Multiple Cerebral Hydatid Cysts: A Surgical Challenge

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Introduction

Hydatid disease is common in the developing countries of South Asia. The rate varies from 10-15 out of every 500 intracranial lesions[1]. Primary hydatid disease of the brain is a rare entity. Most cases of cerebral hydatidosis are associated with disease in the liver, lungs or other organs[2]. The number of cysts is variable, but may range from one to ten. We report a case of primary cerebral hydatid disease in which 25 cysts were evacuated intact from a single hemisphere and the patient showed complete neurological recovery.

Case Report

Clinical Presentation and Imaging

A 20 year year old man was admitted to our unit with 3 months history of progressive left hemiparesis and altered consciousness. A neurological exam showed cognitive deficits and grade 3/5 power in the left upper and lower extremities. A contrast enhanced CT scan of the head showed multiple, confluent, cystic lesions in the right parieto-occipital region with mass effect causing midline shift (Figure 1).

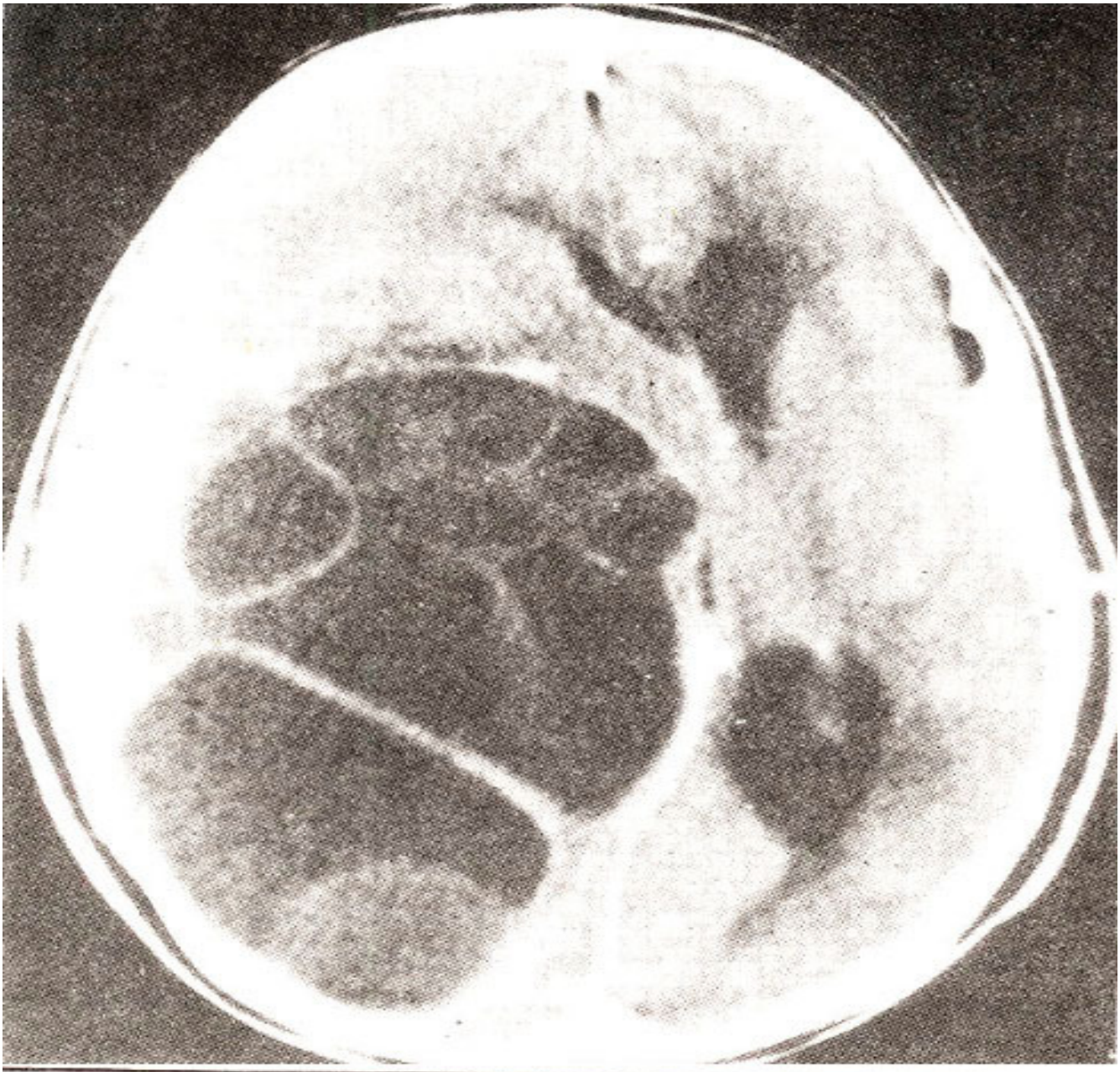

Figure 1. Pre-operative CT head with contrast showing multiple confluent cysts with well demarcated margins causing mass effect and midline shift

The margins of the lesions were clearly defined. There was no edema or enhancement.

Medical therapy

He was initially treated with albendazole in the recommended doses for cerebral hydatid disease. After one month of therapy, repeat CT scan showed no change in the size of the lesions. In addition, the patients cognitive deficits increased during this time. It was therefore decided to abandon medical treatment and undertake surgery.

Operative Procedure

A large right reverse question mark flap was turned to reveal the temporal, parietal and occipital lobes. The dura was opened gradually. There was diffuse bulging of brain tissue but no gross abnormality visible. The cortex was incised in the superior parietal lobule. A large bulging grayish white cyst was visualized and was delivered intact by the hydraulie dissection technique of Arana-lniguez et al[3]. A number of smaller cysts were then evacuated through the same incision aided by saline dissection

through a soft silastic catheter inserted deep to the cysts. Approximately 12 cysts of various sizes were evacuated in this manner without rupture. A large deep cyst was then encountered at the temporo-parietal junction which could not be removed through the parietal corticotomy. Therefore a separate incision was made in the superior temporal gyrus and several other cysts were visualized and removed through hydraulic dissection. The cysts numbered twenty five in all.

Pathological examination

The macroscopic aspect was typical of hydatid cysts.

Histological examination confirmed hydatid origin of the cysts.

Post-op Con rse

The patient recov ered well and the hemiparesis resolved immediately after the operation. The cognitive deficits also improved sign ilicantly during the following week. A post-operative CT sean showed no evidence of residual disease (Figure 2).

