Surgical evacuation of a pontine-medullary hematoma

Case report

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Primary hemorrhages and spontaneous hematomas of the brain stem appear in series of vascular lesions, and constituted as much as 13% of one series. The rostral parts of the brain stem are most affected because vascular malformations are more frequent in this region. Primary pontine and medullary hemorrhages are rare, and the pathogenic mechanisms are not clear. Some authors have related the primary pontine hemorrhages to the presence of microaneurysms affecting the long penetrating branches of the basilar artery.

We only have knowledge of four cases in which a hematoma of the brain stem and pons was successfully evacuated. Gros, et al., reported a patient with a cerebellopontine syndrome and an increase of intracranial pressure produced by a hematoma of the pons who made a good recovery after operation. Scoville and Poppen successfully approached an intrapeduncular hemorrhage through a parietooccpital flap and occipital lobectomy. An intramedullary hematoma was evacuated by Kempe in a young patient with loss of hearing and an acute Wallenberg’s syndrome. Koos, et al., reported the successful removal of an intrapontine hematoma.

Case Report

A 10-year-old boy was admitted to the Neurosurgical Department of the Ciudad Sanitaria La Paz because of a severe headache and continuous vertigo of acute onset and 5 days’ duration.

Examination. The boy was immobile in bed and unable to get up or stand because of severe vertigo. Otherwise his responses were normal, and no other meningeal or general signs could be elicited. There was a slight blurring of the optic discs. The eyes were maintained looking upward; there was difficulty and incoordination in the eye movements which could not be properly studied because of the discomfort produced by test maneuvers. Nystagmus appeared with lateral gaze. There was some difference in the size of the pupils, the right being slightly larger. Sensory examination of the face was difficult to evaluate but there was a definite weakness of the left facial musculature. There was a generalized hypotonia with diminution of tendon reflexes. Left-sided cerebellar disturbance was indicated by ataxia and dysmetria in the routine tests performed with the left arm and leg.

The cerebrospinal fluid obtained by lumbar puncture showed a normal resting pressure and normal cell and protein content. There were no abnormalities in the routine electroencephalogram or skull x-ray films. Iodoventriculography with emulsified Lipiodol F. Lafay demonstrated an expanding lesion of the posterior fossa that had produced posterior and right lateral displace-
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ment of the fourth ventricle, which was incompletely filled (Fig. 1).

Operation. A suboccipital exploration was carried out in the usual way and under general anesthesia. There were no lesions in the cerebellar hemispheres. In the left and lower portion of the floor of the fourth ventricle we found a bluish-colored swelling. After careful incision of this area, a collection of black blood was evacuated together with blood clots. The cavity in the floor of the fourth ventricle was about 3 cm in diameter. The wall was formed by a thin grayish capsule, but no tumor or other abnormal tissue was found. Small pieces of the capsule of the hematoma were taken.

The histological study of the wall of the hematoma demonstrated glial tissue with small hemorrhagic areas. Around some blood vessels there were macrophages and lymphoid cells. No tumor tissue was found in any of the biopsy pieces (Dr. S. Contreras, pathologist).

Postoperative Course. During the first few days the patient remained quite stuporous, but by the end of a week he was fully conscious. Ocular movements improved and the vertigo subsided. The left facial weakness and the cerebellar signs on the left side persisted to some extent until the patient was discharged 1 month after operation. One year later this child was in good general condition. Oculomotor function and facial motion were practically normal. The hemicerebellar syndrome was reduced to moderate unsteadiness in gait and slight incoordination in the movements of the left hand.

Discussion

Although we do not have complete pathological evidence, it seems very likely that the hematoma was due to a primary hemorrhage in the region of the pons and medulla. The sudden onset, the operative findings, and the histological study of the cavity wall seem to eliminate the presence of a tumor; the steady recovery of the patient in a long follow-up is additional evidence against a tumor.

The most likely cause of this primary pontine-medullary hemorrhage is the rupture of a microaneurysm of one of the branches of the basilar artery, as suggested by Cole and Yates.1

This case incidentally shows the possibility of successfully removing a deep-seated hematoma, even from such sensitive areas as the brain stem and pons, without creating much residual disability.

Summary

We have reported a rare case of pontine-medullary hematoma that suddenly produced headache, vertigo, oculomotor dysfunction, facial weakness, and a profound

Fig. 1. Lipiodol ventriculograms showing poor filling and posterolateral displacement of the 4th ventricle, indicating an expanding lesion of the posterior fossa. Left: Lateral view. Right: Anteroposterior view.

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hemicerebellar syndrome. At operation, a hematoma was evacuated through the floor of the fourth ventricle. No tumor tissue was found, and the biopsies from the hematoma cavity were also negative. Recovery was very satisfactory without marked residual disturbances 1 year after the operation.

The pathogenesis of these primary hemorrhages of the pons and medulla is, as shown by others, possibly related to a microaneurysm of a branch of the basilar artery.

References


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