Department of Neurosurgery, University of South Carolina, Charleston, South Carolina, U.S.A.

Lateral-Trigonal Intraventricular Tumors.
A New Operative Approach

By

L. G. Kempe and R. Blaylock

With 4 Figures

Summary

With the introduction of additional diagnostic methods, computerized axial tomography, interventricular tumors are discovered at a time when these lesions are still small and may have presented very insignificant or no clinical symptoms. If the lesion is a benign tumor as a meningioma and within the lateral ventricle of the dominant hemisphere a very difficult problem presents itself to the patient and surgeon. Shall they wait until the tumor reaches such a size to make more permanent symptoms to justify entering the ventricle by the conventional approach through the middle temporal gyrus and leaving the patient at least with a visual field defect? Or should surgery be postponed until the ventricle especially the temporal horn is enlarged due to blockage by the tumor, making the operative procedure technically easier? The authors present a method used in three atrial trigonal meningiomas of the dominant hemisphere which did not result in any neurological deficit which was not present before surgery and which abolished paroxysmal attacks of hemianopsia and severe headaches in one patient. The latter patient was believed to have suffered from migraine for 2½ years.

Truly intraventricular tumors are rare lesions like choroid plexus papilloma or meningiomas. Of 393 supratentorial meningiomas, Tönnis reports 11 meningiomas which had their origin from the choriod plexus of the lateral ventricles. Of these, four were on the left side. Abbott and Courville found in their review of the literature which includes the observation of Cushing and Eisenhardt that of the intraventricular meningiomas the lateral ventricles are the predominant site. Zülch describes the meningioma of the lateral ventricle as having a smooth surface of an egg to fist size, and that these lesions are especially situated at the trigonum and in close connection with the choroid plexus. Zülch furthermore mentions that the menin-
giomas of the lateral ventricles have their vascular supply from the post. chorioidal arteries and anterior chorioidal arteries. He has observed a meningioma of the lateral ventricle in a 11 year old girl which weighed 618 Grams.

Gardner and Turner observed a fibroblastic meningioma in a 3½ year old girl. Delandscheer up until 1965 reports 175 intraventricular meningiomas in the literature. Tönnsis saw a 12 year old child in which the meningioma was imbedded deeply within the frontal and parietal lobes, another lesion grew into the temporal horn. Only in one of his intraventricular meningiomas did the neoplasm have its origin from the temporal horn position of the chorioid plexus. Taren reports on 4 patients all tumors were located at the atrium (trigonum).

All authors that have reported on these lesions agree that the clinical picture is not a striking one. The symptoms may be extremely vague. The only symptom which has a localizing value and which is not infrequently present, especially when the tumor has reached a certain size are visual field defects or hemianopsia. The latter symptom may be intermittent as it was in one of our three patients which occurred together with throbbing headaches and was diagnosed for years as migraine. Both symptoms disappeared post surgery. Gassel and Davies reports on similar intermittent symptoms during change of posture. In some patients mild euphoric or depressive episodes are reported (Tönnsis). Wall, Huber and Courville emphasize the minimal value of symptoms in regard to localization. Calcification of the tumor on routine x-ray of the skull has pointed to the lesion in 4 intraventricular meningiomas in Tönnsis’ series. But here we have to consider that the tumor has its most common location at the glomus and could be misleading when the glomus is calcified and the tumor is still small. Calcification on the other hand has been observed more in the larger and thereby older tumors (Zülch). The visual disturbances appear to be the most significant as mentioned above and of these especially the hemianopsia is to be observed (Busch). Two of our patients had visual field defects and the third had paroxysmal hemianopsia. Tunnel vision was observed in one of the patients reported by Tönnsis.

The blood supply to this tumor comes from the chorioidal arteries and especially from the posterior median and lateral chorioidal arteries (Krayenbühl, Yaşargil, Zülch, Olivecrona). Wackenheim points out that the opacification of the chorioid plexus of the lateral ventricles occurs rather early at the end of the arterial phase and persists for some seconds until the end of the venous phase. Attention to this may give us some information on the symmetry of the