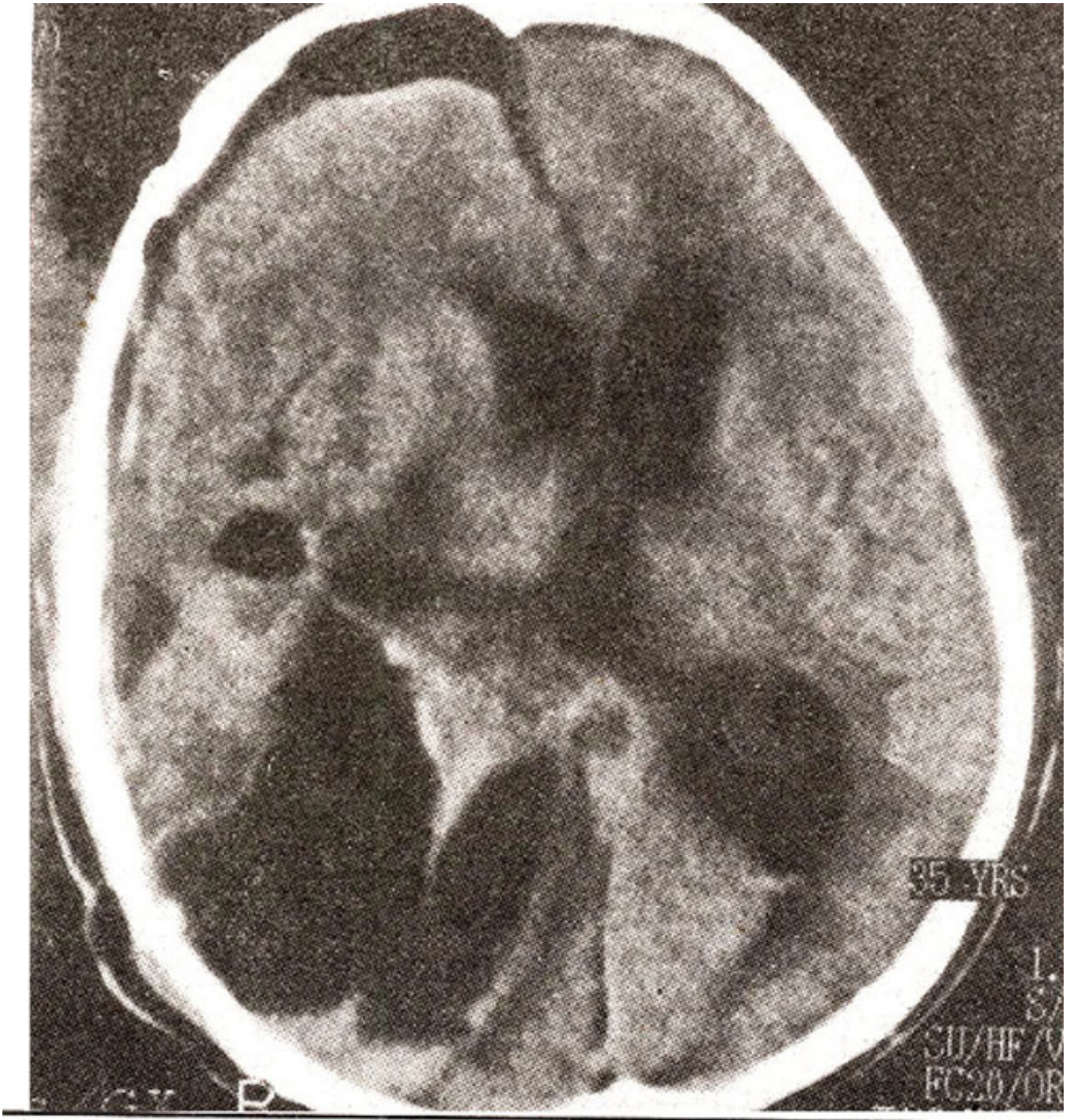

Figure 2. Post operative (2nd day) plain CT head showing complete excision of the multicystic lesion with marked reduction in mass effect.

The patient remained symptom free at last follow-up, three mouths after operation.

Discussion

Primaty multiple hydatid disease of the brain is a rare pathological entity. Only 11 cases have been reported in the world literature4. Most mu ltiple intracranial hydatid cysts are secondary. resulting from iatrogenic. traumatic or spontaneous rupture of the existing primary cyst because of spillage of seoliees in the parenchvma of the brain.

Approximately 80% of cerebral hvdatid cysts are associated with cysts in the[4] liver[2]. In our patieat. extensive work-up failed to reveal any evidence of primar' disease in other organs.

The cysts multiplicity could have resulted from repeated infestation or by a fortuitous tear of the primary cyst'. The latter pathogenesis seems more likely as they were closely grouped and flattened against each other in a single large nidus. Accidental trauma could have resulted in rupture of the primary cyst.

Cerebral hydatid cysts are seen most commonly in children and young adults[5]. In adults, focal neurological signs like heniiparesis, hemianopia. speech disorders or epileptic seizures are usually first to appear. whereas in children, the clinical, picture is primarily that of raised intracranial pressure. Medical treatment of cerebral hydatid disease has been shown to he effective both in experiments and in the clinical setting[6]. Todorov et al reported a patient with primary multiple hydatid cysts who was treated with albendazole. The daily dose was 10 mg/kg. Taken three times a day with niain meals, in four one month courses separated by intervals of 15 days. After 12 months of therapy, CT scan failed to reveal any evidence of these eight cystic lesions. In our patient, however, medical treatment was not successful in reducing the size of the cysts or arresting the progression of symptoms. Therefore surgical treatment was preferred in this case and resulted in cure of the disease.

Reference

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