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Case Report

A rare case of full recovery following delayed presentation of paraplegia secondary to thoracic epidural abscess: A case report and review of the literature

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ABSTRACT

Background: Timely diagnosis and prompt management of thoracic epidural abscesses are vital to preventing the onset of irreversible paralysis and death.

Case Description: A 39-year-old female was managed initially for non-specific chest pain for 10 days (i.e., diagnosis of respiratory tract infection). After she developed paraplegia (0/5 motor function), a T10 sensory level, and acute urinary retention, a thoracic magnetic resonance with contrast revealed a T3–T7 spinal epidural abscess with cord compression. On review of her lab studies revealed a white blood cell count of 11.03×10^9/L and a C-reactive protein level of 122 mg/dL. Following a T3–T7 laminectomy with evacuation of an extradural empyema, she fully recovered.

Conclusion: This case report emphasizes the need for early recognition, diagnosis, and treatment of thoracic epidural abscesses that are too often mis-diagnosed as respiratory infections.

Keywords: ASIA A, Delayed presentation of thoracic epidural abscess, Thoracic Laminectomy

INTRODUCTION

It is vital to obtain an early diagnosis and surgery to limit neurological morbidity/paralysis associated with thoracic epidural abscesses. Risk factors for the development of spinal epidural abscesses (SEAs) include diabetes mellitus, intravenous drug use, end-stage kidney disease, and prior surgery.[1]

Only 10% of patients present with the full triad of back pain, fever, and neurological deficits (i.e., varying from non-specific to paraplegia).[4]

Here, a 39-year-old female with a thoracic epidural abscess had a delayed diagnosis for 10 days. She was initially managed for a respiratory infection before an acute onset of paraplegia led to her having imaging that revealed an spinal epidural abscess (SEA).

CASE REPORT

A 39-year-old presented with the acute onset of right-sided chest pain. She was afebrile but was found to have a mildly elevated white blood cell count (WBC) and elevated C-reactive protein (CRP). She was discharged on antibiotics with the diagnosis of a chest infection ± pleurisy. Nevertheless, she

again presented with unrelenting chest pain over the 8 days following her initial visit. Eight days following her initial visit she had a negative computed tomography angiography for a pulmonary embolism. Ten days after her original presentation, she re-presented with a 22 h history of paraplegia (0/5 motor), a T10 sensory level, and acute urinary retention (American Spinal Injury Association (ASIA) Grade A). The magnetic resonance imaging (MRI) with/without contrast showed a T3–T7 SEA with cord compression [Figure 1]. Now with a WBC of 11.03 × 109/L and CRP of 122 mg/dL. She underwent a T3–T7 laminectomy for evacuation of an extradural empyema; intraoperatively, the findings included thick/organized pus compressing the spinal cord to the left. The postoperative MRI scan showed adequate cord decompression [Figure 2].

Cultures and postoperative course

The intraoperative cultures grew a group A *Streptococcus*. Her inflammatory markers improved on Intravenous (IV) benzylpenicillin; she completed a 6 week course of this medication.

She was discharged 24 days after her admission and within 8 post-discharge weeks had 5/5 motor function in both lower extremities, but still required intermittent catheterization (ASIA Grade E).

DISCUSSION

SEA occurs in 0.2–2.8 cases/10,000 patients/year; the mortality rate is 15–20%.[3] The classic triad of SEA, which

