction: Chronic pulmonary aspergillosis (CPA) is a pulmonary fungal infection commonly caused by *Aspergillus fumigatus* and *Aspergillus niger* that can disseminate into nearby organs acutely in invasive pulmonary aspergillosis (IPA) or chronically in chronic necrotizing aspergillosis (CNA). Diagnosis is often difficult in immunocompromised patients like diabetics due to limitations in diagnostic testing, though identification of calcium oxalate crystals in BAL or biopsied tissue can provide timely diagnosis supported by serum galactomannan, BAL galactomannan, and *Aspergillus* PCR. There is growing evidence suggesting concern for chronic cannabis use by the immunocompromised because of *Aspergillus* contamination of cannabis cultures. Firstline treatment is voriconazole or Posaconazole in refractory cases. In this case report, we discuss a case of nodular-cavity chronic pulmonary aspergillosis concerning for hepatic CNA secondary to *Aspergillus tubingensis* in a 38-year-old with Type 1 diabetes mellitus with chronic cannabis use.

Case Presentation: A 28-year-old female with pulmonary cavitary lesions secondary to aspergillosis and cannabis use followed by diagnosis of T1DM presents to our institution in early 2025 for intractable diffuse abdominal pain. Associated symptoms include one week of productive cough with brown sputum, nausea, and self-reported one year 100-pound weight loss.
Review of medical history showed the patient previously presented with similar abdominal pain. CT chest revealed cavitary nodules within the right upper lobe, right middle lobe, and lingula (Figure 1). Bronchoscopy of broncho-alveolar lavage was positive for calcium oxalate stones and gram stain showed few neutrophils, suggesting aspergillosis, confirmed via CT-guided lung biopsy of nodules positive for GAS (+) GMS(+) fungal hyphae. Galactomannan antigen testing in serum and bronchoalveolar lavage fluid (sensitivity 70%) and *Aspergillus* PCR serum isolated *Aspergillus tubingensis*, member of Section Nigri. The patient was discharged on Isavuconazonium sulfate 372 mg daily pending results. She was unable to get voriconazole because of insurance issues.
During this hospitalization, the patient presented with diffuse abdominal pain and ALP, ALT, and AST ranged 363-617 units/L, 41-195 units/L, and 16-125 units/L, respectively. Given her weight loss, T1DM, elevated liver enzymes, and cannabis use with chronic symptom progression, CNA with hepatic involvement was considered a potential cause of intractable abdominal pain. CT chest demonstrated smaller cavitary lung nodules and no obvious liver lesions; Posaconazole 300 mg daily was initiated. The patient returned in two weeks with similar symptoms. Pelvic exam revealed scant white vaginal discharge. Budding yeast on wet mount suggested vaginal candidiasis. She was discharged on Diflucan 150 mg, recording multiple ED visits with intractable abdominal pain yet to be attributed to any other medical condition. Liver biopsy is being considered for definitive diagnosis.

Discussion and Conclusion: The patient's presentation of T1DM, chronic cannabis use, chronic elevated ALP and liver enzyme with diagnostic tests positive for CPA secondary to *Aspergillus tubingensis* provided worrying signs for CNA with hepatic involvement. Though no lesions to the liver were identified as an indication of hepatic dissemination, hepatic CNA cannot be definitively ruled out as a possible source of her intractable abdominal pain. Overall, further research into enhanced diagnostic techniques and standardized treatment is needed to better address this *Aspergillus* complication.

(A)



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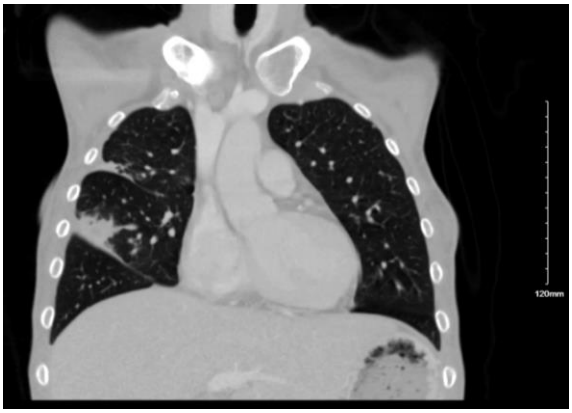

Fig 1. C/T chest with and without contrast demonstrating nodular cavitation lesions in (A) upper lobe and (B) middle lobe.

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Abstract 2025 – 52

A Unique Presentation of Primary Cutaneous Coccidioidomycosis, By Infecting Burn Wounds with Extensive Contiguous Local Spread.

Anhad Sarang, OMS III; Arash Heidari, MD

Introduction: Coccidioidomycosis, also known as Valley Fever, is a fungal infection caused by the dimorphic fungus *Coccidioides* spp. Cases of primary cutaneous coccidioidomycosis are exceedingly rare as most cutaneous cases are usually a form of dissemination after pulmonary infection. Less than 100 cases have been reported to date.

Case Description: This is a case of a Hispanic 42-year-old male from Central California Valley who underwent extensive burn injury to his right upper arm and shoulder with an ongoing open wound on his right antecubital area due to burn contracture. He noticed the development of skin lesions around the chronic wound which slowly spread upwards towards his upper arm, shoulder, and upper back over his burn scar area. (Figure 1). He came to our institution due to the extension of his lesion with oozing blood and associated excruciating pain from lesions. Before admission a local clinic obtained a skin punch biopsy which came back positive for the presence of coccidioidomycosis spherules with endosporulation. 4 fungal culture swabs were collected from oozing lesions, and all were identified as *Coccidioides* spp. His serology returned positive by precipitin IgG at our institution and positive immunodiffusion IgG with complement fixation of 1:2024 at the ARUP reference laboratory. He was started on liposomal amphoteric B daily for 14 days, with significant improvement in his lesions, less oozing blood, and the closing of open wounds. He was discharged to our infusion center to continue liposomal amphotericin B for another 12 weeks on a 3-times-a-week basis. After his 14 weeks total of liposomal amphotericin B infusions, the patient reported no constitutional symptoms, as well as significant resolution of his pain and lesions. His most recent CF titer level is 1:64, and he was then started on Posaconazole 400mg daily. He will continue this oral dosage until further resolution of his CF titers, current literature recommends oral treatment for 1-3 years for cutaneous cocci infections.

Discussion: It is conceivable that he acquired primary cutaneous CM infection via an open wound by working on a dairy farm in an endemic area with significant exposure to soil and dust. The reason behind the local contiguous spread from the primary infection site towards his upper arm shoulder and upper back is unknown. Still, it could be hypothesized that the mounted tissue T cell immunity and interruption of lymphatics in the burn

scar tissue may have played a role in the development and spread of these lesions.

Conclusion: This brings up the question, are the extensive cutaneous cocci lesions potentially contagious due to the growth of mycelia at the surface of the skin lesions? Primary Cutaneous Cocci is rare and will need further investigation to understand the characteristics and pathophysiology. This rare dermatological manifestation can be mistaken for other cutaneous lesions, so it is important to consider this diagnosis in endemic areas.

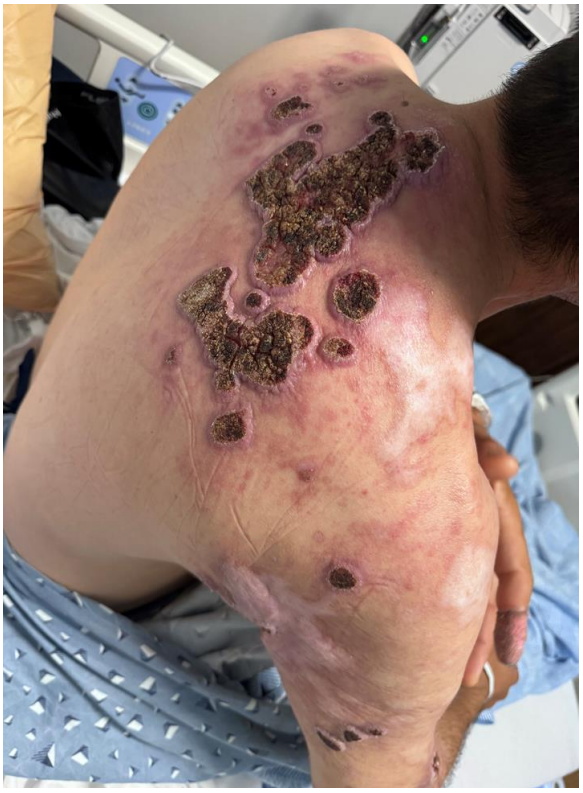

Figure 1.

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Abstract 2025 – 53
Concomitant Brain and Lung infections with Nocardia Mimicking Coccidioidomycosis.
Anhad Sarang, OMS III; Arash Heidari, MD

Introduction: Nocardia is an aerobic gram-positive branching filamentous bacillus that is found in the soil, isolated fresh and saltwater, and decaying organic matter. Nocardiosis typically occurs in immunocompromised individuals, transmission typically occurs either through inhalation or skin contact through wounds or cuts. Notoriously, nocardiosis is presented as a pulmonary infection with potential dissemination to the brain. This picture could mimic coccidioidomycosis in the endemic area.

Case Description: This is a case of a 54-year-old Hispanic male gardener residing in Central Valley, California who presented to the ED with bilateral upper lobe cavitary lesions and right-sided numbness, twitching, and weakness in the face, and upper and lower extremities for 2 days. He was diagnosed with a focal seizure and found to have a left parietal intracranial mass (4.5 x 2.5 x 3.4 cm) with surrounding edema on the CT head (Figure 1), confirmed with MRI showing a ring-enhancing lesion with surrounding edema. He had a positive coccidioidomycosis IgG with CF <1:2 (ARUP) and was placed on Liposomal Amphotericin B (LAmB) after admission to the neuro ICU. He underwent a biopsy of his brain lesion and intraoperative culture grew *Nocardia farcinica/kroppenstedtii*. His LAmB was stopped, and he was placed on double coverage with meropenem for 42 days, and high-dose TMP/SMX for 12 months. After discharge from the hospital and rehabilitation, his right-sided weakness significantly improved and was able to ambulate using a cane. His follow-up neuroimaging showed significant improvement as well.

Conclusion: Clinicians in endemic areas of coccidioidomycosis should avoid anchoring on the positive IgG serology (particularly with negative CF titers) which could represent a remote infection masking the new pathology. Other differential diagnoses should be included, and a comprehensive workup should be conducted.

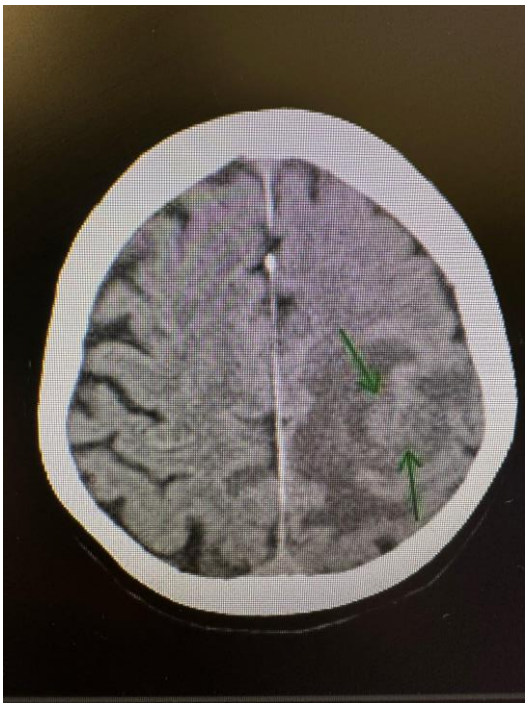

Figure 1. 4.5 x 2.5 x 3.4 cm with surrounding edema on CT head without contrast

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Abstract 2025 – 54
A Case of Non-Keratinizing Squamous Cell Carcinoma of Oropharynx Mimicking Peritonsillar Abscess
Nathan Brar, RA; Harsukh Dhillon, MD; Adam Lang, MD; Mona Shete, MD; Arash Heidari, MD

Introduction: Oropharyngeal cancer is rare, and squamous cell carcinoma (SCC) is the most common form. SCC is closely associated with Human Papillomavirus (HPV) infection typically affects men in their 60s. The diagnosis could be challenging and delayed due to its similarity to other head and neck conditions, such as infection.

Case Description: This is a 73-year-old Caucasian Male who was admitted to the hospital due to experiencing a variety of recurrent symptoms in the right side of his throat and ear. The patient initially experienced a sore throat after nasogastric tube placement, which warranted an episode of small bowel obstruction. A few weeks later, the patient developed painful swallowing and right-sided neck swelling, resulting in a 2 cm right peritonsillar/parapharyngeal mass mimicking an abscess. He underwent outpatient debridement and biopsy of the lesion on an outpatient basis. Histopathology revealed P16-positive squamous papilloma with inflammatory mucosa. His symptoms recurred, so he underwent adenotonsillectomy, excision of right level 2 lymph nodes, and direct laryngoscopy. This time, his histopathology confirmed that the patient had P16-positive SCC of the tonsil with a lymphoepithelioma-like pattern. The patient was staged as 1(AJCC V8) TNM:pt1, PN1, cm0 and received concurrent cisplatin and a total of 6600 Gy doses of radiation and is currently in remission Pet Scan. Retroactively, after reviewing the first biopsy and obtaining more cuts through the biopsied tissue, it was determined that the malignancy was present in an extremely small area of the first biopsy as well that did not appear in the examined cut during the processing.

Conclusion: The presence of P16-positive squamous tissue from head and neck sources without a definitive diagnosis of malignancy should be a strong clue for clinicians to investigate further and may warrant a repeat biopsy to increase the yield of diagnosis.

Abstract 2025 – 55
Isolated Pyogenic Liver Abscess with *Streptococcus anginosus* in an Immunocompetent Host Presenting as Persistent Bacteremia.
Anhad Sarang, OMS III; Arash Heidari, MD

Introduction: *Streptococcus anginosus* is typically found in the oral cavity, gastrointestinal tract, upper respiratory tract, subgingival plaques, and female urogenital tracts. This microbe is commonly seen in immunocompromised hosts such as those with uncontrolled diabetes and malignancies. Persistent and recurrent bacteremia without a source warrants a comprehensive workup.

Case Description: This is a case of a 36-year-old Hispanic male with no medical history who presented to ED with persistent fever and night sweats that were occurring intermittently for 5 months. His blood culture grew "*Streptococcus viridan group*" and was considered a contamination. In the follow-up ED visits his blood cultures grew the same twice. This time he was admitted for workup

which revealed a 4.2 x 3.9 x 3.3 cm liver abscess in his right hepatic lobe of the liver (Figure 1). The CT also showed diverticulosis and bilateral medullary renal cysts with Medullary Cystic Kidney Disease, a potential diagnosis. He underwent aspiration of the liver abscess which grew *Streptococcus anginosus*. Previous blood cultures were also reidentified similarly at ARUP using MALDI-TOF and were sensitive to penicillin with MIC of <=0.03. He was treated with ceftriaxone and was discharged on amoxicillin to finish a 6-week total course. His follow-up CT 8 weeks after discharge showed resolution of the liver abscess. He is scheduled to do a colonoscopy and visualization of his diverticulosis as a potential source of infection.

Conclusion: Bacteremia particularly when associated with constitutional symptoms requires attention and should never be ignored. Persistent bacteremia will require a comprehensive workup to investigate the foci of infection for eradication and the potential discovery of sources for prevention.

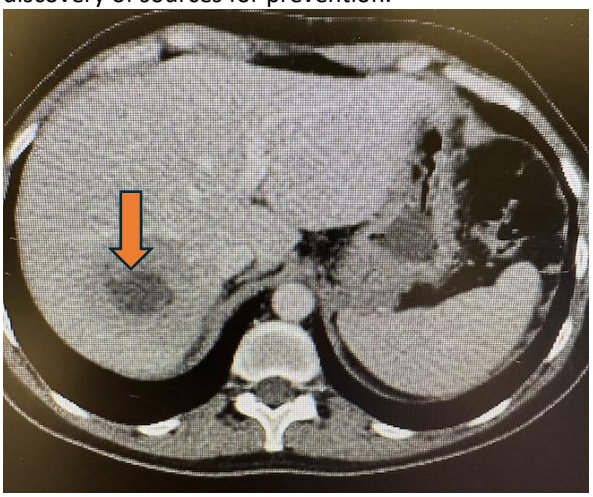

Figure 1. 4.2 x 3.9 x 3.3 cm abscess in the right hepatic lobe of the liver

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Abstract 2025 – 56

Incidental Finding of Prostate Cancer in a 37-year-old Male During Proctocolectomy for Crohn's Disease: A Case Report.

Alexandra Elias, MD; Soroush Bazargani, MD; Luz Perez Montes, MS IV

Background: Emerging evidence suggests an increased risk of prostate cancer in patients with inflammatory bowel disease (Crohn's disease and ulcerative colitis), however, there is a paucity of publications on the subject. We report a case of a young man with long-standing Crohn's disease who experienced an iatrogenic injury to the prostatic urethra during proctocolectomy, which led to an incidental diagnosis of prostate cancer.

Case Presentation: A 37-year-old male with a long-standing history of colonic, rectal, and severe fistulizing perianal Crohn's disease refractory to optimal medical therapy with steroids, multiple biologics, and fecal diversion underwent robotic proctocolectomy. Significant fibrosis in perirectal area with dense adhesions led to intraoperative injury during perineal dissection. Pathological examination incidentally revealed prostatic adenocarcinoma at the area of injury with a Gleason Grade of 3+3 (score 6). Total prostate specific antigen (PSA) was 1.8. Surveillance of his prostate cancer is being implemented, per protocol.

Discussion and Conclusions: Emerging evidence from studies published between 2019 to 2022 suggests an association between IBD and prostate cancer with up to a fourfold increase in odds compared to the general population [1] [3]. While the association between IBD and prostate cancer is more established in UC, data specific to CD remain limited and inconclusive for now [4] [5].

It has been proposed that the mechanism by which IBD induces tumorigenesis in the prostate is lymphocyte infiltration from chronic gut inflammation. In a study of men with IBD who underwent prostatectomy, Desai et al. analyzed lymphocyte infiltrates within prostatic tissue and compared it to a non-IBD control group to investigate whether chronic intestinal inflammation leads to pro-inflammatory changes associated with tumorigenesis in the prostate [2]. They found that men with IBD had increased T and B lymphocyte infiltration within prostatic tumors. Furthermore, a stronger association between IBD, specifically UC, and prostate cancer has been observed in men with longstanding IBD for more than 20 years [5].

Prostate cancer is the most common non-skin cancer in men, and it is primarily considered a disease of older individuals, with a median age of presentation at 68 years [6]. It is relatively rare in younger age groups; however, the global incidence of prostate cancer in men aged 15–40 has increased by 2%

annually since 1990 [7]. Despite this trend, the United States Preventive Services Task Force (USPSTF) recommends against routine prostate cancer screening for individuals aged 55–69, leaving the decision to healthcare providers and patients based on individual circumstances.

Our case is particularly significant not only because it highlights a concomitant presentation of IBD and prostate cancer in men, but also due to the relatively young age of our patient at diagnosis. Prior studies have demonstrated an association between IBD and an increased rate of prostate cancer, with median ages of 53 and 56 in key studies [1,5], and a reported four-fold increased odds of clinically significant prostate cancer, defined as a Gleason grade group ≥2 (score >7) [1]. In contrast, our patient's pathology revealed a Gleason grade of 3+3 (score 6), placing him in grade group 1, which is considered a low/very low-risk category. However, it is important to emphasize that this was an incidental finding, likely contributing to its early detection. This case underscores the need for further studies into the risk and rates of development of prostate cancer at a young age in patients with IBD.

Abstract 2025 – 57

A Close Look at Cold and Warm AIHA in the San Joaquin Valley

Kevin Trong Dao, MD; Rupam Sharma, MD; Kasey Fox, DO

Introduction: Autoimmune hemolytic anemia (AIHA) is a rare disease caused by autoantibodies that adhere to a patient's own erythrocytes, thus inducing hemolysis. When a patient's own bone marrow is unable to keep up with the hemolysis, severe anemia can occur. What is unique is that the autoantibodies that cause hemolytic anemia are active at various thermal temperatures. Immunoglobulin G (IgG) antibodies are more associated with warm AIHA, whereas Immunoglobulin M (IgM) or, in some rare instances, anti-PR antigen are associated with cold AIHA. However, what is interesting regarding this disease is that different disease has been known to be associated with warm and cold AIHA. More commonly immunodeficiencies, infectious, malignancies, autoimmune disorders, pregnancy, etc. tend to play a role in immune response which can lead to dysregulation causing the onset of AIHA. As such, to further investigate this we would like to observe various disease and management and how it would affect morbidity and mortality. A discussion regarding the results of the study and any and all conclusions will also be held.

Purpose of the Study: Here we would like to look at the various co morbidities and disease that patients have that resulted in AIHA as well as to look at the various treatments and to see what has caused resolution of the AIHA as well as the prognosis.

Methods: This is a retrospective study that was conducted within the past four years from 2020 to 2024. The patients were selected after they were diagnosed with warm or cold autoimmune hemolytic anemia based on blood work. The patient's blood work would initially depict hemolysis with elevated lactate dehydrogenase, elevated indirect bilirubin and low haptoglobin. Various other tests were done to ensure the patients didn't have any other causes of hemolysis, such as heparin-induced thrombocytopenia, disseminated intravascular coagulation, etc. If there were such patients, then they were excluded from the study. The diagnosis was further confirmed after positive direct antibody coombs testing (DAT) with positive immunoglobulins (IgG or IgM). Occasionally, complement levels were also done, which were noted to be decreased. However, this was not always the case, since a diagnosis was primarily made from direct antibody coombs testing.

Summary of Results

For full-sized figures or tables describing the results of this abstract, please contact researchforum@kernmedical.com.

Discussion: Overall, treating the underlying cause is crucial in treating AIHA. However, temporizing measures via blood in conjecture with immunosuppresive medications such as IVIG, steroids, or biologics (Disease-Modifying Antirheumatic Drugs, DMARDs) should be done in all settings with varying degrees since some patients might be able to tolerate one medication better compared to another. In autoimmune-related causes, using steroids, IVIG, and biologics seems to be the best, but giving such medication helps both the autoimmune disorder and the AIHA. As such, it should be highly recommended. More acute causes that cause AIHA such as infections, seem to show

resolution of the disease with a good prognosis once the infection has been cleared, unless it's due to sepsis.

Conclusion: This opens a promising idea of using other medications and DMARDs and immunosuppressive medications to help resolve AIHA because in various instances, patients still have anemia despite various immunosuppressive medications. The study also shows that some patients had to switch up various treatments to have improvement and or resolution of the disease. While treating the underlying cause is crucial, the initial steps should be giving blood and immunosuppressive medications in the interim. However, the treatment course of immunosuppressive medications seems to vary and hopefully more research regarding other immunosuppressive medications will help show what works in resolving this disease.

Abstract 2025 – 58

The Weight of Sadness: A Retrospective Dive into Obesity and Depression

Yaritza Santos, MD; Danish Khalid, MD; Maria Fernanda Malave, MD; Hector Arreaza, MD

Introduction: Obesity is one of the critical public health challenges worldwide; an epidemic. Obesity increases the risk of certain cancers, diabetes, Alzheimer's disease, cardiac pathologies and cerebral vascular accidents, which are the leading causes of mortality in the US and around the world according to the CDC and WHO. Over the past decade obesity rates have increased by almost 10%, and tripled over the past century. At the same time, rates of depression have steadily risen. Many studies have established a link between these two conditions sharing genetic, metabolic, psychological, and social linkages with a bidirectional relationship. Thus, gaining a better understanding of the mechanisms underlying the association between obesity and depression is of high clinical and scientific relevance.

Purpose of Study: Our main purpose was to determine the strength of the association between obesity and the prevalence of depression and anxiety in a diverse adult population. Furthermore, assess the impact of psychological and social factors (e.g., stigma, self-esteem, and social support) on the relationship between obesity and mental health conditions. Ultimately to provide recommendations for integrated treatment approaches that address both obesity and mental health concerns, supporting holistic health improvements.

Methods: The study explores the correlation between obesity and depression within the patient population of Clinica Sierra Vista (CSV), a rural healthcare institution in California's Central Valley serving predominantly low-income and underserved communities. Utilizing a retrospective design, data from 42,646 patients aged 18-99 were analyzed through chart reviews of BMI and PHQ-9 scores recorded in the Epic System from January 1, 2022 to January 1, 2024. Inclusion criteria included BMI ≥ 30, PHQ-9 ≥ 5, and GAD-7 ≥ 5, while patients with BMI ≤ 30, and PHQ-9 and GAD-7 scores ≤ 4 were used as a control group.

Summary of Results: We analyzed data from 42,646 (67% females, 33% males, 3 excluded due to missing gender). The female-to-male ratio was 2:1. Average age was 46 years. Mean BMI was 35.75 kg/m^2.

A significant positive correlation was found between BMI and GAD-7, stronger in females than males. Logistic regression showed BMI significantly predicted anxiety, with obese patients having 1.10 higher odds of anxiety. To put it into perspective, for every 5-unit BMI increase, odds of anxiety rose by 10%.

Similarly, using PHQ-9 and BMI as continuous variables, there was a significant positive correlation; again, stronger in females than males with an odds ratio of 1.14. Meaning that for every 5-unit BMI increase, the odds ratio of depression rose by 14%.

Conclusion: Our research highlights a significant link between BMI, anxiety, and depression, emphasizing BMI's role in mental health. Limitations in our study include potential confounders such as gender misrepresentation, cultural norms, socioeconomic status, healthcare access, and reliance on self-reported data. However, these initial findings will guide clinicians and researchers in identifying at-risk populations and tailoring interventions to address

modifiable factors such as BMI, while also accounting for demographic influences. It underscores the need for an integrated approach to treatment strategies and should include lifestyle interventions to mitigate weight gain, or be more careful when selecting medications with preference on those which have minimal impact on weight. Future research should explore the pathophysiology and relationship between obesity and depression, focusing on obesity-centered approaches. Additionally, future research will include data on PHQ-9 after semaglutide (vs others), potentially proving that weight loss improves mental health outcome.

Abstract 2025 – 59

Training the Next Generation: A Comparative Study of Direct vs. Video Laryngoscopy in Medical Education

Danish Khalid, MD; Veronica Rojas, BA; Xitlaly Patel, RA; Sage Wexner, MD

Introduction: Proficiency in direct laryngoscopy is a critical skill in medical education, particularly for airway management in emergency and anesthetic settings. While traditional hands-on training remains the standard, video-based learning has emerged as a promising tool with the newer generation of learners. This study examines whether video-assisted learning enhances competency levels compared to traditional methods.

Purpose Of Study: This study aims to investigate how video-based learning impacts the competency level of medical students performing direct laryngoscopy. The research explores whether video laryngoscopy (VL) improves first-attempt success rates, shortens time to successful intubation, and enhances confidence and satisfaction compared to direct laryngoscopy (DL).

Methods: A randomized controlled trial was conducted with 20 medical students and/or intern residents (PGY-1) with no prior to little laryngoscopy experience. Participants were randomly assigned to two groups (VL vs. DL). Both groups received a one-hour training session covering airway anatomy, laryngoscopy techniques, and common pitfalls. Each student had three practice sessions and performed five intubation attempts on a high-fidelity mannequin before doing a final exam with direct-laryngoscopy. Success rate, time to intubation, number of attempts, complication rates, and confidence levels were assessed immediately post-training.

Summary Of Results: The VL group demonstrated a significantly higher first-attempt intubation success rate compared to the DL group ($p<0.05$). Additionally, the VL group had a shorter time to intubation ($p<0.01$) and required fewer attempts for successful intubation ($p<0.05$). Although complication rates, such as esophageal intubation and dental trauma, were lower in the VL group, the difference was not statistically significant. Furthermore, confidence and satisfaction scores were notably higher in the VL group ($p<0.01$), suggesting that video-assisted training improved both technical performance and self-assessed competency.

Discussion: Findings suggest that video-based learning enhances procedural competency in direct laryngoscopy training. The VL group achieved superior outcomes in success rates, efficiency, and confidence. The ability to visualize the airway with real-time feedback likely contributed to these improvements. Limitations include the study's short follow-up period, potential instructor variability, and the controlled simulation environment not fully reflecting real-world clinical settings.

Conclusions: Video laryngoscopy appears to be a superior educational tool for teaching direct laryngoscopy skills, supporting its integration into medical training curricula. Further research should explore long-term skill retention and real-world applicability. Institutions should consider hybrid models incorporating both direct and video-assisted learning to optimize competency development.

Abstract 2025 – 60

Page Kidney as a Rare Etiology of Hypertension: Insights from Two Cases

Gurtej Bindra, DO; Rupam Sharma, MD; Lauren Burson, OMS III; Kim Duong, OMS III; Ayesha Rehman, MD; Leila Moosavi, MD; Kasey Fox, DO

Introduction: Page kidney represents a refractory hypertension due to hematoma or fluid accumulation in the perirenal or subcapsular space of the kidney. Because of its rarity, it is often

overlooked in the differential diagnosis, leading to delays in recognition and management. These two cases highlight the importance of obtaining a thorough history and appropriate imaging to identify a rare but treatable cause of secondary hypertension.

Case Description

Case 1: A 45-year-old-male with history of hypertension and DM II presented for evaluation of progressive right flank pain, fever, and hypertensive determined to be secondary to pyelonephritis and incidentally found to have right renal hematoma on CT. Subsequent MRI of abdomen with and without contrast revealed a 3.0 x 2.3 cm right renal upper pole angiomyolipoma with internal hemorrhagic transformation resulting in a subcapsular renal hematoma. Urology was consulted and determined that no immediate surgical intervention was needed due to low-risk features. The patient was discharged home in stable condition with oral antihypertensives.

Case 2: A 52-year-old-female with right ureteral stent placement due to hydronephrosis presented to the ED with nausea, vomiting, and sudden right lower quadrant and right flank pain for 1 day. CT abdomen and pelvis with contrast revealed a large right perinephric hematoma measuring 11.1 x 7.5 x 13.7 cm along with presence of a right nephroureteral stent. Initially started on empiric antibiotics due to suspicion of abscess. Further workup with renal angiography confirmed a right perinephric hematoma with capsular distension of the fibrocollagenous hulk surrounding the kidney resulting in page phenomenon. The patient was found to be hypertensive with readings of systolic blood pressure >140 mmHg requiring intervention, and she was subsequently discharged with lisinopril 10 mg in stable condition.

Discussion: These cases highlight the varied etiologies and subclinical presentation of Page kidney as both patients presented for alternative complaints in the absence of symptomatic hypertension or trauma that could suggest Page kidney. Moreover, while both patients responded well to initial antihypertensive therapy, diagnosis of Page kidney was crucial in directing appropriate subsequent care. Selection of RAAS inhibiting antihypertensive therapy is essential given the underlying pathophysiology of Page kidney, and further refractory presentations may necessitate surgical intervention depending on the individual case

Conclusion: Page kidney is an uncommon cause of secondary hypertension and is often underdiagnosed due to limited research. This report presents two patients with Page kidney leading to secondary hypertension. In both cases, incidental findings of renal hematomas invading the capsular space were identified during further workup for an alternative differential diagnosis. While further research on the topic is needed, Page kidney should be considered on the differential when encountering perinephric fluid collections or cases of refractory hypertension.

Abstract 2025 – 61

First Documented Case of Mpox in Advanced AIDS With Multiple Concurrent Opportunistic Infections in Kern County

Sanjana Murdande, MD; Linh Tran, MS IV; Asad Mohammad Jani, MS IV; Colby Kulyn, MD; Cesar Aranguri, MD; Shikha Mishra, MD; Augustine Muñoz, MD; Kasey Fox, DO; Carlos D'Assumpcao, MD

Introduction: Managing patients with advanced HIV poses significant challenges, particularly with opportunistic infections and inconsistent adherence to antiretroviral therapy (ART). This report highlights one of the first cases of Mpox in an AIDS patient in Kern County before the WHO declared Mpox a global health emergency on August 14, 2024. We aim to bring light to early diagnosis, management, infection prevention and other challenges such as peri-procedure management.

Case Presentation: A 42-year-old male with a history of AIDS due to HIV diagnosed in 2007 with CD4 count of 75; syphilis, and coccidioidomycosis, both diagnosed in 2023. He presented with a two-month history of fever, bilateral neck swelling, diarrhea, and disseminated skin lesions. He had also experienced fevers, chills, fatigue, and night sweats for the same duration. The patient had been noncompliant with ART Biktarvy for many months and had restarted therapy one month prior to presentation.

Skin examination showed round, raised, non-tender lesions on his bilateral upper and lower extremities, chest, and face. Imaging revealed moderate cervical and supraclavicular adenopathy, innumerable

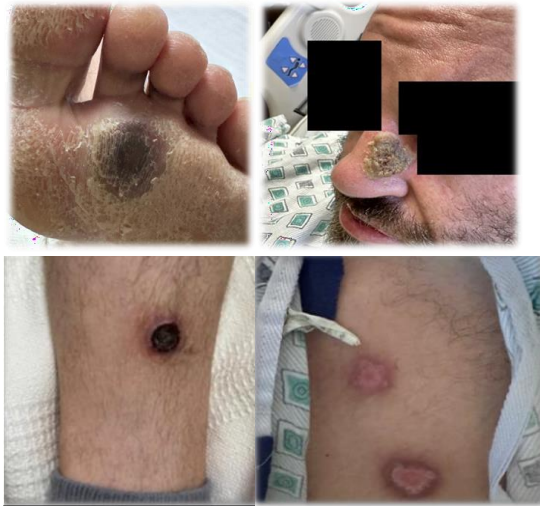
pulmonary nodules, and splenomegaly. The patient was restarted on home Biktarvy and initiated on Bactrim for Pneumocystis jirovecii pneumonia prophylaxis. He was also treated with broad-spectrum antibiotics of vancomycin and cefepime. Due to positive serology for Coccidioidomycosis, he was initially on intravenous liposomal Amphotericin followed by Fluconazole. The differential diagnosis included disseminated coccidioidomycosis infection, pneumocystis pneumonia, miliary tuberculosis, mycobacterium avium complex infection, EBV-associated lymphoma, HHV-8 multicentric Castleman's disease, and Kaposi sarcoma. The patient remained intermittently febrile and tachycardic throughout this time with a new CD4 count of 27.

A comprehensive Karius test was performed which was positive for Mpox clade II, Coccidioides immitis, HHV8 related Kaposi sarcoma, Epstein-Barr virus (EBV), and cytomegalovirus (CMV). Approval for Tecovirimat (TPOXX) was obtained and patient completed the 14 day standard course, after which his skin lesions began to shed with evidence of re-epithelialization, after which patients are no longer considered infectious. However, three of these skin lesions were swabbed for PCR analysis, each of which were positive for Mpox.

Due to lack of literature for peri-procedural management and isolation measures, the patient could not undergo lymph node biopsy while admitted for evaluation of lymphoma. Outpatient fine needle aspiration biopsy of the cervical lymph node was thus suggested.

Conclusion: This case illustrates the complex management of AIDS with multiple opportunistic infections in the context of poor ART adherence. Mpox is now a global health emergency, with multiple reported cases in Kern County. Clinicians should be vigilant for early diagnosis and encourage vaccination in high-risk populations. Furthermore, patients are no longer considered to be infectious when all skin lesions have re-epithelialized, however, this patient had an epithelialized skin lesion that returned positive for Mpox. Persistent Mpox PCR positivity in epithelialized lesions highlights challenges in managing isolation protocols, as it may be evidence of ongoing viral replication. Many of these patients require procedures therefore more data is needed to understand peri-procedure management.

Images:



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Abstract 2025 – 62

Management of Hyperthyroidism and Acute Mania with Lithium Adjuvant Therapy.

Tanner Mooney, OMS IV; Tiffany Chng, OMS IV; Itwinder Sivia, MD

Introduction: Hyperthyroidism and mania share overlapping features, including irritability, anxiety, emotional instability, even psychosis, complicating diagnosis and management. First-line treatment for hyperthyroidism includes antithyroid drugs (ATDs) like methimazole and propylthiouracil; however, a rare but serious adverse effect of ATDs is agranulocytosis, a severe decrease in white blood cells that increases infection risk, necessitating alternative therapies.

Lithium, a primary mood stabilizer for bipolar disorder, also inhibits thyroid hormone release and can serve as adjuvant therapy for severe hyperthyroidism. Additionally, lithium is known to induce leukocytosis by stimulating granulocyte colony-stimulating factor (G-CSF) production, leading to an elevation of white blood cells, which may counteract ATD-induced agranulocytosis. Given its dual effects on thyroid function and mood stabilization, lithium presents a unique therapeutic option when distinguishing hyperthyroidism-induced mood symptoms from primary bipolar disorder,

particularly in patients who develop agranulocytosis from initial ATD therapy.
We present a case of a patient with concurrent mania and hyperthyroidism who developed ATD-induced agranulocytosis and was treated with adjuvant lithium therapy.

Case Description: A 42-year-old female with untreated hyperthyroidism and Bipolar I disorder, non-adherent with medications for at least six months, was admitted to the Behavioral Health Unit at Kern Medical on a psychiatric hold after threatening her son with a knife.

On admission, laboratory findings revealed TSH <0.008 µUnit/mL (reference: 0.550–4.780 µUnit/mL) and free T4 of 5.8 ng/dL (reference: 0.9–1.8 ng/dL), consistent with hyperthyroidism. She exhibited tachycardia (HR 114 bpm; reference: 60–100 bpm) and manic symptoms, including agitation, mood lability, hyperverbal, and rapid speech, with bizarre and paranoid behaviors. Methimazole and atenolol were initiated for hyperthyroidism, and lithium 300 mg twice daily was started for mood stabilization.

Shortly after starting methimazole, her absolute neutrophil count (ANC) dropped from 1.6×10^3/µL to a critically low 0.9×10^3/µL (reference: 1.8–7.7×10^3/µL). Given the agranulocytosis risk, methimazole was discontinued per endocrinology's recommendation. Lithium was increased to 300 mg three times daily, targeting a therapeutic level to manage both manic symptoms and hyperthyroidism while avoiding further neutropenia.

Over 10 days, her mania symptoms and paranoid behaviors improved, her T4 decreased to 2.1 ng/dL, and her ANC recovered to 3.6×10^3/µL. Despite recommendations for continued psychiatric stabilization, she declined voluntary admission at the end of her involuntary hold. She was discharged against medical advice to a substance use program with a one-month medication supply and plans for outpatient follow-up.

Discussion & Conclusion: This case highlights lithium's dual role in treating mania and hyperthyroidism in a patient with ATD-induced agranulocytosis. While lithium is known to inhibit thyroid hormone release, reports of its simultaneous use for both conditions in this specific setting remain limited. Although not a definitive treatment for hyperthyroidism, lithium's side effect profile, particularly leukocytosis, makes it a viable alternative when ATDs are contraindicated. Unfortunately, we were unable to follow up on long-term outcomes, side effects, or thyroid levels post-discharge. There is increasing research surrounding thyroid dysfunction's role in mood disturbances, however the exact correlation is still not fully understood. Further research is warranted to better understand the complex interplay between thyroid dysfunction, mood disorders, and lithium therapy.

Abstract 2025 – 63

Miller Fisher Variant of Guillain-Barré Syndrome Presenting with Dysphagia and Ophthalmoplegia

Rupam Sharma, MD; Sanjana Murdande, MD; Jose Garcia-Corella, MD; Arin Orogian, DO; Linh Tran, MS IV; Ralph Garcia-Pacheco, MD; Katayoun Sabetian, MD

Introduction: Guillain-Barré Syndrome (GBS) is a rare but life-threatening autoimmune disorder characterized by acute peripheral neuropathy, often triggered by an infection. Several variants exist, each with distinct clinical features, such as Miller Fisher Syndrome. MFS is characterized by the triad of ataxia, areflexia, and ophthalmoplegia, and it is associated with anti-GQ1b antibodies[2,3]. Its recognition is important, as early diagnosis and appropriate treatment can significantly improve patient outcomes. Here is presented a unique case of a patient with the Miller Fisher variant of GBS presenting with dysphagia, dysarthria, and ophthalmoplegia.

Case Presentation: This patient is a 35-year-old male with medical history of syphilis one year ago treated with penicillin, who presented with dysphonia, blurry vision, weakness and numbness in arms and legs, and the inability to eat anything, which began one day prior to presentation. CT, MRI, and MRA of head were negative. Respiratory BioFire was negative. The patient was transferred to a second hospital where the working diagnosis was Myasthenia Gravis and received three doses of pyridostigmine. Symptoms improved and the plan was to initiate plasmapheresis, however it was unavailable. Therefore, the patient was transferred to KMC.

Upon arrival, he had inability to swallow his saliva and lateral gaze palsy. Strength in the deltoids and

hamstrings were 4/5. Reflexes were absent. He had decreased sensation to pinprick distally to mid-thighs and elbows. Speech language pathology noted decreased labial seal and reduced hyolaryngeal elevation.

Neurology was consulted and the patient received intravenous immunoglobulin (IVIG) 0.5 g/kg daily for four days. Myasthenia Gravis antibody panel was negative. Lumbar puncture revealed CSF protein of 35.7. Nerve conduction study of the right upper and lower limb demonstrated severe diffuse sensory neuropathy with absent median, ulnar, and superficial peroneal sensory potentials as well as absent ulnar F waves, which can be seen with GBS. Electromyography of the same limbs showed mild denervation in the right extensor digitorum brevis and vastus medialis. Anti-GQ1b antibody titer was elevated at 1:6400.
At three month neurology clinic visit, he no longer had dysphagia. He had 5/5 strength in upper and lower extremities with normal sensation to pinprick. Reflexes were absent except for 1+ patellar reflexes.

Discussion: MFS is a variant of GBS characterized by the triad of ataxia, areflexia, and ophthalmoplegia[3]. Non-classic MFS has been described with less frequency, but can have other symptoms such as mydriasis, ataxic neuropathy, and oropharyngeal palsy[,5].
It is hypothesized that MFS is an autoimmune response to a recent infection, most commonly *Campylobacter jejuni*, cytomegalovirus and Epstein-Barr virus[6]. Although the exact mechanism is not well understood, interaction between peripheral nerve and infectious antigens are thought to trigger the development of antibodies against gangliosides, most frequently IgG anti-GQ1b (~85%)[2-6.] The initial presentation was challenging due to severe dysphagia and dysphonia in conjunction with ophthalmoplegia and arm and leg weakness and numbness. In summary, despite the classically described triad of ataxia, areflexia and ophthalmoplegia, MFS may present with a variety of symptoms, including bulbar palsy causing severe dysphagia and dysphonia.

Abstract 2025 – 64
A Rare Case of Asymptomatic Aortic Dissection
Sanjana Murdande, MD; Fowrooz Joolhar, MD

Introduction: Acute type A aortic dissection is a life-threatening disease that involves a tear leading to the formation of a false lumen within the tunica intima of the aortic wall. It is typically characterized by symptoms such as tearing chest pain, syncope, and can even be associated with stroke[2]. However, there exist a rare subset of patients who present asymptomatically and are incidentally found to have aortic dissection[5]. Here we present one such case.

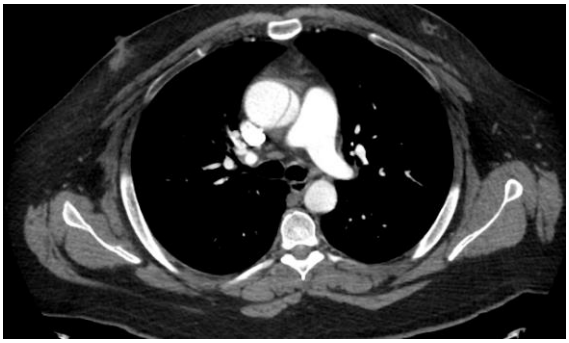
Case Presentation: The patient is a 43-year-old male with hypertension since 15 years of age and tobacco use of 50 pack years who presented to his primary care provider for routine appointment, during which time he reported intermittent palpitations of two weeks duration. Transthoracic echocardiogram revealed thoracic aortic aneurysm, with the aortic root dilated to 6.5 cm with evidence of possible dissection. Severe aortic regurgitation was visualized. The patient refused treatment and left against medical advice. CT angiography of chest, abdomen, and pelvis approximately one month later demonstrated a Stanford type A aortic dissection involving the right brachiocephalic artery with aorta of 7 cm, beginning at the sinus of Valsalva and terminating at the aortic isthmus. He was directly taken to the ED for immediate treatment of elevated blood pressure and surgical treatment of the dissection. However, he left against medical advice again. Surgical repair in this patient was further delayed due to a thigh abscess that required operation. He eventually underwent valve-sparing surgical replacement of the aortic root, hemiarch replacement, aortic aneurysm repair, and aortic dissection repair 6 weeks from the initial diagnosis of aortic dissection. The patient had total resolution of aortic regurgitation that was confirmed with echocardiogram 6 months later.

Discussion: Acute type A aortic dissection is fatal if left untreated with 30-day mortality rate of up to 90%[1]. Asymptomatic and chronic presentations are rare with chronic type A aortic dissections being defined as those greater than one month from onset of symptoms[7]. They have a lower in-hospital mortality compared to acute dissection of 4.5% versus 13.2%, respectively[6]. This patient refused immediate diagnostic workup; therefore, it was completed around one month later and the patient

remained asymptomatic. Given the prolonged duration of the dissection, this is assumed to be a chronic case.
There are several risk factors for aortic dissection, each of which contribute to significant wall tension. The most significant risk factor is hypertension, which puts stress on the aortic wall, predisposing to tearing[4]. However, other contributing causes include genetic connective tissue disorders such as Marfan's syndrome, type IV Ehlers-Danlos syndrome, and Loeys-Dietz syndrome, which weaken the tunica media of the aorta through distorted remodeling[7]. While this patient did not demonstrate phenotypic features of any of these conditions, such as Marfanoid habitus, confirmatory genetic testing was unable to be performed.

Conclusion: This case highlights a unique presentation of type A aortic dissection. For reasons unknown, this patient remained asymptomatic throughout diagnosis and management. Appropriate treatment with definitive surgical repair was delayed, however, effectively resolved the dissection once performed.

Supplemental Images:



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Abstract 2025 – 65
Microscopic Polyangiitis with RPGN: False Negative ANCA Serology Complicating Diagnosis
Gurtej Bindra, DO; Ralph Garcia-Pacheco, MD

Introduction: Microscopic polyangiitis (MPA) is a rare, necrotizing small-vessel vasculitis characterized by pulmonary and renal involvement with potential debilitating symptoms and life threatening sequalae. The diagnosis can be difficult to establish due to nonspecific clinical manifestations and limitations of laboratory studies, particularly the low sensitivities of pANCA testing. This case illustrates the challenges of recognizing MPA in the setting of chronic respiratory symptoms obscured by varied pharmacotherapies and emphasizes the importance of clinical gestalt over strict reliance on serologic testing.

Case Description: A 60-year-old female with a history of asthma, obesity, and hypothyroidism presented with progressive dyspnea. Initially treated as pneumonia without improvement on antibiotics, imaging revealed small pulmonary nodules and weakly positive coccidioidomycosis serology, leading to a presumed diagnosis of pulmonary coccidioidomycosis and treatment with fluconazole. Symptoms initially improved, but over the following months, she experienced recurrent episodes of worsening dyspnea, night sweats and weight loss. Repeat imaging demonstrated increasing number of pulmonary nodules now with spiculated appearance and mediastinal lymphadenopathy. Bronchoscopy with BAL was nondiagnostic and complicated by iatrogenic pneumothorax. Unexpectedly, her symptoms completely resolved. An autoimmune panel prior to hospitalization had resulted and revealed nonspecific elevated ANA and inflammatory markers. Subsequent imaging had shown notable improvement in lung findings, and given patient's symptomatic resolution and largely nondiagnostic workups, she was continued on fluconazole for several months for presumed pulmonary coccidiomycosis.

Nearly a year later, patient returned with dyspnea, fevers, chills, and a new erythematous rash. Chest imaging revealed worsening bilateral nodularities with new multifocal consolidations and pleural effusions. Patient again underwent extensive workup with repeat imaging and lab work as the presence of macular rash was inconsistent with previously diagnosed coccidiomycosis. Patient condition worsened, and studies inevitably revealed strongly positive p-ANCA, suggesting MPA with rapidly progressive glomerulonephritis (RPGN). A kidney biopsy confirmed RPGN, and patient was immediately admitted for high-dose corticosteroids and rituximab, leading to stabilization and improvement.

