CASE REPORTS AND TECHNICAL NOTE:

MYELOGRAPHIC DIAGNOSIS OF SACRAL PERINEURIAL CYST

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Sacral perineurial cyst has come to attention in recent years as a possible cause of symptoms referable to the cauda equina. The symptoms include lumbosciatic pain and urinary retention. In each case previously reported, no definite preoperative diagnosis could be made.

Myelography has been considered of no value in these cases because of the frequent lack of communication between the cyst and the subarachnoid space. However, in the case presented such communication was present and permitted preoperative visualization of the lesion. As far as we know, positive myelograms have not been reported previously in this condition.

CASE REPORT

The patient was a 38-year-old woman who had suffered low back pain intermittently for 15 years, but none for the past 3 years before the present episode. Two weeks prior to admission, she lifted a 50-pound tray and felt severe lumbar pain. Four weeks of bed rest produced no improvement. The pain began to radiate down the posterolateral aspect of the right lower limb and was increased by coughing or straining.

Examination. She was unable to bend forward or to walk on toes or heels. The patellar and Achilles reflexes were normal. There was no tenderness along the course of the sciatic nerves. Straight leg raising was permitted to 120° on the left and 80° on the right; when either leg was lifted, pain was referred to the right lumbosacral area. Sensory status was normal. Vertebral tenderness was limited to the spinous process of the 5th lumbar vertebra. There was slight atrophy of calf and thigh muscles on the right side. Plain x-ray films of the lumbosacral region were normal.

Myelography. Under the fluoroscope a small amount of pantopaque passed from the terminal portion of the sac to a small irregular diverticulum just caudal to the sac. The opaque medium did not return to the main portion of the sac after the patient was tilted back. On the basis of this finding, together with confirmatory spot films (Figs. 1 and 2), a diagnosis of sacral perineurial cyst was made.

Operation, Feb. 21, 1951. There was no ruptured disc at the lumbosacral space, but far laterally there was bulging of the disc in the region of the posterior ganglion of the right 1st sacral nerve. The sacrum was unroofed and the lower end of the dural sac was found to have numerous tiny outpouchings. There was a large perineurial cyst on the right which measured 5×7×3 mm. (Fig. 3). Tantalum clips were placed above and below the cyst. The cyst and adjacent portion of the right 2nd sacral nerve were removed. There was a similar cyst, 3×3×5 mm., on the left 2nd sacral root.

Postoperative Course. The patient was completely free of pain and other symptoms. No sensory loss could be demonstrated and the rest of the neurological examination was negative. Postoperative myelograms demonstrated the small cyst on the left with its narrow pedicle from the dural sac.

The patient returned to her work as factory inspector 5 months after operation and when last heard from, 7 months postoperatively, felt entirely well.
Figs. 1 and 2. Preoperative myelograms. (Left) Anteroposterior view, showing pantopaque which is trapped in the cyst. The lowest part of the dural sac extended to the top of the cyst as determined by other films made with patient erect. (Right) Lateral view.

Microscopic section of the specimen showed sensory and motor roots; no cyst wall was visualized. There was moderate axonal degeneration of the motor and sensory roots.

DISCUSSION

Attention was called to the presence of these cysts in the posterior spinal nerve roots, within the perineurial space, by Tarlov. He found 5 instances of cysts attached to the posterior sacral and coccygeal nerves in a study of the filum terminale in 30 autopsies, without any correlated clinical signs and symptoms during life.

In 1948, Tarlov reported a case of lumbosciatic pain due to a perineurial cyst, which was removed with abolition of symptoms. Weiford reported a patient with urinary retention due to a perineurial cyst who was operated on successfully.

These cysts are not parasitic or neoplastic. The cyst develops in the space between the endoneurial and the perineurial sheath (perineurial space). It may arise from arachnoidal proliferation. A possible origin of the cyst from a congenital diverticulum of the dura mater or a herniation of the arachnoid through a congenital defect of dura has been suggested by Elsberg, Dyke and Brewer. Schreiber has suggested a traumatic origin for some of these cysts. As our case shows, the connec-