A 56-year-old man presents with low back pain, fever, and chills; he has no history of trauma. He has type 2 diabetes mellitus and uses intravenous heroin. The only abnormalities noted on physical examination are needle track marks and pain on palpation over the lumbar spine.

A lumbar spine radiograph is obtained (Figure 1). The erythrocyte sedimentation rate (ESR) is 102 mm/h, and the C-reactive protein (CRP) level is 4.2 mg/L. A urine toxicology screen is positive for cocaine and opiates. An MRI scan is done (Figures 2 and 3). The patient leaves before treatment is completed, but he returns 6 weeks later with continued back pain.

**IMAGING RESULTS**

The lateral radiograph of the lumbar spine shows blurring (between arrows in Figure 1) of the inferior endplate of L1 and the superior endplate of L2.

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**Figure 1** – Lateral radiograph of the lumbar spine shows blurring of the endplates of L1 and L2.

**Figure 2** – Sagittal fluid sensitive MRI scan of the spine shows the edema and inflammation consistent with osteomyelitis.
which suggests spondylodiskitis, on a background of severe degenerative changes. The elevated ESR and CRP level coupled with the fever and chills point to an infection.

The sagittal fluid sensitive MRI scan (see Figure 2) shows an abnormal bright signal in the L2 vertebral body, and to a lesser degree in L1 and L3, representing the edema and inflammation of osteomyelitis. There is abnormal mildly hyperintense soft tissue in the ventral epidural space consistent with an epidural abscess (between the two thin arrows), causing spinal canal narrowing and compression of the cauda equina. Additional abnormal mildly hyperintense anterior paraspinal soft tissue is present, which represents phlegmon (bold arrow). The axial T1 weighted contrast-enhanced MRI scan (see Figure 3) at the level of the L1-L2 disk space shows the enhancing ventral epidural abscess (between the two thin arrows) and the enhancing paravertebral phlegmon (bold arrows mark the outer margins). Figure 4 is a schematic diagram of Figure 3. After a CT-guided biopsy grew Candida albicans, the patient was started on fluconazole.

SPINAL EPIDURAL ABSCESS: AN OVERVIEW

A spinal epidural abscess is a focal infection of the paraspinal epidural space that results in a collection of pus within the spinal canal between the vertebral column and the dura mater. It is secondary to hematogenous spread from distant foci to the epidural space or a contiguous source of infection. Common bacterial pathogens include Staphylococcus aureus, coagulase-negative staphylococci, gram-negative bacilli (especially Escherichia coli), and Pseudomonas aeruginosa (often found in intravenous drug abusers). Fungal infections such as Candida are relatively rare but are increasing because of a greater incidence of risk factors including immunosuppression, instrumentation, and intravenous drug use.1-3

Local pain is the most common complaint and occurs without constitutional symptoms in most cases. Bone biopsy and culture usually under fluoroscopy or CT-guided is the most accurate method of diagnosis. Management includes surgical drainage and antimicrobial therapy.

Paraspinal abscess remains a clinical challenge. The diagnosis is typically delayed. However, early diagnosis and intervention increase the likelihood of a favorable outcome.

REFERENCES:

Figure 3 – Enhanced MRI scan at the level of the L1-L2 disk space shows a ventral epidural abscess and paravertebral phlegmon.

Figure 4 – This schematic diagram represents the anatomy seen on the MRI scan in Figure 3. (Reprinted with permission, Cleveland Clinic Center for Medical Art & Photography © 2009-2013. All Rights Reserved.)