Discussion: This case underscores the diagnostic complexity of ANCA-associated vasculitis, particularly when initial laboratory testing is

negative. The sensitivity of p-ANCA for MPA can be as low as 46%, and serologic testing varies throughout the disease course and flare ups. Additionally, transient steroid responsiveness in autoimmune vasculitis can create a misleading picture of improvement, delaying definitive diagnosis. This patient's prolonged course highlights the necessity of reconsidering alternative diagnoses in the setting of recurrent, unexplained pulmonary and renal disease, particularly when imaging findings, systemic symptoms, and treatment responses do not align with the presumed diagnosis.

Conclusion: MPA and autoimmune vasculitis must be considered on the differential in patients with unexplained pulmonary nodules, diffuse lung disease, and progressive renal dysfunction, even in the absence of serologic confirmation. Given the low sensitivities of p-ANCA and the particularly dynamic nature of the disease, repeat testing and clinical judgment are essential for timely diagnosis. Early recognition and initiation of immunosuppressive therapy is imperative to improve patient care and halt progression to life threatening sequelae like RPGN.

Abstract 2025 – 66

Atypical presentation of choledocholithiasis due to aberrant biliary anatomy

Vindhya Sridhar, MD; Gurtej Bindra, DO; Lawrence Okumoto, MD; Hobart Lai, DO

Introduction: The location of the common bile duct can be seen as a rare anatomical variant of the biliary tree. Some the earliest documented cases were described in the 16th century CE by Vesalius. The Classification system was developed in 1972 and has been revised as more variations been described. These abdominal variations are rare and rarely reported in the literature. A combination of choledocholithiasis along with this abdominal variation is extremely rare.

Clinical Course: A 48-year-old female with a past medical history of hyperlipidemia presents to the ED on 12/26/24 for 2 days of right upper quadrant pain with 1 episode of nausea and vomiting, without any fevers, chills, diarrhea, or constipation. She takes vitamin D supplements. The patient's vitals were stable, and the labs were unremarkable. The initial ultrasound showed 6-7 mm dilation of the CBD, MRCP showed 8 mm dilation with multiple stones in the gallbladder and an accessory hepatic duct, which is a developmental variant. This variant could be the cause of her unusual symptoms along with her lab findings. She underwent ERCP, which removed the gallbladder sludge, and no stones were seen, and Oddi's sphincter was dilated. The patient is stable enough to be discharged home with a follow-up with a surgery outpatient.

Discussion: The patient had a unique anatomical variation of their common bile duct in which there was mostly a duplication. The patient had choledocholithiasis, which was clearly seen on the ultrasound and MRCP. The patient's gallbladder was full of stones, and MRCP showed a possible 4 mm stone in the CBD distally. What is unique in this situation was that the patient's LFTs were normal. Most likely, this is due to the bypass of the obstruction distal to the stone. This allowed what would have been a backup of the bile within the biliary tree to circumvent the obstruction caused by the stone. The patient's pain is most likely experienced due to inflammation of the gallbladder due to impaction from the gallstones that were present. This patient with this anatomical variant followed surgery with a general surgeon with robotic-assisted cholecystectomy, which was completed successfully. Awareness of this anatomical variant is important to the medical and surgical team as it should be on the differential with patients in the future who have cholelithiasis with normal LFTs, as there may be an accessory duct providing a bypass to the stone, which would normally cause an obstruction.

Conclusion: In conclusion, this case shows a very rare situation where the patient had cholelithiasis, in which she had an accessory duct that provided a bypass around the obstruction caused by a stone. The patient had all the physical symptoms of a CBD obstruction but with normal labs; imaging provided additional information, which showed cholelithiasis with an accessory duct. It is important to remember that there are anatomical variations within the gallbladder and ducts that provide a bypass of the obstruction, and this comes to mind when performing ERCP and cholecystectomy on a patient with cholelithiasis.

Abstract 2025 – 67

When bone cancer is out of the bone: Extraosseous Ewing Sarcoma.

Mariano Rubio Garcia, MD; Harnek Singh, MD; Samhrutha Sripathi, MD; Kara Willbanks, MS III

Introduction: Extraosseous Ewing Sarcomas (EES) are rare tumors originating from soft tissues. Their clinical presentation depends mainly on the primary site of the tumor. Patient characteristics and outcomes are characteristically found to be different in EES when compared to patients with skeletal Ewing Sarcoma. The objective of this clinical case report is to highlight the unusual presentation of this rare tumor and poor prognosis when metastasis is associated.

Case presentation: A 30-year-old Hispanic male with an 8-month history of paraplegia secondary to EES was admitted to the hospital because of new neurologic symptoms consistent with paresthesia and pain located in the posterior neck and both upper extremities, associated with numbness from waist up to the level of the nipples. He had a similar presentation to this previously however his legs were primarily affected. In 2022, at an outside hospital, the patient initially presented with symptoms consistent with cauda equina syndrome. He was found to have masses along the cervical, thoracic and lumbar spine with medullary/leptomeningeal involvement. Predominant metastases were noted at the ventral medulla oblongata, C6, T2/3 and T6 spine with a dominant mass at T11-L2. In that hospital, an intradural spinal tumor biopsy confirmed Ewing Sarcoma consistent with diffuse nodular leptomeningeal studding which was confirmed positive for EWSR1 rearrangement [5'EWSR1 (22q12)/ 3'EWSR1 (22q12)] by FISH. At that time, he received treatment with radiotherapy and chemotherapy however these lesions metastasized and progressed in size. On current admission, MRI showed pathologic signal and enhancement involving the lower brainstem, cerebellar, cervical, thoracic, lumbar spine and sacrum. Imaging showed progression of disease correlating with the new neurologic symptoms. Neurology and oncology were consulted and recommended transfer to a higher level of care. This was attempted but unsuccessful. The patient was treated with Solumedrol 1000mg per day for 5 days, for temporary relief. The patient was discharged home with palliative medicine on board for comfort care. Unfortunately, the patient passed away 3 years after his initial diagnosis of EES.

Discussion: On the surveillance, epidemiology, and end results program database, patients with extraosseous Ewing Sarcoma were more likely to be older, of non-white race and have axial primary sites. They were also more likely to have pelvic primary sites than were patients with skeletal Ewing Sarcoma. Although this is a rare disease and this an even more rare presentation, the clinical picture highlights the physical findings. We always need to correlate signs and symptoms with further testing (imaging, bloodwork). In this case neurologic findings suggesting a spinal compromise which was corroborated through imaging. Also, it is imperative to search for previous medical records, if available, so we may understand the past and present worsening of a disease. This case highlights, as studies have shown, that the presence or absence of metastatic disease is the single most powerful predictor of outcome.

Abstract 2025 – 68

Rocky Road: A Kidney's Last Stand and The Colon's Unexpected Cameo

Mariano Rubio Garcia, MD; Sheila Toro, MD; Alejandra S. Lopez, MD; Harnek Singh, MD

Introduction: Postoperative infections and complications following nephrectomy can result in significant morbidity, often requiring intensive, multidisciplinary management. This case report describes the clinical course of a 31-year-old female patient who underwent a left robotic nephrectomy for a nonfunctioning kidney due to recurring staghorn calculi. The procedure was complicated by colonic perforation, leading to septic shock and subsequent intra-abdominal infection, necessitating multiple surgical and radiological interventions. Hypotheses: The primary hypothesis in this case was that the patient's postoperative sepsis and intra-abdominal infection resulted from colonic perforation during the nephrectomy, requiring emergent surgical intervention. Secondary hypotheses considered the role of staghorn renal calculi complications and anemia as contributing factors to the patient's deteriorating clinical status.

Methods: The patient underwent a series of interventions such as surgical procedures (Left robotic nephrectomy, exploratory laparotomy, left hemicolectomy, and colostomy), radiological interventions (Multiple CT-guided percutaneous drain placements for retroperitoneal and intraperitoneal abscesses), medical management (Broad-spectrum antibiotic therapy, fluid resuscitation, and intensive care support for septic shock) and diagnostic imaging (Serial CT scans and chest X-rays were performed to monitor infection progression and assess fluid collections).
Results: Regarding surgical outcomes, left nephrectomy was complicated by colon perforation, requiring emergent exploratory laparotomy and colostomy for source control. This patient developed intra-abdominal infection with E. coli ESBL and Enterococcus faecium, necessitating prolonged antibiotic therapy. She also presented persistent abscess collections that required multiple drain placements, with an eventual reduction in size and resolution of retroperitoneal fluid collection. The patient exhibited gradual improvement with reduced septic symptoms and successful management of abscesses.

Discussion: This case highlights the complexity of managing intra-abdominal infections following nephrectomy with colonic injury. The successful outcome underscores the importance of prompt surgical intervention, multidisciplinary collaboration, and aggressive infection management. Despite the severity of complications, the patient achieved clinical stability through a combination of surgical, radiological, and pharmacological interventions. This case emphasizes the need for vigilance in managing nephrectomy-related complications, particularly in patients with predisposing factors such as renal stones and chronic infection.

Abstract 2025 – 69

ColpocleiEasy: A Simulation Model Validation Study

Karina Grinberg, MD; Yufan Brandon Chen, MD; Zihao Cai, MS III

Introduction: Pelvic organ prolapse (POP) is a common condition among elderly women, and colpocleisis remains a valuable surgical option for patients desiring definitive treatment without preservation of coital function. The LeFort colpocleisis procedure, although technically straightforward, requires nuanced anatomical understanding and precise tissue handling to ensure success and avoid complications. Given the decreasing frequency of this procedure in training programs, residents and fellows may graduate with limited hands-on experience. Simulation-based education has emerged as an effective modality to address procedural gaps in surgical curricula, allowing trainees to acquire skills in a controlled, reproducible environment.

Purpose: ColpocleiEasy, is a Le-fort colpocleisis simulation model and video, serves as a new and easy way to enhance education and improve understanding of the basic surgical steps of LeFort colpocleisis by both, medical learners and patient.

Objective: To validate the effectiveness of a simulation-based educational model in improving knowledge and technical competency related to colpocleisis, specifically LeFort colpocleisis, among trainees.

Methods: A pre- and post-simulation study design was conducted with 17 participants completing the pre-simulation assessment survey and 14 completing the post-simulation assessment survey. Participants were evaluated across five domains: (1) understanding of anatomy relevant to colpocleisis, (2) patient selection criteria, (3) surgical steps of colpocleisis (LeFort), (4) tissue handling and suturing techniques, and (5) potential complications and their prevention. Outcomes were measured using self-reported scores on a standardized scale, and normally distributed continuous measures were summarized
using mean ± standard deviation (SD) and compared using two-sample *t*-tests. Tests were two-sided and considered significant at $p < 0.05$.

Results: Significant improvements were observed in four out of five domains. Mean scores increased notably post-simulation for understanding of relevant anatomy (from 2.29 ± 1.6v to 3.86 ± 0.59, $p = 0.000354$), surgical steps of colpocleisis (from 1.65 ± 1.12 to 3.93 ± 0.69, $p < 0.00001$), tissue handling and suturing (from 2.29 ± 1.72 to 3.36 ± 0.86, $p = 0.016382$), and knowledge of complications and prevention (from 2.0 ± 1.5 to 3.29 ± 1.14, $p = 0.004527$). Although an increase was observed in understanding patient selection criteria (from 2.65 ± 2.62 to 3.65 ± 1.48), this did not reach statistical significance ($p= 0.067289$).

Conclusion: ColpocleiEasy simulation model demonstrated strong potential in enhancing both cognitive and procedural knowledge related to Le-fort colpocleisis. The most substantial gains were seen in surgical steps and anatomical understanding, supporting the use of simulation for targeted surgical education. Further studies with larger samples are warranted to confirm these findings and explore long-term retention. We hope this intervention may be widely implemented to bolster urogynecologic education.

Abstract 2025 – 70

Temporal Lobe Seizure presenting as Nausea

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Temporal Lobe Epilepsy are one of the most common causes of focal epilepsy. The most common cause of Temporal lobe epilepsy is hippocampal sclerosis, the next most common cause of temporal lobe epilepsy in adults are primary CNS tumor, glioma or rarely GBM. Patient with temporal lobe epilepsy due to glioma often present with seizure symptomology consistent with limbic network environment, or rarely, or symptomology consistent with neo-cortical temporal lobe, depending on location on tumor.

We are reporting a case of a 73-year-old Hispanic male who initially presented to the hospital after being found unconscious and unresponsive in his car after an MVA. He quickly returned to baseline and workup was done for brief loss of consciousness and was found to be in active temporal lobe epilepsy. Patient had been hospitalized previously for nausea six months before admission complaining of repeating episodes of nausea, which he reported came on after 1-4 minutes of an obnoxious smell, which he had not reported to previous physicians, and that it was always this scent bringing on his nausea. Patient reports undergoing extensive outpatient evaluation for his nausea, including swallow screens and EGD. Patient underwent EEG monitoring while in ED and patient was found to be positive for Left temporal lobe epilepsy. Patient then underwent extensive work up with imaging positive for a mass vs inflamed area on the patients left temporal lobe. Patient then was sent to a higher level of care on discharge and after further review, underwent mass removal in his left temporal lobe. In follow up visits after the procedure, his seizures have resolved completely.

In all, this is a patient who had been having fronto-temporal seizures for months, undergoing workup or a GI because of his nausea, where-in he likely had a complex seizure while driving causing a motor vehicle accident. This event allowed the patient to have a full workup for altered mentation and possible syncope, where his epilepsy was diagnosed, and causes were elucidated and solved.

This case warrants a report due the patient's cardinal symptom being incorrectly categorized. Initial teams thought this was simple nausea related to a GI issue, none considered this was an olfactory aura secondary to focal epilepsy with temporal lobe/limbic lobe involvement until after the patient had an MVA likely secondary to a seizure caused by the later diagnosed astrocytoma. This highlights an important aspect of history taking, and why it is a vital skill to always maintain and keep sharp. This case also highlights it is important to take initial complaints (in this case, nausea) and broaden the history and physical when the results are not conclusive to ensure diagnoses aren't missed.

Abstract 2025 – 71

Bilateral Inguinal Hernia

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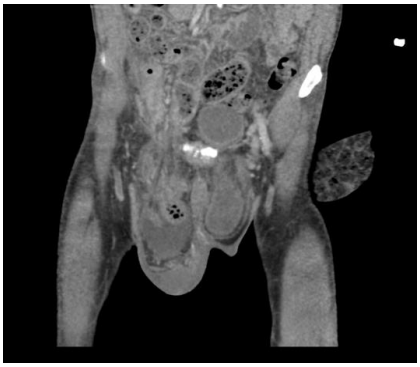
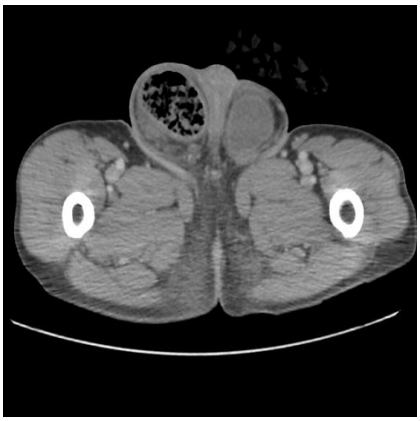
Introduction: Inguinal hernias occur when abdominal tissue or intestines protrude through a weakened region of the lower abdominal wall (fascia), forming a bulge in the groin area. There can be direct and indirect inguinal hernias, with indirect being more common. Direct hernias cause protrusion through a weakness in the posterior wall of the inguinal canal, specifically through Hasselbach's triangle. Indirect hernias are defects that protrudes through the inguinal ring, following the path of the inguinal canal, and can extend into the scrotum. Generally, most hernias seen in the ER are managed conservatively or able to be easily reduced and are repaired electively. In severe cases they need to be urgently or emergently repaired as

they can be associated with bowel obstruction, incarceration, strangulation, necrosis. This can lead to sepsis, hemodynamic instability, and can be life threatening. The purpose of our case study is to showcase an extreme case presentation of a recurrent large sized hernia in a patient who has had repair previously with failure. This patient also had impressive radiologic features on advanced imaging with CT that are unique.

Case Description: A 63-year-old male presented to the emergency department with inguinal pain associated with nausea, however no vomiting or fever. The patient had a history of bilateral inguinal pain for several years but then worsened over several days and was persistent. His vital signs showed that he was hypertensive, but otherwise vitals were stable and normal.

An abdominal examination revealed large, indurated, and diffusely tender right inguinal bulge concerning for a large hernia extending from the inguinal canal to the scrotum. There was also evidence of a left sided large bulge also concerning for hernia. Given how large the hernias are on exam, there was concern for possible incarceration.
CT of the abdomen and pelvis was obtained given complex appearance and exam. CT scan illustrated extensive and impressive intra-abdominal contents herniating into the sacs bilaterally. The right contained small bowel, appendix, and colon. The left hernia sac contained the anterior aspect of the bladder. These findings confirmed incarcerated right sided hernia, and present left sided hernia, but no incarceration of the left side. Initial attempts at manual reduction were unsuccessful, necessitating surgical consultation and ultimately surgical repair was done. This study shows a complicated case that required operative intervention, and most notably provides interesting radiological findings.





Conclusion: CT showed extensive herniation of intra-abdominal contents in the hernia sacs in bilateral inguinal canals. The right contained small bowel, appendix, and right colon, and was incarcerated. The left contains the anterior aspect of the bladder. Manual reduction under sedation was unsuccessful. Patient was then admitted and then taken to the OR for repair. Intraoperatively he was found to have an incarcerated right indirect inguinal hernia, and on the left side he had a direct inguinal hernia. Mesh was used for both repairs. He did well during the surgery. Patient otherwise since the operation he has been doing well and has been followed in the general surgery clinic with improvement and no recurrence as of 6 months later.

***For full-sized figures or tables, please contact** researchforum@kernmedical.com**.**

Abstract 2025 – 72
Small Bowel Obstruction and Vaginal Cuff Dehiscence Caused by Post-Operative Pelvic Infection: A Case Report
Hyun Bin Suh, MS III; Aayushi Jain, MD; Yufan Brandon Chen, MD

Introduction: Post-operative infections are a common complication after obstetric or gynaecologic surgery. Rarely these infections are the cause of subsequent small bowel obstructions and vaginal cuff dehiscence (VCD), and even more uncommonly, do all three occur simultaneously. This case describes a severe postoperative complication in a patient with uncontrolled diabetes mellitus. It adds to the body of literature on the types of complications after laparoscopic hysterectomy.

Case Report: We present a 43-year-old female with a long-standing history of pelvic pain, dysmenorrhea, constipation, dyspareunia, and type II diabetes (most recent HbA1c: 8%). Due to abnormal uterine bleeding and chronic pelvic pain, the patient underwent an uncomplicated robot-assisted total laparoscopic hysterectomy. One week after discharge, the patient re-presented to the ED with sepsis and leucocytosis of 43.9x10^3/mcL. CT Abdomen & Pelvis showed a loculated collection 4.5 x 4.2 x 4 cm in size. The patient received IV antibiotics and underwent IR drainage of the abscess; however, she did not improve with conservative measures. Three days later, she developed partial post-operative ileus with severe abdominal distension and significant vaginal bleeding requiring a transfusion of 1 unit of packed red blood cells. She was taken to the OR for a gynaecologic exam under anaesthesia, where a vaginal cuff dehiscence was diagnosed and repaired. Later that same day, her abdominal distention worsened, and an exploratory laparotomy was conducted, unveiling both small and large bowels adherent to a dehiscing vaginal cuff with pelvic abscess tissue. The bowel was safely mobilized, and the vaginal cuff was reinforced. Prompt surgical intervention and medical management with broad-spectrum antibiotics led to the resolution of the abscess and ileus and repair of the vaginal cuff. The patient's bowel function returned after 1 week. She was discharged with a PICC line for IV antibiotics and went on to make a full recovery.

Discussion: Post-hysterectomy pelvic abscess as a cause of small bowel obstruction and vaginal cuff dehiscence has been rarely described in previous literature. Diabetes is a risk factor for infectious complications in any surgery, including pelvic abscesses, vaginal cuff dehiscence, bowel evisceration, bowel obstruction, and death. As hyperglycaemic states impair neutrophil function and overproduction of inflammatory markers, the risk of cellular damage and poor wound healing contribute heavily to the high operative risk in patients with comorbidities. Here we noted a rare sequelae of post-hysterectomy infection which led to two consecutive surgical emergences – cuff dehiscence and bowel obstruction.

Conclusion: Gynaecologic surgeons should be vigilant to the possibility of severe post-hysterectomy infection, which can lead to both vaginal cuff dehiscence and bowel obstruction. These may present with acute septic changes, obstipation, abdominal distention, and vaginal bleeding.

Abstract 2025 – 73

Deep Neck Infection by Hypermucoid *Klebsiella pneumoniae*

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Introduction: Deep neck infections are rare but life-threatening conditions that are usually polymicrobial in nature. Oropharyngeal flora are common culprits, particularly in the setting of dental, periodontal, or tonsillar infections. Monomicrobial deep neck infections with *Klebsiella pneumoniae* have been reported, especially in patients of Asian or Hispanic ethnicity and uncontrolled diabetes. Recognizing the clinical manifestations and risk factors is crucial for initiating early treatment. We present a case of a 47-year-old male with a history of uncontrolled diabetes who developed a monomicrobial deep right neck infection caused by Hypermucoid *Klebsiella pneumoniae* (hvKP).

Case Presentation: A 47-year-old Hispanic male with uncontrolled Type 2 Diabetes Mellitus initially presented to a local urgent care with right sided neck pain of 1 day duration. Pain was initially attributed to spasms. Twelve days later, the patient worsened with new subjective fever, dysphagia, trismus, and progressive swelling, erythema, and tenderness extending from the right lateral neck to the right frontotemporal region.
He presented to the Emergency Department where CT with contrast of neck revealed a complex, walled-off fluid collection measuring 4.3 x 3.2 x 9.4 cm deep to the right sternocleidomastoid muscle. Patient was afebrile. Laboratory evaluations indicated leukocytosis of 19.1, CRP 22.1, ESR 47, and HbA1c 11.8. He underwent IR guided aspiration of fluid collection with pigtail placement and cultures were obtained. He was started on broad spectrum antibiotics.
Final blood and wound cultures grew *Klebsiella pneumoniae*, which was found to be a hvKP based on a "string test" of greater than 10 cm. Based on sensitivities, antibiotics were changed to Ceftriaxone. Repeat CT of the head and neck showed persistent right neck abscess measuring 9.3 x 1.8 x

2.3 cm. Patient underwent Incision & Drainage. CT chest Abdomen Pelvis was obtained which was unremarkable for any abscesses. Patient was discharged on Ciprofloxacin and Metronidazole for total of three weeks.

Discussion/Conclusion: While *K. pneumoniae* is a recognized pathogen in deep neck infections, it remains rare in the US. A retrospective study in Taiwan found that *K. pneumoniae* accounted for about 48% of deep neck infections, with diabetes as a major comorbidity. They were associated with prolonged hospitalization, increased recurrence risk, and the need for early surgical intervention.
Mechanism of *K. pneumoniae* colonization in deep neck tissues is unclear, but hematogenous spread or extension from dental, periodontal, or tonsillar infections has been proposed.
These bacteria possess genetic factors like RmpA/RmpA2, which increase capsule production, and iron-acquisition genes (aerobactin and salmochelin), helping the bacteria evade immune responses. Lipopolysaccharide (LPS) layer, particularly the O1 antigen, further aids in resisting immune system attacks.
Typical location for hvKP colonization is the gastrointestinal tract, and bacteria can invade and cause severe infections like pyogenic liver abscesses or pneumonia.
Exact transmission pathways remain unclear, potential routes include contaminated food or water, person-to-person, healthcare-associated infections, or transmission from pets.
This case reports the importance of early recognition and aggressive management of hvKP infections in diabetic patients with rapidly progressing neck abscesses.

Abstract 2025 – 74

Mucovirulent Klebsiella pneumoniae presenting with a pathologic fracture secondary to Brodie's abscesses, a case report review of Brodie's Abscesses.

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Introduction: Hypervirulent strains of *Klebsiella* are classified by the clinical presentation of a *Klebsiella pneumoniae* infection that presents in an immunocompetent patient without regular signs of infection, often with cryptogenic liver abscesses, meningitis or endophthalmitis. The strain was first identified in the Southern Pacific, but has increasingly been found in western countries, often after travel to those locations. We present a case of a Hypervirulent *Klebsiella pneumoniae* infection causing metastasis forming multiple Brodie's abscesses in a patient who has never travelled outside the of the United States or Mexico.

