

CLINICAL VIGNETTE

Osteomyelitis Secondary to Subacute Bacterial Endocarditis

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Case Presentation

A 63-year-old Caucasian male presented to his primary care physician's office with a two-week history of back pain located mid-back in the area T 10-12. He denied fevers, chills, weight loss, cough, and had no recent trauma. He travels extensively in and out of the country as a concert musician.

Social history was remarkable for smoking one pack per day for 30 years and IV heroin use for forty years without needle sharing. He did not drink alcohol.

Vital signs included: Blood pressure 115/76, RR 14 HR 70, Temp 98, Height 5'8", Weight 146 lbs., and BMI 22.2.

Physical exam was remarkable for normal dentition and clear lungs. Cardiac exam included a non-displaced ventricular impulse and a grade I/VI systolic ejection murmur without radiation to the carotids. Abdomen had normal bowel sounds and was non-tender without masses or hepatosplenomegaly. Extremities were free of splinter hemorrhages or Janeway lesions. Back was tender in the T10-T12 paravertebral area. Neurologic and musculoskeletal exams were unremarkable.

Clinical labs included: CBC: WBC 6500 without left shift, Hgb 13.4, Hct 40%, platelets 211,000, and Westergren sedimentation rate 74 mm/hr.

Renal and hepatic functions were normal and HIV screen was negative. Thoracic and lumbar radiographs showed erosion of the T12 vertebral body. The patient was admitted and started on parenteral vancomycin. Two sets of blood cultures were positive for coagulase negative staphylococcus and transthoracic echo demonstrated a small vegetation involving the aortic valve. MR of the thoracic spine confirmed erosion of T12 vertebral body consistent with acute osteomyelitis. Repeat blood cultures at 72 hours were negative, and he was treated for six weeks, monitoring renal function and vancomycin levels. He was counselled regarding tobacco and IV drug use. Post-treatment blood cultures were negative, and repeat cardiac echo showed resolution of vegetations. His back pain resolved after one week of antibiotic treatment.

The patient discontinued smoking and IV drug use and remains drug free four years post-treatment.

Discussion

Bacterial embolization to other organ systems is a common manifestation of subacute bacterial endocarditis. Peripheral

signs of embolization are found in approximately 50% of cases. Petechiae are found in 20-40% of cases usually seen in clusters on extremities, conjunctivitis, palate, and buccal mucosa. Osler nodes, painful nodular lesions usually found on pads of fingers, occur in 10-20% of cases. Janeway lesions, hemorrhagic painless plaques usually on soles of feet or palms of hands, are seen in less than 10% of cases. Musculoskeletal findings are common and usually occur early in the disease process. Severe back pain limiting mobility has an incidence of 5-10%.¹

Treatment of SBE requires bactericidal agents with therapeutic serum levels. Approximately 90% of patients with bacterial endocarditis have positive blood cultures. Patients presenting acutely should be treated empirically. The choice of antibiotics should be directed toward the most likely organism. Staphylococcus, streptococcus, and enterococcus are most commonly associated with native valve endocarditis.^{2,3} Empiric treatment with Vancomycin or Daptomycin is the choice for most patients with the adjustment in therapy once identification and sensitivities are complete. Blood cultures should be repeated in 48 to 72 hours after institution of therapy. The most common organism is Strep viridians species accounting for 40-60% of cases.^{2,3}

This patient grew coagulase negative Staphylococcus, which was likely acquired from repeated IV drug use and contamination of needles by skin flora. Infective endocarditis in IV drug addicts account for 5-15% of infections requiring admission. The frequency of valve involvement is 52% with tricuspid alone or in combination with others, aortic alone 18.5%, and mitral alone 10.8%.

Subsequent valve infection and secondary embolization to the thoracic vertebral body likely occurred in this patient although primary osteomyelitis is also a complication of intravenous drug use. Unless blood cultures are positive with radiologic evidence of osteomyelitis, bone cultures would be needed to confirm the bacteriologic diagnosis.¹ Native valve endocarditis with Methicillin-sensitive Staph aureus should be treated with a six-week course of semisynthetic penicillin such as Nafcillin or Oxacillin. Flucloxacillin would also be appropriate. Methicillin-resistant Staph aureus should be treated with Vancomycin or Daptomycin. Coagulase negative staph are Methicillin resistant and are treated as similar to Coagulase positive staph. Most Coagulase positive staph are Methicillin resistant and should be treated with either Vancomycin or Daptomycin.⁴

REFERENCES

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