

Secondary Multiple Intracranial Hydatid Cysts Caused by Intracerebral Embolism of Cardiac Echinococcosis

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Introduction

Hydatid cyst is an infestation in humans caused by the larval stage of the cestode species *Echinococcus granulosus* or *Echinococcus multilocularis* (alveolaris). Dogs are the definitive hosts, and the intermediate hosts are sheep and man. Primary hydatid cysts of the brain are always solitary, have brood capsule and scoles. Secondary hydatid cysts of the brain result from spontaneous, traumatic or surgical rupture of a primary solitary hydatid cyst or as a consequence of a cyst rupture elsewhere and embolization of hydatids to the brain, as in our case. These cysts are secondary, lack a brood capsule and are infertile [6]. Because contractions of the heart provide a natural resistance to the presence of viable hydatid cysts, primary echinococcosis of the heart is seen very rarely, however the left ventricle is the most common site of cyst formation [5].

Case Report

An 18-year-old woman was admitted to our clinic with a 3-month history of headache, nausea and vomiting. Her complaint increased in the past ten days and she developed mild left hemiparesis. Neurological examination revealed bilateral papilloedema, and mild left hemiparesis. Thorax and abdomen were screened by radiological imaging methods and a hydatid cyst was observed in the interventricular septum of the heart (Fig. 1). Computerised brain tomography showed multiple hydatid cysts occupying right frontal, right parietal, right parieto-occipital, and left parieto-occipital region (Fig. 2). The Antiparasitic drug (albendazol) was administered. Because of the rapidly increasing neurological deficit in the past ten

days an immediate operation was decided on. A large right frontal craniotomy was performed. 5 cysts localised in the right Sylvian fissure especially in the right frontal and parietal region were exposed. The cysts were delivered one by one. It was possible to separate the deep surfaces of the cysts from the parenchyma by irrigating the cleavage plane with physiological saline. After the first operation the patient's neurological status dramatically improved. After one month the second operation, bilateral parieto-occipital craniotomy, was performed and the 2 cysts 3 × 3 and 4 × 4 cm in size were delivered successfully without rupturing (Fig. 2). There was no neurological deterioration after the second operation. The patient was transferred to cardiovascular surgery for the removal of the cardiac cyst.

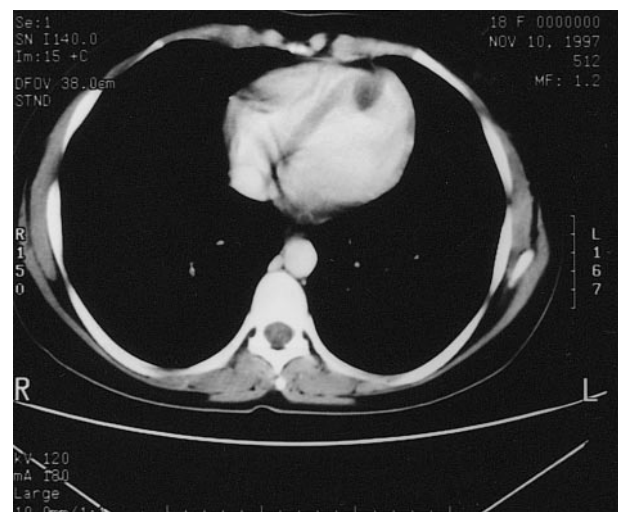


Fig. 1. CT scan showing a hydatid cyst in the interventricular septum of the heart

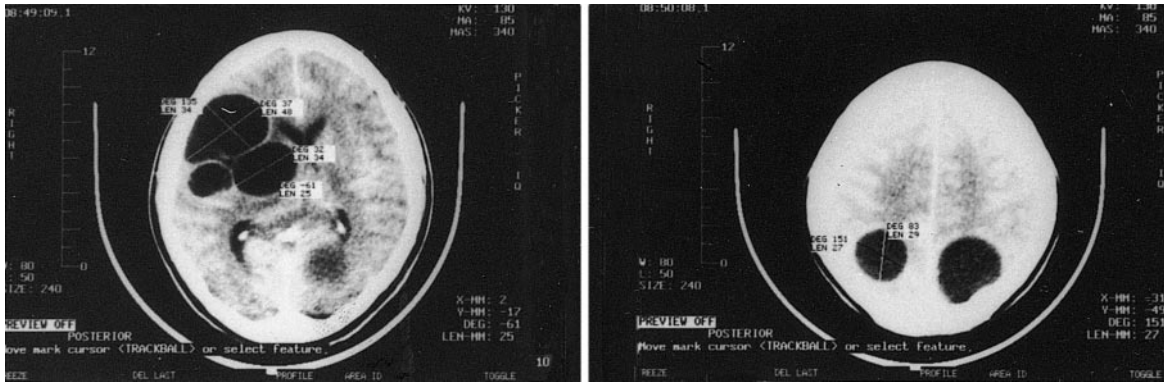


Fig. 2. CT scan demonstrating multiple hydatid cysts before operation

Discussion

Cerebral hydatid cysts occur in 1 to 2% of all Echinococcosis granulosis infections. Intracranial hydatid cysts, 10–15% of which are multiple hydatid cysts, constitute 1.6 to 5.2% of all intracranial space occupying lesions. On review of the world literature, we were able to find about 60 cases of secondary multiple hydatid cysts of the brain reported to date [3]. Of these cases reported in the literature, only six (%10) were caused by embolization from the rupture of intracardiac hydatidosis. Our case is the seventh case. Because of their indolent nature, hydatid cysts may not cause focal neurological signs until they are very large. Raised intracranial pressure secondary to mass effect is usually the clinical sign [1, 2]. There was papilloedema, and left hemiparesis in our case. Computerised tomography is an excellent imaging method that localises the lesions and may be used to predict the histological nature of the cyst structure. [4] Treatment consists of isolation of the patient from the source of infection, antiparasitic drugs and surgical removal of

the cysts. The recommended surgical procedure is cyst removal without rupture via the hydatid birth technique [1, 2, 3]. In our case, seven cysts were delivered without one rupturing. In patients with secondary multiple intracranial hydatidosis caused by intracerebral embolism of cardiac echinococcosis, the surgical removal of the primary source is important to prevent multiple recurrences due to embolism.

References

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