Most cases of septic diskitis occur at the endplate of the vertebral body and the intervertebral disk; transient infection of the facet joint is rare. This article reports a case of septic arthritis of a lumbar facet joint associated with epidural and paraspinal abscess.

CASE REPORT

A 59-year-old woman presented to our clinic two days after experiencing an onset of severe low back pain. There was no prior trauma or other known causal factor. The initial medical examination revealed no neurological abnormalities except for tenderness in her right lumbar region and a positive right Kemp sign. The patient had not developed a fever. Despite taking anti-inflammatory drugs, her low back pain continued. She was admitted 2 days after her initial visit. She had no history of spinal injections or history of diabetes mellitus. Her blood test showed that the inflammatory signs were high, the leukocyte count was 12,200/mm³ (normal range: 4,500–8,500/mm³), the erythrocyte sedimentation rate was 84 mm/hr (normal: 3–15 mm/hr) and the C-reactive protein was 5.3 mg/dL (normal: <0.6 mg/dL).

Plain radiographs showed no abnormal lumbar vertebrae or facet joint. A T1-weighted sagittal magnetic resonance imaging (MRI) revealed a cystic lesion on the posterior side of the spinal canal at the L2-L3 level (Figure 1). The cystic lesion showed high-signal intensity on T2-weighted axial MRI and it was observed in the epidural and paraspinal regions, communicating with the right L2-L3 facet joint (Figure 2). T1-weighted gadolinium-enhanced contrast was also noted with this lesion. There was no evidence of infection in the vertebral body or disk (Figure 3).

Computed tomography scans showed swollen right paraspinal muscles, but no clear damage of the facet joint was observed. The patient’s temperature remained normal, but her C-reactive protein level increased to as high as 19.5 mg/dL 4 days after admission, and she was diagnosed as having septic arthritis of the lumbar facet joint associated with epidural and paraspinal abscess. After intravenous piperacillin sodium administration, the C-reactive protein level temporarily decreased, but her pain worsened. Three weeks later, she still had a fever that reached 38°C. Although no blood cultures showed growth, after continuous intravenous administration of sulbactam sodium/cefoperazone sodium, cefmetazole sodium, and imipenem/cilastatin sodium, her pain became intolerable; therefore, irrigation and debridement were performed 35 days after initial admission to our hospital.

The L1-L3 was approached posteriorly and an abscess was noted under the multifidus muscle. The necrotic muscle was removed. The articular capsule and cartilage of the right L2-L3 facet joint were debrided. An L1-L3 laminectomy was performed to drain the epidural abscess. Intraoperative cultures revealed no growth. After surgery, the low back pain resolved, and the patient did not report any recurrence at 18-month final follow-up.
DISCUSSION

Septic arthritis of the lumbar facet joint has been considered a rare disease since Halpin et al. first reported a case in 1987. However, MRI has facilitated its diagnosis and the number of reported cases has increased. Muffoletto et al. reported that 6 (4%) of 140 septic osteomyelitis patients had septic arthritis of the lumbar facet joint. In this article, the clinical presentations of septic arthritis of the lumbar facet joint are summarized based on a literature review of 50 cases. The disease developed in the lumbar region in 44 of the 50 cases reviewed. With respect to the lumbar level of the facet joint infection, 18 cases were at L4-L5, 8 at L3-L4, 6 at L2-L3, and 6 at L5-S1. These patients commonly reported low-back pain and fever, which are more severe than symptoms of septic osteomyelitis. In addition, epidural abscess is a common complication, and lower limb pain, hypoesthesia and dyskinesia may occur. It is difficult to distinguish septic arthritis of the lumbar facet joint from other septic osteomyelitis based on the clinical manifestations and blood tests, and consequently, the imaging findings play an important role in making a proper diagnosis. In particular, MRI is effective in detecting abnormalities in the early stages of the disease. The presence of facet joint swelling, epidural, and paraspinal muscle abscess can be detected one week after the clinical onset. Plain radiographs can detect the abnormalities after only 1-1.5 months. For 70% of the patients in whom the causative agents were identified, Staphylococcus aureus could be detected. In some cases, the causative agents were identified by local puncture of the cyst under CT and ultrasonographic guidance. The medical history of the patients included septic diseases such as oral and skin ulcer in 12 patients, diabetes mellitus in 7, malignant diseases in 4, previous treatment of trigger-point injection and puncture in 4, and immune deficiency in 2. The articular cavity of the facet joint is narrow, and the infection can easily spread to the epidural region when the abscess breaks into the ventral aspect of the articular capsule. The pus may spread to the paraspinal region when the abscess breaks into the dorsal aspect of the articular capsule. Facet-joint infection without epidural or paraspinal abscess formation

The pus may spread to the paraspinal region when the abscess breaks into the dorsal aspect of the articular capsule.

Figure 2: T2-weighted axial view shows high signal areas in the epidural (white arrows) and paraspinal (black arrows) regions, communicating through the high-signal intensity right L2-L3 facet joint.

Figure 3: The cystic lesion found in the epidural (white arrows) and paraspinal (black arrows) regions was enhanced with gadolinium contrast in a T1-weighted axial view.
was detected in 6 patients, a complication of epidural abscess in 8, a complication of paraspinous abscess in 6, and both complications as in our present report in 23.

The antibiotic treatment alone was sufficient to resolve the infection in 36 patients, and the irrigation and debridement were performed in 12.

REFERENCES