Case Description: This is a case of a 35-year-old male with a past medical history of type 2 diabetes mellitus, who came to the ED due to a sudden "pop" in his arm with pain after pressing down on a tablet while standing from a sitting position that happened 4 days prior at work. He reported previous pain in his arm over the previous months, as well as pain in his bilateral shins of similar character. Patient had a CT of the right arm performed in the ED that was concerning for a right mid forearm abscess, myofascial edema as well as osteomyelitis and fracture of the radial shaft. The imaging also found indeterminate hepatic lesions measuring up to 3 cm. Patient was admitted by medicine; orthopedics went in for debridement and fixation with the cultures growing a Mucovirulent *Klebsiella pneumoniae.* Due to the concurrent leg pain, and hepatic lesions seen on imaging, further imaging was done which showed bony involvement of abscesses in his bilateral tibias. Orthopedics was further consulted, and did not recommend drainage of the tibial abscesses, but recommended medical therapy. Interventional radiology successfully drained the 3cm hepatic abscess that was also positive for the same species. Infectious disease was consulted, who recommended ceftriaxone 2g IV for six weeks and to continue following outpatient.

Discussion: This case highlights a rare but developing cause of Brodie's abscess. *Klebsiella pneumoniae,* has been developing a phenotype that develops a thick, mucus coat that makes antibiotic penetrance more difficult, as well as blocking host natural immune defense options. Mostly seen in Southeast Asia, with many cases having multiple hepatic masses, bacteremia, and remote abscesses in other regions such as the bones or brain. Brodie's abscesses are also a rare diagnosis, usually found in children. Most cases are caused by *Staphylococcus areus,* however, this case showed the incidence of a newly establishing cause of disseminated abscesses being further examined worldwide and is a point of discussion for the treatment options for this disease.

Conclusion: Providers should be aware of the possible examples of hypervirulent *Klebsiella pneumoniae,* especially in the setting of Brodie's Abscesses, which are a rare form of osteomyelitis that is often hard to diagnose and often caused by *Staph. Aureus.* This case highlights the importance of further awareness to be focused on the complications of Mucovirulent *Klebsiella pneumoniae* and for clinicians to be able to recognize and identify it promptly for correct treatment.

Abstract 2025 – 75

Knowledge and Awareness of Valley Fever Among the Community: A Survey Analysis

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Introduction: Valley Fever (VF) is caused by the fungus *Coccidioides* and is increasing in frequency primarily affecting regions of the southwestern United States. This survey aimed to evaluate community awareness and knowledge about VF, assessing both general understanding and personal experiences with the disease. The significance of this research lies in its potential to identify gaps in knowledge and address misconceptions that may improve effective public health campaigns. Evaluate community awareness, aiming to inform targeted educational initiatives that enhance understanding and ultimately reduce the misconceptions of Valley Fever. Understanding these dynamics is crucial, as increased awareness can lead to better informed diagnosis, treatment, patient and economic outcomes.

Purpose of Study: Accessing the community's knowledge about Valley Fever and vaccine hesitancy

Methods: Approval for this study was obtained from Kern Medical Institutional Review Board (IRB) and was sponsored by the CDC. The survey was created by an iterative process involving multiple individuals with varying levels of expertise about VF. Surveys were distributed during local community events including the Bakersfield College Pre-Med and STEM conference, the Caterpillar Health Fair, the Kern Medical Employee Health Fair, the California Hispanic Chamber of Conference (a statewide audience) and Valley Fever tabling events among non-Valley Fever patients and their family members at Kern Medical clinics. The electronic software, Survey Monkey® was used to collect data and ensure efficient data input and organization in both English and Spanish. The software evaluated participants' knowledge on disease awareness, pathogenic tendencies, attitudes towards potential vaccinations for both pets and humans and demographics.

Results: Out of 135 participants, 131 completed the survey, yielding a completion rate of 97%, with 60% of respondents identifying as native English speakers. Of the participants, 78.6% were female and 21.4% were male. Regarding ethnicity, 68.2% identified as Hispanic or Latino, and 22.8% as non-Hispanic or Latinos. Racial breakdown, 51.2% identified as White, 25.0% as 'Other', 9.1% as Asian and 6.6% as Black or African American.
The age distribution showed that 30.7% of participants were between the ages of 18-29, 24.4% were between 30-39, and only 6.3% were 65 years or older. In terms of education, 32.3% had Some college, 27.2% had a high school diploma or equivalent, 18.1% had a college degree, 11% had some high school or less and10.2% had a graduate degree or higher. Only 0.02% declined to answer the education question.
Regarding VF awareness, 77% of participants had heard of VF, 51% knew someone with the disease, 48% correctly identified it as being caused by a fungus and 31% thought it was due to a virus, bacteria or were unsure. 64% of adults reported that VF is not contagious.
When asked about vaccination, 47% expressed interest in a vaccine for pets if available, while 37% were unsure. 59% of adults were interested in receiving a human vaccine for VF, while 40% said no or unsure.

Discussion: The results of this survey suggest a generally high level of awareness about VF as most participants had heard of the disease. Many respondents correctly recognized symptoms resembling influenza or pneumonia. When asked about the cause, 40 participants or 31% incorrectly attributed it to a virus (40%), bacteria (15%) or were unsure (45%). Indicating gaps in understanding.
The demographic distribution of the sample reveals educational disparities, as this study primarily consisted of Pre-Med and STEM majors, as well as hospital employees and individuals with higher

education. This may create a bias in the data, limiting the findings to show the true population of Kern County, particularly minorities.
Interest in potential Valley Fever vaccine for both pets and humans suggest a proactive approach to disease prevention. Though a significant percentage remains uncertain about a vaccine suggesting that additional education about vaccines may improve community engagement and acceptance.

Conclusion: This study assessed community knowledge and awareness of Valley Fever in Kern County, California, focusing on understanding the disease and vaccine hesitancy. While general knowledge was high, there were still misconceptions of the disease suggesting future educational campaigns. Future efforts should expand demographic sampling to include farmworkers and other minority groups to create a more representative dataset. By addressing knowledge gaps, and improving outreach, health initiatives can better support disease prevention and education in Kern County.

Abstract 2025 – 76

Cutaneous Microvascular Responses to Post Occlusive Reactive Hyperemia with Habitual Cannabis Use.

Jasmine Benavides; Jesse Okoli; Regina Ortiz; Jahyun Kim, PhD

Purpose: Since cannabis has been legalized in many states, its usage for recreational purpose has become more prevalent, particularly among young populations. Recent studies have shown negative effects of habitual cannabis use (HCU) on vascular health, but there is limited research tested skin microvascular function of healthy young HCU populations. Skin microvascular dysfunction is a good early indicator of cardiovascular diseases (CVDs) progression. Therefore, investigating the impact of HCU on skin microvascular dysfunction could provide insight into how HCU negatively affects CVDs profession. The purpose of this study is to investigate to extent to which HCU impairs skin microvascular reactivity by Post Occlusive Reactive Hyperemia (PORH).

Methods: The study recruited a total of 15 healthy young participants (Age: 21± 2 yr old, CON vs HCU, 1M/6F, n= 7 vs. 26 ± 4 yr old, 6M/2F, n=8; MAP: 78.14 ± 8.43 vs 84.62 ± 7.83 mmHg, CON vs HCU; BMI: 22.05 ± 2.06 vs. 24.36 ± 2.70 kg/m^2, CON vs HCU). PORH was elicited by restricting the blood flow in the non-dominant arm with a cuff inflated at 200 mmHg for 5 minutes followed by cuff deflation. The Laser Doppler Flowmetry (LDF) was used to measure the skin blood flow throughout the PORH protocol (baseline, 5 minutes of occlusion, and 5 minutes after deflation). Blood flow changes throughout the PORH was presented by Cutaneous Vascular Conductance (CVC, flux/mmHg).

Results: Currently our preliminary data has shown no statistically significant on Peak-Biological Zero (BZ) (CON vs HCU: 1.00 ± 0.29 vs 1.12 ± 0.40 CVC flux/mmHg, p=0.49), Max/Time (CON vs HCU: 0.04 ± 0.01 vs 0.073 ± 0.064 CVC/s, p=0.20), AUC-BZ (CON vs. HCU: 135.47 ± 66.6 vs 151.75 ± 48.85 CVC flux/mmHg, p=0.59), Time to Peak (TP) CON vs HCU: 24.9 ± 8.96 vs 22.5 ± 24.4 s, p=0.71), Total Reactive Hyperemia % (CON vs HCU: 2853.81 ± 1201.23 vs 3808.30 ± 1155.35 & CVC max * sec, p=0.14), and Peak CVC % (CON vs HCU: 31.67 ± 6.77 vs 38.27 ± 8.00 flux/mmHg, p=0.11).

Conclusion: Although we did not find statistical significance in variables from PORH due to the limited sample size and imbalance in sex distribution within the group; it is premature to draw conclusion with the current dataset. In fact, most variables showed better cutaneous microvascular responses from PORH in HCU group. Given the small and imbalance sample, increasing the number of participants and balancing the sex ratio may yield different outcomes. Thus, more participants are needed to test our hypothesis.

Abstract 2025 – 77

Assessing the Effectiveness of Kahoot! as an Educational Tool for Improving EKG Rhythm Recognition Skills

Sage Wexner, MD; Monisha Lewis, BA; Jersery Quintero, BA

Introduction: Accurate recognition of EKG rhythms is critical in emergency situations, requiring medical professionals to quickly identify abnormalities and respond appropriately. At our institution, some learners have reported a lack of confidence in distinguishing EKG rhythms. Gamification, using interactive platforms like Kahoot! has shown

promise in increasing learner engagement and enhancing knowledge retention. This study aims to assess whether integrating Kahoot! quizzes into a structured educational curriculum improves EKG rhythm recognition accuracy and response time, while also evaluating learner engagement and perceived educational value.

Methods: This is an educational study that will be conducted at Kern Medical Center with voluntary participant enrollment. Participants will complete a pre-test to establish baseline EKG recognition skills, followed by a four-week curriculum of 20 Kahoot! quizzes. The quizzes will be delivered via email with a 24-hour completion window. A post-test, identical to the pre-test, will measure knowledge retention and improvement. Surveys given before and after the curriculum will assess learner engagement and perceptions. Data will be anonymized using a numbered code-key stored on an encrypted spreadsheet accessible only to research assistants. Outcomes measured will include an initial pre-test total score with a question breakdown and total time taken, score for each Kahoot! trivia quiz with a question breakdown with time measured for each question, and a final post-test total score with a question breakdown and total time taken. Engagement levels and learner perceptions will be assessed through survey responses.

Results: Preliminary findings indicate that gamification, such as Kahoot! may enhance learner engagement and support knowledge retention. While individual performance varied, participants demonstrated increased accuracy in Kahoot! quiz scores over a four-week period, highlighting the potential benefits of gamification in reinforcing learning through repeated exposure and active recall. Although the overall pre-test (M = 53.8, SD = 5.93) and post-test scores (M = 52.8, SD = 7.63) showed minimal change, qualitative feedback suggests that participants perceived gamification as an effective tool for mastering EKG rhythms. These findings underscore the value of interactive learning platforms in medical education, with ongoing analysis aimed at further evaluating their impact on EKG rhythm recognition skills.

Conclusion: Preliminary findings suggest that Kahoot! may enhance EKG rhythm recognition through gamification, with some improvement in test performance and quiz accuracy observed. Positive participant feedback suggests that gamification may support knowledge retention and learner engagement. The results will provide valuable insights into the effectiveness of gamification in medical education and its potential to improve efficiency in clinical practice.

Abstract 2025 – 78

An Uncommon Case of Bacteremia Diagnosed on CBC

Sage Wexner, MD; Monisha Lewis, RA; Carlos D'Assumpcao, MD

Introduction: Capnocytophaga canimorsus is a gram-negative facultative anaerobe that is most associated with a bite from an animal. 1 As a zoonotic agent, it can progress to a fatal form due to life-threatening sepsis. This bacterium is commensal oral flora that is common in dogs and cats with an incidence of 0.5-0.7 cases per million individuals per year. 2 The onset of manifestations can vary, as there may be a delay in presentation. Diagnosis can be especially challenging if physical exam findings of pre-existing wounds are absent, or history of animal contact is unclear. 3 Most strains are susceptible to antibiotics such as a combination of amoxicillin and clavulanic acid, ureidopenicillins, broad-spectrum cephalosporins, and imipenem. 4

Case Description: A 47-year-old man with diabetes, schizophrenia, TBI, and a history of exploratory laparotomy and intubation presented with two days of shortness of breath. At triage, he was tachycardic (120s), tachypneic, and hypoxic with oxygen saturations below 70%. Peripheral mottling and cold extremities prevented accurate readings. Despite a core temperature of 101.5, his blood pressure remained stable. He received broad-spectrum antibiotics, blood cultures, and fluid resuscitation (30cc/kg crystalloid). Arterial blood gas showed a pH of 6.9, and labs reported critically elevated troponin, procalcitonin, and creatinine. The lab called with panic values of an elevated troponin, procalcitonin, and creatinine. They indicated the Complete Blood Count (CBC) would need to be redrawn because "there was too much bacteria for them to read it." A CBC was redrawn but never resulted. However, the patient subsequently lost pulses, and despite intubation and initiation of pressors, succumbed to his bacteremia.

Discussion: Septicemia is a life-threatening condition that can be difficult and time-consuming to definitively diagnose, and treatment must be initiated prior to final identification of the causative organism in many cases. The peripheral blood smear can give a clue about the etiology although this is the first experience in our Emergency Department of making such a diagnosis based on this initial laboratory result.

Capnocytophaga canimorsus is a rare but potentially life threatening source of sepsis in an immunocompromised patient who was bitten by a dog or had other contact with dog saliva, usually 5-6 days but up to 30 days prior.6,7 C. canimorsus has an incubation period of 1-8 days which may result in a varying onset of illness.5 Appearing as thin gram-negative rods, the infection has the ability to cause fulminant sepsis in asplenic patients, though the mechanism is poorly understood.3 It is rarely resistant to penicillin or cephalosporins, making these good initial choices of antibiotics, however a case fatality rate of up to 30% has been reported, even in immunocompetent hosts.5

Conclusion: This case highlights a rare and unexpected method of diagnosing bacteremia via a peripheral blood smear that was unreadable due to bacterial overgrowth. Clinical suspicion in the correct scenario or with the appropriate risk factors or mechanism of infection should be entertained. Of note, the micro lab may need to be informed of the suspicion of slower-growing organisms as they may require extended culture time.

Abstract 2025 – 80

EBV+ Lymphoproliferative disorder in an HIV patient successfully treated with Rituximab

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Introduction: Epstein-Barr virus (EBV)-associated lymphoproliferative disorders (LPDs) encompass a spectrum of diseases characterized by abnormal lymphoid cell proliferation, often occurring in immunocompromised individuals, including those with HIV infection. EBV plays a well-established role in various lymphoproliferative diseases. We present a case of a 55-year-old female with undiagnosed HIV who developed an EBV+ lymphoproliferative disorder, initially suspected to be a peritonsillar abscess, highlighting diagnostic and management challenges in HIV-infected individuals.

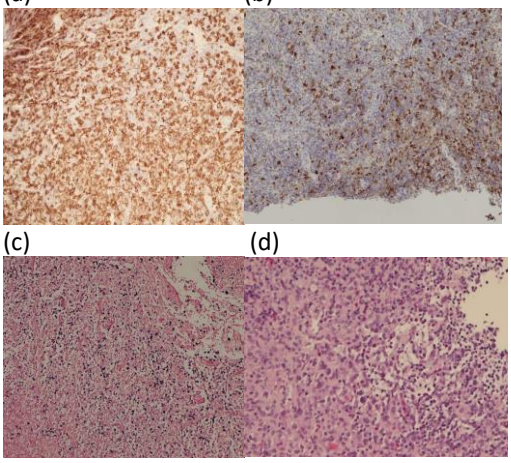
Case Presentation: A 55-year-old female with uncontrolled diabetes presented with persistent left-sided throat pain, worsening dysphagia, fever, chills, and weight loss over two months. Previously diagnosed with recurrent tonsilitis refractory to multiple antibiotics. CT imaging revealed early abscess formation near the left tonsil with asymmetrical swelling and a hypodense lesion. After multiple emergency visits, she was admitted for biopsy to rule out malignancy. HIV screening was positive, showing an HIV RNA of 546,000 copies/mL and CD4 count of 204 cells/mcL. Antiretroviral therapy (Biktarvy) and PJP prophylaxis were initiated.

Biopsy confirmed EBV+ polymorphic lymphoproliferative disorder with atypical B-cell proliferation (CD20, CD79a, CD30) and clonal B-cell proliferation highlighted using IgH chain gene rearrangement studies.

The patient returned with worsening symptoms, including odynophagia and difficulty swallowing medications. Imaging showed bilateral cervical lymphadenopathy and pharyngeal edema. EBV DNA PCR was positive with a viral load of 11,069 copies/mL, while HIV RNA had decreased to 66 copies/mL. Rituximab therapy was initiated, leading to significant clinical improvement. Symptoms resolved, and EBV viral load became undetectable two weeks post-treatment. HIV RNA decreased to <20 copies/mL.

Figure 1

(a) (b)



(c) (d)

FIGURE 1. Tonsillar biopsy (**a**) The neoplastic cells expressing CD20 (**b**) Many of the cells showing weak CD79 (**c**) EBV ISH studies are performed with the EBER-1 probe and show that many of the atypical B cells express EBV. (**d**) 20x H&E - Atypical lymphoid proliferation characterized by a polymorphic collection of small to large neoplastic cells in a background of histiocytes and eosinophils.

Discussion: EBV+ lymphoproliferative disorders can arise in various settings of immune suppression, including HIV infection, organ transplantation, chemotherapy and immune senescence. HIV-related immune dysregulation allows EBV to persist, leading to clonal B-cell expansion. Managing EBV+ LPD in HIV patients is challenging due to scarce and limited data, with treatment often extrapolated from post-transplant lymphoproliferative disorder (PTLD) protocols. Both conditions share EBV-driven B-cell proliferation, suggesting that PTLD treatments like Rituximab may be effective in HIV-associated LPD.

While antiretroviral therapy (HAART) is critical for immune restoration, it may not be sufficient to control EBV-driven lymphoproliferation alone. Rituximab, a CD20-targeting monoclonal antibody, has shown efficacy in treating EBV-related LPD in HIV patients. In this case, Rituximab led to rapid symptom relief and near-complete disease remission.

Rituximab's role in depleting B cells interrupts the EBV-driven clonal expansion, providing symptom relief and improving outcomes. EBV DNA quantification is also essential for monitoring disease progression and treatment response, guiding timely clinical decisions. The presence of EBV viremia was a key element in distinguishing this diagnosis from EBV MCU (mucocutaneous ulcer) which shares an almost identical histopathology.

Further studies are necessary to determine standardized treatment protocols for EBV+ LPD in HIV patients. This case demonstrates that a combined approach of immune restoration and targeted therapy is essential for optimal management.

Conclusion: This case illustrates the diagnostic challenges of EBV+ lymphoproliferative disorders in HIV patients, particularly when symptoms mimic other conditions. Rituximab can significantly improve symptoms and achieve disease control when HAART alone is insufficient.

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Abstract 2025 – 81

Immediate Stabilization and Reconstruction of Flail Chest Following Thoracic Impalement

Lindsey Braden, MD; Joshua Crosby, MD; Amber Jones, DO, MPH

Introduction: Flail chest is among the most devastating injuries with mortality rates reaching 40%. Flail chest presents following thoracic or sternal injury of the anterior or lateral chest wall. Flail segment is defined as two fractures in at least three consecutive ribs. Flail chest occurs when the flail segment is accompanied by paradoxical chest wall movement. Historically treatment has focused on analgesia, respiratory support and early mobilization. Surgical stabilization has yielded promising outcomes, however, there remains no consensus on timing, location or patient selection. Herein, we describe our experience utilizing immediate surgical stabilization in a patient with flail chest and an optimal recovery.

Description: A 50-year-old man presented following a twenty-foot fall where he was subsequently impaled by a tree. Exam revealed respiratory distress, hypoxemia, severe left chest wall deformity with paradoxical chest wall movement and a 3 cm penetrating wound at the third intercostal space. Thoracostomy returned 300 mL of frank sanguineous fluid. Imaging revealed a moderate left hemopneumothorax, emphysematous chest wall changes and fractures of ribs 3 through 8. Decision was made to proceed to the operating room where thoracotomy exposed a laceration transecting the left lower lung lobe, extending to the left hilum and inferior pulmonary vein. Operative interventions included removal of the devascularized lower lobe segment, ligation of the inferior pulmonary vein as well as its tributaries and plating of the flail segment at ribs 3-8. He was extubated on Post operative day (POD) and chest tubes were removed on POD 3. The patient was deemed stable for discharge on POD 5 when adequate pain control was achieved, and overall functional status was optimized.

The patient remains without major complications or disability on follow up 6 months post inciting injury.

Discussion: Despite significant polytrauma, our patient readily obtained adequate analgesic effect, early extubation and mobilization following rib stabilization leading to a reduction in overall hospital length of stay. In turn, this prevented acute complications such as associated pneumonia, retained hemothorax, uncontrolled pain and immobility, minimizing risk for long-term complications. We believe surgical intervention in the immediate or acute setting may allow for a profound reduction in the high morbidity and mortality of flail chest.

Conclusion: For adult patients suffering flail chest following blunt trauma, we conditionally recommend immediate (within 24 hours) operative rib reduction internal fixation. Immediate rib fixation has shown to decrease mortality, duration of mechanical ventilation, ICU length of stay (LOS), hospital LOS, tracheostomy need, as well as associated.

Abstract 2025 – 82
Sacroneural Modulation Relieves Chronic Constipation, A Case Report
Naomi Akhidenor, MS II; Yufan Brandon Chen, MD

Introduction: Constipation is a prevalent gastrointestinal disorder that affects approximately 15-20% of the global population. It is characterized according to the Rome IV criteria: infrequent bowel movements, difficulty passing stools, and a sensation of incomplete evacuation of the bowels. Constipation is associated with significant physical discomfort, financial healthcare burden, and an inability to complete activities of daily living. Currently, the first-line option for treatment is pharmacologic. However, some individuals show no response to medication, and this is termed refractory constipation. In such situations, surgical interventions are the next step in treatment, but this is associated with significant risks and long-term complications. Therefore, there is a need for a different option to bridge the gap between medication and surgery.
An emerging treatment for refractory constipation is Sacral neuromodulation (SNM). SNM is FDA-approved for the treatment of urge urinary incontinence, urinary retention, and fecal incontinence. Several people who underwent treatment with SNM experienced improvement in constipation and overall quality of life. Given the minimally invasive nature of this treatment, SNM could present as an effective and safe modality for the treatment of refractory chronic constipation.

Case Presentation: This report describes a 45-year-old female with a history of refractory urge urinary incontinence (UUI) and a five-year history of refractory constipation which worsened following a cholecystectomy two years ago. Her constipation had caused her stress and impaired her ability to sleep which led to chronic daytime fatigue.
At the time of her evaluation, she reported having 1-2 bowel movements per week, a sensation of incomplete evacuation, and frequent use of laxatives all consistent with a diagnosis of constipation according to the Rome IV criteria. Given the refractory nature of her UUI, she underwent SNM.
Treatment

The patient first underwent a test procedure for sacral neuromodulation with the Axonics device. Lead wires from the device were carefully placed in the medial aspect of the right S3 foramen. Then a test stimulation was delivered to confirm placement and adequate motor response. The temporary wires remained in place for a week and the patient was instructed to monitor her tolerance to the device. During her one-week follow-up visit, she reported no adverse effects. At the two-week mark, she underwent a second procedure for temporary placement using a similar technique.

Discussion: Sacral neuromodulation works by delivering electrical impulses to sacral nerves which are responsible for bladder and urinary control. The patient reported significant improvement in her UUI and bowel symptoms during the trial. She then received the full SNM implant and endorsed a near-complete resolution of both symptoms. Notably, she endorsed a significant reduction in the use of laxatives, a reduction in fatigue, and an increase in spontaneous bowel movements and ultimately ceased to meet the Rome IV criteria for constipation following treatment.

Conclusion: This case adds to the growing evidence that SNM may offer therapeutic benefits beyond its current FDA-approved indications, particularly for functional bowel disorders. Given its minimally

invasive nature, SNM could serve as an alternative to surgical interventions in people with refractory constipation.

