Lumbar Extradural Cyst

Case Report

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The most common causes of nerve root pain are degenerative disc disease, spondylosis, and tumors in the intradural or extradural space. On rare occasions a congenital or acquired extradural cyst in the lumbar region may be responsible for sciatic pain. Elsbert et al. found 3 such patients among 250 cases of cord compression, and Fried and Dietrich found 4 in 280 laminectomies.

Wise and Foster and Gortvai summarized the literature on spinal extradural cysts and described the symptomatology. The most frequent location of these cysts is in the thoracic and thoraco-lumbar area. These authors describe the symptomatology, pathology, and etiology of the cysts in detail. Since the last review by Gortvai, a few additional cases of spinal extradural cysts have been reported.

The purpose of this case report is to emphasize the possibility of an extradural cyst as the cause of nerve root pain. We are reporting the case of a 71-year-old woman in whom subtle radiological changes were demonstrated over a 10-year period.

Case Report

G.D.G. (J398250). A 71-year-old woman had a long history of "arthritis of her spine," resulting in minor back pain since she was in her 40's. This pain, described as neuralgic in type, involved both sides, but primarily the left. It was frequently more severe after she had been sitting down but improved after walking.

History. For the past 2 years she had had pain in the right groin, leg, ankle, and toes. It was described mainly as an aching, but at times as a sharp pain, increasing on standing, sitting or walking. For the last year this pain had become so intolerable that she was unable to go about her everyday activities. There was no objective numbness, but the pain was associated with paresthesia. She was unaware of any muscle weakness, but felt insecure bearing weight on her right leg, particularly when climbing stairs. For the past month she had required almost constant analgesics.

In February, 1962, she was admitted to another hospital and was treated for bronchitis, bronchopneumonia, and cholangitis. A "lytic lesion" of L-1 and L-2 was described, although an extensive work-up, including a search for metastases, disclosed no malignancy. A myelogram was reported as inconclusive.

Examination. The patient was an active, bright, elderly lady. Her blood pressure was 115/65 and pulse 64. There was a slightly diminished right knee reflex, but equal ankle reflexes. The plantar responses were flexor. Pain and temperature sensations were diminished over the lateral and anterior aspect of the right thigh and the medial aspect of the leg. Absence of pin-prick sensation over the right buttock and flank was attributed to a nephrectomy scar. Proprioception and coordination were normal. Motor examination revealed some weakness in the right gluteal muscles with slight atrophy. Straight leg raising was performed to 90° bilaterally with only minimal referred pain on the right side. On walking she favored the right leg. There was slight tenderness of the upper lumbar spine without muscle spasm or list. Range of motion was excellent in all directions.

Laboratory findings. Urinalysis revealed 5 to 6 red cells, and 15 to 20 white cells in the sediment. Urine examination for Bence-Jones protein was negative. Serum alkaline phosphatase was 12.3 units, serum calcium 9.8 mg %, and serum phosphorus 2.0 mg %. Spinal fluid examination showed clear, colorless fluid with a protein of 48 mg %. A chest x-ray was normal.

Thoraco-lumbar spine films showed erosion of the inferior part of the facet of L-1 and of the superior aspect of the facet of L-2 on the right. This was accompanied by a loss of definition of the bone of the lamina of L-2 superiorly (Fig. 1). There were minor arthritic changes, but the interspaces and vertebral body heights were well preserved. A review of the first available spine films, taken in 1953, showed the beginning of an erosive process of the facette of L-1 and L-2 (Fig. 2).

Hospital course. A myelogram carried out in prone and in supine positions showed no space-occupying mass, although on fluoroscopy the medium deviated slightly medially on passing the area of the suspected lesion. A nerve block of the L-2 nerve root resulted in temporary relief of pain and an appropriate dermatal sensory deficit.

Operation. A hemilaminectomy of L-1 to L-3 on the right was carried out. The L-2 lamina was thinned and eroded, and upon removing it, a bluish, thin-walled, cystic structure was seen beneath the markedly eroded facet. The cystic structure was not compressible and remained unchanged with increased abdominal pressure. The lower margin of L-1 was removed, revealing a continuous sac starting from the beginning of the nerve root sleeve of L-1 and extending to the L-2 nerve root. The cyst wall was well-developed and membranous with a clear, colorless fluid content. It measured about 4 cm in length and 2 cm in width, occupying the entire right gutter between the 2 nerve roots. The cyst was easily separated from the adjacent dura. Upon opening the cyst, no further fluid collection or communication with the subarachnoid space was found. The cystic structure was completely removed. The dura was then opened and no intradural abnormality was found.

Received for publication March 23, 1966.
Revision received July 8, 1966.
Pathological examination. The cyst wall consisted of dense, fibrous, parallel bands of tissue with sparse numbers of nuclei. The cyst was lined by a single layer of flattened, nonspecific cells.

Postoperative course was satisfactory, although the patient required a Foley catheter for a few days. The radiating pain in her right leg disappeared and ambulation was aided by physiotherapy. One month postoperatively she was free of pain and was able to sit and walk comfortably with no subjective numbness or weakness. She had good motion of the lumbosacral spine. The right knee jerk remained slightly diminished. The area of diminished sensation was still present but less marked and no weakness was detected in the lower limbs.

Discussion

In previous reports, two-thirds of the patients were male and the age at the time of their presenting symptoms ranged evenly from 20 to 50 with the exception of a threefold increase in the teens. Our 71-year-old patient is the oldest of those reported.

The symptoms differ depending on the location of the cyst. In the thoracic and conus areas the symptoms generally are of shorter duration, ranging from several weeks to years, leading to signs of cord compression of variable severity. If pain is present, it is of dull character or radiating in segmental distribution. In several cases, spontaneous remission occurred and, as emphasized by Elsberg et al., may be used as a differentiation from a neoplasm. The high incidence of juvenile dorsal kyphosis and its relationship to the extradural cyst in adolescence is discussed in detail by Cloward and Bucy.

In contrast, extradural cysts confined to the lumbar region present nerve root pain as a prominent symptom, with paresthesia and dermatomal sensory loss. Weakness, if present, is mild and of a lower motor neuron type. The symptoms last for several years. They are so characteristic that Smith and Chavez proposed referring to them as lumbar extradural cysts in contrast to those occurring elsewhere which might be called spinal extradural cysts.

Spinal fluid findings may be normal or may show evidence of increased protein and pressure.