Endocystography in Cystic Neurilemmoma

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Summary. During myelographic evaluation for a suspected herniated disc, a cystic neurilemmoma in the lower lumbar region was inadvertently punctured and a contrast study of the interior of the lesion resulted. The possibility of puncture of a cystic mass should be considered in the differential diagnosis when a complete block is encountered above and below the site of needle puncture, and particularly when the contrast column demonstrates a relatively smooth biconcave appearance.

Key words: Myelography – Tumors, intradural.

Percutaneous needle puncture of intradural spinal lesions was first described in 1928 by Vitek [1]. In studying patients with syringomyelia, he punctured the spinal cord lesion at its widest point, as demonstrated by positive contrast myelography, and introduced Lipiodol for endomyelography. No adverse reactions were encountered in his first three patients and temporary relief of symptoms occurred following aspiration of fluid from the cystic lesions.

Westberg [2] reported nine cases in which he had aspirated cystic intramedullary lesions by percutaneous needle puncture of the cervical cord. Booth and Kendall [3] and Kendall and Symon [4], both added three cases to the literature where percutaneous aspiration of cystic tumors of the spinal cord, in several cases accompanied by endomyelography, resulted in symptomatic improvement or additional diagnostic information without associated complications.

In all of the 18 patients described in the above-mentioned series, puncture of the intramedullary mass and endomyelography, when performed, were carried out purposely. Zilkha and Nicoletti [5] reported a case in which an intradural extramedullary dermoid cyst extending from Th$_3$ to S$_3$ was inadvertently punctured during myelography. While studying a patient for a suspected herniated disc, we have recently had a similar experience leading to a striking myelographic picture and an interesting gross pathological specimen.

Case Report

M. E., a 52 year old female, was first seen in December 1971 complaining of low back pain of three years duration. For the previous six months, the pain had radiated down both lower extremities and often awakened the patient at night. Occasionally she had difficulty standing and walking, and was bedridden during acute episodes. The pain was exacerbated by coughing and straining. She was unaware of sensory loss or of muscle weakness. There were no sphincter disturbances. Neurological examination at that time was essentially normal.

Plain films of the lumbosacral spine revealed minimal narrowing of the L$_5$–S$_1$ interspace but were otherwise unremarkable. The patient was given muscle relaxants and anti-inflammatory drugs with improvement.

She did well for the next 14 months, then was seen again because of increasing radiating pain in the lower extremities, more intense on the left than on the right. The night pain had recently become more intense and she found that she could no longer sleep in the horizontal position. There was no back pain.

Neurological examination disclosed depression of both Achilles tendon reflexes with normal plantar responses. The straight leg raising test was positive
Fig. 1a In the head-down position, contrast material would not proceed cephalad to the L3-4 interspace. Note the relatively smooth configuration to the upper border of the contrast column, atypical for most extradural obstructions. An additional block to the caudal flow of contrast material was encountered at the upper L3 level in the erect position. Again note the relatively smooth appearance of the contrast column at the lower level of block. The biconcave appearance of the contrast column is demonstrated bilaterally. The pain was increased by flexion of the neck. There were no sensory changes. She was admitted to the hospital for further evaluation.

Plain films of the lumbosacral spine were unchanged. A myelogram was performed. Spinal puncture at the L3-4 interspace was carried out; yellowish straw-colored fluid was obtained which suggested the possibility of a complete block. For this reason, 3 cc of contrast material was injected but this never moved cephalad (Fig. 1a) despite placing the patient in the head-down position. Inferiorly the contrast material did not descend below the top of the 5th lumbar vertebral body (Fig. 1b). These upper and lower levels of block remained constant. The blocks were considered atypical for extradural changes due to disc herniation or metastasis as they were both concave towards the center of the Pantopaque column and relatively smooth superiorly and inferiorly, on both frontal and lateral projections.

The Pantopaque was not removed and laminectomy of L3-L5 was performed. On exposure of the spinal canal, the dura appeared to be draped over an oval, intra-arachnoid mass. A cystic lesion was exposed when the dura was opened. It was possible to separate the arachnoid membrane clearly from the

Fig. 2. Radiographic examination of the gross pathological specimen revealed it to be filled with markedly opaque material, representing the contrast injected at myelography. Note the areas of dense goblet formation.