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Case Studies

Epidural hematoma secondary to a rupture of a synovial cyst

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Abstract

BACKGROUND CONTENT: With modern advances in imaging studies, synovial cysts are becoming more evident as a common component of erosive lumbar degenerative disc disease causing spinal stenosis and radiculopathy. Whereas hemorrhage can occur inside the cyst and is reported, rupture causing epidural hematoma is a rare complication and finding of this disorder.
PURPOSE: To report a rare clinical presentation of a synovial cyst and spinal stenosis, where rupture of the cyst leads to an early cauda equina syndrome.
STUDY DESIGN: Case report with a review of literature.
METHODS: Clinical history, physical findings, and magnetic resonance imaging studies of a patient with an intraspinal synovial cyst at L4-5 1 week before a sudden worsening of symptoms are reported.
RESULTS: A case report is presented of a male with a known synovial cyst at L4-5, presenting initially with neurogenic claudication. This patient developed sudden worsening of symptoms with bilateral lower extremity pain, weakness, and radiculopathy with difficult voiding. The patient had developed an epidural hematoma, secondary to rupture of a synovial cyst, documented at surgical decompression.
CONCLUSIONS: Although synovial cyst associated with erosive facet and erosive degenerative disc disease are common, rupture of the cyst is not. A case report of a ruptured synovial cyst leading to an early cauda equina syndrome is presented. This case illustrates the spectrum of clinical features and presentations possible with spinal stenosis complicated by lumbar synovial cyst formation.

Keywords: Intraspinal cyst; Hemorrhage; Epidural hematoma; Cauda equina syndrome

Introduction

Because of the vast array of imaging studies available today, intraspinal synovial cysts or juxta-articular facet cysts are becoming increasingly recognized as important etiological factors of radicular or neurogenic claudicatory type symptoms. Since juxta-articular facet cysts were first described by Kao et al. [1] in 1968, numerous studies have been reported. History, examination, and clinical studies suggest a compound problem involving degenerative or instability changes, or both, primarily of the lower lumbar spine, and also of the lower cervical spine [1–8]. Patients generally present with a history of low back pain that later develops into radicular type symptoms that are exacerbated when standing or walking [3–6,9,10].

There have been previous case reports recognizing intracyst hemorrhage within the spine [3,5,9–15]. The majority of these cases identify the mass postoperatively [5,9–12,14,15] through pathological analysis while few are preoperatively [3,13] diagnosed. When an intraspinal synovial cyst hemorrhages, an acute exacerbation of symptoms, caused by cyst expansion or resultant inflammation, may occur [3,5,6,9]. Epidural hematoma after cystic rupture is rare and infrequently presents as cauda equina syndrome.

We report an uncommon manifestation of this common degenerative condition. Initially the condition was documented 1 week before surgery by magnetic resonance imaging (MRI). The patient subsequently experienced a sudden exacerbation of symptoms that included bilateral sciatica, increased back pain, increased bilateral leg weakness, and

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urinary dysfunction. This culmination of symptoms was seen as an early cauda equina syndrome, secondary to an epidural hematoma after synovial cyst rupture and hemorrhage.

Case report

A 68-year-old male patient presented to his orthopedist with problems standing and walking that had been progressing for 2–3 months with no recent history of injury. The patient was a 5'9", 196 lb, nonsmoker who was in generally good health except for hypertension and borderline diabetes mellitus type II. The patient also had a history of low back pain that preceded his current symptoms. Conservative treatments of physical therapy and pain medications such as Carisprodel were unsuccessful for relieving the patient's symptoms.

Physical examination revealed approximately 1 centimeter of atrophy of his right leg. He was hyperlordotic with extension to 20 and flexion to 60 degrees. The upper extremity demonstrated Herberden and Bouchard's nodes. His tension sign with right-sided straight leg raise test was mildly positive, but without any other focal deficits. Plain films showed him to have degenerative disc disease without degenerative deformity. MRI showed him to have moderate L3-4 spinal stenosis (7 mm height × 12 mm width; 84 mm^2) and severe central stenosis at L4-5 (6 mm height × 7 mm width; 54 mm^2). A 1×0.6 cm posteromedial ovoid mass of the right spinal canal at the L4-5 level immediately contiguous with the right facet joint was also found, adding to the stenosis at this level with mild degenerative facet changes (Fig. 1). High signal intensity on T1-weighted and intermediate signal intensity on T2-weighted MRI correlated with the finding of a nonhemorrhagic, intraspinal, extradural synovial cyst that compromised 60–70% of the spinal canal at L4-5. Laboratory studies were normal. Preoperative diagnosis of spinal stenosis with right L5 radiculitis (sciatica) was confirmed.