Abstract 2025 – 83

Juvenile Granulosa Cell Tumor: A Case Report

Alexa King, MS III; Kara Willbanks, MS III; Hyun Bin Suh, MS III; Thiagarajan Nandhagopal, MD

Introduction: Sex cord-stromal tumors account for less than 5% of all ovarian neoplasms, with granulosa cell tumors (GCTs) being the most common subtype. GCTs have an annual incidence of 0.4–1.7 per 100,000 and are classified into adult and juvenile forms, the latter comprising only 5% of all GCTs. Although rare, juvenile granulosa cell tumors (JGCTs) are the predominant form in females under 30. JGCTs often present in premenarchal or early postmenarchal girls with symptoms of hormonal activity, mass effect, or acute abdomen. Inhibin B is typically elevated and useful for both diagnosis and surveillance.
We present the case of a 12-year-old girl with stage IA JGCT, emphasizing the importance of maintaining a broad differential and considering gynecologic causes when evaluating lower abdominal pain in adolescent females.

Case Description: A 12-year-old girl with no medical history presented with one day of sudden onset left lower quadrant abdominal pain, described as pressure-like with flank radiation and worsened by movement. She also reported chills, nausea, one episode of vomiting, and a 15 lb. unintentional weight loss over three months. Menarche was two months prior, with two episodes of light spotting. She was afebrile, stable, and in no acute distress. Exam revealed mild generalized abdominal tenderness; labs and urinalysis were normal. Pelvic ultrasound and CT revealed a 7.9 cm complex cystic and solid left adnexal mass with smaller adjacent solid components and pelvic free fluid. Inhibin B was elevated at 1046, all other tumor markers were negative.
She was referred to gynecologic oncology and underwent exploratory laparotomy with left salpingo-oophorectomy and omentectomy. Pathology confirmed stage IA juvenile granulosa cell tumor. Postoperative inhibin B decreased to 21. She recovered well and remains under surveillance with serial tumor markers and imaging.

Discussion: Juvenile granulosa cell tumors are rare sex cord-stromal tumors that typically present in young women. Many cases involve symptoms related to hormonal secretion, such as precocious puberty, or present with signs of mass effect. Our patient presented less obviously with a gynecologic pathology—reporting acute left sided abdominal and flank pain, nausea, vomiting, and weight loss. Her recent onset of age-appropriate and normal-appearing menses did not raise any red flags initially. This case shows the importance of maintaining a high index of suspicion for gynecologic conditions in adolescent females, even when symptoms are nonspecific or when the menstrual history appears normal. Pelvic ultrasound played a critical role in identifying the adnexal mass and prompting early specialist referral. This highlights the value of incorporating ultrasound early in the evaluation of adolescent females with abdominal or pelvic pain. Final pathology confirmed stage IA JGCT, allowing for fertility sparing surgery with a good prognosis. Long term follow up is recommended due to the risk of recurrence.

Conclusion: This case highlights the importance of maintaining a broad differential diagnosis when evaluating abdominal pain in adolescent females, including potential gynecologic etiologies. In this patient, timely pelvic ultrasound and tumor marker evaluation were instrumental in identifying the pathology early, enabling fertility-sparing treatment and a favorable prognosis.

Abstract 2025 – 84

Imposter Syndrome and Mental Health: A Comparison Study between Healthcare Doctoral Students located in an Urban/Rural campus

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Introduction: Although previous studies have been completed on medical students' rates of depression, anxiety, and imposter syndrome, significantly fewer studies compare medical students' mental health to other healthcare students' mental health. There are also relatively few studies comparing rates of depression, anxiety, and imposter syndrome between rural vs. urban healthcare students.

Methods: We completed a cross-sectional survey-based study with students from the Western University of Health Sciences' (WesternU) two campuses, an urban campus in Pomona, CA, and a rural campus in Lebanon, OR. 1,682 students enrolled in the Doctor of Osteopathic Medicine (DO) and the Doctor of Physical Therapy (DPT) programs were sent an anonymous survey containing the Generalized Anxiety Disorder scale (GAD-7), Patient Health Questionnaire (PHQ-9, depression), Clance Imposter Scale, and sociodemographic questions. Target response was *n*=334 from power analysis and anticipated 20% response rate.

Summary of Results: N=316 participants responded; 43.7% urban DO students, 31% rural DO students, 13.6% urban DPT students, and 11.7% rural DPT students. GAD-7 scores had a mean of 6.4 (SD=±5.4); PHQ-9: M=6.3 (SD=±5); and Clance Imposter Scale: M=61.7 (SD=±17.4). Average scores among all students indicated mild levels of anxiety and depression and high levels of imposter syndrome. No significant differences were noted between DO and DPT students or between urban and rural campuses. All fourth-year-DO students had significantly lower depression ($F=4.68$, $p < 0.01$) and anxiety scores ($F=4.40$, $p=0.02$) than all first-year students. All students identifying as female had significantly higher imposter syndrome scores than males ($F=3.65$, $p=0.02$), and students identifying as gay, queer, or asexual had significantly higher imposter syndrome than those identifying as heterosexual ($F=4.0$, $p=0.05$).

Conclusion: Results suggest interventions targeting imposter syndrome, particularly among women and those with marginalized sexual orientations, may be beneficial to both medical and physical therapy students in a variety of settings. Further research on a larger population is warranted.

Abstract 2025 – 85

Conventional Laparoscopic versus Multi-Degree-of-Freedom Articulating instruments for Vaginal Cuff Closure in Minimally Invasive Gynecologic Surgery

Vikas Nookala, MD; Christine Peng, OMS III; Yufan Brandon Chen, MD

Introduction: Vaginal cuff closure is a key step in any hysterectomy, requiring precision and dexterity to ensure optimal surgical outcomes. While conventional laparoscopic needle drivers are effective, newer technologies like a multi-degree-of-freedom laparoscopic instrument (Artisential), offer enhanced articulation and may further optimize surgical efficiency. This study investigates the effectiveness of vaginal cuff closure using Artisential versus traditional laparoscopic instruments in minimally invasive gynecologic surgery.

Study Objective: The primary objective was to compare vaginal cuff closure times using conventional laparoscopic needle drivers versus the Artisential needle driver during a laparoscopic hysterectomy. Secondary outcomes compared the times of suturing passes (suture anchoring followed by each of 5 passes through the tissue).

Methods: We conducted a randomized controlled study. The study received IRB approval and was registered on Clinical Trials.gov (NCT06050161). English or Spanish speaking patients undergoing elective robotic hysterectomy for benign indications were invited to participate. Exclusion criteria included patients under age 18 or having robotic hysterectomy for cancer or emergency indications. Robotic hysterectomy was performed in the usual fashion with a Da Vinci Xi console. At the time of vaginal cuff closure, the robotic arms were undocked. Using block randomization, the patients were allocated to either a control group, whereby the vaginal cuff was closed using 2 conventional laparoscopic needle drivers, or an experimental group, by which the cuff was closed with a conventional laparoscopic needle driver in one hand and an Artisential needle driver in the other hand. The cuff closures were performed by the same surgeon who was experienced in operating with both conventional and Artisential needle drivers. Each cuff closure consisted of anchoring of the barbed suture, completion of 5 full thickness throws, and cinching of the suture after the 5th throw. All cases were recorded and evaluated by 2 reviewers, using time stamps to determine knot tying duration. T-tests were conducted to compare times between the groups with a significance level set at less than 0.05. A power analysis determined that 12 participants in each group were required to find a 90 second difference in suturing times, with a power of 80% and alpha of 5%.

Results: A total of 24 patients were recruited to participate, and 12 were allocated to each control

and experimental group. The demographics included 5 (41.6%) Hispanic in the control group, and 9 (75%) Hispanic patients in the experimental group. Clinical factors such as age and BMI were well balanced between the two groups, with no significant differences observed ($p > 0.05$). The average age was 56.3 in the control group and 52.9 in the experimental group, and the average BMI was 33.2 in the control group and 30.8 in the experimental group.

For the primary outcome, mean time was 350 seconds (SD 86) with the conventional instruments and 281 seconds (SD 61) with the Artisential needle driver ($p < 0.05$).

Conclusion: The findings of this study align with growing evidence supporting the benefits of wristed laparoscopic instruments in various surgical disciplines. The Artisential multi-degree-of-freedom laparoscopic instrument improved cuff closure time by 1min 9s ($P < 0.05$) on average compared to conventional laparoscopic instruments. In minimally invasive gynecologic surgery, where space constraints and fine motor control are critical, the added degrees of freedom provided by Artisential may contribute to improved surgical ergonomics and efficiency. Further research comparing Artisential to both standard laparoscopic and robotic-assisted surgery will be crucial to determine its long-term impact on clinical outcomes, complication rates, and cost-effectiveness.

Abstract 2025 – 86

Pneumococcal vaccination rates among patients hospitalized for pneumococcal infection at a community teaching hospital

Shikha Mishra, MD; Kelly Ayabe, BA; Royce H. Johnson, MD; Michelle Fang, PharmD; Luz Perez Montes, MS IV; Liza Chen Wijaya, MS IV

Background: In October 2024, the United States Centers for Disease Control and Prevention (CDC) lowered the age for routine pneumococcal vaccination (PV) from 65 to 50 years. Given this update, historically lower PV coverage in minority populations and those with newly diagnosed chronic medical conditions, and increased hospitalizations for pneumococcal infections at Kern Medical (KM), a safety-net teaching healthcare system in Bakersfield, California, we sought to identify potential missed opportunities for PV at KM.

Methods: This quality improvement review was conducted to evaluate PV status of patients who were hospitalized for pneumococcal disease from January 2023 through June 2024. Eligibility for PV was based on CDC's 2025 adult immunization schedule. PV history was identified through the California Immunization Registry. The primary endpoint was PV coverage in patients hospitalized for pneumococcal disease. Secondary endpoints included 14-day all-cause mortality, length of stay (LOS), and opportunities for vaccination at KM prior to admission.

Results: Thirty-five patients were hospitalized for pneumococcal disease at KM, including 18 cases of bacteremia. Mean age was 54 years, 77% were male, and 54% were Hispanic/Latino. Twenty-five patients met CDC criteria for PV, however, 92% of these patients were unvaccinated (68%) or under vaccinated (24%). Eight patients died within 14 days of positive culture, 7 of whom were unvaccinated but eligible for PV. Mean LOS was 14 days with 7 ICU days. Of the 23 unvaccinated or under vaccinated patients, the most common criteria met for PV included age (70%), chronic liver disease or alcoholism (35%), and diabetes mellitus (26%); only 4 patients between 50-64 years met criteria based on age alone. Of these, only 5 had primary care encounters at KM within one year of admission.

Discussion: Despite significant improvement in general incidence and outcomes of pneumococcal disease due to PV, vaccination rates still lag in minority communities and those with underlying medical conditions. The resultant and potentially avoidable impact on mortality and healthcare resources should serve as a call-to-action for public health and key stakeholders, including community pharmacies, to capture and augment opportunities for vaccination in these vulnerable populations.

Abstract 2025 – 87

An Atypical Case of RSV in an Asplenic Patient

John Petrucci, OMS III; Byron Lee, OMS III; Jiayan Tan, OMS III; Sabrina A. Yip, OMS III; Thiagarajan Nandhagopal, MD

Introduction: Respiratory syncytial virus (RSV) is an enveloped RNA virus that causes mild upper respiratory tract infections in healthy adults and older children. More severe RSV infections have been documented in infants (especially those <6 months old), preterm infants, and those with histories of congenital heart disease, neuromuscular disorders, or immunocompromised states. RSV is the most common cause of bronchiolitis, pneumonia, and hospitalization in infants. C-reactive protein (CRP) is a laboratory marker widely used in clinical practice to monitor inflammatory conditions, including sepsis and chronic inflammatory diseases. The PERCH study found that elevated CRP levels were positively associated with bacterial pneumonia and negatively associated with RSV pneumonia. In this case report, we highlight the unique clinical and treatment course of an asplenic patient diagnosed with RSV who displayed significantly high fevers and elevated CRP levels.

Case Presentation: 5-year-old male with a history of functional asplenia, congenital malrotation, and situs inversus abdominalis presented to the emergency department for evaluation of fever and cough for two days. He tested positive for RSV at urgent care prior to arrival. He was afebrile and tachycardic on physical exam, and lungs were clear to auscultation without wheezing or rhonchi. On admission, labs were significant for elevated CRP 4.89 and procalcitonin 0.75. Given a history of immunosuppression and elevated inflammatory markers, the patient was admitted for RSV bronchiolitis and started on intravenous (IV) ceftriaxone.

Overnight, the patient developed significantly elevated fevers with Tmax recorded at 40.5°C. Ibuprofen and Tylenol were ordered for fever control, and an infusion of D5-0.45NaCl was started for hydration. Despite the presumed viral etiology of the patient's infection, CRP levels continued to trend up on hospital day (HD) 2, measuring at 5.04. Oxygen saturations dropped to 85-89% on room air, and the patient was placed on nasal cannula. There continued to be no evidence of leukocytosis. Chest x-ray revealed no acute cardiopulmonary disease process. Given the high fever and increasing inflammatory markers, suspicion for superimposed bacterial infection was considered, and IV vancomycin was added to the antibiotic regimen. On HD3, the patient significantly improved. Vital signs were stable, with an oxygen saturation of 98% on room air and no tachypnea. Blood cultures revealed no growth after 48 hours. Patient was discharged with a prescription for high-dose amoxicillin for five days with instructions to follow up with their pediatrician.

Discussion: RSV typically presents as a mild upper respiratory infection in healthy adults and older children, with most individuals infected by age two. However, severe illness can occur in young children and immunocompromised patients, such as those with functional asplenia. Previous data suggests elevated CRP is positively associated with bacterial pneumonia and negatively associated with RSV pneumonia. These findings suggest that while CRP can be elevated in RSV infections, it is generally lower compared to bacterial infections and can potentially help in differentiating between the two. This distinction is crucial, as recognizing the typically lower CRP levels in RSV infections may help reduce unnecessary antibiotic use, particularly in immunocompromised or high-risk patients.

Abstract 2025 – 88

Geriatric Acute Appendicitis

Monisha Lewis, BA; Sage Wexner, MD

Introduction: Acute appendicitis afflicts patients predominantly between 10-30 years old.[1] Acute appendicitis is not a common pathological condition afflicting the elderly and was found to be the cause of abdominal pain in only 14% of patients above 50 years old in one study.[2] For this simulation, which is based on a real case, an elderly patient presented with abdominal pain and was found to have a ruptured appendix requiring surgery. The signs and symptoms of appendicitis can be vague, which frequently leads to misdiagnosis.[3] Acute abdominal pain can be caused by infection, inflammation, or obstruction and is often accompanied with nausea and vomiting. Cost conservative and non-invasive methods to evaluate abdominal pain for appendicitis include assessment scales like the Alvarado Scoring System.[4] Imaging strategies such as ultrasound, MRI, and CT scans can be utilized to diagnose acute appendicitis. Surgical intervention for acute appendicitis is one of the most common procedures performed.

Methods: This simulation was implemented as a simulation for EM interns, in lieu of an oral-boards

verbal encounter. A standardized patient was utilized, along with a nurse actor. An EM physician and general surgeon observed and the surgeon took the consult at the end of the simulation. Learners were given a pre-brief prior to the simulation and were debriefed upon completion. Learners received feedback on differentials, treatment, and communication with the patient and family, followed by a debrief. Immediate and anonymous electronic surveys gathered feedback on the simulation's quality and educational value.

Summary Of Results: Feedback completed by 4 of 5 interns in the post-simulation survey was generally positive. One intern did not fill out the survey. Everyone present for the simulation felt that it was realistic and provided a unique opportunity to practice resuscitation skills. On a scale from 1-5, three learners rated their overall experience as a 5 and one learner rated it as a 4. Three learners felt that the simulation was educational and rated it as a 5 and one learner rated it a 4. Three learners strongly felt that the simulation should be used for future interns, while one learner was indifferent. Three learners strongly agreed, and one learner somewhat agreed that this was an appropriate case in terms of an intern-level patient encounter. 100% of the learners noted that they did not notify the patient's family nor give them updates about the elderly patient. Three of the learners felt that this simulation gave them a different outlook on how to approach elderly patients and their family members. This case was derived from a real patient that offered their personal background for the case. That patient reported feeling happy with the care implemented but noted that her family did not know the diagnosis and plan. She strongly indicated that she would have liked better physician-to family communication.

Five out of the five learners diagnosed the patient correctly with acute appendicitis. Four of the five learners gave morphine as pain medication and one learner gave fentanyl. Five out of the five learners ordered a CT scan of the abdomen/pelvis to confirm the diagnosis and subsequently consulted general surgery. Two of the five learners gave ceftriaxone via IV before the appendectomy. Performance ratings from the confederate nurse and patient for each of the 5 learners were: 100%, 64%, 82%, 82%, and 92%, using a form adopted from ASPE guidelines. Learners with lower scores were due to a perceived deficiency in communication and education for both the patient and family with comments regarding overall empathetic tone as well.

Discussion: Acute abdominal pain is a frequent presenting concern in the emergency department and, when it presents due to acute appendicitis, quick surgical intervention may be necessary. Although the presentation of appendicitis can be non-specific, making the correct diagnosis in a timely manner is preferable. A ruptured appendix that is left untreated can result in life-threatening sepsis. In this simulation, the age of the patient is atypical for general acute appendicitis cases. A broad differential should be initially entertained, followed by assessment of the associated signs and symptoms, physical examination, and with subsequent appropriate imaging modalities.

Conclusions: This simulation highlighted the challenges of diagnosing acute appendicitis in elderly patients and reinforced the importance of timely intervention and family communication. Learners found it educational and realistic, with feedback emphasizing the need for improved patient-family updates. Future iterations can further enhance decision-making and communication skills in managing geriatric patients with acute abdominal pain.

Abstract 2025 – 89

Using Z-Scores to Standardize Emergency Medicine Residency Interview Inter-rater Reliability

Manish Amin, DO; Veronica J. Rojas, BA; Xitlaly Patel, BA; Monisha Lewis, BS; Michael C. Anderson, MS; Sage Wexner, MD

Introduction: There is an inherent variability in interviewers' ratings for emergency medicine residency applicants, potentially influencing a program's rank order list. A study published in 2023 demonstrated that the use of a standardization calculation might help increase inter-rater reliability in Plastic Surgery.[1]

Purpose: Our institution piloted a similar method of standardization to determine the potential impact on an emergency medicine rank order list.

Methods: This observational study analyzed a single emergency medicine residency program during a single interview cycle. Interviews were conducted

virtually, and data was collected retrospectively during a period of one interview cycle. We performed an observational statistical analysis and utilized a Z-score to standardize interviewers' ratings and candidate scores (Figure 1). The results were then used to re-compile a hypothetical rank order list.

$$x_{candidate} = \frac{\text{candidate score}}{60}$$

$$\mu_{interviewer} = \frac{\sum x_{candidate}}{\eta_{interviews}}$$

$$\sigma_{interviewer} = \frac{\sum |x_{candidate} - \mu_{interviewer}|^2}{\eta_{interviews}}$$

$$Z_{candidate} = \frac{x_{candidate} - \mu_{interviewer}}{\sigma_{interviewer}}$$

$$Adjusted\ Percentage = AUC\ (Z_{candidate})$$

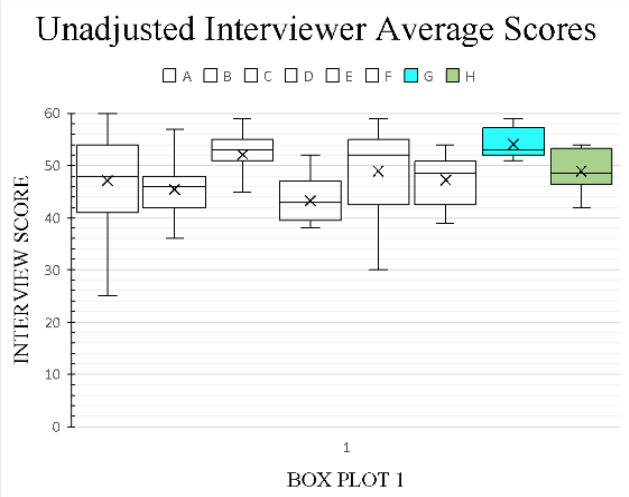
$$Adjusted\ Score = Adjusted\ Percentage * 60$$

$$Final\ Percentage = \frac{\sum Adjusted\ Percentage}{\eta_{interviews}}$$

$$Final\ Score = \frac{\sum Adjusted\ Score}{\eta_{interviews}}$$

Figure 1

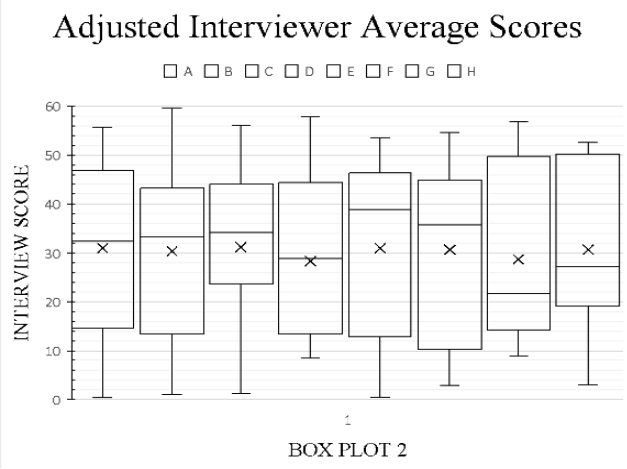
Results: Prior to standardization, the average rating was 48.13 (± 4.93), with interviewer C and B's average at 52 and 45, respectively (Box plot 1). After standardization, the mean rating was 30 (± 0.02), with Interviewer C and B's adjusted averages at 31 and 30, respectively (Box plot 2). Standardization of raters' scores impacted the ranking positions of eight of the top 10 emergency resident candidates from the rank order list of 2020 (Table 1). Interviewer C interviewed candidates 150, 133, and 154 which were removed from the standardized rank order list (Table 2). After standardization, candidate 152 moved from position two to number one, and candidate 163 moved from position one to number two. Candidate 140 was moved from position three to number nine. Candidate 144 was moved from position seven to number six. Candidate 157 was moved from position 10 to number eight. Candidate 145, interviewed by Interviewer B, received an adjusted score of 50, was added to the top 10 of the standardized rank order lists and ranked third (Table 2). Candidate 162 and 161 remained the same despite standardization.



BOX PLOT 1

Table 1. Rank Order List From 2020

Rank Order	Candidate ID	Candidate Average Score	Interviewer Average Scores	Interviewer(s)
1	163	60	47	A
2	152	56	47 45 43	A B D
3	140	55	54 52 47	G C A
4	162	54	47	A
5	161	54	47	A
6	150	54	54 52 47	G C A
7	144	54	47	A
8	133	54	52 47	C A
9	154	53	54 52 47	G C A
10	157	53	47	A



BOX PLOT 2

Table 2. Standardized Rank Order List

Rank Order	Candidate ID	Candidate Average Score	Interviewer Adjusted Average Scores	Interviewer (s)
1	152	58	31 30 28	A B D
2	163	56	31	A
3	**145**	**50**	31 **30** 28	A B D
4	144	47	31	A
5	162	47	31	A
6	161	47	31	A
7	139	46	31 30 31	A B E
8	157	45	31	A
9	140	44	31 31 28	A C G
10	134	43	31 30 28	A B D

Discussion: Although different programs may have slightly different criteria, the online Emergency Medicine Residency Application Service (ERAS) requires applicants to upload a personal statement, biographical information, curriculum vitae, letter(s) of recommendation, medical school transcript, USMLE and/or COMLEX-USA scores, a Medical Student Performance Evaluation (MSPE or "Dean's Letter"), and an optional photo.[2] Depending on the institution, interviews are conducted by faculty, the program director, or current Emergency Medicine resident physicians.[3]

It is important to note that the role of the interview itself remains controversial. EM faculty at the University of California San Diego evaluated 54 graduates and determined that the interview did not correlate with their success in residency, however it remains an important aspect of candidate selection.[4]

Multiple studies that suggest MMI's and standardized questions yield higher inter-rater reliability than traditional interviews. One study showed that increasing stations rather than number of interviewers increased inter-rater reliability.[5] Although this supports the use of MMI's, a study that surveyed radiology residency programs discovered that out of 63 programs, 92.06% reported using unblinded, unstructured traditional interviews for candidate selection and only 22.22% of these programs used structure interview questions.[5] This indicates that even with the research suggesting that standardized MMI's improve inter-rater reliability, there remains variance amongst interview techniques within residency specialties, and most likely across residency programs as well. Another study discovered that 6-12 interviews were optimal to maintain data quality; however, many residency programs only conduct an average of 3-4 interviews due to limited resources.[6]

Furthermore, studies have shown that virtual interviews provide many benefits while maintaining the quality of a structured interview format.[7,8,9] Despite these benefits, a study that investigated neurosurgery residency interviews from 2016 to 2021 determined that only two out of 19 interviewers had an increased inter-rater reliability from in-person to virtual interviews.[10] Another study proposed to incorporate interviewers from different professional backgrounds to increase inter-rater reliability.[11] However, its financial and staffing feasibility for residency programs remains unknown and warrants further investigation.

