Iatrogenic Intraspinal Epidermoid

Report of a Case

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Although epidermoid tumors of the spinal canal are relatively rare, sufficient material has been gathered to show a definite relationship between these tumors and lumbar punctures done for various reasons prior to the development of the tumors. A comprehensive review of the subject by Manno et al. was published in 1962. This present report deals with a single case of intraspinal epidermoid known to have arisen following myelography and lumbar discography.

Case Report

Present illness. A 40-year-old housewife was admitted in December, 1962, because of pain of one year's duration in the left buttock and leg. The pain had been of gradual onset and progressive severity, so that at the time of admission she was unable to stand unless the left knee was bent, and could walk only with great difficulty. Coughing and sneezing increased her pain, but it was no worse at night than in the daytime. She had no loss of bowel or bladder function.

Past history revealed that she had developed low back pain in 1958, and that she had been hospitalized in April of that year, at which time a lumbar myelogram was done (Fig. 1). This study was normal, and she was discharged for further conservative therapy. Her back pain persisted, and in August, 1959, she was re-hospitalized, and a lumbar discogram study was done at the L-4 and L-5 levels (Fig. 2). This was interpreted as showing abnormality at the L-5 level, and on December 19, 1959, the patient underwent laminectomy and spine fusion at the L-4 and L-5 levels. Postoperatively, the patient developed a hemolytic staphylococcus infection in the wound. The infection was resistant to treatment and subsided only after a long course of antibiotics and immobilization in a body cast. By August, 1960, she appeared to have made a satisfactory recovery, although the bone graft had entirely disappeared. She had no further difficulty until the onset of her present illness.

Examination. The neurological examination revealed marked spasm of the back muscles, with restriction of motion. Straight leg raising was slightly restricted bilaterally. The tendon reflexes were normal, except for the right ankle jerk, which was absent. No atrophy, weakness, or sensory loss was present in the lower extremities. The lumbar laminectomy wound was well-healed and not tender.

X-rays of the lumbar spine revealed almost complete sacralization of the 5th lumbar vertebra, and narrowing of the L-4 interspace. No evidence of osteomyelitis was seen. On December 31, 1962, a lumbar myelogram was done. The spinal fluid dynamics were normal, and the cerebrospinal fluid protein was 45 mg. per cent. The myelographic study revealed a rounded defect at the level of L-4 interspace (Fig. 3). The lateral film showed the defect, presumably intradural, to lie posteriorly within the spinal canal (Fig. 4).

Operation. The patient subsequently underwent surgery with a complete laminectomy at L-4 and L-5. No evidence of infection was present. When the dura was opened, a spherical white tumor mass was found among the nerve roots of the cauda equina. It measured approximately 1.5 cm. in diameter. The tumor was composed of white caseous material, typical of an epidermoid. It was removed without damage to the nerve roots, to which it was slightly adherent. Histologic examination confirmed the diagnosis of epidermoid tumor.

Postoperatively, the patient was relieved of her pain and has had no further difficulty.

Discussion

The presumption that epidermoids may be introduced into the spinal canal by lumbar puncture is at least justified by the high percentage of cases in which this procedure was carried out prior to the development of symptoms ascribable to the tumor. However, this appears to be the first case in which a myelogram, made before the onset of symptoms, showed no evidence of the tumor in the site where it was subsequently found. The offending plug of epidermis may have been introduced at the time of myelography, or at the time of the subsequent discogram. It is perhaps significant that the tumor overlay the site of the L-4 discogram, whereas the lumbar puncture, for the initial myelogram, was at the level of L-3. While an epidermal plug might be expected to gravitate to the most dependent portion of the dural sac, it is notable that this occurred in none of the 39 cases of epidermoid following spinal tap reported by Manno et al. These tumors were all found in the lumbar region, at or near the presumed site of implantation, except for 5 cases which were found in the thoracic region. Two of these were intramedullary, and the tumors were probably not the result of implantation. In any event, there is no reason to think that the tumor found in this case could not have originated from the discogram puncture. In discussing a paper on lumbar discography, Collis and Gardner indicated that prior to that examination, a spinal puncture should be done in order to assess cerebrospinal fluid dynamics and protein content, so that a tumor may be excluded. Had that procedure been

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Fig. 1. Lumbar myelogram made in April, 1958, showing normal appearance of the L-4 and L-5 levels.

Fig. 2. Lumbar discogram performed August, 1959, with dye injections at L-4 and L-5 interspaces.

Fig. 3. Lumbar myelograms performed December, 1962, showing rounded defect at L-4 level.

Fig. 4. Cross-table film of myelogram showing defect lying posteriorly at the level of L-4.