

A Severe Case of Necrotizing Fasciitis

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Introduction

Necrotizing fasciitis is an uncommon disease of infection of the soft tissue characterized by rapidly progressing necrosis of the skin, fascia, subcutaneous tissue, and muscle. Due to often minimal specific signs and symptoms at the early stages of the disease, necrotizing fasciitis can often be difficult to detect and is often misdiagnosed or missed entirely. Symptoms can include skin erythema and edema with a grayish-brown discharge, severe localized pain extending past the boundary of evident infection and appearing to be disproportionate to physical findings, vesicles, bullae, necrosis, and crepitus. Diagnosis is clinical, with supporting laboratory signs, and occasionally evidence of ectopic gas within the soft tissues. Standard of care is prompt surgical debridement, with adjunctive intravenous broad-spectrum antibiotics. We report a case of necrotizing fasciitis along the fascial planes of the chest and right upper extremity in a diabetic patient caused by intravenous drug use, with significant radiographic findings. Photographic signed consent was acquired from the patient, including IRB approval for the case report.

Presentation

A 31-year-old male with a past medical history of poorly controlled diabetes mellitus type II and intravenous drug use presented to Kern Medical with five days of worsening right upper extremity pain. He reported injecting heroin several days prior into his right deltoid area and noticed rapid progression of pain, erythema, and swelling to the upper extremity. Initial exam was significant for circumferential erythema and induration of the right upper extremity, fluctuance, and crepitus along the right shoulder and right lateral chest wall along with ecchymosis. Severe tenderness to palpation was present. Initial vital signs were within normal limits. Initial laboratory results were significant for hyponatremia of 113 mEq/L, hyperglycemia of 740 mg/dL without evidence of diabetic ketoacidosis, and bandemia of 49% without leukocytosis. X-ray imaging of the chest and right upper extremity (**Image 1**) showed extensive ectopic air tracking along the fascial planes.

Hospital Course

General surgery was immediately consulted who promptly took the patient to the operating room, where purulent dishwater fluid was noted underneath the fascial planes and necrotic fascia. Patient was initially started on IV penicillin, gentamycin, and clindamycin. Cultures grew out *enterococcus faecalis* and *pseudomonas aeruginosa*. Patient underwent multiple further serial surgical washouts and debridements of necrotic tissue of the right upper extremity and right flank and chest wall. Patient remained on broad spectrum antibiotics and Internal Medicine consulted for glycemic control. Patient was eventually discharged home with home health nurse and wound care set up for dressing changes on hospital day #31.



Image 1. Subcutaneous air tracking along the fascial planes of the right upper extremity and chest wall

Discussion

Necrotizing fasciitis is a severe, potentially devastating soft tissue infection, the standard of care of which is emergent and thorough surgical debridement of necrotic tissue. Mortality rates approach 100% if antibiotic therapy alone is used in the absence of surgical management. Due to the almost universal mortality in the absence of surgical treatment, it is imperative that the astute clinician maintain a high level of suspicion for the illness in patients presenting with evidence of soft tissue infection, particularly with pain out of proportion to exam. The disease course can be occasionally quite indolent and presentation non-specific making a missed diagnosis a possibility. Scoring systems such as the LRINEC (Laboratory Risk Indicator for Necrotizing Fasciitis) score can be helpful to help guide clinician decision making regarding necrotizing soft tissue infection, but a low score still does not rule out this disease. Often times, radiographic imaging can reveal evidence of ectopic gas, but the absence of which does not rule out necrotizing soft tissue infection. This patient's presentation is somewhat unique due to the obvious severe ectopic air seen on plain films.