

Air in the Spinal Canal – An Unusual Presentation of Spontaneous Spinal Epidural Abscess

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Introduction

Diagnosing spinal epidural abscess can be challenging. Patients may not present with the classic triad of fever, neurological deficits, and

back pain, resulting in delayed diagnosis and treatment. We present a patient with back and abdominal pain, atrial fibrillation, and lactic acidosis.

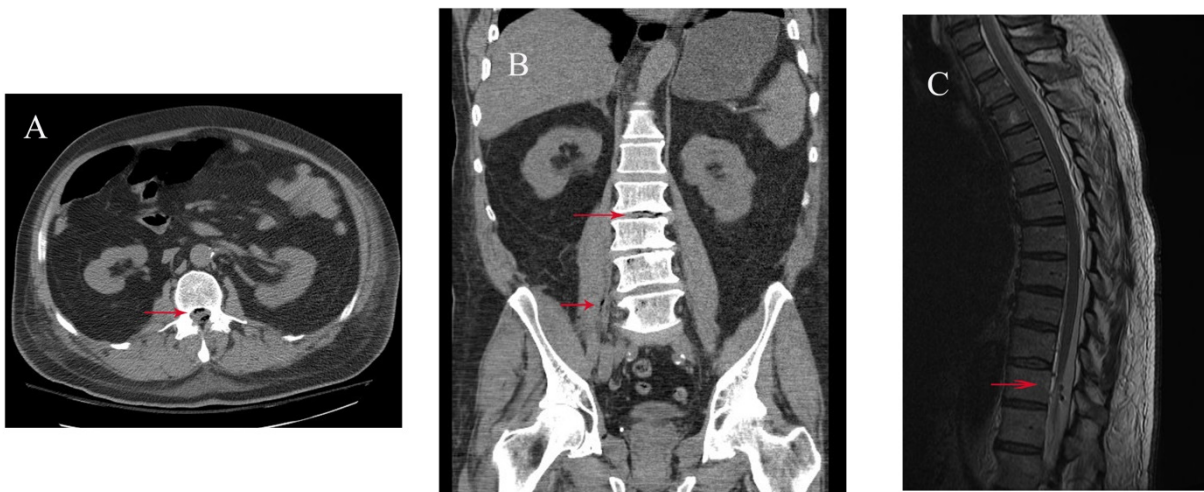


Figure 1: Red arrows indicating air locules on computed tomography (CT) scan of the abdomen and pelvis (A and B) and on Magnetic Resonance Imaging (MRI) (C).

A 74 year old man with hypertension and Diabetes Mellitus developed progressive worsening of his back pain. He was evaluated by a chiropractor, who referred him to his primary care physician. The patient was treated with prednisone and muscle relaxants without clinical improvement. The following day, he presented to the Emergency Department with new abdominal pain and worsening back pain radiating to the right lower extremity and exacerbated by supine position and movement. The patient was found to have atrial fibrillation and lactic acidosis (9.7 mmol/L). Computed tomography (CT) scan of the abdomen and pelvis demonstrated air locules throughout the spinal canal and nonspecific swelling in the right groin (Figure 1A). The patient was admitted for further evaluation of a new arrhythmia. Within several hours, patient developed acute kidney

injury (Cr 3.1 mg/dL), leukocytosis (18,000/L), worsening lactic acidosis (14 mmol/L), thrombocytopenia (20,000/L) and coagulopathy (INR 3.6). Physical exam was significant for slurred speech without focal neurological deficit, meningeal signs, or spinal tenderness. Repeat CT imaging of abdomen and pelvis was concerning for necrotizing fasciitis with scattered locules of gas within the spinal canal extending to the retroperitoneum along the right psoas fascial plane (Figure 1B) and asymmetric thickening in the right iliacus muscle extending to the right rectus femoris and medial quadriceps musculatures without a clear focus of infection. Therefore, spinal magnetic resonance imaging (MRI) was recommended by Neurosurgery. MRI revealed extensive epidural mass throughout the spine with associated effacement of the thecal sac. The largest collection at T11-T12 level contained a locule of

gas (Figure 1C). Surgery was deferred due to hemodynamic instability and the patient expired several hours later.

Spinal epidural abscess is often associated with trauma, spinal procedures, or a hematogenous spread [1,2]. In a study of patients in Olmsted County, spontaneous epidural abscess occurred in 0.88 cases/100,000 person years [3]. Lack of recognition of classic symptoms and/or the absence of a clear antecedent history may lead to diagnostic delays. Patients may have multiple medical encounters before an accurate diagnosis is made, as happened in our case [4]. Our patient uniquely presented with back pain and new onset atrial fibrillation with no history of invasive spinal procedures, trauma, or recent infections. The gas locules detected on CT imaging were thought to represent necrotizing fasciitis; however, MRI imaging ultimately confirmed presence of epidural abscess. Healthcare providers must have a high index of suspicion for spinal epidural abscess during

evaluation of back pain, even in the absence of classic symptoms or identifiable source on imaging.

References

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