Case Reports

Post-Traumatic Leptomeningeal Cysts of the Brain

Report of an Unusual Case

IBRAHIM HIGAZI, M.D.

Department of Neurological Surgery, Ein-Shams University School of Medicine, Cairo, Egypt

Leptomeningeal cysts of the brain that result from trauma are not common lesions, considering the few cases reported in the literature in comparison with the vast numbers of head trauma. This condition has been known and reported under a variety of headings for over 100 years.

Recently, we came across a case in an infant. The reason for reporting it is the comparative rarity of the lesion but more especially its unusual features. It presented a combination of a cephalohydrocele and a large cerebral cyst connected together through a hiatus in the bone. This feature will be elaborated later.

Case Report

A 9-month-old female infant fell from a height of 2 metres striking the back of its head on the floor, 6 weeks prior to its admission. She was unconscious for 2 min. There were no open wounds in the scalp. A few hours following the accident, a swelling started to develop at the injured part; it gradually extended until most of the scalp was involved in 18 hrs.

Next morning this swelling started to subside until it disappeared within 2 days from the whole scalp with the exception of that part from which it had started initially. The swelling left behind was the size of a tangerine and it had changed very little since the accident.

Examination. There was a cystic, pulsatile swelling 8x10 cm. in the right occipital region. It was irreducible and became tense on crying. It had a wide pedicle which seemed to connect it to the intracranial contents through a defect in the bone. The edges of the bony defect were felt raised above the surface of the cranial bones. No abnormal neurological signs were present (Fig. 1).

Plain roentgenography revealed the presence of a fracture with the edges eroded and scalloped (Fig. 2). There was a large defect in the bone, oblong in shape, of about 4x10 cm. extending from the right occipital toward the right temporal region (Fig. 7).

The cyst was aspirated and it contained xanthochromic fluid which on analysis showed 42 mg. per cent of proteins. The cerebrospinal fluid obtained by lumbar puncture was clear and contained 25 mg. per cent of proteins.

Air was substituted for the fluid aspirated. Roentgenography revealed the presence of a multiloculated cyst (Fig. 3). The lateral brow-up position shows to what extent the cyst has involved the brain tissue. The finger-like shadow limits the anterior border of the cyst (Fig. 4).

Pneumoencephalography by the lumbar route was performed at the same time to determine the relationship of the cyst to the ventricular system. It revealed the multiloculated cyst separate from the ventricles (Fig. 5).

The frontal view shows the ventricles moderately dilated but placed symmetrically. The body of the lateral ventricle is drawn toward the defect proving that the large intracerebral part of the cyst is caused by destruction and replacement of brain tissue rather than by the effects of pressure on the brain by an extracerebral cyst (Figs. 6 and 7).

Operation. The extracranial part of the cyst had a wall consisting of tough fibrous tissue with a smooth shining inner surface. This was continuous with the intracranial part which seemed to replace most of the occipital lobe. Underneath this tough wall there was a very thin layer of degenerated, yellowish-colored brain tissue. This brain component of the wall of the cyst seemed to extend to the extracranial part of the cyst, not quite up to its dome but certainly for some distance outside the cranial cavity. The extracranial part of the cyst was removed flush with the isthmus. The wall of the cyst was strong enough to hold sutures and it was possible to make a watertight closure. The scalp was closed in two layers.

Postoperative course was uneventful and the patient was discharged 3 weeks after operation apparently normal. She was seen 9 months later and the condition was satisfactory.

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Discussion

The condition most commonly known at present as leptomeningeal cysts of the brain has been known for over 100 years. These cysts may be of congenital origin or may be produced by inflammatory causes. This communication concerns only a third variety which is a sequel to head trauma.

The first post-traumatic case was reported by John Howship in 1816. He noted a bony defect after a head trauma in a young child. Over the second half of the past century a number of papers appeared reporting single or a few cases containing some shrewd clinical and pathological observations. Those early authors concentrated on cephalohydrocele, which is one of the constant features of the affection. With the development of roentgenology in the diagnosis, the emphasis, at the turn of the century, shifted to the bony lesion.

Leptomeningeal cysts was the name given to this condition by Dyke in 1937, but this name was not accepted universally and different authors continued to report their cases under different terms.

In the more recent literature two notable contributions have appeared on this subject. The first one was by Taveras and Ransohoff, who reported 7 cases treated at the Neurological Institute of New York over a 20-year period. The second paper is a comprehensive review of the world literature since the first case described by Howship in 1816 until the present time. It is by Lunde and Erickson who reported 5 cases under the term of “Growing Skull Fractures of Child-