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CASE OF THE MONTH

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MULTIPLE SPINAL EPIDURAL ABSCESSSES

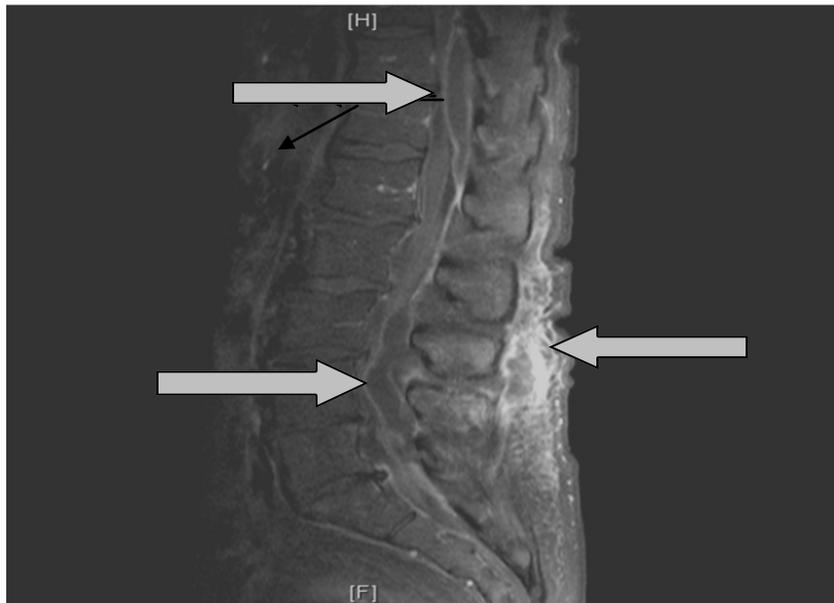
A 62 year old white male with a past history of Hepatitis C presented to the ER with complaints of fever, back pain and weakness of his lower extremities. The patient had been having intermittent low grade fevers for about a month, with associated chills and night sweats. He took a course of Amoxicillin with no improvement. Over the past 8 days, his lower back pain, described as sharp without radiation, was increasing in severity and had become 10/10 with movement. He also reported a sensation of weakness in his lower extremities and was having difficulty walking or standing; at presentation, he was unable to stand without support. He admitted to alcohol and IV drug abuse; home medications included ropinirole, fluoxetine, olanzapine and fluticasone nasal spray.

Initial vitals revealed T 36C, P 92, R 16 and BP 136/74. Physical exam demonstrated an acutely distressed, disheveled male who was irritable and uncooperative. He had a port-a-cath on his left chest, placed 8 months ago for treatment of melanoma; no erythema or tenderness was noted at the catheter site. Cardiac exam revealed a regular rhythm without murmurs. A tender, red, non-fluctuant swelling of his left hand, on the thenar aspect, restricted finger movement. Swelling was also noted over his lumbar spine (10cm transverse by 3 cm vertical); this was non-fluctuant and not erythematous. The patient was unable to walk and could not stand without support due to weakness in his legs; motor strength was 3/5 in both lower extremities. Cranial nerves 2-12 were intact. DTRs were hyperreflexic in the lower extremities but his sensory exam was normal. Anal sphincter tone was also normal.

Admission labs revealed WBC 19.2 with 80.2% granulocytes, Hgb 13.8, ESR 113, CRP 32.7, Na 123, K 3.4, serum glucose 196, creatinine 1.75, albumin 2.8 and his hepatic transaminases were normal; his urine toxicology screen was positive for amphetamines and barbiturates. Plain films of the LS spine showed 6mm of retrolisthesis of L3 on L4, multilevel degenerative disc disease and anterior margin osteophytosis with disk space loss, which was most prominent at L4 and L5. Films of the left hand were remarkable for severe degenerative changes and radiographs and a CT of the thoracic and lumbar spine revealed only degenerative disc disease. The patient was pan-cultured and started on IV vancomycin and meropenem.

HOSPITAL COURSE:

An MRI of the spine revealed extensive epidural abscess formation throughout the thoracic and lumbar spine (T10-L5), multiple abscesses within the posterior superficial soft tissues and musculature and evidence of osteomyelitis.



The patient underwent drainage and debridement of the epidural abscesses with a laminectomy of L1-L5. Blood cultures and wound cultures from the surgical debridement rapidly turned positive for MRSA. A TEE was negative for endocarditis but a bone scan revealed osteomyelitis of the left wrist and right ankle. He was eventually discharged home to complete a 6 week course of IV Vancomycin and, at followup, the patient was placed on TMP-SMX for another month due to concerns of residual infection in the hand and ankle which had not been debrided. His final diagnosis was multiple spinal epidural abscesses with associated osteomyelitis, secondary to MRSA.

DISCUSSION:

The incidence of epidural abscesses has doubled over the past two decades due to an aging population, the use of spinal instrumentation and vascular assist devices and the ongoing problem of injection drug abuse [1-3]. Most patients have one or more predisposing conditions, such as underlying disease (diabetes mellitus, drug abuse, HIV), a spine abnormality or a local or systemic source of infection (skin and soft tissue infections, UTI, osteomyelitis, etc.) [4-13]. Most predisposing conditions allow for invasion by skin flora and *Staphylococcus aureus* accounts for about 2/3 of cases. Less common pathogens include coagulase negative staph, *Escherichia coli* and *Pseudomonas aeruginosa* (especially in injection drug users) [1]. The classic triad of fever, back pain and neurologic deficit is present in only a minority of cases [15]. Abscesses are more likely to develop in larger epidural spaces that contain infection-prone fat; these are primarily in the posterior area of the spinal column [2]. Bacteremia, arising from spinal epidural abscesses, is detected in about 60% of patients [16]. Lumbar puncture should not be performed routinely; MRI is the diagnostic procedure of choice since it is less invasive and (continued)

(continued) delineates both the longitudinal and paraspinal extension of the abscess [17].

The majority of studies provide support for surgical drainage and systemic antibiotics as the treatment of choice [1,2,16,19]; decompressive laminectomy and debridement of infected tissue should be performed as soon as possible. Empiric antibiotic therapy should provide coverage against staphylococci (usually with Vancomycin) and gram-negative bacilli (broad spectrum beta-lactam or a carbapenem); continued therapy should be guided by culture results and coverage should be narrowed accordingly. Since vertebral osteomyelitis exists in most patients with spinal epidural abscess, IV antibiotic coverage is usually continued for 6 weeks.

The death rate for spinal epidural abscess is about 5%, usually resulting from uncontrolled sepsis, evolution of meningitis or other underlying illnesses. The final neurologic outcome and functional capacity of patients should be assessed at least 1 year after treatment since patients may continue to regain neurologic function and benefit from rehabilitation.

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