The case:

A 70-year-old woman presented with urinary incontinence and recent onset of paraplegia.

Figure: Lateral radiograph (A) and corresponding sagittal T2-weighted magnetic resonance image (B) of the thoracic spine.

Your diagnosis?

For answer see page 480
A 70-year-old woman with a history of ankylosing spondylitis and advanced kyphoscoliosis sustained a fall at a nursing home. After the fall, she developed paraplegia and remained confined to her bed. Urinary incontinence predated the fall by a few months. Three months after the fall, with no improvement in paraplegia, the patient underwent conventional radiographs and magnetic resonance imaging (MRI) and was diagnosed at an outside institution with septic spondylodiskitis at T9-T10. She was treated empirically with 1 g of vancomycin and 1 g of ceftriaxone taken daily intravenously for 8 weeks. A repeat, end-of-treatment MRI and computed tomography scan showed progression of destructive changes at the T9-T10 level, at which time the patient was referred to the authors’ institution.

Given the absence of fever and the normalization of her white blood count, C-reactive protein, and erythrocyte sedimentation rate, the patient discontinued antibiotic use and underwent instrumented posterior spinal fusion from T5-L4 along with noninstrumented interbody fusion at T9-T10. All intraoperative cultures were negative. No obvious signs of infection were encountered intraoperatively or on surgical pathology. No recovery of bladder or lower-extremity function was achieved postoperatively. The patient appeared to have suffered a diskovertebral fracture and resulting pseudoarthrosis of her ankylosed spine, with MRI findings initially reported as septic spondylodiskitis. The subsequent delay in surgery could account for the irreversibility of her paraplegia.

The aim of this case report is to alert practitioners to a rare but well-described complication of ankylosing spondylitis known as diskovertebral (Andersson) lesions and point out the consequences of mistaking it for an infectious process.

**IMAGING**

Typical radiographic features of ankylosing spondylitis include squaring of the vertebral bodies followed by thin bridging syndesmophytes and then widespread ankylosis, also known as bamboo spine. The reported prevalence of diskovertebral lesions in ankylosing spondylitis ranges from 1.5% to 28% and includes nontraumatic inflammatory diskovertebral lesions and occult diskovertebral fractures. Diskovertebral lesions demonstrate osteolytic destruction with surrounding reactive sclerosis, reduced disk space, and focal kyphosis and can be confined to the vertebral bodies (transvertebral), disk space (transdiskal), or both (diskovertebral). The lesions often have accompanying fractures of the posterior elements, as observed in this case. Flexion and extension radiographs may demonstrate motion at the affected level. However, radiographs may not show a significant portion of the fractures or posterior-element involvement in ankylosing spondylitis, allowing for progression to pseudoarthrosis.

Computed tomography shows diskovertebral osteolysis with surrounding reactive sclerosis similar to radiographs. However, computed tomography is more sensitive than radiographs in demonstrating fractures, nonfusion of the facet joints, vacuum phenomenon, soft
tissue swelling, and severity of spinal stenosis. Magnetic resonance imaging is the best imaging modality at identifying diskovertebral lesions and shows decreased signal intensity on T1-weighted images and corresponding increased signal intensity on T2-weighted images within the disk space and adjacent vertebral body. Accompanying increased signal intensity and enhancement are observed on T1-weighted images after administration of intravenous contrast. Magnetic resonance imaging has the added benefit of identifying occult fractures, ligament disruption, vertebral translation, dural enhancement, epidural lesions, and spinal stenosis. Magnetic resonance imaging can help differentiate diskovertebral lesions from septic spondylodiskitis based on morphology, the extent of marrow edema, contrast enhancement, and disk space signal intensity on T2-weighted images (Figures 1, 2).  

**TREATMENT AND PROGNOSIS**

Diskovertebral lesions are often treated conservatively with immobilization and nonsteroidal anti-inflammatory drugs. However, no established guidelines exist for the recommended duration of treatment. A rigorous exercise program, typical in treatment of ankylosing spondylitis, is contraindicated in patients with diskovertebral fractures. Surgical treatment is reserved for patients with unbearable pain, progression of symptoms or kyphosis, and neurologic deficits. The purpose of surgery is to decompress the spinal canal and stabilize the spine to facilitate healing and fusion, which is accomplished through surgical decompression with associated instrumented or noninstrumented fusion and can be performed through an anterior, posterior, or combined approach. Correction of the kyphotic deformity with an anterior opening wedge osteotomy or posterior transpedicular wedge resection osteotomy may be performed in conjunction with the decompression and fusion. Significant improvement in pain and neurologic status are seen postoperatively for the majority of patients.

**REFERENCES**