Case Reports

Meningioma and Astrocytoma Adjacent in the Brain*

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Multiple brain tumors of different histological structure are not common. We wish to chronicle the present record of two tumors in the same patient, a meningioma and an astrocytoma, with the striking feature of their juxtaposition in the same hemisphere.

With few exceptions, in most of the previously reported cases of meningioma associated with glioma,1-19 two tumors of diverse origin were discovered at autopsy. In several instances one tumor was found by operation and the other was demonstrated at autopsy.1,3,6,7,11 Only in Gass and Van Wagenen’s case8 were both tumors removed at a single operation with good prognosis.

This report deals with another example of total removal in one session with good recovery for over 4 years of normal life without serious deficit.

Case Report

A 42-year-old man was admitted to the Department of Neurosurgery, University of Tokyo, under the care of Professor K. Shimizu, on June 23, 1958 because of headache, nausea and vomiting with blurred vision. Two months prior to admission he had severe frontal headache associated with occasional nausea and vomiting. One month later bilateral choked disc was noted by an ophthalmologist and he was referred to our clinic.

Examination. He was alert and his general physical findings were within normal limits. Cranial nerves were intact except for the 1st and 2nd nerves. There were bilateral anoma, impaired visual acuity of both eyes, bilateral fairly advanced papilledema and bilateral concentric constriction of visual fields. Excoraula movements appeared normal without nystagmus. Sensory system seemed to be normal. Deep tendon reflexes were hyperactive and more marked in the right arm and leg but there were no Hoffmann’s or Babinski’s signs.

Cerebellar tests of the arms revealed normal findings. However, he had had a positive Romberg’s sign and moderate ataxia when walking but nothing lateralizing. There was moderate weakness of muscles in the right upper extremity.

A left lateral carotid arteriogram showed unrolling of the left anterior cerebral artery with downward displacement of the middle cerebral artery. In addition, an abnormal hypervascularity was found in the anterior fossa immediately above the orbital roof. This hypervascularity consisted of many small vessels of irregular caliber (Fig. 1A).

Preoperative Diagnosis. Left frontal glioma with suspicion of another unknown pathologic lesion in the left anterior fossa. This diagnosis was based on the neurological evidence of the anosmia and angiographic finding of hypervascularity in the anterior fossa which suggested strongly the existence of a lesion in addition to the glioma of the frontal lobe.

Operation. On June 26, 1958, a left frontoparietal craniotomy was performed with an extra large horse-shoe-shaped incision of the scalp. The gyri of the frontal lobe were twice their usual width and pale. A ventricular needle was inserted at the midpoint between the frontal pole and the Rolandic area and a cavity was entered at a depth of 1 cm. A large quantity of straw-colored fluid, which tended to clot, was evacuated. The left frontal lobe seemed to be occupied largely by the cyst. The cortex then was incised down to the cyst and at the medial and inferior part of the wall a mural nodule, the size of the tip of a thumb, yellowish in color and surrounded by a jelly-like mass, was found. The mural nodule was excised with the surrounding cystic wall. At the base of the cavity a slight hemispherical projection was found and on palpation revealed a firm mass fixed tightly to the floor. The left frontal lobe was lifted by a brain spatula from the base of the skull. In the medial portion of the left sphenoidal ridge a vascular ovoid mass, well encapsulated, the size of a hen’s egg and firm in consistency, was exposed. It was removed in toto (Fig. 2). The enormously large cavity remaining after ex- tirpation of the two tumors was filled with normal saline solution and the wound was closed. The location of the two different tumors is shown in Fig. 3.

Postoperative Course. Convalescence was uneventful and the patient was discharged on the 99th postoperative day. At the time of discharge he was able to walk well. The muscular power of the right upper extremity still remained weak but was increasing day by day. Visual acuity and visual fields remained unchanged.

Follow-up. The patient was examined postoperatively at 2 years and 3 months, and 4 years and 3 months (Fig. 4). The weakness of the right upper extremity had recovered well and there was no hyperreflexia. Visual acuity and visual fields had improved considerably. A left carotid arteriogram performed 2 years and 3 months after operation was normal; no evidence of recurrence was found (Fig. 1B).

Pathological Examination. The tumor of the sphenoidal ridge, measuring 4×3×3 cm., was fibroblastic meningioma (Fig. 5) and seemed to be classified Type III, Var. 2, according to the classification of Cushing and Eisenhardt.

The diagnosis of the other tumor, a mural nodule, was fibrillar astrocytoma (Fig. 6) and identified as astro-
Fig. 1. Left carotid arteriogram (A) before and (B) 2 years and 3 months after operation.

Fig. 2. Macroscopic appearance of meningioma removed from left sphenoidal ridge.

Fig. 3. Reconstruction from operative findings showing cystic astrocytoma with a mural nodule and a meningioma at the left sphenoidal ridge.

Fig. 4. The patient 4 years and 3 months after operation.