



A Second Look at Back Pain

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Learning Objectives

1. Recognize back pain as a presenting symptom of infective endocarditis
2. Understand the predictive factors that raise clinical suspicion for infective endocarditis
3. Explain how situational challenges influence physical exam findings

Case Description

A 37-year-old male with a history of hepatitis C, IV drug abuse, and degenerative disc disease presented to the Emergency Department (ED) for worsening lower back pain that had previously been assessed multiple times in the ED as musculoskeletal injury due to unremarkable findings. The patient described the pain as constant, non-radiating, with no focal tenderness, and not exacerbated by movement. History was significant for a 10-pound weight loss. The patient denied fever, chills, weakness, neuropathy, and bowel or bladder concerns.

The patient was afebrile, and all other vitals were unremarkable. Physical exam was notable for 4/5 strength of the quadriceps bilaterally with a normal back exam. Leukocyte count and Erythrocyte Sedimentation Rate (ESR) was elevated to 16.8 and 44. A thoracolumbar MRI was unchanged from prior studies. The patient was admitted for intractable pain. Further examination upon admittance revealed a 3/6 holosystolic murmur. A subsequent EKG demonstrated a first degree atrioventricular (AV) block. A transthoracic echocardiogram revealed vegetations along the aortic and mitral valves. A transesophageal echocardiogram confirmed the presence of an anterior, posterior mitral valve abscess that fistulized to the left atrial appendage. The patient was started on IV vancomycin and ceftriaxone, and was transferred to a tertiary center for cardiovascular surgical evaluation.

Discussion

Infective endocarditis (IE) remains a highly lethal disease with an in hospital mortality rate of 20%.¹ The diagnosis of IE tends to be challenging with a diverse and nonspecific clinical presentation. Textbook descriptions of Osler

nodes, Janeway lesions, and Roth spots as defining presentations of IE are rare, and have been extrapolated from data obtained decades ago.²

Fever, although a nonspecific symptom is the most common presenting symptom, found in 96% of patients while the presence of a new cardiac murmur or worsening cardiac murmur was prevalent in 69% of patients.³ The pathogenesis of back pain in IE is not well understood but has been theorized to be due to septic embolization, which can occur before clinical presentation or after initial antimicrobial therapy. Imaging studies of the spine may be negative, which requires a careful history and physical exam in the evaluation of septic emboli to the back.⁴

A focused physical exam, especially a careful cardiac exam, can be difficult to accomplish in loud settings such as in the ED. In the case of this patient, his 3/6 holosystolic murmur was never noticed until after admission, resulting in a delay in diagnosis and treatment. Situational limitations such as the fast pace of the clinic, clothing and wiring on patients, and the ability to remember findings create variability and uncertainty in making a clinical diagnosis. Making a proper physical diagnosis requires being attentive to situational impediments while understanding the balance between optimizing the clinical situation and repeating the exam under improved circumstances.⁵

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