Current research has looked at the interview format, professional background of interviewers, and interviewer training. Our study provides a standardization tool that addresses the variance

between interviewer ratings with the goal of creating a baseline for residency candidate comparison. We applied our calculation to our applicants, which yielded a different hypothetical rank order list. This method may prove to be beneficial for other residency programs.

Conclusion: Application of our standardization calculation may assist with inter-rater reliability by standardizing interviewers' scores, which might improve the rank order list process. The findings are similar to a study regarding Plastic Surgery Residents published in 2023.[1]

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Abstract 2025 – 91

The Effects of Social Determinants of Health on Diabetes

Reeha K. Choi, PharmD; David Lash, PharmD; Alan Duvall, PharmD; Raquel Aguirre, PharmD

Introduction: Kern County bears a disproportionately high diabetes burden, low education attainment, and a high poverty rate that exceeds state and national averages. Studies from the Kern Medical Diabetes Clinic found Spanish-speaking patients had higher baseline A1c levels and lower rates of achieving A1c less than 7% compared to English-speaking patients.

Purpose of Study: To investigate causes of the disparity mentioned above, an 11-question survey was developed, covering five social determinants of health (SDOH) domains included in the Healthy People 2030 national initiative.

Methods: A cross-sectional, single-centered survey study was conducted on non-pregnant adults with type 2 diabetes seen at the Kern Medical Diabetes Clinic between January and March 2025. Patients without an A1c measurement within three months of recruitment were excluded. Ten of the eleven questions were "yes" or "no" responses, where "yes" indicated unmet needs and "no" indicated sufficient resources. Data analysis primarily assessed how SDOH domains influenced glycemic control. Secondary endpoints included SDOH differences between Spanish and English speakers and their effects on metabolic markers, as well as identifying the most prevalent SDOH needs among participants. To detect a 1% difference in A1c between the Spanish and English groups, a sample size of 63 subjects per group was estimated. Statistical analyses were performed using t-tests, chi-square tests, ANOVA, and logistic regression, as appropriate, in Jamovi v2.3.28.

Summary of Results: A total of 126 patients completed the SDOH survey, with the population being predominantly female (n=69, 54.8%), Hispanic (n=99, 78.6%), and Spanish-speaking (n=63, 50%), with an average age of 53.7 ± 11.1 years and A1c of 7.94 ± 2.02%. Lower education levels were significantly associated with higher A1c levels (A1cElementary School = 8.45 ± 2.15%, A1cHigh School 7.82 ± 1.94%, and A1cCollege/University 6.79 ± 1.20%, $p<0.001$). Compared to English speakers, Spanish speakers had a trend toward higher baseline A1c (8.29 ± 2.08% vs. 7.60 ± 1.91%, $p=0.054$) and fewer patients with controlled A1c of less than 7.0% (33% vs. 49%, $p=0.070$). Spanish speakers reported greater social needs, with more "yes" responses on the SDOH survey (2.94 ± 2.12 vs. 1.67 ± 1.50, $p<0.001$) and lower educational attainment ($p<0.001$). They also reported needing more help reading hospital materials (46% vs. 21%, $p=0.002$) and expressed higher concern for immigration matters (48% vs. 3%, $p<0.001$).

Discussion: Lower education levels were strongly associated with higher A1c levels, with Spanish speakers having significantly less education and greater difficulty reading hospital materials than English speakers. Poor health literacy may be a key factor in the persistently high rates of uncontrolled type 2 diabetes among Spanish-speaking patients at Kern Medical and possibly throughout Kern County. To improve outcomes, expanding enrollment in the clinic's bilingual diabetes education class, updating the curriculum, regularly reassessing patient understanding, and implementing periodic SDOH screening to identify more patients with unmet needs are recommended.

Conclusion: The strong inverse correlation between education and A1c levels highlights the need to improve health literacy to enhance diabetes outcomes, particularly for those with a high school diploma or less and for Spanish-speaking patients. Ongoing SDOH screening may perhaps reveal additional SDOH domains that significantly influence

glycemic control and provide more opportunities for targeted interventions.

Abstract 2025 – 92

The Role of Recall Simulation as A Teaching Modality to Improve Learning and Short-Term Memory (STM) Retention in Medical Students

Tyler Wheeler, MD; Danish Khalid, MD; Simran Ghuman, MS; Goli Shenasan, MD, Sage Wexner, MD. Sarayu Vasan, MD; Angel Garza, BS, Anmol Dhaliwal, BS

Introduction: Simulation-based education is increasingly used in psychiatric training to strengthen diagnostic reasoning, communication, and clinical interview skills. It offers a controlled, risk-free environment for students to practice key interactions before encountering real patients. Studies have shown that simulation improves diagnostic accuracy, enhances crisis management, and fosters empathy among learners.[1] Additionally, structured simulation exercises have been associated with improved cognitive, psychomotor, and affective outcomes in clinical education.[2]

Despite its growing integration into medical school curricula, many students report discomfort with simulated learning and question its relevance. Concerns often stem from a perceived lack of realism or difficulty applying simulated experiences to real patient interactions.[3] Even in high-frequency users, simulation may not always translate into comfort or perceived educational value.[4] This study examines whether simulation-based recall exercises improve short-term memory (STM) retention in medical students and explores student perceptions of this educational modality.

Purpose of Study: The aim of this study was to evaluate whether recall-focused simulation exercises enhance quiz performance and short-term knowledge retention in medical students during psychiatric training. It also assessed student comfort, perceived effectiveness, and attitudes toward simulation-based learning.

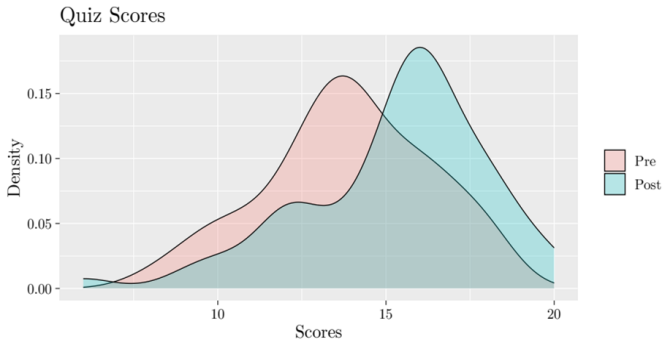
Methods: A descriptive, cross-sectional study was conducted with 60 medical students (ages 18–54) during their psychiatry rotation. Participants completed surveys capturing demographics (age, year in school, clinical experience, specialty interest, and prior simulation exposure), attitudes toward simulated learning, and pre- and post-intervention quiz scores.

The intervention included a recall-based psychiatric simulation focused on decision-making and therapeutic communication. Surveys included Likert-scale questions evaluating perceived educational value and comfort with simulations. Paired t-tests were used to compare quiz scores. McNemar's test assessed categorical changes in pass/fail status, while permutation ANOVA and t-tests evaluated demographic influences. A p-value < 0.05 was considered significant.

Summary of Results: Most participants (87%) were aged 25–32, and 83% were third-year medical students. The majority (67%) participated in more than five simulations. The most common areas of interest were Surgery (17%), Emergency Medicine (13%), and Psychiatry (12%).
Regarding attitudes, 62% strongly disagreed that simulated learning was important in their education, despite high participation. This is reflected in the table below:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Count	37	12	3	4	4
Proportion	0.62	0.2	0.05	0.07	0.07

Despite high levels of participation, 62% of students strongly disagreed with the importance of simulated learning in their education.
The following graphic simply overlays Pre-Scores and Post-Scores to help better visualize the relationship between the two.



The mean difference between pre- and post-quiz scores was 1.42 points (p-value = 0.0000), indicating a statistically significant improvement in scores after the educational intervention. After the intervention, 56% of the sample that failed the pre-test then went on to pass the post-test. This result is extremely significant according to McNemar's test results.
No significant differences in score improvement was observed based on age, year in medical school, clinical experience, or prior simulation exposure.

Discussion: While most students had considerable experience with simulations, many still reported discomfort and undervaluation of this learning method. This suggests a disconnect between exposure and perceived benefit, potentially due to limited realism or a lack of opportunities to apply skills clinically.
Despite these concerns, the simulation exercise led to statistically significant improvements in quiz performance. This supports existing evidence that simulation can enhance short-term retention, even when student attitudes
are mixed.

Interestingly, students with no clinical experience performed similarly to their more experienced peers, suggesting that simulation may help equalize learning opportunities. These findings highlight the role of simulation in competency-based training and experiential learning, particularly in psychiatry.

Conclusion: Simulation-based recall exercises significantly improved short-term memory retention among medical students. However, the widespread discomfort and skepticism reported suggest a need to reevaluate how simulations are conducted. Enhancing realism, feedback mechanisms, and alignment with real-world applications may increase both comfort and learning outcomes.
One limitation of this study is that students did not engage with real patients between the simulation and post-survey, which limited the ability to assess how well simulated learning translated to clinical performance. Delaying the post-survey or incorporating patient interaction could offer more insight into long-term retention. Additionally, sample size and reliance on self-reported data introduce potential bias.

Future Research: Future studies should investigate psychological and contextual factors contributing to simulation discomfort. Further research is also needed to evaluate whether modifications in simulation complexity, realism, or feedback enhance both engagement and knowledge retention. Longitudinal designs should assess whether the benefits observed in STM persist over time and translate into clinical competence.

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Abstract 2025 – 93
A Unique Case of Heat Stroke Complicated by Necrotizing Pancreatitis
Jiayan Tan, OMS III; Anna Mikami, OMS III; Zahur-Saleh Subedar, OMS III; Edvard Davtyan, MD; Anna Vajda, MD; Hobart Lai, DO

Introduction: Heat stroke is characterized by a combination of elevated body temperature (>40°C) and central nervous system dysfunction caused by the body's failure to eliminate excess heat [1]. The combination of hyperthermia and dehydration in heat stroke can cause circulatory failure, which may lead to multiorgan dysfunction. Less commonly seen is heat stroke leading to necrotizing pancreatitis. We present a case of a 37 year old female who suffered a heat stroke with recovery complicated by severe necrotizing pancreatitis further complicated by pseudocyst, abscess, and fistula formation, ultimately requiring a necrosectomy.

Case: A 37-year-old female presented for altered mental status after working on a roof all day with an outside temperature of 35.5°C. Upon arrival, her Glasgow Coma Scale score was 8 and she presented with a fever of 42.2°C, hypotension, tachycardia, and tachypnea. Cooling measures including cool mist, ice packs, and an OG tube with cool water, were initiated. Laboratory findings included a blood urea nitrogen of 20 mg/dL, creatinine of 1.88 mg/dL, lipase of 353 U/L, and lactic acid of 5.1 mmol/L. A CT of the abdomen/pelvis with contrast suggested acute pancreatitis.

While other aspects of the patient's presentation improved, the pancreatitis progressed to necrotizing pancreatitis, complicated by pseudocyst, abscess, and fistula formation. This ultimately resulted in aggressive medical interventions including gastric tube placement, cystoenterostomy with pseudocyst drainage, endoscopic necrosectomy, splenic artery

embolization, video assisted retroperitoneal debridement, multiple drain placements, and cholecystectomy for source control.

Discussion: Although the patient had a clear inciting injury, multiple other etiologies of pancreatitis were discovered, further complicating the treatment plan. The obvious cause of the patient's pancreatitis was heat stroke; however, the patient was additionally found to have hypertriglyceridemia, choledocholithiasis, and obesity. She was also on medications known to cause susceptibility to pancreatitis. The patient additionally initially presented in shock which was later complicated by cardiogenic shock with an ejection fraction of 30% based on echocardiogram. All of these factors contributed to the development of necrotizing pancreatitis and pose an interesting theory on how the patient's disease process progressed. It brought forth challenges to the traditional treatment plan, and thus serves as an excellent learning opportunity.

Conclusion: Acute pancreatitis is a rare complication of heat stroke. Due to multiple contributing factors of the patient's pancreatitis, the treatment plan was complicated. The severity of the disease was intriguing and additional investigation would provide important insight into the disease process. Current literature states that heat stroke may cause acute pancreatitis as a rare consequence however, literature also suggests that hyperthermia paradoxically can provide protective effects in pancreatic injury. More research regarding the exact pathophysiology of heat stroke leading to pancreatitis could help establish more effective treatment and reduce complications.

Abstract 2025 – 94

Disseminated Histoplasmosis in Patient with Acquired Immune Deficiency Syndrome (AIDS)

Mahum Zahid, MD; Aishwarya Saripalli, MD; Jigar Patel, MD; Nicole Merklebach, MS III; Shikha Mishra, MD; Rasha Kuran, MD

Introduction: Histoplasmosis is a common infection seen in patients with AIDS. These patients are more likely to experience disseminated disease as opposed to the more commonly seen pulmonary manifestations in immunocompetent people within specific geographical regions. Here we present a case of a primary disseminated histoplasmosis diagnosed via colonic biopsy in HIV/AIDS patient in an uncommon geographic region.

Case Description: 35-year-old male with past medical history of HIV/AIDS (diagnosed in 2017- non compliant with medications), late latent syphilis s/p treatment and chronic methamphetamine use presented to the ED with the complaint of diffuse abdominal pain, with watery diarrhea, that had worsened over past 1 month. Patient was afebrile, normotensive, tachycardic to 134. Physical examination remarkable for diffuse abdominal tenderness, bilateral lower extremity edema, and for oral thrush. Labs remarkable for Hb 6.5, HIV RNA Quant PCR 150000, Absolute CD4 count <20. Patient was started on Itraconazole with resumption of Anti-Retroviral therapy and PJP prophylaxis. In addition, patient underwent left supraclavicular lymph node biopsy which was positive for Histoplasma capsulatum. Patient had improvement in diarrhea and was discharged with outpatient Infectious Disease follow up with continued symptom improvement.

The decision to start Itraconazole was made on the basis on previous findings. Patient was admitted three months prior for dysphagia and treated with fluconazole. At that time a CT Abdomen and Pelvis was done which showed extensive retroperitoneal and mesenteric lymphadenopathy, splenomegaly, distal ileitis and colitis. Colonoscopy was performed at that time which showed GMS stain positive for fungal organisms from terminal ileum biopsy. Patient was discharged prior to final pathology results due to improvement in dysphagia and unfortunately failed to follow up outpatient.

Discussion: Histoplasmosis is typically associated with pulmonary disease; however, in immunocompromised individuals, it has the potential to cause disseminated disease, including involvement of the gastrointestinal (GI) tract. This is especially pertinent in HIV/AIDS patients, where loss of cellular immunity can result in the disease spreading throughout the GI system, mouth to anus (Psarros & Kauffman, 2007). The terminal ileum and colon are the most common sites of involvement, with patients frequently presenting with abdominal pain and diarrhea. Additionally, hematogenous spread can occur, with symptoms resembling constitutional B- symptoms, necessitating even more extensive diagnostic testing such as obtaining biopsies of local and regional lymph nodes. Our case

aligns with previous studies indicating that disseminated histoplasmosis can present in immunocompromised individuals, including those with HIV/AIDS, even in non-endemic regions. Thus, it is important to keep histoplasmosis in the differential as the diagnosis can easily be missed and can result in higher rates of mortality.

Conclusion: Disseminated fungal disease should be considered in immunocompromised patient's presenting with diarrhea or abdominal pain, even in non-endemic regions. While bone marrow biopsy tends to be the preferred diagnostic modality for diagnosing disseminated disease, less invasive methods such as colonoscopy may be considered even in absence of gastrointestinal symptoms.

Abstract 2025 – 95

Mortality of Vasopressin with Norepinephrine in Treatment of Septic Shock

Kiranjit Rai, PharmD; David Lash, PharmD; Jeff Jolliff, PharmD

Introduction: Septic shock is a critical condition marked by inadequate tissue perfusion resulting in multi-organ failure. Management requires hemodynamic control with vasopressor therapy. The Surviving Sepsis Campaign (SSC) recommends norepinephrine as first-line therapy. If patients fail to achieve adequate mean arterial pressure (MAP) with norepinephrine, SSC suggests the addition of vasopressin, though this is classified as "weak with moderate-quality evidence."

Purpose: Further investigation is needed to determine whether the addition of vasopressin to norepinephrine therapy can reduce in-hospital mortality in adult patients admitted to the intensive care unit (ICU) for septic shock.

Methods: A retrospective study was conducted on Kern Medical patients hospitalized between January 2020 and December 2024. Eligible participants were non-pregnant, ≥ 18 years, and admitted to the ICU with a diagnosis of sepsis or septic shock. The control group, those who received intravenous norepinephrine monotherapy (NE), were compared to those that received intravenous norepinephrine plus intravenous vasopressin (NEV). The primary outcome was in-hospital mortality. The secondary outcome was the difference between early versus delayed vasopressin use. Statistical comparisons and analyses were conducted with t-tests for continuous numerical and chi-square tests for categorical data where appropriate using jamovi v2.3.28 (JASP, Amsterdam, The Netherlands).

Results: One hundred patients were collected who met the inclusion criteria, with 50 patients in each group. Mortality was higher in the NEV group (NEV: 70% vs. NE: 20%, $p < 0.001$). There was no significant difference in initial systemic inflammatory response syndrome (SIRS, $p = 0.69$), initial quick sepsis-relate organ failure assessment (qSOFA, $p = 0.65$), or initial MAP ($p = 0.58$) between NE and NEV groups. However, the NEV group had higher mean initial lactic acid (4.9 ± 4.0 mmol/L vs. 3.5 ± 2.7 mmol/L, $p = 0.04$), mean peak lactic acid (10.2 ± 7.3 mmol/L vs. 5.3 ± 4.0 mmol/L, $p < 0.001$), longer mean duration of vasopressor use (7.5 ± 7.6 days vs. 3.9 ± 4.1 days, $p = 0.003$), and higher maximum mean norepinephrine dose (1.15 ± 0.94 mcg/kg/min vs. 0.24 ± 0.28 mcg/kg/min, $p < 0.001$) compared to the NE group. The mean norepinephrine dose in the NEV group when vasopressin was initiated was 0.81 ± 0.84 mcg/kg/min, which was significantly higher than the NE group (0.24 ± 0.28 mcg/kg/min, $p < 0.001$). There was a trend towards lower mortality rates when vasopressin was started at or below norepinephrine 0.5 mcg/kg/min (NEV deaths ≤ 0.5 mcg/kg/min: 28%; NEV deaths > 0.5 mcg/kg/min: 42%; $p = 0.193$). Survivors in the NEV group exhibited a non-significant trend toward lower norepinephrine doses at vasopressin initiation compared to those that did not survive (0.55 ± 0.3 mcg/kg/min vs. 0.89 ± 0.98 mcg/kg/min, $p = 0.20$).

Discussion: The NEV group had higher mortality compared to the NE group, despite no significant differences in initial SIRS, qSOFA, or MAP. However, we cannot rule out the possibility of NEV group being sicker at baseline as initial lactic acid was higher. Ideally, APACHE II (Acute Physiology and Chronic Health Evaluation II) scores would provide better baseline severity comparison, but limitations in medical charting prevented these scores being obtained. Additionally, the NEV group exhibited greater norepinephrine requirements and prolonged vasopressor duration versus the NE group, suggesting a more severe disease progression. Our results propose a potential benefit with initiation of vasopressin at norepinephrine doses ≤ 0.5 mcg/kg/min, possibly aligning with SSC's suggested initiation at the range of 0.25-0.5 mcg/kg/min.

Conclusion: The addition of vasopressin to norepinephrine did not improve mortality in patients with sepsis or septic shock. There was a trend towards less mortality when starting vasopressin at norepinephrine doses ≤ 0.5 mcg/kg/min. However, further investigation with prospective analysis is warranted to identify patients who may benefit from adding vasopressin to norepinephrine and its optimal timing to limit selection bias encountered here.

Abstract 2025 – 96

A Rare Case Of "Switch Syndrome"

Mia Yasonova, MD; Matthew Clarke, MD; Sukhmani Singh, MD; Sangeeta Chandramahanti, MD

Abstract: Autoimmune thyroid disease includes a spectrum of conditions from Graves' disease to Hashimoto's thyroiditis. We report a case of a 62-year-old woman who was initially diagnosed with hyperthyroidism due to Graves' disease and was managed with radioactive iodine therapy, subsequently, developed hypothyroidism and was treated with Levothyroxine. However, she presented to the endocrinology clinic complaining of palpitations and anxiety that improved with methimazole. In her case we suspect that her presentation of alternating hyperthyroidism and hypothyroidism is due to a switch between TSH receptor stimulating antibodies (TSAb) to TSH receptor blocking antibodies (TBAb).

Introduction: Graves' disease (GD) is an autoimmune thyroid disease caused by thyroid stimulating immunoglobulin (TSI) that binds with thyroid-stimulating hormone (TSH) receptor on the thyroid cell membrane and stimulates thyroid hormone synthesis and thyroid gland growth, causing hyperthyroidism and thyromegaly. Typical symptoms of hyperthyroidism include tachycardia, sweating, lid lag, and heat intolerance, fatigue, weight loss, and tremors. Graves' orbitopathy (ophthalmopathy) is caused by inflammation, cellular proliferation and increased growth of extraocular muscles and retro-orbital connective and adipose tissues due to the actions of thyroid stimulating antibodies and cytokines released by cytotoxic T lymphocytes (killer cells). These cytokines and thyroid stimulating antibodies activate periorbital fibroblasts and preadipocytes, causing synthesis of excess hydrophilic glycosaminoglycans (GAG) and retro-orbital fat growth. GAG cause muscle swelling by trapping water. These changes cause proptosis, diplopia, congestion, and periorbital edema. Here, we discuss an atypical presentation of Graves' disease, a case of spontaneously alternating hyperthyroidism and hypothyroidism. It is thought that the switching of stimulating TSH receptor antibodies (TSAb) and blocking TSH receptor antibodies (TBAb) has a role in alternating thyroid function.

Case Presentation: A 62-year-old female with history of multiple ED visits in 1990s due to palpitations was diagnosed with Graves' disease in 1992. Patient undergone Thyroid ablation in 1993. After ablation she reported history of thyroid storm which did not require ICU stay. Immediately started on Levothyroxine, highest dose 125mcg. Patient has been on Levothyroxine 112 mcg for last 10 years. She was referred to our endocrinology clinic by primary care doctor in July 2023 due to ongoing persistent concerns of thyroid eye disease and pretibial myxedema. Patient noted that for the past few years she struggled with dry and red eyes, used eye drops over the counter that provides some relief. Since 01/2023 patient began to notice intermittent blurriness and double vision. Patient was seen at ophthalmology clinic, and was prescribed doxycycline 50mg daily. CT scan showed inflammation of left optic nerve and was referred to thyroid eye disease specialist in UCLA. It was confirmed thyroid eye disease likely Graves' eye disease. Patient undergone treatment with Tepezza (teprotumummab-trbw) total of 8 cycles that improved her eyes symptoms. Patient also closely follows with Dermatologist for pretibial myxedema and was given topical betamethasone.

When initially we saw her in our clinic she denied any excessive anxiety, diarrhea, constipation, chest pain, but notes that she has had intermittent bouts where she felt her heart racing and irregular as if she was in "atrial fibrillation". Patient was started on low dose methimazole at 2.5 mg daily that controlled her symptoms. At this time patient continues taking Levothyroxine 112mcg daily. However, by May 2024 we had to increase the dose of methimazole to 5mg daily as she noted to feel more anxious and started having more palpitations. By that time patient already was on metoprolol tartrate 50mg twice a day. During last clinic visit patient stated that she had seen her ophthalmologist from UCLA who had

noted that there was some increase in her exophthalmos. She was told that about 15% of patients may have to repeat Tepezza treatment. On physical examination, patient has mild chemosis, otherwise, cardiovascular and neurological examinations were unremarkable.

