

A Case of Report of Spontaneous Pyogenic Vertebral Osteomyelitis, Discitis, and Bilateral Paraspinous Abscesses

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ABSTRACT

Low back pain is one of the most common chief complaints in the outpatient setting. Vertebral osteomyelitis is a rare infection in an otherwise healthy individual. This case report illustrates a healthy male presenting with seemingly benign lower back pain who eventually developed subjective fevers. MRI revealed large bilateral paraspinous abscesses, L1-2 discitis, and osteomyelitis which were found to be due to methicillin sensitive staphylococcus aureus (MSSA) which is a common skin flora. The initial empiric antibiotic therapy failed and he required surgical debridement followed by indefinite antibiotics. This case illustrates the importance of close monitoring for symptoms which bring concern for infection in a patient with back pain.

CASE

- A healthy 56-year-old male with a history of tobacco use presented to the emergency room with one day of low back pain and spasms.
- Vitals were within normal limits and physical exam revealed generalized pain, spasms, and decreased range of motion of the lower back.
- He was given oral diazepam and intravenous ketorolac which significantly reduced his pain. He was discharged home.
- He was seen a week later at a clinic with the same persistent symptoms. Plain radiography of his lumbar spine revealed mild scoliosis with moderate degenerative changes of the spine.
- He was treated with naproxen, diazepam, and physical therapy. His pain worsened and he developed intermittent fevers over the next 2 weeks.
- He presented to my clinic with intermittent subjective fevers, persistent severe pain, spasms, and decreased range of motion of the lower back. MRI revealed large bilateral paraspinous abscesses, L1-2 discitis, and osteomyelitis. Labs revealed leukocytosis, elevated alkaline phosphatase, ESR of 83, and CRP of 11.
- He was admitted to the hospital for intravenous antibiotics and percutaneous abscess drainage. Blood and fluid cultures revealed MSSA. Echocardiogram did not reveal any vegetation.
- He was discharged with intravenous cefazolin therapy for 5 weeks then transitioned to oral doxycycline for 3 weeks.
- He presented to the emergency room with severe low back pain and fevers 2 weeks after finishing antibiotics. CT revealed recurrent osteomyelitis. He was admitted into the hospital and started on intravenous cefazolin.
- Despite antibiotics he had persistent fevers thus underwent surgical debridement and fixation. He was discharged on intravenous cefazolin and rifampin for 6 weeks and then transitioned to trimethoprim/sulfamethoxazole (TMP/SMX).
- He has not had recurrence of disease since transitioning to TMP/SMX. The tentative plan is for him to remain on TMP/SMX for at least a year however it may be indefinite.

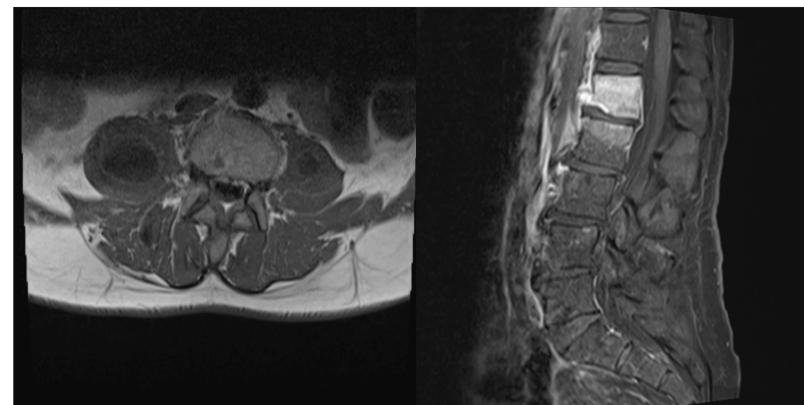
INTRODUCTION

- Vertebral osteomyelitis is most common in adults over the age of 50 and twice as common in men.
- Risk factors for vertebral osteomyelitis include injection drug use, infective endocarditis, degenerative spine disease, prior spinal surgery, adjacent tissue infection, diabetes mellitus, corticosteroid therapy, or other immunocompromised state [1].
- Mechanism for infection is typically hematogenous spread, direct inoculation, or contiguous spread from adjacent infection.
- Symptoms often appear benign and progressively worsen over weeks to months. Diagnosis can be made with imaging and inflammatory markers
- Staphylococcus aureus is the most common pathogen identified in vertebral osteomyelitis [2].
- Treatment is typically pathogen directed antibiotic therapy for a minimum of 6 weeks [3].
- Although mortality is relatively low at 6%, recurrence of infection occurs in nearly a third of patients [4].

DISCUSSION

- The importance in this case lies with its insidious onset in the guise of a common complaint seen by primary care physicians. Low back pain is a common outpatient complaint with spinal disorders accounting for 3.1% of diagnoses in 2010 [5].
- Only after the onset of subjective fevers did we suspect a more serious diagnosis for this patient. Torda AJ et al state that fever is an inconsistent symptom with a rate as low as 30% [6].
- There is a distinct lack of risk factors in this case. A review of literature from Ju KL et al in 2015 suggests a hematogenous source. Segmental arteries supplying vertebrae usually bifurcate to supply two adjacent contiguous vertebrae. Thus, hematogenous vertebral osteomyelitis often causes bone destruction in two adjacent vertebral bodies and destroys their intervertebral disc [7]. This pattern was made apparent in the imaging we obtained.
- The bilateral psoas abscesses were likely a contiguous extension of the infection which is more common of a finding seen with gram-positive infection rather than gram-negative infection [8].
- Early imaging would not have been justified in this case. Gold RH et al found that plain radiographs are often normal in the early phases of infection. Osseous destruction may not be apparent for three weeks or more after the onset of symptoms [9].

IMAGING



Axial section of T1 noncontrast MRI depicting bilateral psoas abscesses and osseous destruction of vertebral body. The dominant right psoas muscle rim-enhancing fluid collection is 8.8 cm craniocaudal by 3.4 cm transverse, and 2.5 cm anteroposterior. Left side dominant collection is 6 cm craniocaudal, 1.9 cm transaxial, and 1.4 cm anteroposterior. Sagittal section of T1 contrast weighted MRI showing vertebral osteomyelitis and discitis of L1-2.

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