

Interhemispheric Epidermoid Tumour Involving Longitudinal Interhemispheric Fissure

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Abstract : In this paper, the authors describe a 39-year-old man admitted with the complaint of generalized convulsions, headache and amnesia. The radiological and neuropathological findings were interhemispheric epidermoid tumour, which is a rare location. The

tumour was removed completely. The diagnosis and management of epidermoid tumours are discussed by reviewing the literature. **Key Words:** Convulsion, Epidermoid tumour, Interhemispheric fissure.

INTRODUCTION

Intracranial epidermoid tumours, which are inclusion tumours of the central nervous system, are congenital neoplasms that grow through desquamation of keratin, cholesterol, and cellular debris. They constitute 0.5 to 1.8 per cent of all brain tumours (15). The expansion usually conforms to available subarachnoid spaces (2, 15). The most common intracranial locations are the parachiasmatic and cerebellopontine angle regions (1, 4) and the most common single symptom is seizures (7). The goal of surgery is total removal (16). These are curable tumours and the only real chance for this cure is the first operation. We report the case of a patient with epidermoid tumour in the longitudinal interhemispheric fissure who presented with convulsions.

Case Report

A-39-year old man was admitted to Hacettepe University School of Medicine, Department of Neurosurgery with the complaint of generalized convulsions. He had a history of epilepsy for two years and had had two episodes of generalized convulsion previously; one two years ago, the other two months ago. He had been suffering from headache and amnesia for the last two months. He appeared quite depressive and inactive, and spoke very slowly. During examination his depressed situation was verified.

Neurological examination was normal except for bilateral papilloedema. Computed tomographic (CT) scan showed the presence of a mass located in the anterior interhemispheric fissure (Fig. 1).

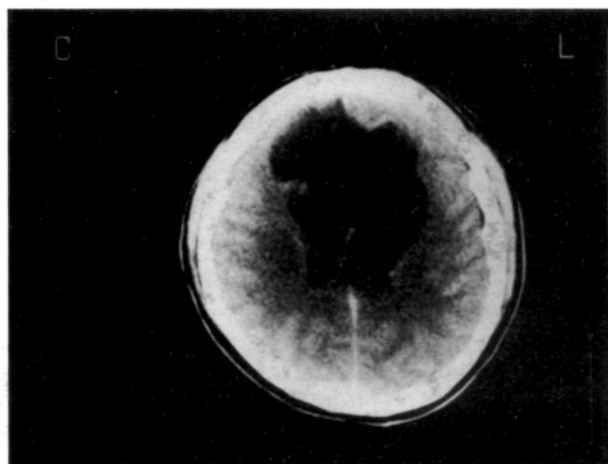


Fig. 1 : CT scan, showing a hypodense mass in the anterior hemispheric fissure.

On magnetic resonance imaging (MRI), the tumour was hypointense on T1-weighted sequence and hyperintense on T2-weighted sequence (Fig. 2 A, B) and lobulated, showing an irregular extension into the corpus callosum (Fig. 3 A,S).

