VAScular MALFORMATIONs ASSOCIATED WITH TEMPORAL LOBE EPILEPSY*

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Several varieties of cerebral vascular malformations have been described. The cirroid or racemose angioma is the most common type and is familiar to most neurosurgeons. An infrequent vascular anomaly, the so-called "cryptic hamartoma," consists of a small collection of vessels usually concealed in the depths of a sulcus. The hemangioma calcificans is a rare variety characterized by calcification in the temporal lobe.

Most vascular malformations are related to a high incidence of epilepsy. Their frequent occurrence in the sylvian and rolandic areas results in sensory and motor seizures and occasional psychomotor epilepsy. These lesions, however, account for less than 5 per cent of the total pathology in selected series of psychomotor epilepsy.

Usually vascular lesions are detected early in the course of preoperative studies of seizures. The present cases, however, were not discovered despite an intensive investigation. They represent an incidence of 11.4 per cent in a series of 88 temporal lobectomies performed on patients with psychomotor epilepsy.

PREOPERATIVE DATA

The significant clinical data are shown in Table 1. The sex distribution was 6 males and 4 females. The average age at onset of seizures was 18 years. Epigastric aura occurred in 60 per cent of the cases as compared to 36 per cent in the entire series of 88 cases.

All patients experienced psychomotor epilepsy and, in addition, 5 had generalized clonic-tonic seizures. Momentary confusion was common postictally. One patient experienced postictal aphasia.

The past histories were negative except for head trauma in Case 2, possible encephalitis in Case 6 and syphilis in Case 10.

Neurologic findings were usually within normal limits. Mental retardation occurred in 3 patients and was associated with left hemiparesis and atrophy in Case 9. Chorioretinitis was present in Case 10. Cerebrospinal fluid pressures and proteins were all normal.

The pertinent neuroradiologic data are shown in Table 2. Roentgenograms of the skull were normal except for ballooning and thinning of the right temporal squama in Case 1 and right hemicranial smallness in Case 9.

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Pneumograms usually showed some degree of general or temporal-horn dilatation. A cyst of the septum pellucidum was present in Case 1. In retrospect, Case 3 showed a slight deformity of the right anterior temporal horn. Carotid angiography was performed on 5 patients and all were within normal limits.

An analysis of the electrographic data is presented in Table 3. In 7 cases the preoperative electroencephalograms revealed unilateral temporal-lobe involvement. Five of them showed epileptiform activity well localized over the anterior portion of the right temporal lobe and 1 over the posterior portion. The sixth showed epileptiform activity over the anterior portion of the left temporal lobe.

Three out of 10 patients showed independent bitemporal epileptiform activity with maximal right-side involvement in 2 and left in 1. Electrographic evidence of rather widespread extratemporal involvement occurred in 2 of these cases.

The epileptiform activity in all instances consisted of high-voltage triphasic or diphasic sharp-wave discharges occurring sporadically or, less frequently, organized into brief bursts. They were very well localized over the temporal region in all records.

In the postoperative electroencephalograms there was a rather marked decrease in the amount of abnormalities, but all patients continued to show remaining epileptiform activity. Two of the unilateral cases became bitemporal.

Individual cases will now be presented.