Title: *Pseudomonas aeruginosa* Vertebral Osteomyelitis

Authors: Neil Rangwani1, MD, Christopher Tanayan1, MD, Sai Krishna Korada BS2, Bahar Moftakar1, MD, Michael Nguyen1, MD, Michael Rich1, MD

1Summa Health – Akron Campus, OH, 2Northeast Ohio Medical University, Rootstown, OH

Introduction: Hematogenous osteomyelitis in intravenous drug users has a predilection for the vertebral, sternoclavicular, and pelvic bones. During the 1970s and 1980s, Pseudomonas and Serratia were commonly reported pathogens in these patients. In recent years, however, the medical literature has become devoid of cases of Pseudomonal vertebral osteomyelitis. In response, we present such a case as a reminder of its continued clinical relevance.

Case Presentation: A 57-year-old male intravenous (IV) heroin user presented with a 6-month history of back pain that acutely worsened over a 24-hour period. He last used IV drugs 2 weeks prior to presentation and reported occasional washing of his needles with tap water. On physical examination, he was afebrile. He had decreased sensation in his toes bilaterally, some instability while standing, kyphosis with scoliosis of the lower back along with a significant posterior bulge at the level of thoracic spine with localized ecchymosis. Pertinent blood work included a leukocyte count of 7.4 cells/uL [4.5 to 11.0 cells/uL], erythrocyte sedimentation rate of 35 mm/hr [0 to 22 mm/hr], and a C-reactive protein of 3.6mg/L [< 3.0 mg/L]. Blood cultures obtained prior to antibiotics demonstrated no growth. Contrast magnetic resonance imaging showed compression deformities of the T11-L1 vertebral bodies with distal cord compression. Cultures from the infection site grew pan-sensitive Pseudomonas aeruginosa. The patient was treated with 8 weeks of cefepime. Given his mild neurological deficits, surgical intervention was not indicated and he was instead fitted with a back brace for support.

Discussion: Given the life-threatening and debilitating consequences that a Pseudomonal infection poses, empiric among intravenous drug users with similar presentation should always be considered.