SPINAL EXTRADURAL CYSTS, CONGENITAL AND ACQUIRED

REPORT OF CASES

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CASES of congenital and acquired extradural cysts are reported together in this paper with the purpose of comparing them from etiologic and pathologic standpoints.

I. CONGENITAL SPINAL EXTRADURAL CYSTS

Congenital extradural cysts are rare. The last report of a case in the literature was that of Good, Adson and Abbott (1944). In 1934 Elsberg, Dyke and Brewer reported 4 cases and described the cyst with its attending symptoms and signs as a definite clinical entity. The 4 cases represented the incidence in 250 cases of spinal tumor. Adelstein (1941) found only 16 cases reported in the literature and added one of his own. He found that only 3 cases had been reported previous to 1934: one by Schlesinger in 1898, one by Krauss in 1908, and one by Mixter in 1932. In addition to those listed by Adelstein there are 4 cases in the literature as follows: one reported by Turnbull in 1939; one by Mayfield and Grantham in 1942; one by Meredith quoted by Mayfield and Grantham; and one by Good, Adson and Abbott. Our case is apparently the 22nd to be recorded.

The Clinical Syndrome. All of the cases that have been reported are strikingly similar. The lesion manifested itself and was discovered in most instances before the patient was 20 years of age. The cyst is almost consistently located in the mid-thoracic region. Since it is an extradural expanding mass situated for the most part posterior to the cord, it compresses the latter forward and provokes symptoms and signs of such compression: motor weakness in the lower extremities associated with spasticity, hyperactive deep reflexes and the Babinski sign; varying degrees of loss of sensibility to touch, pain and temperature discrimination; some loss of sense of position and two-point discrimination, and in some cases a loss of bowel and bladder control.

A spinal puncture below the lesion reveals a marked increase in protein in the spinal fluid and a partial or complete block when the Queckenstedt test is performed.

Roentgenogram. The roentgenogram of the dorsal spine is of special interest because it has consistently revealed a kyphosis or scoliosis. Cloward and Bucy pointed out this association of kyphosis with the cyst and believed the deformity to be due to impaired venous drainage from the neighboring vertebral bodies. In addition to the kyphosis there is usually a widening of
the spinal canal due to a smooth erosion of the pedicles over several segments.

Thus when the symptoms and signs of a compressive intraspinal lesion are presented in an adolescent patient and these are associated with the type of deformity of the dorsal spine described, one may reasonably suspect an extradural cyst.

CASE REPORTS

Case 1. §88945. F.M., a Mexican male, aged 13, was admitted to the Colorado General Hospital, Denver, Colorado, on April 30, 1945. About 8 months before, he felt that his legs were getting weak. He fell occasionally because of the weakness. He then gradually lost sensation in the legs. Numbness began in the feet and gradually ascended to the abdomen. A severe burn on the skin caused no pain. Lately he had experienced difficulty in starting the urinary stream but still retained adequate control of bowel and bladder function. Lately he had complained of a painful girdle-like band about his waist just above the level of the umbilicus.

Examination. He was well developed and well nourished. The general and neurological examination gave essentially negative findings except for the following: He could barely walk with aid and the gait was markedly ataxic. The Romberg test was markedly positive. The patellar and Achilles tendon reflexes were hyperactive. There was sustained clonus of the ankles on both sides. The abdominal reflexes were absent; cremasteric reflexes present. The Babinski sign was present on both sides. There was a marked loss of all skin sensibilities up to a rather well defined level at about D-8. The usual tests indicated very poor coordination of the lower extremities and alternate motor movement was poorly performed. He had no sense of position of the large toes.

Laboratory Tests. The urine was normal. Blood studies revealed 12.9 gm. of hemoglobin, 9,400,000 erythrocytes, and 8,400 leukocytes of which 58 per cent were polymorphonuclears and 36 per cent were lymphocytes. There was a marked hypochromia and anisocytosis and because of this a biopsy of the marrow of the sternum was taken. It revealed no unusual diagnostic pattern. The blood serology was negative.

Spinal Puncture. Fluid pressure was 90 mm. of water in the prone position. The Queckenstedt test demonstrated a complete spinal block. The protein content of the spinal fluid was 140 mgm. per cent; sugar, 54; Wassermann test, negative.

Roentgenograms. The skull and long bones were negative. The dorsal spine showed a mild scoliosis with convexity to the right. The center of the convexity was at D-5 and 6. The spinal canal was widened and the pedicles were narrowed at D-6, 7 and 8.

Diagnosis. Intraspinal tumor, probably extradural and located at about D-7 and 8.

Operation. On May 18, 1945, under avertin anesthesia, the laminar arches of D-7 and 8 were removed. A structure that was taken for dura mater came into view, and it appeared to have the natural color and texture of dura. It was under tension and was incised in the customary manner. Clear transparent fluid gushed forth leaving a hollow cavity with no visible spinal cord. This was at first confusing. A blunt instrument was passed upward and downward within the cavity and met with obstruction at the lower limit of D-4 and the upper limit of D-10. The laminar arches of D-4 to D-10 were removed. It then became obvious that the lesion consisted of a fusiform cyst with pads of fat at both poles (Fig. 1). It was situated in the midline, extradural and posterior to the dura. It was of such a size in its maximum diameter that it could have filled a normal spinal canal, and it severely compressed the dura and spinal cord forward. The cyst was removed without difficulty, having to be severed from the dura at only one attachment the size of a pinhead and close to the lower pole. It was clearly established that there was no fistula or communication with the subarachnoid space. The dura was opened and except for the marked compression of the cord there was no other abnormality of the intradural contents noted. The spinal canal was wider than normal at D-6, 7 and 8 in keeping with the X-ray findings, and the severe compression of the nerve roots intraspinally could easily have accounted for the patient's complaint of girdle pain. The wound was closed in the usual manner.