Case Report of Extensive Spinal Epidural Abscess

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BACKGROUND

- Spinal Epidural Abscess (SEA) is a rare but serious infection between the vertebral periosteum and the spinal dura that can lead to neurological complications.[1]
- Diabetes mellitus was found to be the most prevalent risk factor, followed by trauma, intravenous drug abuse, underlying spinal conditions such as spinal stenosis or degenerative disc disease, and alcoholism.[2]
- The most common causes of SEA include bacterial infections, with Staphylococcus aureus the most common causative agent and skin abscesses among the most common source of infection.[2]
- The symptoms of SEA typically develop over a few days and include severe back pain, fever, weakness or numbness in the legs or arms, along with bowel or bladder incontinence.

CASE

- A 63-year-old male with a past medical history of hypertension, prostate cancer, and chronic back pain presented to the emergency department with jaundice, altered mentation, and an unwitnessed fall. The patient had been experiencing generalized weakness for four weeks, which acutely worsened over the past two weeks with deteriorating mentation in the last 2-3 days.
- One month prior, the patient was seen in the emergency department for low back pain and diagnosed with a urinary tract infection, for which he was discharged with a 10-day course of Cefdinir. No imaging was performed at that time.
- Upon arrival, the patient reported bilateral shoulder pain with limited range of motion, neck and back pain believed to be secondary to the fall, and tenderness in the right upper quadrant. Photophobia and sensory deficits were denied.
- A CT scan of the brain was negative, and initial imaging of the neck was not tolerated due to shoulder pain. An abdominal ultrasound revealed a distended gallbladder with sludge, small stones, and a mildly dilated common bile duct. The patient was afebrile on admission but had tachycardia and laboratory abnormalities consistent with leukocytosis, thrombocytopenia, and acute kidney injury.
- Based on laboratory findings significant for leukocytosis and hyperbilirubinemia, the leading diagnosis was cholangitis or choledocholithiasis.
- A CT scan of the abdomen and pelvis demonstrated an enlarged gallbladder with sludge but was concerning for a left psoas muscle abscess and multiple areas of epidural gas of the lumbar spine. Subsequent imaging of the neck revealed extradural gas density ventral to the dural sac at the C6-C7 level.
- The patient was initiated on Ceftriaxone, Vancomycin, and Metronidazole. A spinal epidural abscess was diagnosed, and neurosurgery was consulted. The patient's family opted against surgical intervention due to potential risks. Metronidazole was discontinued once cholangitis was ruled out.

IMAGE FINDINGS

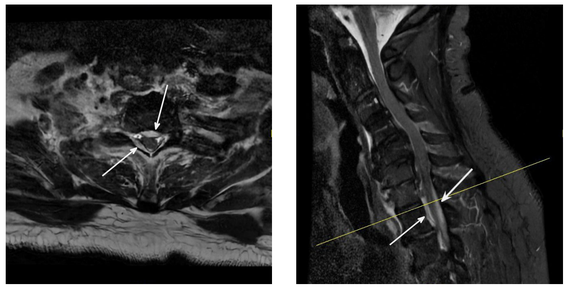

Figure 1-2. MRI C-Spine: Axial and Coronal view - Ventrally, the abscess extends up to at least the C4-C5 level. Dorsally, the abscess extends up to at least the C7 level. There is additional dural-based and epidural enhancement that effaces CSF surrounding the cord up until the C3-C4 level.Imaging appearance of severe central canal stenosis from C3-C4 down to cervicothoracic junction.

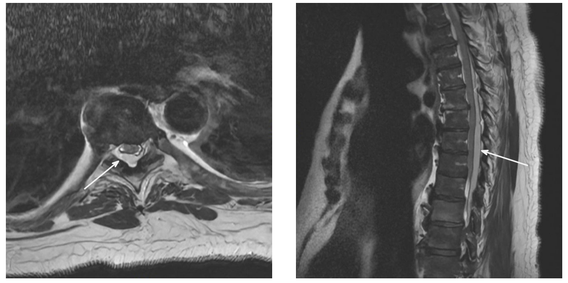

Figure 3-4. MRI T-spine: Thoracic Epidural Abscess extends entire length of the thoracic spine with both dorsal and ventral involvement (dorsal greater than ventral). At multiple levels from T1-T2 down to T5-T6, there is complete effacement of CSF surrounding the cord.

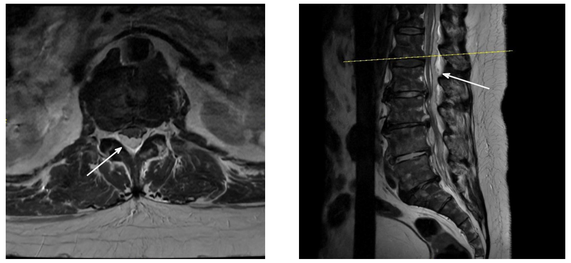

Figure 5-6. MRI Lumbar: Thoracolumbar epidural abscess primarily present dorsally also extends ventrally. Results in multilevel cauda equina compression with compression of the thecal sac to 3-5 mm. Compression present at L1-L2, L2-L3, L3-L4, and the L4 vertebral body level. Medial left posts muscle abscess at the lumbosacral junction with greatest cross-sectional dimensions of only 1.7 x 1.2 x 3.3 cm (not imaged).

CONCLUSION

- This clinical case emphasizes the crucial role of considering spinal epidural abscess as a differential diagnosis in patients presenting with back pain, even in the absence of typical features such as fever and headache.
- This patient had multiple risk factors for spinal epidural abscess, including prostate cancer, recent urinary tract infection, and chronic low back pain with severe disc disease. Although the initial physical examination was inconclusive as to the extent of weakness due to the patient's recent fall, back pain was considered to be mechanically-induced rather than resulting from meningoencephalitis.
- The patient's family opted against surgical intervention, choosing only medical management. Notably, the patient regained awareness but not full strength, as cord compression persists at the time of publication.
- This case underscores the importance of prompt recognition and treatment of spinal epidural abscess, which can lead to severe neurological complications if left untreated. Thus, clinicians should maintain a high index of suspicion for spinal epidural abscess in patients with relevant risk factors, and ensure timely diagnostic and therapeutic interventions.

REFERENCES

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