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Masoud Hemmati, Chinnamma Thomas and Dushyant V. Patel

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Symptomatic Intraspinal Ganglion Cyst of the Nerve Root Sheath

Ganglion cysts of the nerve roots frequently occur in the extremities. However, there is no report of their intraspinal occurrence. In this paper we report a symptomatic case of such lesion with clinicopathologic and radiographic manifestations as well as a brief discussion of differential diagnosis.

Case Report

A 36-year-old man was admitted to the hospital because of low back pain radiating to his right leg, which had lasted with gradual worsening for the last 4 years. On physical examination, there was mild motor and sensory deficit of the leg and foot of the affected side. Electromyography findings were compatible with an L5 root injury with evidence of axonal neuropathic dysfunctions involving motor fibers.

Plain radiographs of the lumbosacral spine were unremarkable. CT of the lumbar spine was performed (Fig. 1A). Myelography demonstrated an extradural defect (Fig. 1B). Postmyelography CT showed the defect to better advantage (Fig. 1C). The defect was thought to represent a neurofibroma of the L5 nerve root. At surgery, an extradural cystic lesion adjacent to the right L5 root was resected. Histology of the lesion showed a myxomatous nodule composed of loose stroma with stellate cells. The cyst was devoid of epithelial lining. No neural tissue was identified in any section. The lesion was reported as a myxoid ganglion cyst most likely arising from the nerve root sheath.

Discussion

Symptomatic intraspinal extradural cystic lesions are most commonly due to synovial cysts arising from degenerated apophyseal joints, which are located dorsolateral to the dural sac [1]. In some reports these have been referred to as ganglion cysts, but clearly described as cystic lesions arising from the facet joints [2, 3]. These cysts rarely cause erosion of the vertebral bodies; however, erosion of the adjacent pedicle has been reported [2]. These cysts may or may not cause classical symptoms of sciatica [3]. An extradural pigmented villonodular synovitis may behave similarly [4]. Arachnoid cysts, although usually occurring in the thoracic region, may occur in the lumbar region and by growth cause erosion of the vertebral

bodies [1]. Intraspinal segments of the neurofibromas and schwannomas of the nerve root sheaths are the most common cause of erosion of the posterior margin of the vertebral bodies. Other conditions that may show such radiographic findings include conjoined nerve roots—although unlikely to cause sciatica [5], symptomatic diverticulum of the nerve root sheath [6], dermoid cyst [2], and rheumatoid cyst [7]. Unusually located disk protrusion or extruded disk fragment, intradiscal disk herniation [8], and epidural or nerve root metastasis should also be considered.

Intraneural ganglion cysts are lesions of the peripheral nerves usually seen in the tibial nerve [9], the peroneal nerve, the sciaticopopliteal nerve [10], and the suprascapular nerve. Our review of the English-language radiology literature revealed no report of an intraspinal ganglion cyst of the nerve root sheath.

Masoud Hemmati
Chinnamma Thomas
Dushyant V. Patel
Michael Hospital and Medical Center
Chicago, IL 60616

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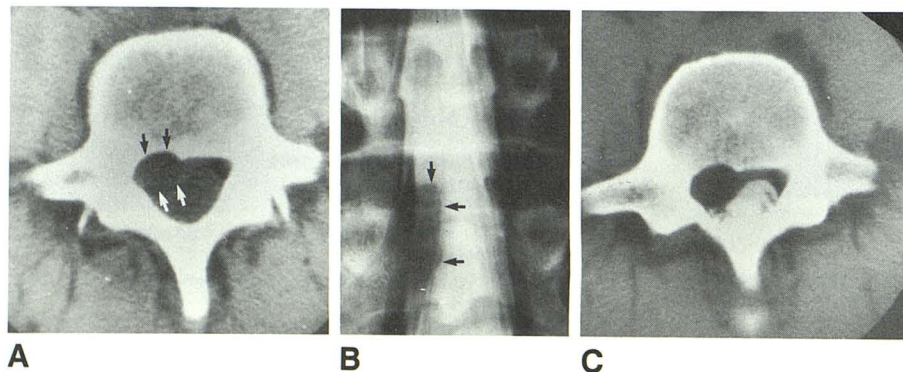


Fig. 1.—Ganglion cyst of the nerve root sheath.

A, CT of the lumbar spine at L5 level. Asymmetric scalloping of posterior vertebral body on right side (arrows) with smooth cortical margins occupied by a soft-tissue density.

B, Anteroposterior view of lumbar myelography. Elongated right ventral lateral extradural defect at L5 level.

C, Postmyelography CT. There is a ventral lateral extradural defect at L5 level with compression of dural sac. Lesion does not fill with contrast material.