Case Report

Recurrent Intracranial Hydatid Cyst in an Adolescent

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Abstract
Cerebral hydatid disease is a rare cyclozoontic infection, being more common in the pediatric population. A previously healthy 18-year–old boy is presented here, who had a surgery for the removal of a giant hydatid cyst in the right fronto-parietal region without rupture. About 10 months after surgery, he was diagnosed as recurrent hydatid cyst deep in the right parieto-occipital region. Medical therapy with albendazole was effective in treatment with a very good outcome. Hydatid cyst is still a common and serious disease especially in rural parts of Turkey, which requires a proper treatment and close follow up for any complications and recurrences.

Keywords: Hydatid disease, Intracranial involvement, Recurrence

INTRODUCTION
Hydatid disease is a cyclozoontic infection caused by a tapeworm, Echinococcus granulosus. Although liver and lungs are the two commonest organs involved, almost any part of the body could be affected. The involvement of central nervous system was reported about 2–4% (10). Cerebral hydatid disease is more common in the pediatric population with a male predominance (11). Cerebral hydatid cysts are most commonly localized supratentorially in the distribution of the terminal branches of the middle cerebral artery (5). Almost always a single lesion is seen, multiple or recurrent hydatid cysts in the brain are rarely reported (14). Here we report an adolescent diagnosed by multiple intracranial hydatid cysts.

CASE PRESENTATION
A previously healthy 18-year–old boy was admitted complaining of headache and nausea for about two weeks. The physical and neurological examination examination of the patient was normal. The previous medical history revealed that he had a similar but more severe clinical table of headache, nausea and vomiting about 10
months ago, for which he had a cranial computed tomography (CT) and magnetic resonance imaging (MRI) showing a giant 9.0x7.0 cm cystic lesion in the right fronto-parietal region (Figures 1 and 2). He had a surgical removal of cyst without rupture, and diagnosed as intracerebral hydatid cysts. He denies the use of any regular medical therapy following surgery. A control cranial CT and MRI was performed, which demonstrated a smaller 2.0x2.0 cm hydatid cyst in the right parieto-occipital region (Figures 3 and 4). For this small cyst located deep in the right parieto-occipital region, medical therapy with albendazole (15 mg/kg/day) was given. Three months later, a control cranial CT was performed, showing the calcification of the cyst (Figure 5). The latest neurological examination of the patient was normal without any deficit.

*Figures 1 and 2: The previous cranial CT and sagittal T1-weighted MRI of patient showing a giant cystic lesion in the right fronto-parietal region.*

*Figures 3 and 4: Cranial CT and sagittal T1-weighted MRI performed at his last admission demonstrating a smaller cyst in the right parieto-occipital region.*
DISCUSSION

Intracranial hydatid cyst could present with a wide range of clinical manifestations depending on the location and size of slowly growing benign cystic lesions\(^{(2,9)}\). The lesions may cause no symptoms until they become quite large\(^{(9)}\). Most common symptoms are headache, vomiting, nausea, and focal neurological signs like weakness of extremities\(^{(6,7,9)}\). Most of the symptoms tend to disappear after successful removal of cysts. Our patient was also admitted complaining of headache and nausea, which are the signs of increased intracranial pressure.

Both cranial CT and MRI demonstrate the hydatid cysts adequately, revealing solitary, homogeneous, spherical and large parenchymal cysts with well-defined borders, without perifocal edema and environmental contrast enhancement\(^{(9)}\). In cranial MRI, contents of the cyst are observed as hypointense on T1-weighted images and hyperintense on T2-weighted images, with hypointense cyst wall on both T1- and T2-weighted MRI images\(^{(3,13)}\). Although radiological features are very characteristic, definitive diagnosis of hydatid disease is made by histopathological examination of the surgical specimen\(^{(9)}\).

Medical treatment with albendazole both pre- and postoperatively was suggested in cases of recurrences, intra-operative cyst rupture, as well as when giant or multiple hydatid cysts are encountered\(^{(9)}\). Our patient, who had a removal of a giant hydatid cyst, denies the use of any chemotherapy postoperatively. Upon recurrent intracranial hydatid cyst, he was treated by medical therapy only, which was shown to be efficient. Long-term follow-up in patients with cerebral hydatid cyst disease having surgery without intra-operative cyst rupture has confirmed a very good outcome\(^{(5)}\). In a recent case report, Dowling's technique was demonstrated to be an effective and safe surgical procedure to remove intracranial hydatid cysts, as it is of vital importance to avoid ruptures that could result in serious complications such as anaphylactic shock, meningitis or recurrences\(^{(7)}\).

Hydatid cyst is still a common and serious disease especially in rural parts of Turkey\(^{(1-4,8,10-14)}\). As hydatid disease could be highly mortal if untreated, the proper
treatment is necessary with a close follow up for any complications and recurrences.

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