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Minimally Invasive Management of an Extensive Cervicothoracic Epidural Abscess: A Case Report

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Title: Minimally Invasive Management of an Extensive Cervicothoracic Epidural Abscess: A Case Report.

Background: Epidural abscesses are severe infections requiring prompt diagnosis and treatment to avoid neurological complications. Early detection and treatment improve outcomes.

Research Question: Can minimally invasive decompression through small incisions effectively manage extensive cervicothoracic epidural abscesses?

Design: This is a single-patient case report focusing on clinical presentation, diagnostic process, surgical approach, and postoperative outcome.

Methods: A 42-year-old female with a history of drug addiction presented with severe neck pain and torticollis. There were no neurological deficits, but lab results showed elevated WBCs (17,000) and CRP (78 mg/L). Imaging revealed an epidural abscess from C1/2 to Th9/10. The patient underwent minimally invasive decompression and abscess evacuation through a 1 cm incision at selected levels (C2/3, C5/6, Th1/2, Th4/5, Th7/8), along with catheter irrigation and drain placement.

Results: Postoperatively, the patient reported pain relief, improved mobility, and reduced inflammatory markers. Staphylococcus aureus was identified as the causative organism. Follow-up MRI showed residual abscess at Th4/5, requiring revision surgery. After six weeks of intravenous antibiotics, MRI confirmed complete resolution.

Discussion: The case highlights the advantages of minimally invasive surgery for managing epidural abscesses. Small incisions allowed targeted abscess access, minimizing tissue disruption, leading to reduced postoperative pain, faster recovery, and lower risk of spinal instability compared to open surgery. Although revision surgery was necessary at Th4/5, the initial approach provided effective relief. This case further supports minimally invasive techniques combined with appropriate antibiotics as a promising, less invasive alternative to open surgery for cervicothoracic epidural abscesses.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6