MIDLINE CALCIFIED INTRACRANIAL ANEURYSM BETWEEN OCCIPITAL LOBES

REPORT OF A CASE

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Intracranial aneurysms nearly always arise from arteries at the base of the brain in the vicinity of the circle of Willis. In rare instances they may be located out along the larger branches of the circle and lie imbedded in the brain substance. The occurrence of a calcified aneurysm situated in the midline between the occipital lobes is unusual enough to warrant description.

In a careful perusal of the literature only 4 cases were found of vascular anomalies in this region. Russell and Nevin first reported 2 cases, both in 17-month-old infants, who had arterio-venous aneurysms involving the great vein of Galen associated with marked hydrocephalus. In their first case, a hugely dilated vein of Galen communicated with a branch of the left posterior cerebral artery and the torcular Herophili, and formed an aneurysmal swelling which lay over the corpora quadrigemina in the transverse fissure. The second patient had a similar aneurysm formed by the great vein of Galen and the superior callosal artery. This mass was attached to the ventral point of junction of the falx with the tentorium overlying the pineal and compressing the quadrigeminal plate. Neither of these aneurysms was calcified. Alpers and Forster presented a case of an 18-year-old male with a 12-year history of headaches, and dizziness of 1 month’s duration. On examination the patient was of subnormal intelligence and had mild equilibratory coordination disturbance. Electroencephalograms were normal but skull roentgenograms showed evidence of long-standing increased intracranial pressure and a crescentic rim of calcification in the right parieto-occipital region. The patient died 2 days after an exploratory craniotomy. Necropsy revealed marked dilatation of the lateral and third ventricles with normal-sized aqueduct of Sylvius and fourth ventricle. A firm, dense but thin-walled aneurysm, 4 cm. x 2.5 cm., lay between the occipital lobes occupying the pineal recess and resting on the tectum mesencephali. It arose at the junction of the great cerebral vein and the straight sinus and had a rich arterial supply from the posterior choroidal and posterior cerebral arteries. Jaeger and Forbes reported a fourth case in a 4-year-old boy, who at necropsy was found to have a similar aneurysm of the vein of Galen communicating with branches of the posterior cerebral arteries. This patient also had dilatation of the third and lateral ventricles with a normal iter and fourth ventricle.

These 4 cases thus represent an anomalous anastomosis of the vein of Galen with branches of the circle of Willis. The following case probably represents another example of this vascular anomaly.

CASE REPORT


History. The patient was admitted to Montefiore Hospital on April 20, 1946, complaining of headaches of 9 months’ duration. She had been in good health prior to the onset of the headaches. These were located deep under the vertex of the skull, were sharp in character and were constantly present for periods up to 2 to 3 weeks at a time. She would have intervening
periods of about the same duration during which she would be free from pain. She related the onset of many of the attacks to the onset of her menstrual periods. The headaches were unaccompanied by nausea or vomiting, syncope, or convulsions, and were not affected by change in position. During the past 3 to 4 months, she complained of intermittent blurring of vision but could otherwise read newsprint without glasses and had no diplopia. She had become increasingly nervous and apprehensive shortly before being admitted to the hospital. Her past history was essentially negative.

**Physical Examination.** The positive findings included a soft blowing systolic mitral murmur, and slight scoliosis to the right in the mid-thoracic region. Neurological examination was entirely negative.

**Laboratory Studies.** Blood count, urinalysis, blood chemistry and serology were all within normal limits. Roentgenograms of the skull (Fig. 1-A) revealed a large, round and somewhat irregularly cyst-like mass with calcified borders measuring 3½ cm. in diameter lying in the midline just posterior and superior to the pineal gland. Electroencephalograms were essentially normal except for increased amplitude in the posterior part of the head.

**Course.** On April 26, 1946, bilateral frontal trephinations were made and 15 cc. of helium were injected into each frontal horn. Ventriculograms revealed a normal ventricular system except for a slight indentation on the inner aspects of both posterior horns (Fig. 1-B). On the same day, a right occipital cranioplasty was carried out. The dura was found to be under essentially normal pressure. After opening the dura, the right occipital pole was retracted away from the falx, exposing this membrane at its junction with the tentorium. Further retraction of the occipital lobe exposed the free edge of the falx and the incisura of the tentorium. At this point the outer surface of the lesion was encountered. It presented a yellowish white calcific smooth capsule. Palpation with the tip of the forceps revealed a solid mass lying mostly to the left of the falx with the falx on the right side stretched over its surface. The falx close to its attachment to the tentorium was coagulated and cut, allowing a greater exposure of the surface of the lesion. The surface of the mass was then probed with blunt forceps in search of an uncalcified point where a needle could be inserted. Suddenly such a soft area was encountered and the forceps plunged through the capsule and there followed a great gush of arterial blood. Strips of gelfoam were quickly placed over the opening and held in place with the finger. Meanwhile, some muscle was obtained from the calf of the patient's