The patient's condition dramatically worsened over a period of 1 week. However, the patient did not report these changes until the day of surgery. Because the clinical picture would not alter the proposed surgical procedure, a new MRI was not requested. A sudden exacerbation of different symptoms occurred including bilateral sciatica, increased back pain, bilateral leg weakness, and urinary dysfunction requiring immediate surgery. On physical examination, the patient now had absent ankle jerks bilaterally, right foot dorsiflexion weakness 3/5 (with 5/5 being normal muscular strength), left foot dorsiflexion weakness 4/5, decreased rectal tone, and normal post-void residuals. Fortuitously, the patient was under active care and these changes were quickly diagnosed. A routine lumbar decompression was then performed under general anesthesia including a L3-S1 bilateral laminectomy, partial medial facetectomy, and right lateral L5 cystectomy. A new MRI with or without gadolinium was not thought to be necessary, because of the clinical presentation

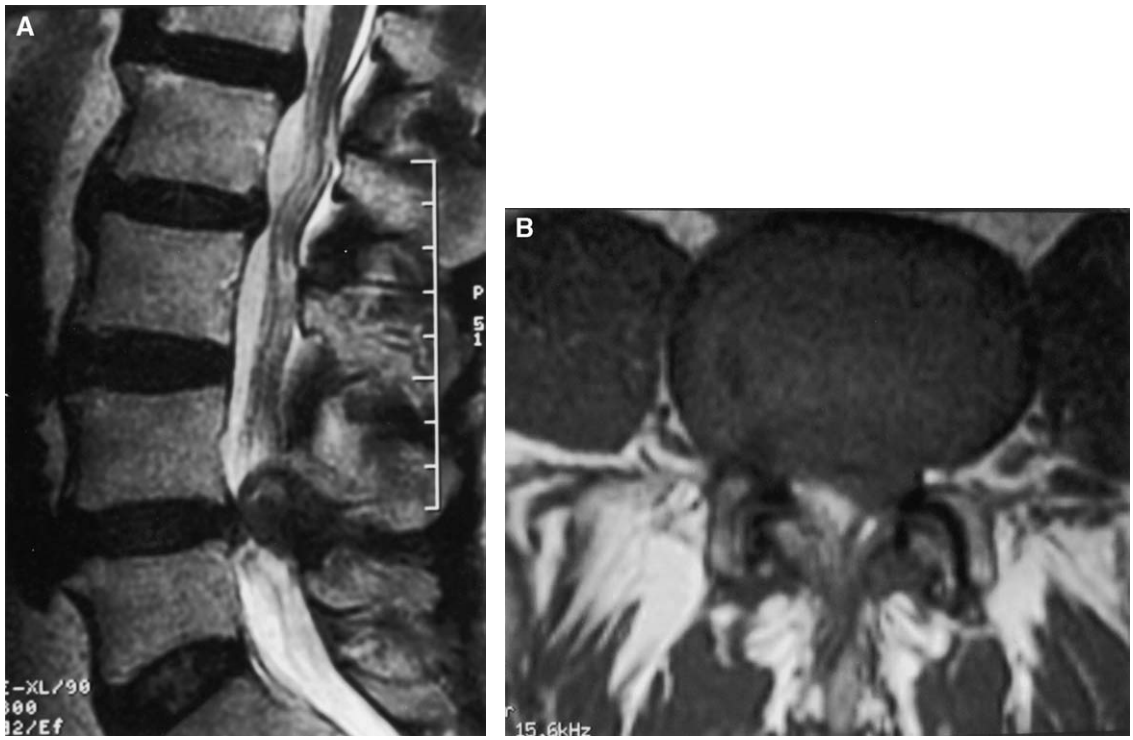

Fig. 1. T2-weighted sagittal (A) and coronal (B) MRI scan documenting a large right L4-5 synovial cyst. The cyst projects off the more cephalad aspect of the involved facet joint. This is the preoperative appearance taken 1 week before the acute deterioration, surgical exploration and decompression.