Haemorrhagic lumbar synovial cyst

A CAUSE OF ACUTE RADICULOPATHY

K. Kaneko, Y. Inoue

From Juntendo University, Izunagaoka Hospital, Shizuoka, Japan

A total of 254 cases of synovial cysts of the spine have been reported in the English literature, but only eight have been associated with haemorrhage. We describe a 55-year-old man with acute radiculopathy resulting from haemorrhage involving a synovial cyst at a lumbar facet joint. Traumatic factors could have caused bleeding around or into the synovial cyst. Treatment by resection of the cyst and evacuation of the haematoma led to complete neurological recovery.

J Bone Joint Surg [Br] 2000;82-B:583-4.

Received 5 August 1999; Accepted after revision 17 November 1999

Intraspinal synovial or ganglion cysts are widely recognised.¹ Only eight cases of haemorrhagic cysts, however, have been reported in the English literature.²⁻⁹ The most frequent presentation of a lumbar synovial cyst is with intermittent low back pain in the absence of motor or sensory impairment, classical radiculopathy and acute exacerbation of symptoms because of haemorrhage.⁸ They rarely occur after injury to the back.⁴

We describe a patient with a synovial cyst of the lumbar spine who presented with neurological deficit as a result of acute radicular compression by a haematoma.

Case report

A 55-year-old man complained of low back pain for a period of six months, which had increased during the month before presentation. Three days before admission, he fell and subsequently had pain radiating into his left leg from his buttock to the posterolateral aspect of the calf. He also complained of weakness, paraesthesia and a painful limp favouring the left leg. He did not have incontinence of the bowel or bladder. His medical history was otherwise unre-

markable. The left straight-leg-raise test elicited pain in the leg at 30° which was exacerbated further by ankle dorsiflexion. He had mild weakness of the left extensor hallucis longus and tibialis anterior muscles (MRC grade 4). There was diminished sensation to light touch in the left thigh and calf, and in the distribution of the L3 and L4 dermatomes. The left patellar tendon reflex was present but diminished. Plain radiography of the lumbosacral spine was normal. CT of this area revealed a 10 mm osteolytic lesion of the left inferior facet of L3, with marked degenerative changes (Fig. 1). MRI showed an obvious haematoma and compression of the dura of the spinal canal at the level of L3 and L4 (Fig. 2). The neurological deficit indicated urgent surgical decompression. The posterior elements from L2 to L4 were exposed and an *en-bloc* hemilaminectomy and facetectomy were carried out on the left side at the level of L3. The extradural haematoma was directly visualised and evacuated, effecting decompression of the left L3 and L4 nerve roots. Subsequent histological examination of the surgical specimen revealed a synovial cyst (Fig. 3). Recovery was uneventful except for an episode of slight pain in the left leg. Three months after operation he returned to work and

Fig. 1

CT of the third lumbar lamina and the lower facet showing the cyst and destruction of the ventral aspect of the cortex associated with loss of articular cartilage, osteophytes and subchondral cysts.

K. Kaneko, MD, Assistant Professor

Y. Inoue, MD, Professor

Department of Orthopaedic Surgery, Juntendo University, Izunagaoka Hospital, 1120 Nagaoka, Izunagaoka, Tagata, Shizuoka 410-2295, Japan.

Correspondence should be sent to Dr K. Kaneko.

©2000 British Editorial Society of Bone and Joint Surgery
0301-620X/00/410444 \$2.00

Fig. 2a

Fig. 2b

MRI showing a) a sagittal T1-weighted image with high signal intensity within the lesion suggesting a haematoma and b) an axial T1-weighted image with high signal intensity indicating compression of the thecal sac.

Fig. 3

Photomicrograph of a surgical specimen of a synovial cyst with normal synovial villi from its wall (haematoxylin and eosin $\times 100$).

11 months later MRI confirmed complete disappearance of the haematoma and decompression of the dural sac. By 2.5 years, the patient had fully recovered and had no symptoms in his lower back or his left leg.

Discussion

Synovial cysts of the axial skeleton are typically associated with pain, but not usually with neurological impairment.¹ The differential diagnosis of a lytic lesion of the posterior elements of the axial skeleton includes a ganglion cyst of bone, a solitary bone cyst, aneurysmal bone cyst, osteoid osteoma, giant-cell tumour, and a metastatic tumour. Synovial cysts of the spine rarely present with acute pain and

neurological deficit after haemorrhage into the cyst.²⁻⁹ The bleeding is usually into the cyst and surrounding soft tissues, such as the ligamentum flavum or the epidural space. Haemorrhage into the spinal canal may cause acute compression of the spinal cord and/or nerve roots and may exacerbate the symptoms.^{8,9} These lesions may be associated with injury.^{4,6,10}

Haemorrhagic synovial cyst should be included in the differential diagnosis of an epidural haematoma with acute back pain and radiculopathy, especially if there has been a history of injury. Prompt recognition and appropriate surgical decompression can give an excellent outcome.

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

References

1. Parlier-Cuau C, Wyber M, Nizard R, et al. Symptomatic lumbar facet joint synovial cysts: clinical assessment of facet joint steroid injection after 1 and 6 months and long-term follow-up in 30 patients. *Radiology* 1999;210:509-13.
2. Brish A, Payan HM. Lumbar intraspinal extradural ganglion cyst. *J Neurol Neurosurg Psychiatry* 1972;35:771-5.
3. Kjerulf TD, Terry DW Jr, Boubelik RJ. Lumbar synovial or ganglion cysts. *Neurosurgery* 1986;19:415-20.
4. Jabre A, Shahbaban S, Keller JT. Synovial cyst of the cervical spine. *Neurosurgery* 1987;20:316-8.
5. Jackson DE Jr, Atlas SW, Mani JR, Norman D. Intraspinal synovial cysts: MR imaging. *Radiology* 1989;170:527-30.
6. Liu SS, Williams KD, Drayer BP, Spetzler RF, Sonntag VK. Synovial cysts of the lumbosacral spine: diagnosis by MR imaging. *AJR Am J Roentgenol* 1990;154:163-6.
7. Summers RM, Quint DJ. Case report 712: hemorrhagic synovial cyst arising from right L2-L3 facet joint. *Skeletal Radiol* 1992;21:72-5.
8. Tatter SB, Cosgrove GR. Hemorrhage into a lumbar synovial cyst causing an acute cauda equina syndrome. *J Neurosurg* 1994;81:449-52.
9. Howling SJ, Kessel D. Case report: acute radiculopathy due to a haemorrhagic lumbar synovial cyst. *Clin Radiol* 1997;52:73-4.
10. Awwad EC, Sundaram M, Bucholz RD. Post-traumatic spinal synovial cyst with spondylolysis: CT features. *J Comput Assist Tomogr* 1989;13:334-7.