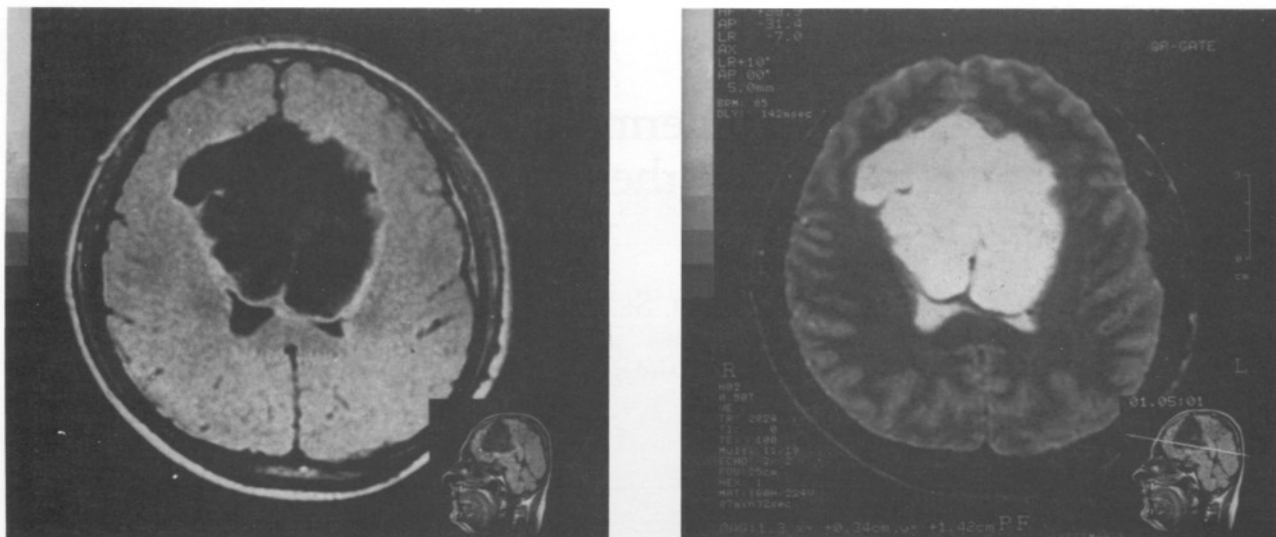


Fig 2 : Contrast enhanced axial T1 - weighted (A) and T2 - weighted (B) images. T1 - weighted MR scan demonstrates a hypointense mass in the anteriorhemispheric fissure., but T - 2 weighted image shows presence of a hyperdense mass.

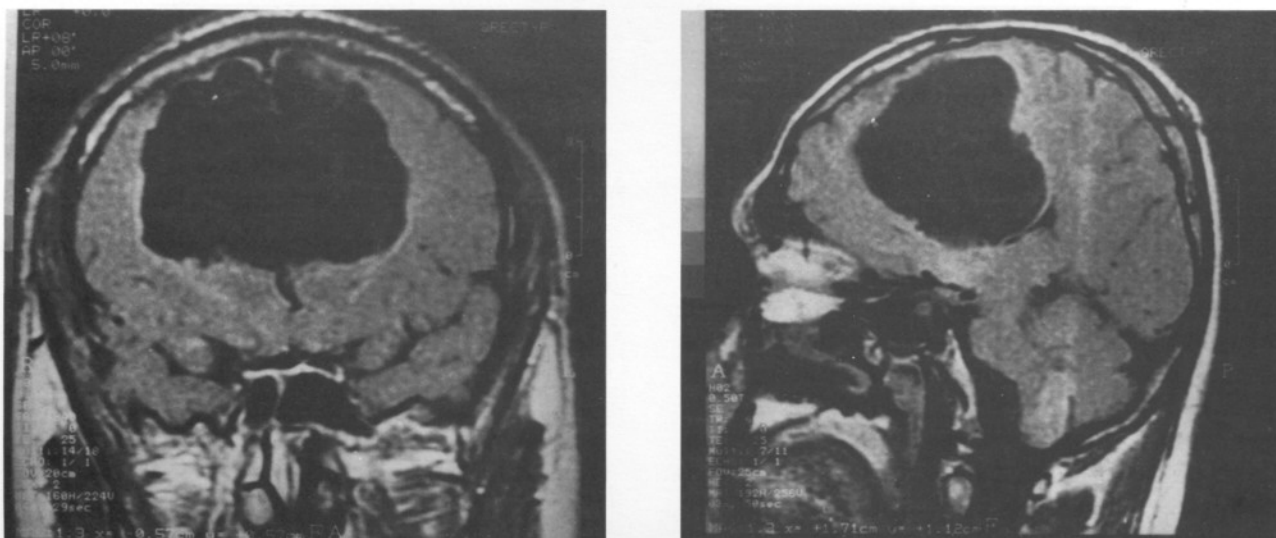


Fig. 3 : The tumour is lobulated and shows an irregular extension into the corpus callosum. Contrast enhanced coronal (A) and sagittal (B) views.

A bilateral frontal craniotomy was performed. The dura mater was opened, and the tumour, which had a nodular, glistening, white appearance, was removed completely along with the capsule. Steroids and antiepileptics were given perioperatively. There was no complication in the early postoperative period. He was discharged from the hospital 3 weeks after the operation. The result of pathological

examination of the surgical specimen was reported as epidermoid tumour. The postoperative course was uneventful. Postoperative MRI demonstrated a well circumscribed area in the anterior interhemispheric fissure (Figure 4 A, B). At evaluation one year after surgery, he had no neurological deficits and was leading a normal active life.

