Spinal Epidural Meningioma

Case Report

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The rarity of spinal epidural meningiomas was noted by Haft and Shenkin. Spinal meningiomas, either intradural or extradural, are uncommon under the age of 15 years. At the Columbus Children's Hospital, this case of spinal epidural meningioma is the only meningioma in 20 primary spinal neoplasms treated over the past 15 years.

Reports of successfully managed cases of epidural meningiomas in children are even rarer than the entity itself. The most successful result that we have found is that reported by Ingraham. Considerably less satisfactory results were reported by Niosi and Rand and Rand. All 3 of these reports concerned children between 7 and 10 years old.

Case Report

W. S., a 14-year-old boy, was admitted to the Columbus Children's Hospital on August 4, 1965. For 5 weeks he had experienced the gradual onset and steady progression of stiffness and weakness of the legs. He denied any sensory symptoms, except for some tingling and numbness of the lateral aspect of the left foot which had occurred early in the course of his symptoms, and had lasted but one day. He had experienced no loss of bowel or bladder function. The weakness in his legs had progressed so that at the time of admission he had difficulty walking.

Fig. 1a. Plain lateral spine films showing erosion of the 4th thoracic vertebral body posteriorly (arrows).

Fig. 1b. Myelogram, taken with the patient in deep head down position, showing complete block of contrast medium typical of an epidural mass. The level of the block was at the 4th thoracic vertebra.

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Most of the tumor was anterior and to the left, and was about 1 cm. thick. Tumor encircled approximately 300° of the circumference of the dural sheath. The severely compressed cord was displaced posteriorly and to the right. Frozen sections were diagnostic of psammomatous meningioma. The entire tumor was removed piecemeal. It was necessary to excise the intraspinal extradural portion of the left 4th thoracic nerve trunk.

The origin of the tumor appeared to be an area 8 mm. in diameter on the outer surface of the dura. It was located anterolaterally and extended into the inferior axilla of the 4th thoracic nerve root sleeve. This area of origin, together with a comfortable margin of normal appearing dura, was excised without rupture of the arachnoid membrane. This left about 270° of the circumference of the cord exposed with dura remaining only over the right posterior quadrant. No attempt was made to place a dural substitute or graft; the arachnoid was covered with thin sheets of gelfoam.

Photomicrographs of the permanent sections are shown in Fig. 2. There was no evidence of tumor on the inner surface of the dura or around the dural margins on microscopic examination.

Postoperative Course. At first the patient's neurological deficit was worse. There was marked, but not

Examination. The boy was well-developed, muscular, and lean. He had a typical spastic, scissoring gait. There was marked spastic paresis of the legs, including the pelvic flexors, somewhat worse on the left side. Marked hyperreflexia, sustained ankle clonus, and Babinski responses were present bilaterally. No loss of sensation to pinprick could be found. Toe position sense was present, though diminished, but vibratory sense was intact. Light touch and 2-point discrimination were reduced below the T-11 level. The Romberg test showed marked diminution of stability with the eyes closed. There was no Beevor sign, and abdominal reflexes were present in all quadrants.

Electromyography was normal up to a level of T-8. There was erosion of the 4th thoracic vertebral body posteriorly (Fig. 1a) but there was no erosion of the pedicles or widening of the interpedicular space. Spinal fluid dynamics with jugular compression indicated a complete block. Lumbar myelography (Fig. 1b) showed blockage of the contrast medium at the T-4 level from an extradural mass which was most prominent on the left anteriorly.

Operation. The 3rd, 4th, and 5th thoracic lamina were removed. A fusiform yellowish-pink mass was found in the epidural space. It tapered to become continuous with normal epidural fat both superiorly and inferiorly. The origin of the tumor appeared to be an area 8 mm. in diameter on the outer surface of the dura. It was located anterolaterally and extended into the inferior axilla of the 4th thoracic nerve root sleeve. This area of origin, together with a comfortable margin of normal appearing dura, was excised without rupture of the arachnoid membrane. This left about 270° of the circumference of the cord exposed with dura remaining only over the right posterior quadrant. No attempt was made to place a dural substitute or graft; the arachnoid was covered with thin sheets of gelfoam.

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