

## Imaging Sciences Interesting Cases

### CASE 439

Lisa Siripun, MD

**CLINICAL PRESENTATION:** Patient is a 60-year-old male with progressive back pain for 3 weeks.

**IMAGING FINDINGS:** There was an anterior epidural fluid collection which extends from the level of foramen magnum to the level of L2 with peripheral enhancement. There was mild compression to the spinal cord. Diffuse dural enhancement was seen from the anterior aspect of the medulla to the lumbar spinal cord.

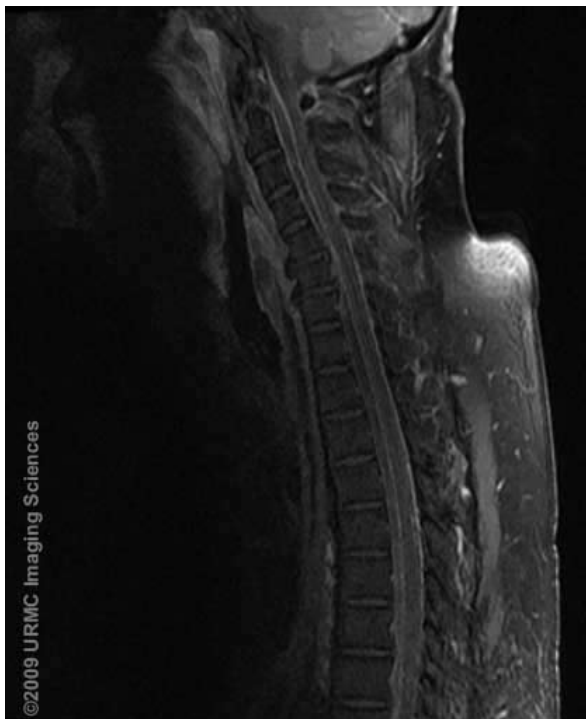
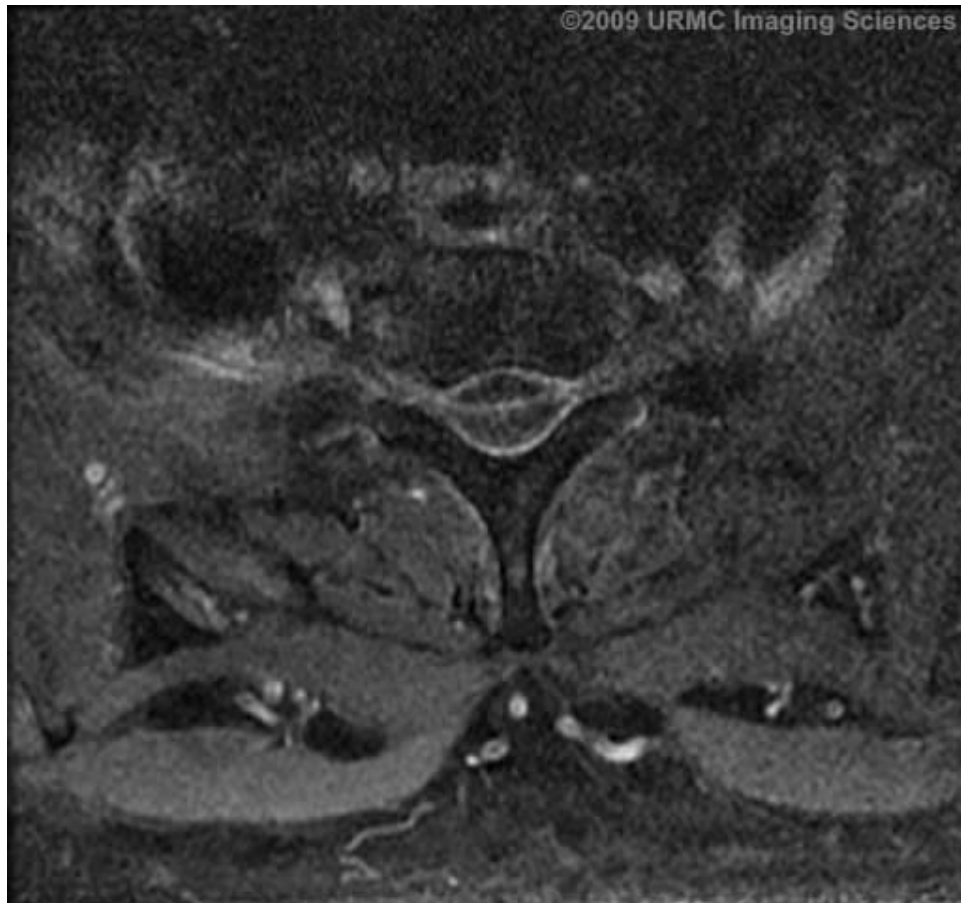


Figure 1.



Figure 2.



**Figure 3**

**DIAGNOSIS: Extensive spinal epidural abscess**

**DISCUSSION:** Spinal epidural abscess (SEA) can cause marked neurologic morbidity by compression of the spinal cord or cauda equina or lead to life threatening sepsis. Frequently, diagnosis is understandably delayed because the initial presentation may be only back pain. It usually occurs in patients with chronic illness such as diabetes mellitus or immunodeficiency and in those with intravenous drug abuse. The patients usually present with back pain, fever, radicular pain, neck stiffness, weakness, bowel and bladder dysfunction and paralysis. The duration of symptoms can range from a few days to more than a month.

Hematogenous spread with seeding of the epidural space is the suspected source of infection in most children and is thought to occur in many adults as well. Direct extension of infection from vertebral osteomyelitis or discitis occurs in adults and rarely in children. The most common infectious agent is staphylococcus aureus. Mycobacterium tuberculosis is the second most common pathogen. Eighty percent of SEA occurs in the posterior epidural space, and 20% anteriorly. Most common site is at the lower thoracic and lumbar spine

MRI with gadolinium (Gd-MRI) has a specificity and sensitivity above 90% to detect SEA, and being superior to other imaging modalities, is therefore the diagnostic method of choice. On T1 pre-contrast studies, the SEA appears hypo- to isointense to the spinal cord. In case of diffuse SEA, the signal of the CSF in the subarachnoid space may not be visualized at the involved segments due to total encasement and displacement of the thecal sac. On T2W, the collection is hyperintense to the spinal cord and therefore difficult to differentiate from CSF. However, T2W help demonstrate areas of discitis and osteomyelitis. On post-contrast study, there may be enhancement of solid component of the SEA either homogeneous or heterogeneous fashion, peripheral enhancing necrotic abscess, diffuse dural enhancement in extensive SEA and enhancing prominent anterior epidural vein or basivertebral venous plexus above/ below the abscess.

Other imaging modality include

- CT which may show enhancing epidural mass narrowing the central canal
- Myelography may show epidural mass impeding CSF flow
- Gallium scan for evaluation of vertebral osteomyelitis

The treatment for SEA includes emergent surgical decompression and abscess drainage, and long-term antibiotic therapy.

**REFERENCES:**

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