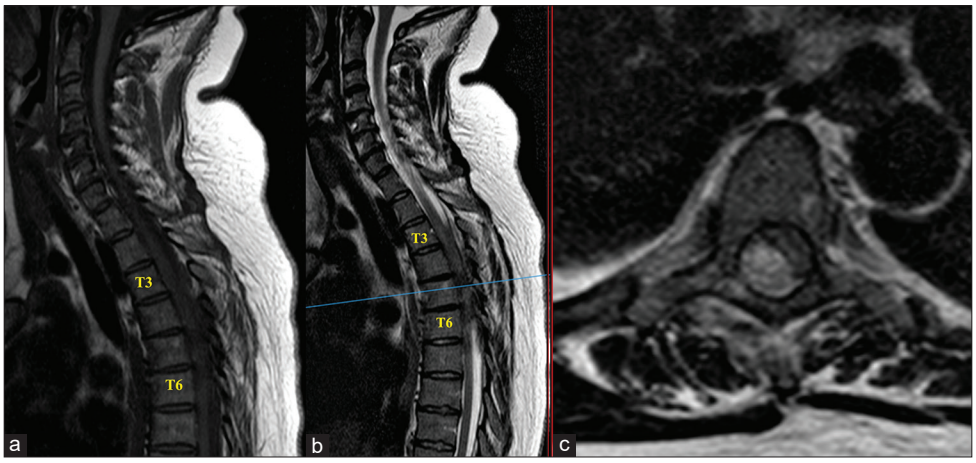

Figure 1: Preoperative magnetic resonance imaging (MRI): (a) Sagittal T1-weighted; (b) T2-weighted (T2W); and (c) axial T2W MRI sequences showing a T3–T7 spinal epidural abscess with significant cord compression.

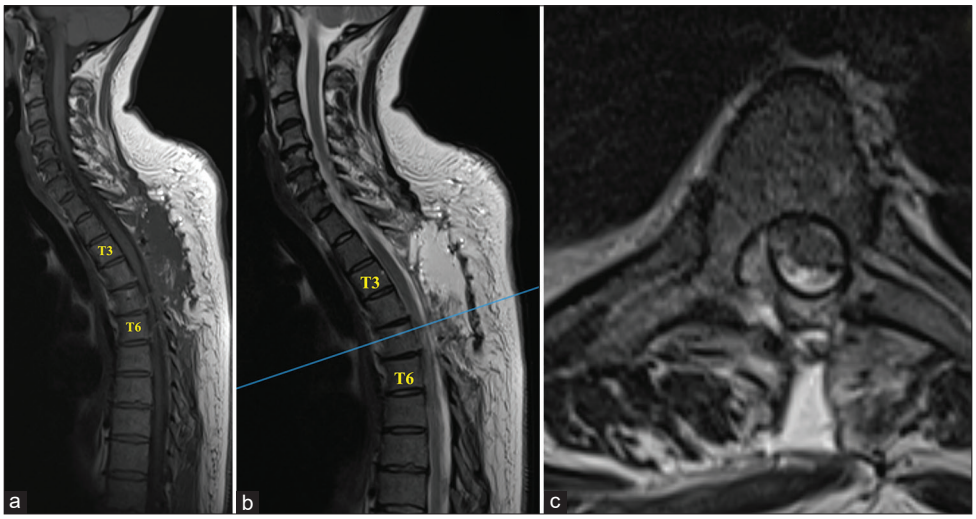

Figure 2: Postoperative magnetic resonance imaging (MRI): (a) Sagittal T1-weighted, (b) T2-weighted (T2W), and (c) axial T2W MRI sequences done 48 h postoperatively showed good postsurgical appearances with significant evacuation of the epidural empyema and relief of the cord compression. There was a small volume residual cord signal changed at T5–6.

includes back pain, fever, and neurological deficit, is found in just 10% of patients.[4] Typically, complete preoperative paralysis for 24–36 h is associated with poor outcomes/ long term neurological deficits; only a handful of patients show complete recovery.[5] Here, the patient underwent a T3–T7 thoracic laminectomy about 27 h after the onset of complete paraplegia. According to Connor *et al*.,[2] in 2013, 66.7% of patients underwent decompressive surgery within 72 h with 56.1% undergoing surgery in under 24 h. Other series documented a statistically significant chance of incomplete recovery with delays of 1.3 ± 1 day. Notably, the neurological status immediately preceding surgery was the strongest predictor of the postoperative neurological outcome.[5] In the case presented above, intraoperative cultures grew group A *Streptococcus*, and the patient received a 6-week course of IV benzylpenicillin. Other studies substantiate the efficacy of such adjunctive antibiotic therapy.

CONCLUSION

We report a 39-year-old female with a thoracic epidural abscess, misdiagnosed for 10 days with a respiratory infection, became paraplegic. Eight weeks after a T3–T7 laminectomy, she regained 5/5 motor function but still required intermittent catheterization.

Declaration of patient consent

Patient's consent not required as patient's identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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