Arachnoid Cyst of the Quadrigeminal Plate*
Case Report

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In infancy, cysts of the quadrigeminal plate are the lesions most likely to cause filling defects in the posterior portion of the third ventricle and partial aqueductal obstruction. As emphasized by Lourie and Berne, precise radiographic diagnosis is mandatory, since these lesions are surgically correctible. In addition to the usual ventriculographic signs of this lesion, the case herein reported had angiographic findings which were of considerable diagnostic significance.

Case Report

A 9-year-old girl entered the St. Louis Childrens' Hospital for the twelfth time on January 29, 1967, complaining of vomiting, headache, lethargy, stiff neck, and gait disturbance. In 1958, at the age of 14 weeks, her parents had noted that she had a large head (circumference 42 cm). Examination at that time showed a tense fontanel and a "setting sun" appearance of the eyes. Her eyes tended to deviate to the right, and upward gaze was rarely noted. Air ventriculography showed a large suprapineal recess, and no air passed through the aqueduct. After insertion of a right ventriculooatrial shunt, numerous revisions were carried out during the next year and a half with the eventual insertion of a left ventriculooatrial shunt. It was repeatedly noted that the patient tended to look to the right and that her upward gaze was limited. As she became older, ataxia was occasionally observed. In September, 1958, at the age of 21 months, a carbon dioxide pneumoencephalogram showed depression of the aqueduct, a filling defect in the posterior portion of the third ventricle, and downward displacement of the upper part of the fourth ventricle. Another shunt revision resulted in a clinical improvement, and she subsequently displayed normal intellectual and physical development.

Examination. When admitted on January 29, 1967, the child was alert and cooperative. She had difficulty with tandem gait and tended to fall either to the left or right. Both optic discs were elevated. Pneumoencephalography on February 1, 1967 (Fig. 1) revealed a posterior incisural mass which was interpreted to be a quadrigeminal plate cyst. The downward bowing of the anterior medullary velum raised the question of an intracerebellar mass. Radioactive iodinated serum albumin, administered intrathecally, showed normal concentration in the area under question. A right retrograde brachial arteriogram (Fig. 2 left) on February 2 demonstrated an enlarged meningeal artery along the tentorium running parallel to the

Received for publication April 24, 1969.
* Supported in part by U.S. Public Health Service Grant T01 NB 055 22.
† Special Fellow in Neuroradiology (Grant 1 F11 NB 194 01 NSRA) National Institute of Neurological Diseases and Stroke, National Institutes of Health.
course of the straight sinus. The mass in the region of the quadrigeminal cistern appeared to extend above and below the tentorium (Fig. 2 right). Posterior bowing and displacement of the precentral cerebellar vein (Fig. 3) suggested that the lesion was anterior and external to the cerebellum.

Operation. On February 6, 1967, a right occipital craniotomy revealed a shortened tentorium. A large fluid-filled cyst anterior to and below the tentorial edge displaced the anterior lobe of the cerebellum posteriorly. The cyst contained 2 oz of clear cerebrospinal fluid. Rupture of the floor of the cyst and the anterior medullary velum created a connection between the cyst and the fourth ventricle (Fig. 4). There was no tumor in the cyst wall. The final diagnosis was arachnoid

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Fig. 2. Right retrograde brachial arteriograms, arterial phase (February 2, 1967): Left: Lateral view, late arterial phase, showing enlarged meningeal artery (arrows). Right: Anteroposterior view showing that the posterior cerebral arteries (hollow arrows) and superior cerebellar arteries (solid arrows) are spread apart in their distal portions.

Fig. 3. Right retrograde brachial arteriograms (February 2, 1967). Left: Venous phase. Lateral view showing the internal cerebral vein (large arrow) displaced superiorly in its posterior portion. The precentral cerebellar vein (small arrows) is displaced and bowed posteriorly, indicating the extracerebellar location of the mass. Right: Arterial phase. Lateral view showing close opposition of the basilar artery to the clivus.