MULTIPLE PRIMARY INTRACRANIAL TUMORS

CASE REPORT

EUGENE B. ELAM, M.D., AND ROBERT L. McLAURIN, M.D.

Division of Neurosurgery, Department of Surgery, University of Cincinnati
College of Medicine, Cincinnati, Ohio

(Received for publication June 29, 1960)

The purpose of this report is to record a case presenting a combination of meningioma and glioma (oligodendroglioma), probably existing simultaneously but recognized 17 years apart. This case is presented to call attention to this rare problem which, if unrecognized, can lead to serious errors in management.

The presence of multiple intracranial tumors of the same histologic type is not rare. The more frequent examples include multiple meningiomas, multiple gliomas, and central neurofibromatosis involving two or more nerve roots. Courville in 1936 collected a series of 134 cases from the literature and his own experience. He stated that the incidence of multiple gliomas, in a series of autopsies, was about 12 per thousand, and that about 8 per cent of gliomas were multiple. The presence of multiple tumors of neuroectodermal origin, but of different histologic type, also is seen occasionally. A less commonly reported combination consists of tumors both of which arise from the primitive ectodermal layer, one from the neuroectoderm and the other from congenital rests of epithelial cells. An example of this combination is the case reported by Carson and Hellwig presenting a suprasellar adamantinoma and a cystic glioma (oligodendroglioma), probably existing simultaneously but recognized 17 years apart. There was bilateral papilledema of 3 diopters with atrophy of the right disc. Perception of light only was present on the right. Right hemihypalgesia, more marked in the leg, was noted, as well as weakness of that leg and ataxia of the right arm and leg.

On Jan. 8, 1941, ventriculography was performed (Fig. 1A). Fluid obtained from the left lateral ventricle was xanthochromic while fluid from the right ventricle was colorless.

1st Operation. Left frontal craniotomy was done and a grossly total removal of an intraventricular tumor was achieved. The tumor was a reddish-gray vascular mass blocking the left foramen of Monro and extending backward along the body of the ventricle. Some exploration along the falx was performed but no tumor was found in this region.

Histologic Diagnosis. The tumor removed from the ventricle was interpreted originally as an ependymoma. Recently the microscopic sections of this tumor have been reviewed by Dr. Abner Wolf, New York City, who wrote "the tumor in the left fronto-temporal region, removed 17 years ago, is an oligodendroglioma (Fig. 2) even though it is intraventricular in position. In this region, the oligodendroglioma may arise from the septum pellucidum or from this portion of the ventricular wall and sometimes have an intermixture of ependymal type of tumor. I did not find any such in this tumor, however. The features that I think are typical of oligodendroglioma are the high cellularity, delicate and rather regular vascular network, small cells with rather regular spherical nuclei and the presence of perinuclear halos in some cells."

Postoperative course was difficult, requiring several ventricular taps. Two weeks later, roentgen-ray therapy was instituted and a calculated tumor dose of 3840 r was administered through 4 ports.

The patient was discharged on Feb. 27, 1941 and followed in out-patient clinic over the subsequent 17 years. Marked visual loss, associated with optic atrophy in the right eye, persisted although papilledema had
MULTIPLE PRIMARY INTRACRANIAL TUMORS

Fig. 1. (A) Ventriculogram performed Jan. 8, 1941. Separation of the lateral ventricles is seen but other views were interpreted to indicate an intraventricular mass on the left.

(B) Ventriculogram performed July 11, 1958. Ventricular separation is seen again and other views confirmed marked deformity and compression of the frontal horns.

Fig. 2. Oligodendrogliona removed Jan. 8, 1941. Hematoxylin and eosin, X650.