Epidural Abscess

Key Points:
- Think of this diagnosis in patients with a predisposing factor (IVDU, immunosuppression) who present with fever and back pain or weakness
- On physical exam, check for saddle anesthesia or a sensory level, diminished rectal tone, and any evidence of motor weakness
- Emergent neuroimaging (with an MRI) is the standard of care
- Definitive therapy almost always involves surgical decompression and a prolonged course of antibiotics

I. Pathogenesis: May occur as result of either local extension of vertebral osteomyelitis/diskitis or hematogenous spread of bacteria from distant site of infection or endocarditis. Damage to the cord occurs either by direct compression, vein thrombosis, arterial interruption, or toxins.

II. Epidemiology:
- Common in IV drug users (median age 35), but may also occur after trauma, spinal surgery, or spontaneously (median age 50)
- 50% of patients have some form of underlying immunosuppression (DM, HIV)

III. Microbiology: Overwhelmingly S. aureus (2/3 of cases); also gram-negative rods, other staph and strep spp. Less common: anaerobes, TB.

IV. Clinical Manifestations: Symptoms usually progress in a typical sequence of:
  a. Back pain (71%): may be reproducible on palpation
  b. Fever (66%)
  c. Progresses to neuropathic/radicular pain
  d. With time, may progress to neurologic compromise, including:
     i. Decreased rectal tone or bladder dysfunction
     ii. Saddle anesthesia, or sensory “level”
     iii. Motor weakness and, eventually, paralysis which may become quickly irreversible

V. Diagnosis: Once you suspect an epidural abscess, you are obligated to obtain emergent neuroimaging – and this is one of the things the MRI team will come in for on a weekend, in the middle of the night, whenever.
- MRI of the spine is the diagnostic test of choice; if unavailable order CT with contrast
- Blood cx should be drawn, and you will likely need to sample the abscess to guide therapy. Positive cultures from abscess=90%, from blood=62%, and from LP=19%.
- LP is contraindicated at the level of the abscess so as not to spread infection into the CSF

VI. Management: If any evidence of neurologic compromise is present, epidural abscess is a neurosurgical emergency!
- Prompt surgical drainage is the definitive treatment; rarely, patients can be managed non-operatively but there exists no good criteria to identify candidates for med mgmt.
- Empiric antibiotic coverage, while awaiting culture results, should include staphylococci, streptococci, gram-negative bacilli, and anaerobes (i.e., be broad!).
- As always, coverage should be narrowed once definitive culture results are available; antibiotic duration should be 4-6 weeks.

References: