Successful Treatment of Intramedullary Angioma of the Cord*

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Arteriovenous malformations of the spinal cord are uncommon and the purely intramedullary cavernous hemangiomas of the cord are distinctly rare.1 In a review of the world literature the only successful excision of a purely intramedullary cavernous hemangioma was in the case reported by Schultze2 in 1912. It is the purpose of this paper to report a second such case.

Case Report

MHMH #176563. A 59-year-old white, widowed female was admitted to the Mary Hitchcock Memorial Hospital on Feb. 7, 1963 for the second time. She complained of radicular pain in the left upper extremity and rapidly progressive weakness in both lower extremities of 8 months’ duration.

1st Admission. The patient had been admitted previously on Dec. 27, 1961 because of numbness and weakness in the left foot and pain and weakness in the right shoulder for 1 year.

Examination disclosed weakness in the right deltoid and right handgrip. The deep tendon reflexes were hyperactive throughout with the exception of the triceps reflex which was normal bilaterally. Babinski’s sign was elicited bilaterally and there was a sensory level at T2. Clinical impression was of an extramedullary cord tumor at C8–4.

Roentgenograms of the cervical spine showed moderately severe spondylosis at the C8-4-5-6 interspaces. Films of the thoracic spine were unremarkable. A cervical myelogram was performed the following day. Queckenstedt’s maneuver produced a slow rise and fall in the column of fluid. There was no block to the flow of contrast medium. The myelogram was interpreted as showing indentation of the column of dye at the 3rd, 4th and 5th cervical interspaces secondary to cervical spondylosis. Protein in the spinal fluid was 38 mg. per cent and there were no white cells present. The serology of the spinal fluid was nonreactive. The gold-sol reaction was 554392100. In view of these findings, it was felt that the patient’s symptoms were caused by compression of the cord secondary to cervical spondylosis.

Operation. On Dec. 29, 1961 a decompressive laminectomy of C5, 6 and 7 was performed.

Course. The patient was discharged on the 14th postoperative day.

When seen as an out-patient 5 months later on May 14, 1962, she no longer had numbness in the hands or feet and her gait was improved.

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Fig. 1. Myelogram demonstrating intramedullary lesion.

2nd Admission, February 1963. Since July 1962 a rapidly progressive spastic paraparesis had developed with recurrence of radiculitis of the left upper extremity.

Examination. There was diffuse weakness in all groups of muscles of the upper and lower extremities; no definite sensory level could be demonstrated. There was no disturbance of senses of position or vibration. The gait was labored and broad-based. There was diffuse hyperreflexia in all extremities with bilateral unsustain ankle clonus, and Babinski’s sign was present bilaterally. Our clinical impression was progressive cervical myelopathy secondary to cervical spondylosis.

A myelogram was performed on Feb. 8, 1963. Queckenstedt’s maneuver was normal. The fluid was clear and colorless with a protein of 38 mg. per cent and no cells. The Kolmer was weakly reactive and the gold-sol reaction was 554392100. The contrast medium outlined a defect at T9–4 consistent with an intramedullary
tumor (Fig. 1). In retrospect, this defect was seen on the previous myelogram, but the outlines were far more striking at this time.

Operation. A complete laminectomy of T2-5 was performed on Feb. 19, 1963. The dura mater and extradural space were unremarkable. The dura mater was then opened for a length of 4 cm. There was a slight increase in the vascularity of the cord; however, this was not of a pathologic degree. There were no dilated vessels overlying the cord. Between the posterior columns there was definitely abnormal yellow discoloration. This area was incised with the scalpel and with careful dissection a subtotal removal of this degenerated yellow tumor was effected. At the end of the procedure, the cavity left between the posterior columns by removal of the tumor measured 1 cm. long by 4 mm. wide by 4 mm. deep.

Pathologic Examination (Figs. 2, 3 and 4). Sections showed numerous vascular channels with hyalinized walls in a loose edematous stroma adjacent to recognizable spinal cord. The fragments of spinal cord showed gliosis and deposition of coarse, yellow-brown granular pigment. Stain for reticulin demonstrated numerous vascular channels in the spinal cord. The pathologic diagnosis was intramedullary hemangioma, cavernous type.

Postoperative Course. The patient’s course was remarkably smooth. There was good motion in both legs without any added defect from her preoperative status. An indwelling urinary catheter inserted after operation was removed on the 10th postoperative day and the patient voided thereafter spontaneously and without difficulty. She was discharged on the 20th postoperative day, walking, her gait being improved over her preoperative status. There was remarkably no defect in the lower extremities to position, vibration, and the other sensory modalities. She was continent of urine and feces. She continued to have radicular pain in the left upper extremity, though at a slightly diminished level.

She was last seen on July 15, 1963, 5 months postoperatively. She had some residual spasticity in the lower extremities, but there was good motor recovery and she was able to walk up to ½ mile per day. She continued to complain of mild radicular pain in the left upper extremity.

Discussion

There are several interesting and not completely explained features in this case. What is the etiology of the patient’s radicular pain in the left upper extremity? It is quite reasonable to suspect that the arthritic ridges play only a minor role in the production of symptoms and that the principal cause of the radiculitis is the cephalad extension of the intramedullary lesion into the lower cervical cord.

The classical symptomatology of the venous anomalies of the spinal cord is represented by the episodic and discontinuous nature of the symptoms which frequently accounts for the misdiagnosis of multiple sclerosis. The typical episode usually is apoplectic in onset and consists of cord symptoms involving the lower half of the body. Acute pain of a root type frequently manifests sciatica; this is one of the common findings. After this acute phase there is a tendency to recover, which may be complete.

The discovery of a positive serology of cere-

Fig. 2. Under low-power observation, the hyalinized walls of the vessels are prominent against the background of the surrounding cord tissue. The lesion is not encapsulated and small abnormal vessels can be seen penetrating the cord apart from the main cluster of vessels (Masson, X40)