International Archives of Medical Research
Volume 1, No. 1, pp.43-46, 2011.

CASE REPORT

Multiple Organ Involvement of Hydatid Cyst in 7-year-old Girl

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Abstract

Hydatid cyst (HC) is still frequently encountered in Turkey and especially in its south-eastern part, with different clinical symptoms and locations. The disease show different symptoms according organs where it settled and developed. The location of HC occurs almost in all organs but most frequently in the liver, lung, central nervous system, muscle tissues. In this article, we present one case with multi-organ involvement in liver, lung, spleen, kidney and central nervous system.

Keywords: *Hydatid cyst, multi organ, symptom, location.*

[&]This work was presented as a poster on 47[th] Turkish Paediatrics Congress (10-14 Ma, 2011, Cyprus) poster (p-66).

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Introduction

Hydatid cyst (HC) is a parasitic disease, transmitted by eggs of *Echinococcus Granulosus*. It shows changes in lavral period where eggs attached to the latest organs lead to hydatid disease by creating a pouch. Cyst enters into body by contaminated water and food and thus it locates various organs via blood by being absorbed through bowel wall. Hence it shows different symptoms and manifestations depending on the organ it locates. The most common locations are the liver (70%) and lung (20%). We had previously reported a case with HC in the brain [1] and there also some other report of multi-organ involvement of HC in another part of Turkey.[2] In this article we present a case applying to our clinic with chronic cough, diagnosed with multi-organ involvement of hydatid cyst disease, though it is rarely seen, by careful examination.

Presentation of the case

A girl aged 7 years (B.Ç.) was transferred to our clinic with complain of only chronic cough since one month, whose family was from a rural area owning a small animal farm. The physical examination showed normal vital manifestations and there were not any abnormalities in other systems including respiratory system. The following laboratory findings were observed: urea as 17 mg/dL, creatinine as 0.5 mg/dL, sodium ion as 131 mmol/L, potassium ion as 4.6 mmol/L, chloride ion as 110 mmol/L, calcium ion as 8.7 mg/dL, alanine aminotransferase (ALT) as 50 U/L, aspartate aminotransferase (AST) as 43 U/L, lactate dehydrogenase (LDH) as 384 U/L, GGT as 32 U/L, albumin as 2.5 g/dL, CRP as 5.4 mg/dL. Prothrombin time (PT), activated partial thromboplastin time (APTT) and complete blood count were in normal values. Posteroanterior chest radiograph indicated various radio opaque cavities, the largest with about 3 cm in diameter in bilateral middle and lower lobes (Figure 1). The abdominal CT (computer tomography) scans demonstrated cystic lesions in the liver, the spleen and kidneys: Many of them were located in the right lobe of the liver, the largest with about 21x16 mm, one in the upper pole of the spleen with 21x15 mm and in the upper poles of both kidneys with about 27 x 22 mm (Figure 2). Cranial magnetic resonance imaging (MRI) illustrated one cystic lesion in the left frontal cortex of the subcortical white matter, properly bordered with 2 cm in diameter, isointense to CSF on all MRI pulse sequences (Figure 3). The patient was treated with albendazole (10 mg/kg), cefotaxime and hydration for a period of 10 days in the clinic and she was discharged from outpatient with continuing treatment. *Echinococcus granulosus* IgG 1 / 320 titre was positive.

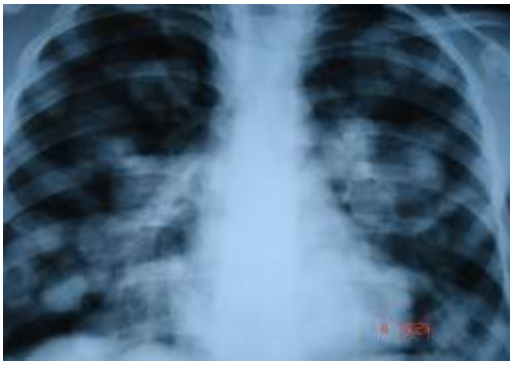

Figure 1. The CT image of large numbers of calcified cavitation in the lung.

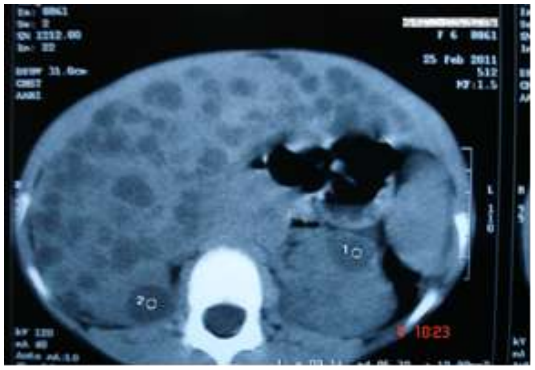

Figure 2. The CT image of cystic lesions in the liver and the spleen.

About one month later the abdominal CT of the patient indicated a significant reduction in the size of the lesions in the liver, spleen, and kidneys. Cranial MRI also showed that there is no change in

the size of the lesion in the brain. The treatment was continued with albendazole. All members of the family was scanned with ultrasound scans and it was found that one of the older sister of the patient had a hydatid cyst with 10 cm in diameter in the liver, hence she was sent for the surgery.

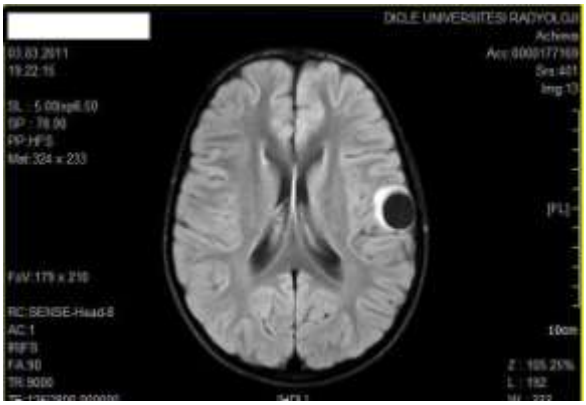

Figure 3. The MR image of the cystic lesion in the left frontal.

Discussion

The prognosis of this disease is well-established but ruptures, classified as self rupture, associated rupture and direct rupture, are often observed, which is one of the most common complications in HC.[3] The last two forms are more severe than the former.[3] The multi-organ involvements of hydatid cysts and their presence in large numbers in the liver and the lung as in our case may be ascribed to the direct rupture of primarily developed cysts.

Serological tests for the diagnosis and follow-ups of the disease are successfully applied in the endemic areas because of having low cost and easy application. These tests are echinococcus IHA, ELISA IgG, immune electrophoresis, indirect fluorescent antibody. These tests show sensitivities for identifying HCs in the liver with 90%, and HCs in the lung with 40%.[4]

The surgery is the main treatment of the disease, but paediatric patients may be preferably treated with medicines and if the medical treatment do not produce satisfactory response, then the surgery is applied.[5, 6] It has been argued that the success of medical treatment is quite high in patients having uncomplicated HCs with sizes lower than 5 cm diameters.[7]

There is no standard procedure for the time course and dose of benzimidazole treatment whereas albendazole is employed for a period of 3-6 months and unless the site-effects are not observed the treatment period may be extended.[3] However, some other studies suggest a period of 6-8 months for newly formed and small sized cysts and 12-20 months for those with larger sizes, with multi-organ involvements and with large numbers.[8]

In conclusion, since HC is frequently observed in our region, all organs, particularly heart, kidneys, spleen, pancreas, spine and central nervous system should be carefully checked.

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