Suprachiasmal and Intraventricular Meningioma in a Four-Year-Old Child

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The present communication concerns a 4-year-old boy from whom two unusual meningiomas have been removed successfully in a span of 2 years. The first tumor, which has been reported previously, was removed from the suprachiasmal region. The second one was found in the left lateral ventricle.

Report of Case

History. In January 1960, when the patient was 2 years old, a large meningioma, weighing 250 gm. (Fig. 1) was removed from the suprachiasmal area. The tumor was located on the dorsal surface of the optic chiasma. The flattened optic nerves, chiasm and optic tracts were markedly stretched downward and bowing, resembling a small concave hammock in which the giant neoplasm nested. The meningioma was not attached to the basilar dura mater, the tuberculum sellae, the olfactory grooves, or the falx. Its blood supply was derived from the ethmoidal arteries.

The postoperative course was uneventful. He made a satisfactory recovery. Aside from a bilateral anosmia, all neurological findings were essentially normal including fundi and vision.

Course. Sixteen months later seizures occurred, each attack lasting 2 to 5 minutes. During these seizures the child was stuporous but not unconscious, with eyes fixed, pupils dilated, pale, at times perspiring and hyperventilating without tonic or clonic phase. The seizures were largely controlled by Dilantin and Mysoline.

Since the operation the child was noted to be restless and hyperactive. He seemed to be everywhere at once, running and hopping, shifting from one activity to another, but short of concentration. He was constantly exploring and manipulating objects in the environment, not remaining with any one thing for any great length of time but moving about from one thing to another as if driven from within. Fits of anger were easily provoked. In tantrum, he rolled on the floor. At meals he was running in and out for a mouthful at a time. For this hyperkinetic behavior he was treated with Dextrodrine 5 mg. t.i.d. The hyperactivity was reduced considerably.

Repeated electroencephalography showed diffuse bilateral delta activity, especially prominent in the left frontotemporal region. Spike potentials often were intermixed with the slow activity.

In December 1961, examination disclosed a bilateral weakness of the 6th cranial nerve, more marked on the left. There was no papilledema. His fundi and vision were normal. Measurement of the head was normal for his age. All other neurological findings were essentially negative.

A radiograph of the skull showed the cranial sutures to be normal. A globular shadow of calcification was visualized extending from the midline to the left (Fig. 2). Radiograms taken in 1960 before the first operation showed no evidence of such calcification (Fig. 3).

On Jan. 8, 1962, at the age of 4, the patient was readmitted for diagnostic studies. Lumbar puncture demonstrated normal pressure and clear cerebrospinal fluid containing a total of 80 mg. protein per cent. A percutaneous left carotid arteriogram disclosed a bowing anterior cerebral artery embracing the shadow of calcification without a lateral shift. The venous phase demonstrated an enlarged internal cerebral vein draining the tumor. A pneumoencephalogram performed with 30 cc. of air revealed a dilated right lateral ventricle; the left was not filled. The brain had fully re-expanded to fill the frontotemporal cranial cavity in the region where the enormous meningioma had been evacuated previously (Fig. 2).

Operation. The left craniectomy window was reopened through the previous frontal longitudinal incision in the scalp. Cortical adhesions were noted here and there, but otherwise the cortex appeared normal. A transcortical incision was made, and the ventricle was entered. The tumor was embedded in the floor and lateral wall of the ventricle. It covered the foramen of Monro and was greyish white in color, well encapsulated, and the size of a large olive. It was avascular, hard and gritty to the scalp. Its scanty blood supply was derived from the ventral wall of the lateral ventricle and a vein was noted draining the tumor to the terminal vein which was clipped. The tumor was removed completely. It was not connected to the choroid plexus, which was left intact.

Postoperatively an aseptic ventriculitis developed which gradually subsided in 3 weeks. He was last seen 7 months after the second operation. He remained hyperactive. The convergence squint had disappeared. He

Fig. 1. Aggregate of tumor removed from suprachiasmal region. Weight, 250 gm.
had occasional seizures of the diencephalic type. A complete psychometric study was done and he scored 120 in an I.Q. test* (Stanford-Binet).

The intraventricular tumor weighed 24 gm. and was a psammomatous meningioma (Fig. 4).

**Discussion**

There are three clinical features of this case that warrant discussion: 1) The multiplicity and lack of dural attachment of the meningiomas, 2) the absence of visual disturbance in spite of pressure upon the optic chiasm, and 3) the hyperkinetic behavior.

A review of the literature revealed 88 cases of intracranial meningiomas in children and adolescents. One of the particular features of meningiomas in these age groups is the frequent lack of dural attachment. This case probably constitutes the largest meningioma ever found and removed from the suprachiasmal region. It had no dural attachment.

Meningiomas of the lateral ventricles are rare. There have been less than 100 cases recorded in the literature. Among these, fewer than half a score were found in children and adolescents.

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* Psychological evaluation done by A. M. Vasquez and Noreen Papatheodorou at The Exceptional Children's Foundation, Los Angeles, California.