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Figure 1. Anterior-posterior radiograph.

Figure 2. Oblique radiograph.

Figure 3. Lateral radiograph. Used with permission of Blaine Hannafin, MD, Chandler Regional Medical Center, Department of Emergency Medicine, Chandler, AZ.

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An 11-year-old Hispanic boy presented with left leg pain after a friend fell on top of him while they were wrestling. He reported pain with flexion and full extension of the left knee but was able to bear some weight on the injured extremity. Physical examination demonstrated no gross deformity or swelling. Palpation of the popliteal fossa and posterior thigh elicited pain. A firm, mobile mass and crepitus were also palpated in this area. The patient was able to walk, though not without significant pain. Radiographs of the affected leg are pictured above (Figures 1-3).

For the diagnosis and teaching points, see page 294.
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DIAGNOSIS:

Pyogenic vertebral osteomyelitis with bilateral paravertebral abscesses. Computed tomographic (CT) scan of the abdomen and pelvis is shown in Figure 2. It displays multifoci of air bubbles in back muscles beside the vertebra. On the patient's admission, the abscesses were drained percutaneously, and culture revealed *Escherichia coli.* We treated with ceftriaxone for 6 weeks. Acid-fast stain results were negative. The patient was discharged in stable condition.

A high index of suspicion is necessary in detecting pyogenic vertebral osteomyelitis because delays in diagnosis are common. Contiguous spread of infection can lead to paravertebral, subdural, retroperitoneal, or psoas abscesses.[1] The major clinical manifestation is back pain, but fever is inconsistent. C-reactive protein is increased in 90% or more of patients.[2] Radiographs will reveal the degree of bony destruction, and an early change can be disc space narrowing in nearly 75% of patients. Soft tissue extension must be suspected in the presence of an abnormal psoas shadow, widening of the mediastinum, or enlargement of the retropharyngeal soft tissue window. CT is the preferred imaging modality, given the high sensitivity and rapidity. CT provides detail of bony anatomy and also can identify the presence of adjacent soft tissue masses or abscesses.[3] Magnetic resonance imaging is the most sensitive radiologic technique. Sensitivity, specificity, and accuracy are reported as 96%, 92%, and 94%, respectively.[4] CT-guided needle biopsy is generally necessary to confirm the suspicion. Treatment is with surgical drainage and empiric antibiotics according to the probable origin of infection.[5]

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DIAGNOSIS:

Osteochondroma. Osteochondromas are benign bony growths with a cartilage cap that usually originate from long bones. They are typically oriented nearly parallel with their neighboring long bone, with their axis pointing away from the nearest joint. New growth extends from the tumor's cartilage cap. Because the cartilage cap is radiolucent, the lesion typically appears smaller on radiography than on physical examination.[1]

Most osteochondromas are diagnosed incidentally, but some may become symptomatic as they place pressure on adjacent muscles, bursae, or nerves. Less than 1% of these growths become malignant. Management is typically conservative. Surgery is reserved for those patients who have significant pain or restriction of joint mobility.[2] In children, radiographs of other areas of the body may be indicated to exclude osteochondromatosis, an autosomal dominant condition resulting in multiple osteocondromas, and an increased risk of malignant change. In this case, the patient's fractured osteochondroma (best seen in Figure 3) was treated with crutches, analgesics, and orthopedic follow-up.

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