Conclusion: Hashimoto's thyroiditis and Grave's disease represent the two spectrums of same autoimmune thyroiditis. Exact incidence of the conversion from Graves' disease to hyperthyroidism is unknown because of its rarity. It could be due to a combination of atypical destructive autoimmune thyroiditis and change of thyroid receptor antibodies from blocking (TRAb) to stimulating ones (TSAb), a phenomenon known as "switch" resulting in hyperthyroidism. It is important to note that treatment with thyroxine itself can induce this switch. Clinicians should suspect this possibility in a patient who suddenly becomes hyperthyroid in setting of hypothyroidism so that appropriate management could be offered.

Abstract 2025 – 97

Unexplained Maculopapular Rash Following a Total Knee Arthroplasty: A Case of Potential Contact Dermatitis or Allergic Reaction to Nickle.

Michael Ibrahim, MS IV; Arturo Gomez, MD

Introduction: Metal hardware such as nickel, chromium, and cobalt are used frequently as implants in orthopedic surgeries, especially total knee arthroplasty. Post-surgical complications, including bleeding and infection, are common. However, allergic reactions to such metal after surgery are rare, which leads to signs and symptoms that are like the ones that occur in the case of systemic infection. Nickel allergies are one of these allergic reactions that is very common. Around 15% of the population is affected, but sometimes it's missed, and healthcare providers don't always make the connection when a patient reacts to joint replacement.

Case Presentation: A 68-year-old woman with a past medical history of diabetes mellites type II, hypertension, and hypercholesterolemia developed an itchy, blistering rash on her right knee and shin two months after undergoing a right total knee arthroplasty on January 24, 2024. After the bandage was removed, a clustered maculopapular rash appeared near the surgical incision that continued to progress and enlarge, causing scabbing and burning pain. There were erythematous and swollen tissues below the knee joint on physical examination. The patient was taken antibiotics, antifungals along with oral and topical steroids where infection and implant issues were considered diagnostically post-surgery until they were ruled out not only by knee X-RAY but also through lab results, which did not show any signs or symptoms of infection or implant complications. Furthermore, Benadryl was given to the patient, which helped with the condition. However, the symptoms returned soon after the patient stopped taking it. The metal lymphocyte transformation test was ordered because of the persistent rash despite the treatment, and it revealed a positive for nickel sensitivity. Although implant replacement with a hypoallergenic alternative was considered, specialists advised conservative treatment given the mild allergy. The patient now manages symptoms with daily antihistamines, which help but do not prevent flare-ups when discontinued.

Discussion: Orthopedic implants can sometimes raise concerns for some patients, which can trigger allergies, such as Nickle allergy, where the patient develops a rash around the surgical incision. Initially, it can be diagnosed as a post-surgery infection or irritation that can be treated and managed. However, the symptoms will persist where the actual diagnosis will require more clinical view and suspicion. One of the special tests that can be used to detect metal allergies such as Nickel is the lymphocyte transformation test, which helps to identify the real concern so treatment options such as antihistamines and steroids can be considered in such cases.

Conclusion: The case is concerned with a post-surgery allergic reaction to metal, especially nickel sensitivity, where some patients develop allergic symptoms and skin reactions after surgeries such as a total knee arthroplasty. Diagnosis should be based on clinical testing that can lead to better treatment and management to prevent any unnecessary medical intervention to improve the patient's outcome.

Abstract 2025 – 98

A Rare Case of Coccidioidal Meningitis

Mia Yasonova, MD; Hridya Harimohan, MD; Konni Granma, MD; Munyal Zira, MD; Jason Phan, MD; Shikha Mishra, MD; Igor Garcia-Pacheco, MD

Introduction: Coccidioidomycosis, caused by the dimorphic *Coccidioides* genus, can range from asymptomatic exposure to fatal disseminated disease, with Coccidioidomycosis meningitis representing the most severe form. This condition poses a significant clinical challenge. Due to its rarity, there is limited information on the clinical presentation, outcomes, and management strategies, despite an extensive literature search. This case highlights the particularly severe and unusual progression of Coccidioidomycosis meningitis.

Case Presentation: A 54-year-old male with a history of diabetes mellitus and hypertension presented with a 12-day history of headache, myalgia, fever, vomiting, and poor oral intake. His symptoms gradually worsened, and he developed watery diarrhea for five days, followed by acute encephalopathy for one day. On examination, he was somnolent and disoriented, with neck stiffness and a positive Kernig sign. Laboratory results showed leukocytosis (20.3 g/dL), but were otherwise unremarkable. A lumbar puncture revealed mildly elevated opening pressure (17 cmH2O), significantly elevated white blood cells (1215/µL), red blood cells (1/µL), severely reduced glucose (7 mg/dL), and elevated protein (162 mg/dL). With a marked eosinophilia (absolute eosinophil count of 200) and the patient's regional endemicity, coccidioidal meningitis was diagnosed. By hospital day 5, the patient showed significant improvement in mentation and was discharged home on fluconazole 1200 mg daily. However, the following day, he returned to the emergency department with acute mental status changes, including nonsensical speech, lethargy, and a Glasgow Coma Scale score of 4, requiring intubation. Laboratory results showed leukocytosis (15.6 g/dL). A repeat lumbar puncture revealed markedly elevated opening pressure (38 cmH2O), elevated white blood cells (428/µL), red blood cells (15/µL), severely reduced glucose (17 mg/dL), and elevated protein (203 mg/dL). The patient was started on IV fluconazole (1200 mg daily) and dexamethasone (20 mg daily for 7 days). Brain MRI showed multiple acute infarcts, likely due to vasculitis secondary to coccidioidal meningitis. He was started on AmBisome IV and eventually extubated but required a prolonged hospital stay complicated by hospital-acquired pneumonia and septic shock. The patient was ultimately discharged on hospice care.

Conclusion: This case underscores the severe and unusual progression of coccidioidal meningitis, with complications such as cerebrovascular events, despite initial improvement. Coccidioidal meningitis, especially when it disseminates to the central nervous system (CNS), can be life-threatening, with untreated cases leading to death in 95% of patients within two years. Our patient developed severe encephalopathy over a few months due to acute coccidioidal meningitis, which makes it unique. Additionally, vasculitis complicated by stroke has become increasingly recognized in these cases. While adjunctive corticosteroids have been shown to be beneficial in such cases, the optimal management remains unclear. In this case, despite initial improvement on fluconazole, the patient later developed severe cerebrovascular accidents. And another unique characteristic in our case is that even after treatment with dexamethasone, he did not make much progress, ultimately requiring hospice care.

Abstract 2025 – 99

Acute Hepatitis of Unknown Etiology Associated with Klebsiella pneumoniae Bacteremia

Michael Ibrahim, MS IV; Igor Garcia-Pacheco, MD

Introduction: Acute Hepatitis is one of the common liver diseases that can be explained with high liver enzymes detected and imagined. Viral, autoimmune diseases and drug toxicity can all be possible etiologies for acute hepatitis. Bacteria, including sepsis, can be another etiology for acute hepatitis. However, it is not that common, but it can lead to hepatic dysfunction. Klebsiella Pneumoniae is a gram-negative rod that is commonly associated with a respiratory infection. However, this case focuses on presenting an unusual condition where Klebsiella Pneumoniae is somehow associated with acute hepatitis without the formation of any abscess without any other identifiable primary hepatic or biliary source.

Case Presentation: A 53 years old female with a past medical history of diabetes type II, hyperlipidemia,

morbid obesity, hypertension, asthma, disseminated coccidioidomycosis to the bone that started in the lungs and was treated with itraconazole, and cholecystectomy presented with a sharp crushing pain on the right upper quadrant and epigastric area plus nausea, and vomiting. On admission, the patient had tachycardia and febrile, her lactic acid was high, up to 6, with severe transaminitis >1000 U/L along with high bilirubin. Acute hepatitis was diagnosed, and viral hepatitis panel, drug toxicity including acetaminophen, alcohol abuse, and autoimmune panel were all negative and ruled out. Furthermore, imaging that included MRCP and abdominal ultrasound revealed hepatic steatosis and mild biliary ductal dilatation but no obstruction or abscess. However, the patient had a blood culture that initially came positive for a gram-negative rod, and the result confirmed Klebsiella pneumoniae. The patient was started treatment with antibiotics, including initial IV piperacillin-tazobactam, and was changed to ceftriaxone as the patient showed improvement in her condition regarding her lactic acid as well as ALT/AST and bilirubin. Five days later, after admission, the patient improved, and her pain was relieved. Despite improvement in lactic acidosis and systemic symptoms, her bilirubin remained elevated. She was discharged on oral ciprofloxacin to follow up with outpatient for further monitoring of her liver function.

Discussion: This case raises important considerations regarding sepsis-induced hepatic injury. While sepsis is a recognized cause of hypoxic hepatitis and cholestasis, isolated acute hepatitis due to Klebsiella pneumoniae bacteremia without hepatic abscess or biliary obstruction is exceedingly rare. Possible mechanisms include direct hepatocellular injury from systemic inflammation, hepatic hypoperfusion, or endotoxin-mediated damage. In this patient, the temporal association between bacteremia and transaminitis, absence of other etiologies, and radiologic findings support the diagnosis of sepsis-associated hepatitis. Her hepatic steatosis may have contributed to increased vulnerability to systemic insult. This case underscores the need for clinicians to consider systemic infections as a potential cause of acute hepatitis when common etiologies are excluded.

Conclusion: Klebsiella pneumoniae bacteremia should be recognized as a potential, albeit rare, contributor to acute hepatitis, especially in patients with pre-existing liver conditions such as hepatic steatosis. Early recognition and appropriate antimicrobial therapy can lead to favorable outcomes. Further research is warranted to explore the pathophysiological mechanisms and frequency of bacteremia-associated acute hepatitis.

Abstract 2025 – 100

Reactive thrombocytosis in an infant with *Salmonella* enteritis and ESBL *E. coli* UTI

Lulua Mandviwala, MD; Luz Perez Montes, MS IV; Zihao Cai, MS III

Introduction: Hematochezia in infants is commonly attributed to cow's milk protein allergy (CMPA), particularly in formula-fed infants. However, other etiologies, including bacterial infections, should be considered. We present a case of a three-month-old infant with initial hematochezia presumed to be CMPA, who was later found to have concurrent *Salmonella* enteritis and an extended-spectrum beta-lactamase (*ESBL*) *Escherichia coli* urinary tract infection (UTI), complicated by significant reactive thrombocytosis.

Case Presentation: A three-month-old male presented to the emergency department (ED) with multiple episodes of hematochezia mixed with green stool and red mucus. The patient was otherwise well-appearing, feeding adequately on breast milk and cow's milk-based formula. Due to low suspicion for necrotizing enterocolitis, CMPA was considered the most likely cause, and the patient was discharged with supportive care.

Three weeks later, the patient returned with four days of high fever (up to 104°F) and six episodes of diarrhea in one day. In the ED, the patient was febrile (39.6°C), tachycardic, and initially improved with antipyretics. A urinary catheterization attempt was difficult, and a shared decision was made to discharge the patient with close monitoring. The following day, the infant returned with persistent fever, worsening diarrhea (brownish-yellow with orange jelly-like mucus), poor oral intake, and vomiting. No upper respiratory symptoms were noted. Laboratory evaluation revealed leukocytosis (WBC 25.5 × 10^9/L), anemia (Hgb 9 g/dL), and mild pyuria (UA with small leukocyte esterase, 6-10 WBCs). The patient was admitted for suspected UTI and started on ceftriaxone.

Urine culture subsequently grew *ESBL E. coli*, and stool culture grew *Salmonella* species. Blood cultures

remained negative. During hospitalization, the patient developed marked thrombocytosis, peaking at 1.4 million platelets. Pediatric hematology attributed this to a reactive process secondary to infection, with no need for antithrombotic treatment unless platelets exceeded 2 million. The patient improved clinically with targeted antibiotic therapy.

Discussion: This case highlights the importance of broadening the differential diagnosis in infants presenting with hematochezia beyond CMPA. While CMPA is a common etiology, infectious causes, including *Salmonella* enteritis, should be considered. Additionally, this patient had two concurrent bacterial infections, likely contributing to significant reactive thrombocytosis. Studies suggest that thrombocytosis in infants may serve as a biomarker for serious bacterial infections, reinforcing its clinical significance in evaluating febrile infants.

Conclusion: Clinicians should keep bacterial infections in mind when evaluating infants with bloody diarrhea, even if cow's milk protein allergy (CMPA) seems like the most likely cause. In this case, the patient's significant reactive thrombocytosis was linked to two serious bacterial infections, highlighting its potential role as a marker of infection. This case reinforces the importance of a thorough evaluation to promptly identify and treat concurrent infections in young infants.

Abstract 2025 – 101

Coexisting Fat Embolism Syndrome and Pulmonary Embolism in a Trauma Patient: A Rare and Complex Diagnostic Challenge

Nadia Kavandi, MS IV; Jigar Patel, MD; Carlos D'Assumpcao H. Johnson, MD

Introduction: Fat embolism syndrome (FES) is a rare complication of long bone fractures, presenting with pulmonary, neurological, and skin manifestations. Pulmonary embolism (PE), a complication of long bone fractures due to deep vein thrombosis (DVT), shares overlapping clinical and radiologic features with FES, highlighting a diagnostic challenge. We present a rare case of co-existing FES and PE in a young male following a long bone fracture sustained after a fall.

Case Description: A 25-year-old male with a BMI of 24 fell 30 feet while canyoning leading to loss of consciousness. He regained consciousness and contacted rescue services, taking 6-12 hours before rescued. Imaging revealed an acute comminuted mid-femoral shaft fracture with displacement and angulation, as well as an acute mid to lower patellar intra-articular fracture. Head CT showed no intracranial bleeding. Surgery was scheduled for the next day, and the patient was placed on bed rest. Awaiting surgery, patient had intermittent altered level of consciousness, initially attributed to hydromorphone pain control. Retrograde intramedullary nailing of the femoral shaft fracture and closed treatment of the patella fracture without manipulation were performed. Postoperatively, patient became unresponsive, unable to follow commands, along with fever (38.5°C), tachypnea, and tachycardia. Chest CTA revealed a segmental pulmonary filling defect in the right lower lobe, concerning for PE versus FES. Autar DVT Risk Assessment Score was 13. Heparin therapy was initiated.

Brain MRI with gadolinium enhancement, while motion limited, showed sub-centimeter diffusion restriction foci in the right frontoparietal subcortical white matter. TTE showed no Patent Foramen Ovale (PFO). Follow-up CTA showed resolution of the filling defect and new bilateral ground-glass infiltrates consistent with FES. On postoperative day one, patient developed transaminitis (AST 88-104), hyperbilirubinemia (total bilirubin 2.9-3.2), jaundice, and thrombocytopenia (platelet count 124-133), meeting Gurd's criteria for FES diagnosis. Supportive care led to stabilization and neurological recovery, ultimately discharged 13 days later.

Discussion: Both FES and PE are potential life-threatening complications in trauma patients, though co-occurrence is rare. Diagnosis guides suitable management, with PE requiring anticoagulation, while FES necessitates supportive care, avoiding anticoagulation due to bleeding risk. Hounsfield Unit (HU) measurements on CTA help differentiate FES from PE, with near-zero HU values indicating fat emboli and positive values confirming PE. Patient's filling defect had an HU of +57, consistent with PE. His comminuted mid femoral shaft fracture, prolonged immobility, and surgery contributed to an Autar score of 9-10, showing moderate predisposition to DVT.
FES commonly presents with respiratory distress, altered mental status, and petechial rash, though petechiae are observed in only 30-50% of cases.

Diagnosis is based on Gurd's criteria, which require one major or four minor criteria. This patient met the major criteria of respiratory distress and ground-glass infiltrates, as well as altered mental status, along with motion limited brain MRI findings of diffusion restriction. Minor criteria included tachycardia, fever, jaundice, thrombocytopenia, and transaminitis. Absence of PFO on TTE further supports FES diagnosis, since PFO is commonly absent in systemic fat embolization.

Conclusion: This case underscores the importance of a systematic approach to differentiating FES from PE in trauma.

Abstract 2025 – 102
Cefepime-induced encephalopathy
John Petrucci, OMS III; Gurtej Bindra, DO; Hobart Lai, DO

Introduction: Cefepime is a widely used fourth-generation cephalosporin. While cefepime-induced encephalopathy (CIE) is a known adverse effect, it remains rare and frequently underrecognized. Diagnosis is often challenging due to overlapping features with delirium, metabolic disturbances, or underlying neuropsychiatric conditions. This case highlights the importance of early recognition of CIE to minimize diagnostic delays and avoid potentially unnecessary diagnostic workup.

Case Description: A 71 year old female with DM, HTN, COPD, tobacco use disorder, and recent ankle fracture presented after several days of worsening weakness, lethargy, cough and shortness of breath. Patient was septic on arrival with nonspecific lung findings and progressed to shock without a clear source. She was admitted to ICU and started on empiric IV vancomycin and cefepime. Patient responded well to fluid resuscitation and did not require mechanical ventilation. She spent a few nights in the ICU before downgrade to medical team. Upon initial evaluation by the internal medicine team, the patient was alert and oriented to person and place, but not to time and event. Given this acute mental status change, CT head was performed but did not show any acute pathology. Preliminary sputum culture revealed rare *Enterobacter cloacae ssp*, and patient was continued on cefepime. While systemic illness appeared to improve over hospital course, patient's mentation continued to worsen further from her baseline as she became frequently disoriented, confused, and agitated. She did not respond well to reorientation tactics by medicine team nor family support. Neurology was consulted and recommended MRI brain, overnight EEG, and lumbar puncture which were all nondiagnostic. The patient remained in the hospital for further observation and testing, and four days later her mental status began to gradually improve. It was at this time of initial mental status improvement that her course of cefepime was completed. Without an alternative explanation and progressive improvement in the subsequent days following antibiotic completion, CIE was diagnosed. Patient returned to baseline within 3 days and was discharged back to the rehab facility.

Discussion: As the patient presented septic with an unknown source, the etiology of mental status change was vast. However, predisposing risk factors for CIE such as underlying DM and acute kidney injury should have raised suspicion for metabolic etiology of encephalopathy. And given that antibiotic therapy could be easily switched to alternative regimen with similar coverage, further imaging and procedure may have been avoided if CIE was considered earlier in disease course.

Conclusion: The manifestations of cefepime-induced encephalopathy include confusion, seizures, altered level of consciousness, and coma. Given the widespread use of cefepime in empiric antibiotic regimens, this side effect should be strongly considered in the differential of mental status changes. Empiric antipseudomonal therapy can be achieved with alternative antimicrobials and can be a quick, cost effective diagnostic and therapeutic intervention, avoiding potentially unnecessarily costly imaging studies or invasive procedures.

Abstract 2025 – 103
Mesh Erosion and Failure to Thrive: A rare complication of implantable mesh presenting as gastrointestinal hemorrhage and obstruction.
Lindsey Braden, MD; Anna Mikami, OMS III; Kara Willbanks, MS III; Amber Jones, DO, MPH; Joshua Crosby, MD

Introduction: Intraluminal mesh migration resulting in small bowel obstruction is an infrequently encountered complication following TEP hernia

repair with an atypical clinical presentation. Furthermore, mesh migration resulting in gastrointestinal hemorrhage and meshoma remains an extraordinarily rare occurrence with few cases documented in medical literature. Appropriate management requires an individualized patient approach, taking note of initial repair technique, erosion location, patient comorbidities, etc. Herein, we present a case of mesh migration and erosion presenting with failure to thrive and chronic obstructive symptoms over 10 years following a TEP inguinal hernia repair, where erosion of the migrated mesh resulted in a large preperitoneal abscess, GIB and small bowel perforation with frank feculent contamination.

Case Description: A 65-year-old man with a history of polysubstance use, CHF, HCV, cirrhosis (MELD 3.0 score 14) and no reported surgical history was sent from a substance recovery to the ED due to one month of abdominal pain and failure to thrive. In the ED, he became hypothermic and hemodynamically unstable. CTA C/A/P revealed large volume ascites, grade 3 splenic injury, thickened loops of small bowel, and a right lower quadrant fluid collection (Figure 1, 2).

During exploratory laparotomy, dense adhesions concentrated at the right lower quadrant secondary to a large meshoma that extended from an abscess cavity within the extraperitoneal space was found. Complete intraluminal obstruction and hemorrhage was identified at the ileum where infected mesh had fistulized through the bowel wall. Spiral tackers were found at the space of Retzius along with gross enteric spillage into the extraperitoneal space. The mesh was explanted, and abdomen remained open until second-look laparotomy, within 24-hours, when the abdominal fascia was formally closed. Post-operatively, the patient was promptly extubated and improved hemodynamically. However, he suffered several complications, including malnutrition and persistent post operative ascites despite exhaustive efforts. The patient ultimately declined further interventions and elected for discharge to a hospice facility.

Discussion: The noteworthy characteristics of this case include the prolonged interval between inciting surgery and onset of complications, the challenging presentation, and two staged surgical approach used for repair. In patients with elevated operative risk factors, optimal management of an erosive meshoma remains challenging and controversial, given repair entails laparotomy, bowel resection, mesh explanation. Our patient's acutely worsening hemodynamic status, warranted prompt intervention, and ultimately necessitated exploratory laparotomy, despite his poor surgical candidacy. Replacement of mesh at the time of surgery introduces added risk. However, following explanation, a high incidence of hernia recurrence remains. To address this issue, we completed a two-staged intervention utilizing temporary abdominal closure with takeback laparotomy, following improvement in hemodynamic status. Given the patient's elevated risk of mesh replacement, as well as the extent of remaining bilateral inguinal adhesions, the decision was made to forego replacement of the explanted mesh.

Conclusion: Meshoma formation and erosion causing obstruction and hemorrhage following TEP hernia repair remains an exceedingly rare complication with a constellation of precipitating factors provoking development. We propose a two staged repair, involving explanation of the migrated mesh and revaluation is conditionally required in patients with complex medical comorbidities.

Abbreviations:
[1] TEP – Totally extraperitoneal
[2] GIB - gastrointestinal bleed
[3] CHF - congestive heart failure
[4] HCV – hepatitis C virus
[5] ED – emergency department
[6] CTA C/A/P - computed tomography of the chest, abdomen and pelvis

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Abstract 2025 – 104
Delirium following re-initiation of clozapine therapy
Parveen Dhillon, MD; Stephanie Zapata, MD; Loren Wines, DO; Sarayu Vasan, MD

Introduction: Clozapine is a common antipsychotic medication used for patients with treatment-resistant schizophrenia, as defined by a patient having the persistence of psychotic symptoms despite $\geq$ 2 adequate trials of antipsychotic medications. Although not commonly documented in the literature, there are reports stating that clozapine-induced delirium is reported to have an incidence between 2.1-10%. Risk factors for clozapine-induced delirium include elderly age, co-

existing medical conditions (eg, infections), pre-existing cognitive deficits, dehydration, polypharmacy.

Case Description: Here we present a case of delirium that occurred in a 52-year-old male patient with treatment-resistant schizophrenia after being restarted on clozapine. On day 10 of re-initiation of clozapine, the patient experienced delirium as evidenced by his change in orientation, dysarthria, and agitation. On this day his daily clozapine was decreased to 150 mg QHS. Although initially appearing to help, on day 15 of hospitalization the patient had another episode of delirium and therefore clozapine was subsequently discontinued. After clozapine was discontinued the patient did not exhibit any similar delirious episodes while hospitalized.

Discussion

Clozapine efficacy stems from its antagonism of many different neurotransmitters including serotonin (5-HT), dopamine (D2), norepinephrine (NE), histamine (H1), and acetylcholine (M1) receptors.

Anticholinergic and antihistaminic effects: Clozapine blocks muscarinic acetylcholine (M1) and histamine (H1) receptors in the brain and thus could alter cognition and lead to neurological disturbances. Also, excessive sedation can lead to reduced cortical arousal, which can also trigger an altered mental state in some individuals.

Antagonistic effects on dopamine (D2) and serotonin (5-HT2A) receptors: coupled with the aforementioned effects on acetylcholine clozapine can also cause an imbalance in the chemical pathways in the brain, leading to disorientation and confusion.

As illustrated by this case, clozapine can induce delirium in patients, even in the absence of typical risk factors. In this case, the patient had none of the aforementioned risk factors. He was middle aged, well-nourished, and did not have any pre-existing cognitive deficits or coexisting medical conditions. He ultimately achieved stability on Venlafaxine, Aripiprazole, and Fluphenazine. He also did not have a reemergence of the dysarthria, agitation, and disorientation he experienced while on clozapine.

Conclusion: This case highlights the potential for clozapine to induce delirium, even in patients without typical risk factors. Clinicians should be vigilant in monitoring patients on clozapine, adjusting dosages as necessary, and considering alternative treatments to minimize the risk of delirium. Areas for further research include the mechanisms behind clozapine-induced delirium and whether a dose-dependent relationship exists between clozapine and the development of delirium.

Abstract 2025 – 105

A Case of Severe Untreated Catatonia: Medical Complications and the Imperative of Multidisciplinary Care

Chloe Telles, DO; Angela Tun, DO; Sarayu Vasan, MD

Introduction: Catatonia, a neuropsychiatric syndrome secondary to underlying illness, manifests with impaired psychomotor symptoms and is often linked with medical and psychiatric conditions (Jonathan, 2023). This abstract discusses the severe medical complications of untreated catatonia and underscores the importance of a multidisciplinary care approach for optimal management.

Case: The patient is a 29-year-old gentleman with unclear psychiatric history who presented to the emergency department for a foot wound, yet was also discovered mute, staring, and motionless. The patient was diagnosed with catatonia and was initially treated with oral lorazepam. However, he necessitated transfer to the medical floor for intravenous lorazepam due to inadequate oral intake and management of associated medical issues. Lorazepam required titration up to 30mg daily, still showing persistent catatonia. As such, the patient necessitated Electroconvulsive Therapy (ECT) due to treatment refractory catatonia. There were further subtleties and obstacles to treatment with ECT, particularly in this case involving high doses of lorazepam and patient requiring a court order. Concluding his several month-long hospital course, the patient stabilized on lorazepam, aripiprazole, and amantadine once in the inpatient psychiatric unit. He began speaking, with improved psychomotor functioning and physical health. Ethical approval from the Institutional Review Board was obtained prior to commencing the study.

Discussion: Treatment for catatonia typically involves lorazepam or ECT. However, a multidisciplinary approach involving psychiatrists, internists, nurses, and occupational and physical therapists is crucial for optimizing health outcomes (Funayama, 2018). Early detection and intervention are vital for preventing exacerbation of medical complications such as dehydration, malnutrition, pressure ulcers, thromboembolic events, and pneumonia (Edinoff, 2021). A comprehensive regression analysis identified catatonic sympathetic hyperactivity, dehydration, and immobility as key factors contributing to various medical complications, including mortality. Deep venous thrombosis was particularly associated with these factors, increasing health risks (Funayama, 2018). Addressing these factors is essential for reducing morbidity and mortality associated with catatonia.

Conclusion: This case report highlights the challenges in the management and treatment of severe catatonia in a community setting and underscores the significance of employing a multidisciplinary treatment approach in managing catatonia where resources are limited. Additional research is necessary to effectively address severe catatonia and improve clinical outcomes, including prevention of potentially fatal medical complications. By collaborating with various healthcare professionals, individuals with catatonia can access holistic treatment that addresses both psychiatric and medical needs, thereby enhancing outcomes and quality of life.

Keywords: catatonia, medical complications, benzodiazepines

Abstract 2025 – 106

Subarachnoid Hemorrhage as a precipitating factor of psychiatric symptoms

Stephanie Zapata, MD, MS; Parveen Dhillon, MD, MPH; Daniel Hanna, MS III; Matthew Louie, MD

Introduction: A subarachnoid hemorrhage (SAH) occurs when blood accumulates in the subarachnoid space, the area between the pia mater and the arachnoid membrane surrounding the brain. SAH can result from either traumatic injury or nontraumatic causes, with approximately 85% of nontraumatic cases stemming from a ruptured aneurysm. Several studies have reported psychiatric symptoms, notably depression, psychotic symptoms, anxiety disorders, and cognitive impairments, as a manifestation of the direct impact of the hemorrhage on brain structures and secondary effects such as inflammation, metabolic disturbances, and physiological stress. In this case, we will explore a patient developing worsening psychiatric symptoms after recent onset of traumatic subarachnoid hemorrhage.

Case Description: Patient is a 58 year old Caucasian male with self-reported psychiatric history of depression, one suicide attempt (2006), and medical history of BPH and C6 fracture and traumatic subarachnoid hemorrhage 9/24 with residual mild cognitive and speech impairment who presents to Kern Medical ED after endorsing suicidal ideation to overdose on pills at current living facility.

Discussion: Subarachnoid hemorrhage (SAH) triggers a strong neuroinflammatory response, with microglial activation, cytokine release (IL-1β, IL-6, TNF-α), and blood-brain barrier (BBB) breakdown. These same inflammatory markers are implicated in depression, where chronic neuroinflammation, astrocyte dysfunction, and glutamate dysregulation contribute to mood disturbances. While SAH-induced inflammation is acute and injury-driven, depression involves systemic immune activation and genetic susceptibility. Persistent neuroinflammation in both conditions may underlie cognitive deficits, anxiety, and depression post-SAH.
Similar neuroinflammatory processes are observed in other brain injuries. Stroke-related vascular damage affects mood circuits, leading to depression, anxiety, and, in rare cases, psychosis or OCD. Traumatic brain injury (TBI) disrupts frontotemporal circuits, contributing to impulsivity and affective instability. Neurodegenerative disorders, including Parkinson's disease (PD) and multiple sclerosis (MS), also exhibit neuroinflammation-associated psychiatric symptoms such as depression, anxiety, and cognitive impairment.

Conclusion: These parallels suggest a broader role for neuroinflammation in psychiatric sequelae following brain injury. Further research is needed to clarify inflammatory pathways driving psychiatric symptoms post-SAH and to explore interventions that reduce neuroinflammation's impact. Ultimately,

more research is needed on how SAH may exacerbate psychiatric symptoms.

Abstract 2025 – 107

Non-ST-Segment Elevation Myocardial Infarction Following Intravenous Immunoglobulin Therapy in Myasthenia Gravis: A Case Report

Tanya Eftekhari, MD; Patrick Betadam, MS IV; Matthew Palmbach, DO; Leopoldo Hartmann, MD; Asad Jani, MS IV; Ali Abbas, MD

Introduction: Cardiovascular events are uncommon in myasthenia gravis (MG). Although definitive correlation of intravenous immunoglobulin (IVIG) with myocardial infarction (MI) is not yet well-defined, clinical observation shares a potential association, particularly for high doses in older patients with risk factors. The low incidence of MI after IVIG treatment in MG must be noted, though thromboembolic events during IVIG treatment have been reported in 3% to 11.2% of cases among patients with inflammatory neuropathies. This report presents a rare case of NSTEMI in a 65-year-old man with recent MG diagnosis following IVIG therapy.

Case Description: A 65-year-old Hispanic male with a history of hypothyroidism and recent MG (8/29/2024) diagnosis who previously tolerated three rounds GAMUNEX®-C IVIG (25g, 25g, 35g) treatment and underwent a thymectomy (12/2/2024), presented on 12/30/2024 with a 3-day history of cough, dyspnea, dysphagia, dysphonia, and progressively worsening weakness with mild chest tightness.

After being admitted for a suspected MG crisis, the patient received a 36.5g of GAMUNEX®-C IVIG with initial ECG and troponin (19 ng/L) levels being unremarkable. On the second day, a second IVIG dose of 36.5g was given with no changes in ECG and cardiac biomarkers. A third 36.5g IVIG dose was given on the third day and the subsequent ECG showed T wave abnormalities, and troponin levels rose significantly from 78 to 2631 ng/L (peaking at 2732 ng/L). Patient was diagnosed with NSTEMI, and this resulted in discontinuation of IVIG treatment. The cardiac workup showed no structural or vessel abnormality on echocardiogram and catheterization. Troponin levels normalized by day four. Patient received supportive care and seven sessions of plasmapheresis and made full recovery on hospital day 14 and was subsequently discharged on Pyridostigmine.

Discussion: Cardiac adverse events following IVIG are rare, even rarer in MG patients. One proposed theory suggests that the salt based high viscosity of IVIG products could potentially be responsible for initiation of thrombosis and MI. As illustrated in this case, our patient who had no major cardiac risk factors other than advanced age, subsequently developed NSTEMI evidenced by ECG changes and elevated troponin following administration of IVIG. It is also important to note that there are over a dozen IVIG products available on the market, each with slightly different dosing recommendations. In older patients (> 65 years), use of the minimum effective dose is crucial to avoid any potential cardiovascular events as recommended by GAMUNEX®-C (300-600 mg/kg) IVIG. Our patient received 3×500 mg/kg doses which was at the higher end of the manufacturer's recommendation.

Conclusion: This report describes a rare case of NSTEMI development following IVIG therapy in the treatment of myasthenic crisis. Although it's rare, physicians must remain alert for this possibility especially in the elderly. Careful consideration of risk-benefit assessment, individual patient factors, and specific dosage guidelines for IVIG products is needed. Cardiac symptoms should remain a focus of vigilant monitoring, and ECG and cardiac enzyme testing should be considered in patients receiving IVIG therapy.

Abstract 2025 – 108

Rapid Diagnosis and Intervention of Massive Pulmonary Embolism in a Thrombolysis-Ineligible Patient Using POCUS RUSH Exam in the Emergency Department

Seth Larsen, DO; Monisha Lewis, RA; Jugraj Randhawa, RA; Frank Sabatelli, MD; Ajit Panag, MD

Introduction: Massive/high-risk pulmonary embolism (PE) is a life-threatening condition requiring prompt diagnosis and treatment. Point-of-care ultrasound (POCUS) with the Rapid Ultrasound for Shock and Hypotension (RUSH) protocol serves as a critical diagnostic tool in the emergency department (ED), particularly when other imaging modalities are impractical. In this case, an 83-year-

old female who presented in shock was rapidly diagnosed with a massive PE using a bedside RUSH exam which identified a clot-in-transit with right ventricular dilation. Systemic thrombolytic treatment with alteplase (tPA) was contraindicated due to a recent cervical spine surgery. The POCUS findings led interventional radiology (IR) to perform an emergent thrombectomy, leading to a successful outcome and hospital discharge.

Case Description: An 83-year-old female with a history of C3-C7 cervical spine laminectomy three weeks prior presented to the ED with altered mental status, hypotension, and hypoxia. Initial resuscitative measures were initiated. Given her hemodynamic instability, a bedside RUSH exam was performed, revealing a clot-in-transit in the right ventricle (RV) with associated RV dilation and bowing of the interventricular septum. POCUS also showed a dilated, non-collapsible inferior vena cava (IVC) consistent with obstructive shock. The POCUS findings led to the diagnosis of a massive PE within minutes of arrival to the ED. Given her recent spinal surgery and advanced age as contraindications to systemic thrombolysis, thrombectomy emerged as the sole viable treatment option to stabilize the patient. Based on the ultrasound findings, IR performed a successful emergent thrombectomy, resulting in hemodynamic stabilization and marked clinical improvement. The patient was discharged neurologically intact on hospital day 5.

Discussion: POCUS is increasingly recognized as a valuable tool in the ED that can assist in diagnosing a wide range of emergent conditions. The RUSH exam, in particular, provides a structured approach for evaluating undifferentiated shock. Its ability to rapidly differentiate the etiology of shock, guide treatment decisions, and monitor therapeutic response underscores its importance in emergency medicine practice.
This case highlights the utility of POCUS in rapidly identifying life-threatening conditions. In this instance, the diagnosis of a massive PE was made within minutes of arrival to the ED based on multiple POCUS findings that have been well studied in ED literature. While systemic thrombolytics remain the standard of care for massive PE, contraindications often necessitate alternative strategies such as catheter-directed thrombectomy and thrombolysis. The collaboration between emergency medicine and IR, driven by bedside ultrasound findings, led to a life-saving outcome, emphasizing the critical role of early POCUS assessment in emergency care.

Conclusion: The prompt diagnosis of a massive PE using the RUSH exam was instrumental in guiding appropriate management for our patient. This case exemplifies how POCUS can expedite life-saving interventions, particularly when conventional therapies are contraindicated. Further studies are warranted to explore the broader impact of POCUS in optimizing outcomes in critically ill patients.
Keywords: Pulmonary embolism, RUSH exam, Point-of-care ultrasound, POCUS, Thrombectomy, Interventional radiology, Emergency medicine, clot-in-transit

Figures

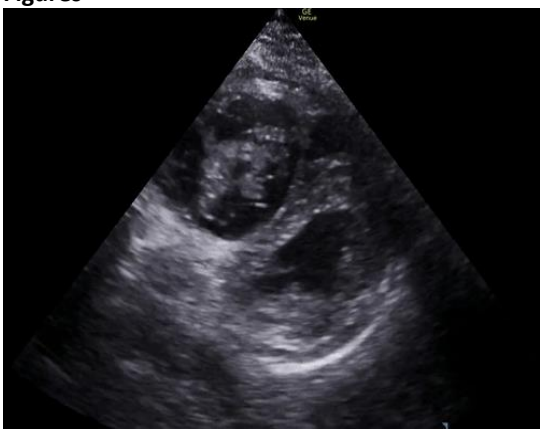

Figure 1: Parasternal short axis (PSAX) view of heart on POCUS showing RV dilation, clot-in-transit in the RV, and bowing of the interventricular septum. The RV pressure overload causes the septal bowing which pushes the normally ring-shaped left ventricle (LV) into a D-shape, also known as the “D-sign”.

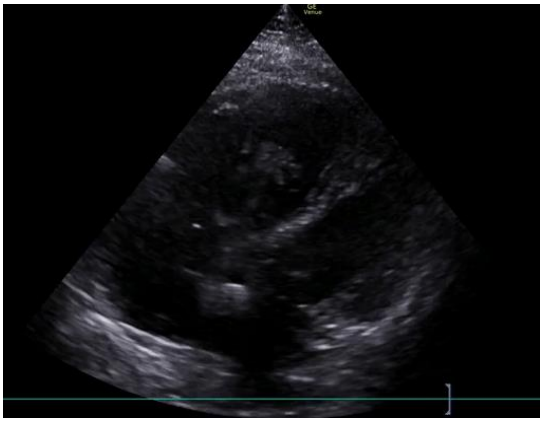

Figure 2: Apical 4-chamber (A4C) view of heart on POCUS showing RV:LV ratio greater than 1, RV

dilation, and clot-in-transit in the right side of the heart.

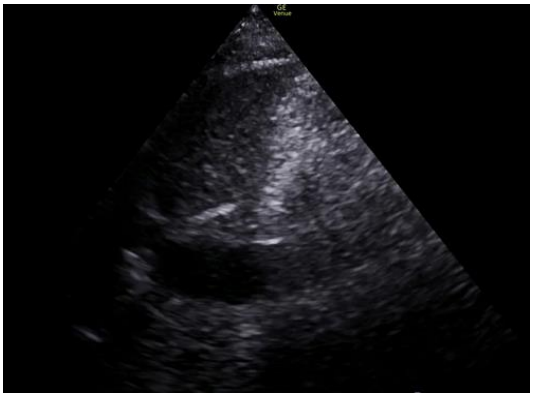

Figure 3: Inferior vena cava (IVC) view on POCUS showing a dilated, non-collapsible IVC without respiratory variation. This finding combined with the cardiac ultrasound findings in this hypotensive patient is suspicious for obstructive shock, likely secondary to massive pulmonary embolism.

Figure 4: Map of pulmonary emboli retrieved during mechanical thrombectomy.

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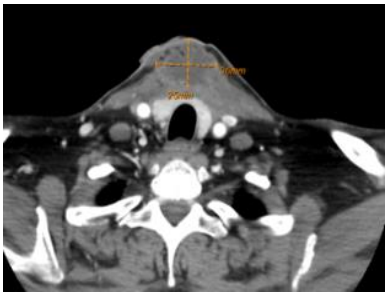
Abstract 2025 – 109

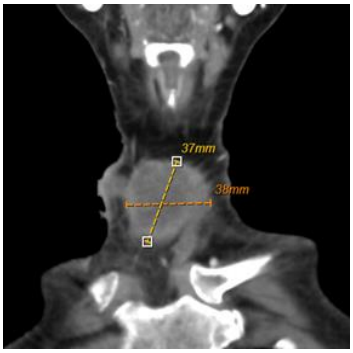
Disseminated Coccidioidomycosis Presenting as a Neck Mass

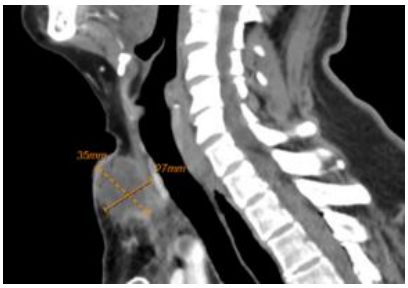
Mariano Rubio Garcia, MD; Michael Ibrahim, MS IV; Sheila Toro, MD; Alejandro Gonzalez, MD; Katherine Schlaerth, MD

Introduction: Coccidioidomycosis, commonly known as Valley Fever, is a fungal infection endemic to the southwestern United States. Disseminated disease is rare but can occur in immunocompromised individuals, including those with CKD, diabetes, and chronic immunosuppressive therapy. This case highlights an unusual presentation of disseminated coccidioidomycosis with a neck mass and abscess formation in a patient with multiple comorbidities, including end-stage renal disease (ESRD) on peritoneal dialysis.

Case Presentation: A 55-year-old female with a history of ESRD on home peritoneal dialysis, diabetes mellitus, and chronic kidney disease stage 4 was transferred from an outside hospital for evaluation of a progressively enlarging anterior neck mass with purulent drainage. She had been experiencing difficulty swallowing but denied fever, chest pain, or respiratory symptoms. Examination revealed a 3x4 cm firm, non-mobile mass superior to the sternal notch. Imaging demonstrated a heterogeneous, lobulated, septated, and infiltrative lesion extending to the infra-thyroidal, pretracheal, and left paratracheal regions, consistent with a phlegmon or abscess. She underwent FNA and biopsy of the neck mass showing fungal growth, final results showed Coccidioides immitis. Serologic testing confirmed coccidioidomycosis with positive IgM and IgG antibodies and a complement fixation titer of 1:64, concerning probable disseminated disease involving the anterior neck. The patient was started on high-dose fluconazole (800 mg daily) for long-term antifungal therapy. On further investigation, the patient was endorsing chronic persistent headaches, given the clinical picture, a suspicion for CNS infection raised. But after counseling the patient multiple times, she refused to perform lumbar puncture. Once her chronic diseases were addressed, she was discharged on Fluconazole and continued close follow up at Valley Fever Clinic. Concurrently, she was treated with antibiotics for a secondary right antecubital fossa infection, suspected to be a post-IV placement abscess.







Discussion: This case highlights multiple factors that can influence patient care and outcome. First of all, patient presentation with a neck mass, although not that common, is frequently seen in our practice. Since it is not recommended to perform incision and drainage of abscesses secondary to coccidioidomycosis infection, we need to be aware of the differential diagnosis of neck mass, or any mass, including coccidioidomycosis infection in that differential diagnosis, especially in high-risk populations like our patient with ESRD on peritoneal dialysis, particularly in endemic areas. Also, cultural barriers play an important role when deciding diagnostic tests or management. Unfortunately, we were unable to perform a full workup on our patient to rule out CNS infection. A higher effort should be made to educate everyone about Valley Fever, at least those in high-risk areas with or without risky jobs related to this type of infection.

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Abstract 2025 – 110

No Fructose, Have Anxiety and Depression Instead

Brian Lu, MD; Nandhini Madhanagopal, MD

Introduction: Malabsorption and intolerance are common problems encountered in gastrointestinal and primary care clinics but can often be poorly managed and misdiagnosed. One study estimates up to one-third of those with suspected irritable bowel syndrome had fructose intolerance. Fructose intolerance is a gastrointestinal condition where the body has difficulty absorbing fructose, a sugar found naturally in fruits, vegetables, and processed foods. There are two kinds of fructose intolerance: hereditary, where the body has mutations in the ALDOB gene, and dietary, where there are deficient carrier-mediated facilitative diffusion and GLUT transporters. While hereditary fructose intolerance can present similarly to hypoglycemia with symptoms of anxiety, fructose malabsorption (formerly known as dietary fructose intolerance) is more common and has been linked to both anxiety and depression.

Case Description: This case features a 17-year-old male with a history of major depressive disorder, anxiety, and fructose malabsorption. The patient was not adherent to his sugar-limited diet, resulting in intermittent stomach cramps, constipation, and diarrhea multiple times a week. Fluoxetine provided clinical relief for his psychological symptoms of depression and anxiety.

Discussion: It is hypothesized that those with untreated fructose malabsorption may suffer from anxiety and depression via reduced intestinal absorption of tryptophan and subsequently impact the serotonergic system. Non-metabolized parts of fructose can bind to tryptophan, leading to restricted metabolic processes, including synthesizing serotonin, a neurotransmitter known to regulate mood, sleep, and appetite. Furthermore, a connection between interleukin-6, depressive symptoms, and tryptophan metabolism has been studied. Studies have shown that a diet adapted to fructose intolerance led to a reduction in both physical and psychological symptoms.

Additionally, the impact of sugar consumption on mood and anxiety warrants attention. Sucrose, commonly known as table sugar, is a disaccharide

composed of the monosaccharides glucose and fructose. Research in rodents has shown that both acute and chronic withdrawal from sugar after prolonged consumption can induce anxiety-like behaviors.

Furthermore, anxiety disorders frequently coexist with irritable bowel syndrome (IBS), a functional gastrointestinal (GI) disorder diagnosed when organic GI conditions are ruled out. Notably, 60–80% of IBS patients report diet-related symptom triggers, with three-quarters attributing their symptoms to poorly absorbed carbohydrates. Choi et al. found that up to one-third of patients with suspected IBS exhibited fructose malabsorption with symptom improvement on a fructose-restricted diet.

Conclusion: While this clinical case was responsive to relief of anxiety and depression with fluoxetine, it continues to serve as a reminder of the importance of a thorough psychiatric evaluation encompassing a complete medical history and interdisciplinary collaboration. Healthcare practitioners should recognize the different types of fructose intolerance and their potential links to anxiety and depression, particularly given the somatic manifestations of anxiety in the gastrointestinal tract. Further steps should be taken to examine the role of malabsorption and intolerance in patients, particularly in those who have symptoms alleviated by medications that modulate serotonin.

Abstract 2025 – 111

Are Personality Traits Associated with Avoidance of Seeking Healthcare Among Adult Populations?

Winnie Huang, BS; Linh Bui, PhD; Heidi McLaughlin, PhD

Understanding why people avoid seeking healthcare is important to improve healthcare utilization and health outcomes. Little is known about how personality traits might impact health seeking behaviors. This study aims to examine whether personality traits are associated with reasons for avoidance of seeking healthcare among adult populations residing in Kern County. Data was collected through an online survey, including the Big Five Inventory that measures 5 personality traits (i.e., extroversion, conscientiousness, neuroticism, agreeableness, and openness) on a 5-point Likert scale and questions adopted from previous research that identifies reasons for avoidance of seeking healthcare. Reasons for avoiding seeking healthcare included intrapersonal barriers (e.g., feeling not sick enough, or believing illness will improve on its own), access to healthcare (e.g., cost is too high, or transportation difficulties), physician barriers (e.g., mistrust/bad experience with a healthcare professional), organizational barriers (e.g., long wait times to get an appointment, or waiting a long time at the hospital), fear (e.g., fear of medical procedures), and negative outcomes (e.g., being hospitalized, or hearing bad health news). Among 127 respondents, the mean age was 23.08 (*SD* = 8.84); 74.8% were female, and 18.1% were male. Personality trait scores included extroversion (*M* = 2.95, *SD* = .72), conscientiousness (*M = 3.5, SD = .52*), neuroticism (*M = 3.21, SD = .66*), agreeableness (*M = 3.75, SD = .53*), openness (*M = 3.45, SD = .50*). Forty four percent of the sample avoided seeking healthcare due to intrapersonal barriers, 21.2% did not seek care because of access to healthcare, 15.7% avoided care due to physician barriers, 35.4% did not seek care due to organizational barriers, 25.1% was due to fear, and 17.3% avoided care due to negative outcomes. Participants who are higher in neuroticism (e.g., more nervous and anxious) are more likely to avoid care due to intrapersonal barriers *($p < .05$)*, physician barriers *($p < .01$)*, time constraints *($p < .06$)*, and fear *($p < .001$)*. People higher in openness (e.g., more open-minded, adventurous) were more likely to avoid seeking care due to physician barriers *($p < .05$)*, and those higher in extraversion (e.g., more energetic, outgoing) were more likely to avoid seeking care due to fear *($p < .05$).* These findings implicate the need for interventions to provide people with different personality traits with better access to care, such as changing the care environment and enhancing healthcare provider communication or training providers to better accommodate specific personality types to improve provider efficiency.

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