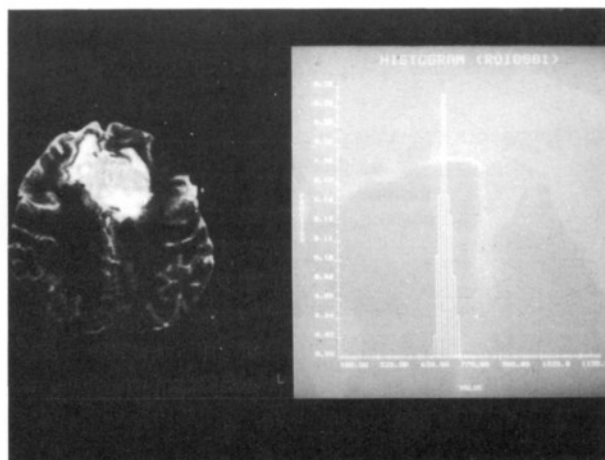
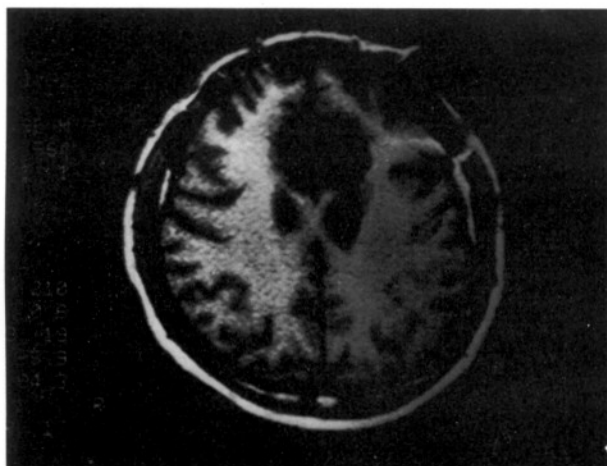


Fig. 4 : Postoperative contrast enhanced axial T1-weighted (A), and axial T2-weighted (B) MRI scans demonstrating a well circumscribed area in the anterior hemispheric fissure. Postoperative axial T2-weighted MRI scan with histogram shows CSF collection.

Intracranial epidermoid tumours are rare, usually benign, slow-growing, and can cause protean symptoms. The rarity of these tumours has often led to delayed diagnosis. The onset of symptoms is usually in the third to fifth decade (7, 15). The parasellar and cerebellopontine angle regions are the most common sites and epidermoid tumours have been found in the fourth and lateral ventricles, cerebrum, cerebellum and brain stem (3, 7, 14, 15). They may also arise within petrous bone causing progressive facial paralysis and destruction of the bone (7). Congenital epidermoid tumours have also been reported over the anterior fontanelle (13). The occurrence of an epidermoid tumour in the interhemispheric region seems to be rare. Mahoney (12) in an analysis of 142 cases, found no case and, to our knowledge, no case has been reported previously.

Epidermoid tumours arise from a capsule of stratified squamous epithelium. They are usually entirely benign histologically, and consist of desquamated epidermal cellular debris. These tumours vary greatly in size, but are consistently circumscribed. As in our case, the interior is characteristically filled with soft white material, rich in cholesterol crystals. Progressive exfoliation of keratinous material towards the interior of the cyst produces the concentric layers of the contents and leads to slow expansion of the tumour. As mentioned above, these tumours are usually benign histologically, but will slowly recur if incompletely removed. Malignant change producing an invasive carcinoma has been reported (11). Goldman and Gandy (6) documented

a squamous-cell carcinoma which developed in the bed of the lesion 33 years after surgical resection of a benign right lateral intraventricular epidermoid tumour.

The most common single symptom is seizures and almost 50 per cent of patients with intracranial epidermoid tumours have repeated attacks of aseptic meningitis as a result of leakage of cyst contents into the CSF pathways (3, 15). Evaluation of patients with intracranial tumour includes careful neurological and radiological examination. Epidermoid tumours are best diagnosed by CT and/or MRI. They often have a characteristic appearance on CT examination, presenting as hypointense lesions with irregular margins with relatively little mass effect. As our case illustrates, axial, coronal and sagittal sections are helpful in delineating the extent of the tumour. They do not enhance after intravenous injection of a contrast agent (5, 8), which reflects the avascular nature of their contents. They only occasionally produce hydrocephalus. These lesions are found to have prolongation of both T1 and T2 relaxation times on MRI (8, 10).

The treatment of epidermoid tumours is surgical, and the approach depends on the location of the tumour. Total excision can be considerably difficult, as the capsule of these tumours is often remarkably adherent to vascular structures such as the carotid and basilar arteries, as well as to cranial nerves and the brain stem substance (5). In such cases, complete removal is unwise and should be avoided (3).

During removal of tumours, contamination of the surgical field and spillage of the cyst contents into the subarachnoid space should be avoided.

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