EXTRADURAL ARACHNOIDAL CYSTS OF 
TRAUMATIC ORIGIN

HOMER S. SWANSON, M.D., AND EDGAR F. FINCHER, M.D.
Department of Surgery (Neurological), Emory University, Atlanta, Georgia

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Acquired extradural arachnoidal cysts of the spinal canal have received scant attention. Although one occasionally hears reference to this complication, a review of the literature reveals only 2 cases, reported by Hyndman and Gerber. When one considers the number of dural lacerations following trauma or incomplete dural closures following laminectomy, undoubtedly this pathological entity has presented itself more frequently than the literature on the subject would indicate.

In our series of 1700 exploratory laminectomies, acquired extradural arachnoidal cysts have been encountered in 4 cases, constituting an incidence of .068 per cent. In 3 of these, the patients had previously undergone lumbar laminectomies for intervertebral disc ruptures, and 1 was related to a non-penetrating injury to the lumbar spine. A 5th case was encountered in a patient without a specific history of trauma, but in whom symptoms began following a severe paroxysm of sneezing in association with hay fever, and nerve root symptoms were thereafter seasonal in occurrence with each episode of hay fever. This case was considered to be a congenital type of cyst. Because of the paucity of experiences recorded and the clinical implications a report of our experiences seems justified.

Case 1. This 38-year-old crane operator was first seen on Mar. 11, 1944, complaining of recurrent attacks of low back pain of 8 years' duration. One year prior to admission, acute and incapacitating low back pain and left leg pain had developed. After 3 months of total disability, he was admitted to the hospital and through a left hemi-lumbar laminectomy, a ruptured intervertebral disc was removed at the 4th intervertebral space. During the process of mobilizing the nerve root, which was adherent to the posterior longitudinal ligament, a tear in the dural sleeve was noted near the axilla of the nerve root. The laceration was repaired by means of a supposedly water-tight closure with two interrupted silk sutures and a muscle stamp was then placed over the suture line. Following this procedure, he was relieved of his acute leg pain, but continued to note back pain of a lessened degree. In view of the fact that this patient was involved in compensation litigations, some doubt was expressed as to the authenticity of his complaints. Because of recurrence of his former leg pain, he was readmitted to the hospital on Mar. 11, 1945 for evaluation. On this occasion, spinal fluid studies revealed no evidence of manometric disturbances and the spinal fluid protein was reported as 41 mgm. per cent. Because of the persistence of his acute leg distress and recalling the dural laceration at the former operative procedure, a decision was made to re-explore this patient.

Operation. On Mar. 8, 1945, the old laminectomy scar was excised and the muscles were subperiosteally dissected off the posterior spine of the 4–5th lumbar and the 1st sacral on the left side. At the laminal level a large collection of clear fluid was encountered. When the dissection had been completed, this fluid was found to be escaping from an extradural cyst. The cyst was fully 3½ cm. in length and about 1½ cm. in diameter and extended from the level of the 4th lumbar arch to the rim of the sacrum. Once inside this cyst, a small pin-head opening
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was seen communicating with the subarachnoid space at the level of the axilla of the 5th lumbar root. The lining of the cyst was identical with the normal arachnoid and cerebrospinal fluid was constantly seen to well up into the cyst. A plastic repair of this cyst was carried out and the interspace explored for evidences of a recurrent disc lesion, but none was found.

Postoperative Course. This patient was readmitted to the hospital on May 2, 1945 still complaining of moderate leg pain and of numbness in the left leg. Other than for anesthesia over the 5th lumbar dermatome and an absent Achilles reflex on the left, together with subjective pain in the left leg on straight leg raising, there were no findings. An epidural saline injection netted very little relief. The patient subsequently returned to work complaining of mild leg pain.

Case 2. A 56-year-old white male was seen in consultation Aug. 27, 1946. His history revealed that following a back strain incurred after lifting a heavy object, he had intermittently experienced low back pain until April, 1944, when, following a second period of trauma, left sciatica appeared. He was operated upon at that time, a lumbar laminectomy being performed and a herniated disc reportedly removed at the lumbosacral level. Postoperatively, he was relieved of his acute sciatica but continued to complain of constant low back pain. Because of persistence of symptoms, a spinal fusion was advised by the orthopedist, who had performed the original operation. Prior to this procedure, a lipiodol fluoroscopy was done to rule out a recurrent disc lesion. The oil was reportedly introduced at the 3rd interspace but undoubtedly it was introduced directly into the extradural cyst depicted in Fig. 1, inasmuch as the oil appeared trapped in this cyst on later fluoroscopy. The spinal fluid removed at this time contained 33 mgm. per cent protein.

Operation. On Aug. 30, 1946, the previous laminectomy incision was reopened and an extradural cyst lying posterior to the dura and occupying the defect of the 5th spinous process and arches was encountered. The outer wall of the cyst was continuous with the