Posttraumatic lumbar epidural true synovial cyst

Case report

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A case is reported of posttraumatic epidural true synovial cyst causing cauda equina compression. Surgical therapy resulted in satisfactory recovery.

KEY WORDS • synovial cyst • epidural cauda equina compression • spinal injury

SYNOVIAL cysts arise from various joints and tendon sheaths in the extremities and may cause pressure on adjacent peripheral nerves, resulting in a variety of neurological symptoms. Theoretically, these cysts can occur at any site in the body where synovial tissue is present. We are reporting a rare case in which a true extradural synovial cyst was the cause of cauda equina compression.

Case Report

This 58-year-old seaman was in good health until 1956 when a fall resulted in severe low back pain which resolved spontaneously within a few weeks. However, he subsequently developed persistent, chronic low back pain with episodes of recurrent exacerbations and remissions occasionally associated with pain radiating down the medial right leg into the ankle. In April, 1972, without apparent cause, he once again developed severe low back pain, this time with leg weakness that prevented him from standing unaided. He treated himself symptomatically at home for 3 weeks and then was admitted to another hospital where neurological examination revealed a flaccid paraparesis, sensory loss in the leg, and urinary retention. A urinary catheter was inserted and an electromyogram and myelogram performed. The patient was then transferred to the neurological surgery service of the University of Washington Hospitals.

Examination. The patient was well-developed and well-nourished. The vital signs and general physical examination were unremarkable. He exhibited flattening of the lumbar lordosis, paravertebral muscle spasm, and scoliosis to the left. Interlaminar and spinous process tenderness was elicited at L3–5 as well as bilateral sciatic notch tenderness. He exhibited a severe flaccid paraparesis involving all muscles below L-3, most marked distally. The right peroneal
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and posterior tibial muscles were totally paralyzed. A complete loss of all sensory modalities was present below L-3 bilaterally. Quadriceps, gastrocnemius, bulbocavernosus, and anal reflexes were absent. Lumbo-sacral spine films revealed marked degenerative narrowing of L2–3 and L4–5 disc spaces with associated anterior and lateral osteophyte formation and indistinct right facet joint margins at L4–5. A lumbar myelogram revealed a block to the flow of contrast medium at L-4 (Fig. 1). An EMG revealed denervation potentials in the distribution of the L4–5 and S-1 roots, bilaterally.

Operation. A decompressive laminectomy of L4–5 and S-1 was performed. At surgery, a fibrous, partially cystic circumferentially constrictive, epidural mass was encountered at the joints of the L4–5 facets. A thin bony spicule indented the right side of the dural sac. Both the bony spicule and epidural mass arose from the right L4–5 facet. Dural pulsations were absent distally. After excision of the epidural mass and bony spicule, dural pulsations were restored to normal.

The patient’s postoperative course was uncomplicated. There was relatively rapid improvement in the strength and sensation of the legs. At 2 months, he was able to void normally. At 6 months, he could walk well with the aid of a cane but had a mild residual hypesthesia in the right L-5 and S-1 roots and a mild paresis of the flexor and extensors of the right foot.

Pathology. The epidural mass consisted of several fragments of fibrous tissue, the largest of which measured 1.2 × 1.5 cm, attached to pieces of cartilage. There was no discernible gross structure on cross section. but microscopically the tumor was composed of cystic synovial tissue. Beneath the mildly hyperplastic synovial epithelium were scattered lymphocytes, a rare eosinophile

Fig. 1. Posteroanterior lumbar myelogram demonstrating a block to the distal flow of Pantopaque at the L-4 level. Note the indistinctness of the right L4-5 facet (arrows).

Fig. 2. Photomicrographs of a section of the epidural mass demonstrating the synovial tissue lining the cyst (asterisk) and the underlying scattered lymphocytes and occasional macrophages. Left: H & E, x 10. Right: H & E, x 40.
and a few macrophages (Fig. 2). There were no giant cells or hemosiderin.

Discussion

Cystic tumors of the extradural or subarachnoid space of the spinal canal include ganglion cysts (which apparently represent mucoid degeneration of the periar
ticular adventitial fibrous tissue as seen elsewhere in the body), arachnoid cysts, acquired or congenital fibrous cysts, ependymal cysts, teratomatous cysts, and perineural cysts of the nerve roots. The presence of typical synovium distinguishes this case from all other cases of epidural masses. Furthermore, the synovium and bony spicule indicate that trauma to the facet joint very likely was the etiologic factor in the formation of the cystic mass. It is surprising that this type of cystic mass is not seen more commonly, considering the relatively high incidence of injury to the facet joint.

The only definitive treatment is operative decompression and excision of the mass. As with other cystic epidural masses, the lesion was posterior and thus laminectomy gave excellent exposure for relief of the neural compression.

References


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