Massive hydatid cyst in four years old child patient; Case report

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ABSTRACT

Hydatidosis is caused by E. granulosus, the parasite in human beings act as intermediate hosts and get infected incidentally by ingesting eggs from the faeces of the infected animals. The disease is one of the endemic parasitic zoonotic diseases in many countries in the global especially in the Middle East. The current surgically exposed case reported in a four years old female child showed a huge hydatid cyst inhabits the liver. The condition was discovered accidentally in the course of treating the patient with chest infection. The growth pattern of the hydatid cyst was abnormal.

Keywords: Hydatid cyst, surgery, parasitic infestation, liver

1. Introduction

Hydatid cyst is one of the endemic parasitic zoonotic diseases in the Middle East region. It can affect any age or gender. Hydatid disease caused by infestation of larvae of Echinococcus granulosus, the definite hosts of E.granulosus is various carnivores (Budke, 2006; Anadol, et al. 1998). Dog is the most common host. Sheep, cattle, goats are commonest intermediate hosts. Humans are accidental intermediate hosts, infected through faeco-oral route by the ingestion of food and milk, contaminated by dog faeces containing the ova of parasite or direct contact with dogs. Eggs lose their envelop in stomach and embryos are released, which then pass through the gut wall into the portal circulation and are carried to the liver where most of the larvae are entrapped and encysted. Some may reach the lungs and very rarely some may pass through the capillary filter of liver and lungs and enter into systemic circulation and can reach to any part of the body, the growth pattern of the cyst is usually 10-20 mm per year, in this case we are reporting a large hepatic hydatid cyst (more than 17.5 cm) in a child of four years old whom presented with a complex history trauma and chest infection and accidentally proved to have a hydatid cyst of liver, which is almost replacing the right lobe, managed surgically with post operative Albendazole therapy as an adjunct.
Main purpose of this scientific work is to demonstrate unusual presentation of the infective larval stage of *E. granulosus* in a child that abnormality of the formed hydatid cyst does not matched with age.

2. Case presentation

Four years old girl, presented to paediatric hospital emergency unit as a case of repeated cough with high grade fever with severe shortness of breath. On physical examination the patient found to have diminished breath sounds on right lower and mid zones with inspiratory and expiratory wheeze. Laboratory investigation that has been performed including a complete blood count revealed an elevated WBC with left shift; a chest x-ray (CXR) showed right lower lobar pneumonia with marked elevation of the diaphragm. Patient transferred to paediatric ward, received treatment for five days, on 6th day another CXR performed, there was no change regarding elevated doom of the diaphragm, but clinically the patient was much better, ultrasound examination of the abdomen has been done revealed a hypo echoic shadow of a giant cystic lesion replacing the whole right lobe of liver for which the patient transferred to Azadi general hospital, surgical consultation done for both thoracic and general surgery departments, CT scan has been done prove the lesion in the liver and the diaphragm was intact (Fig.1,2), the patient admitted to the surgical ward and decision of explorative Laparotomy made, at that time the mother confessed that the child felt on her abdomen ten days ago, now the differential diagnosis was a bit changed to trauma case, after adequate preparation and under general anesthesia explorative Laparotomy done, the lesion found to be a giant hydatid cyst of the liver replacing almost all the right lobe of the liver, after proper isolation of the area and aspiration and injection of scolisidal agent (hypertonic saline) which has been left for 20-25 mints, because if even a minimal spillage can cause deleterious effects (1 ml of hydatid sand contains 400,000 scolices)( Topcu et al. 2000) The endocyst removed, residual cavity obliterated by omentoplasty, drains inserted locally for few days later on removed with uneventful recovery, postoperatively kept on Albendazole for six months. Follow up for 1.5 year after operation demonstrates that the patient was doing well, with no evidence of recurrence.

3. Results & Discussion

Hydatidosis is caused by *E. granulosus* which occurs mainly in dogs. Humans who act as intermediate hosts get infected incidentally by ingesting eggs from the faeces of the infected animal. The eggs hatch inside the intestines and penetrate the walls, entering blood vessels and eventually reach the liver where they may form cysts or move on towards the lungs. Even after pulmonary filter, a few still make it to the systemic circulation and can lodge in almost any part of the body, including the brain, heart and bones (Anadol et al. 1998; Dahniya et al. 2001; Todorov and Boeva, 2000; Haliloglu et al. 1997). Most hydatid cysts are acquired in childhood and are manifested during early adulthood.(Todorov and Boeva, 2000) Cysts develop insidiously, usually being asymptomatic initially, and present with protean clinical and imaging features (Dahniya et al. 2001; Haliloglu et al. 1997; Andronikou et al. 2002; Talaiezadeh and Maraghi, 2006 ). CT scan and MRI are used frequently in diagnosis the
cystic lesions (Dahniya et al. 2001; Guillot and Bouree, 2007; Salih et al. 2003). Treatment though still in infancy, medical therapy for small or inoperable hydatid cysts has been promising. Albendazole alone or in combination with other compounds, such as praziquantel, has been reported with favorable results as an adjunct and, in certain circumstances, as the primary mode of treatment (Tadarov and bovea, 2000; Andronikou et al. 2002; Guillot and Bourre, 2007; Anadol et al. 1998) It is reported that albendazole results in the disappearance of up to 48% of cysts and a substantial reduction in size of the cysts in another 28% (Anadol, 1998), in reviewing literatures a lot of cases of hydatid cyst seen to attain a big size specially brain (Said Hilmani et al, 2006) and pulmonary hydatid (Andronikou et al. 2002; Farkas, 2009; Tocu, 2000) in one study it has been found to have a giant hydatid cyst but age of the patient was thirteen years, but it is the first time to see such a huge size hydatid cyst of liver (Fig.3a,b) and in such an age because usually the cyst will enlarge 10-20 mm per year(Tadarov and Bovea, 2000) but to reach a size of 16.8x17.7x16 cm means a rapid growth of the cyst within four years, this supports the theory of rapid and asymptomatic growth in children more than adults (Haliloglu et al. 1997; Andronikou et al. 2002; Rattan et al. 1998; Salih Topcu et al. 2003) and this rapid enlargement within this time may be due to change in growth pattern of the parasite or probably it is an alarm of new genetically mutated worm which necessitates a sound health education about the methods of transfer of the disease and preventive methods. we recommend a further study regarding this unusual increase of size within a short time.

Fig. 1: CT scan of liver showed a big cystic lesion at the right lobe of the liver with elevation of right dome of the diaphragm.
Fig. 2: CT scan of liver showed a lamellate appearance of inner layer of the cyst.

Fig.3: a) Photo showed the residual cavity after removal of the cyst. b) Photo showing the endocyst after removal.

4. Conclusion

Hydatid cyst in children has insidious course and might attain huge size before discovery. The condition may be alarming signal assuming that the parasite might probably changed its growth pattern because of genetic mutation, further studies required.

References


