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Case Report

A Missed Hydatic Cyst Case with Multifocal and Multiorgan Localization

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Abstract

Hydatidosis is endemic in Iran. This disease frequently invades the liver and lungs. The frequency of multiple organ involvement ranges between 11% and 30%. This study revealed a five -year-old female with missed multifocal and multiorgan localization of hydatic cyst. The patient presented with a complaint of persistent fever and respiratory distress. In computerized tomography (CT) of the thorax and abdomen, cystic lesions of different sizes in both lungs, massive pleural effusion were observed. Albendazole, praziquantel, cephazolin and aminoglycoside was started before surgery. Surgical intervention was planned for pleuropulmonary lesions of this patient. With early diagnosis and proper managements, hydatid cyst in children has an excellent outcome. Today, it is believed that if the operation is performed after a brief course of albendazole or mebendazole, the success rates will be higher.

Keywords: *Hydatidosis, Iran, Multifocal, Multiorgan*

Introduction

Hydatidosis is endemic in Iran (1). Hydatid cyst is primarily a zoonosis caused by *Echinococcus granulosus*. However, transmission to humans is very common and this creates an important public health problem (1-4). These parasites frequently invade the liver and lungs. Combined lung and liver involvement is more frequent in children than adults (16% vs. 4%) are (5). However, surgical complications are less frequent in children and their outcome is better (2, 3).

Case Report

A five -year-old female patient presented to pediatric infectious disease Dept. of Children Medical Center in January 2007 with a complaint of persistent fever and cough from 3 weeks earlier. In 2005, the patient had intermittent fever with epigastric pain and anorexia. She was visited by pediatric specialist and he prescribed many antibiotics and antipyretic for fever but she did not respond to treatment. Then she was admitted to other hospitals for parenteral antibiotic therapy.
She was referred to Children Medical Center Hospital with high-grade fever, respiratory distress and cough since three weeks in spite of intra venous ceftriaxon. She had poor general condition, tachypnea, RR: 55 HR: 100, BP: 100/70, T: 38.5 axillary, scattered rhonchi on the both side of the chest. Respiratory sounds could not be heard in the right lower zones at auscultation. On percussion, there was dullness on the lower parts of the right lung, and hepatomegaly about 10 centimeters in subcostal margin. Examination of other systems revealed no noteworthy findings. PA chest radiography

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in the left hemi thorax showed homogeneous radio opacity with lobulated and well-defined borders that totally covered the middle and lower zones. The right costophrenic angle was much obliterated with massive pleural effusion. Abdominal Ultrasonography (US) revealed a normal spleen, gall bladder and both kidney Cystic lesions of different sizes in liver and in computerized tomography (CT) of the thorax and abdomen as well as cystic lesions of different sizes in both lungs, massive pleural effusion were observed. The lesions progressed through the basal part, they touched the pleura and the inter phase between the diaphragm and the lesion could not be easily traced (Fig. 1-3).

In laboratory examination leukocytosis and polynucleosis, CRP+++ was seen and immunofloscence assay for *E. granulosus* was positive. Albendazole, cephazolin and aminoglycoside in daily and praziquantle in weekly were started before surgery. Department of Pediatrics Surgery was consulted and a surgical intervention was planned for pleuropulmonary lesions of this patient. The intervention revealed the presence of multiple cysts with various diameters in the both lungs and infected plural effusion. The cysts showed adherence pleura and to each other. Double chest tube was inserted. The cysts localized in the parenchyma were injected by scolicide. The patient admitted in PICU after surgery but did not have any postoperative complications. The patient was followed for 6 months.

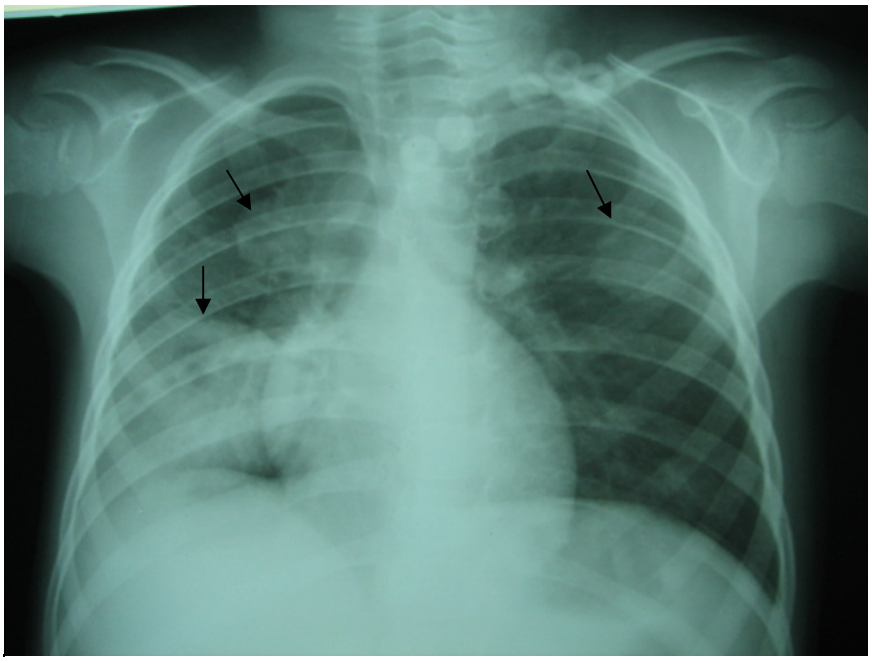

Fig. 1: Chest X- ray of the patient

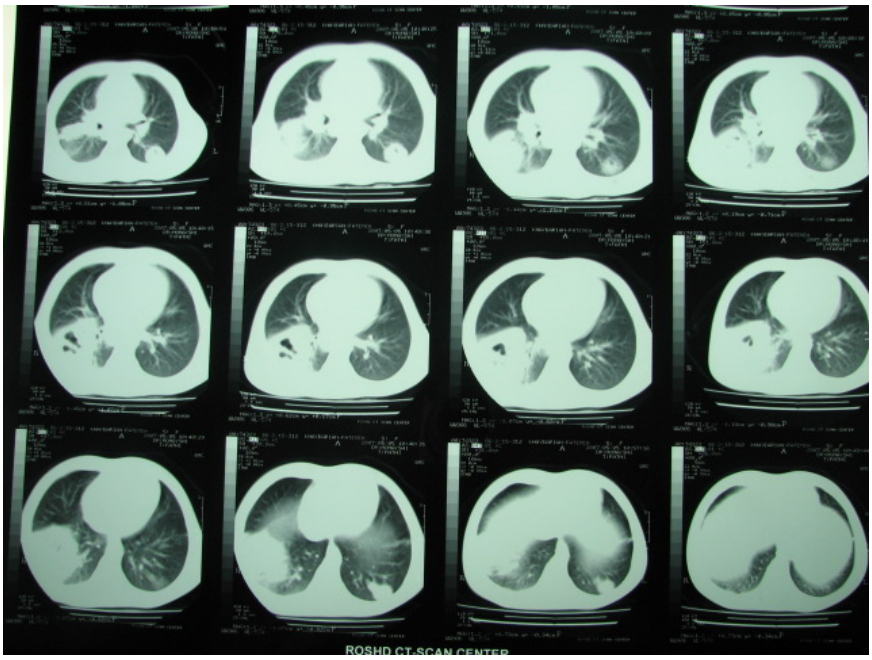

Fig. 2: Chest CT Scan of the patient

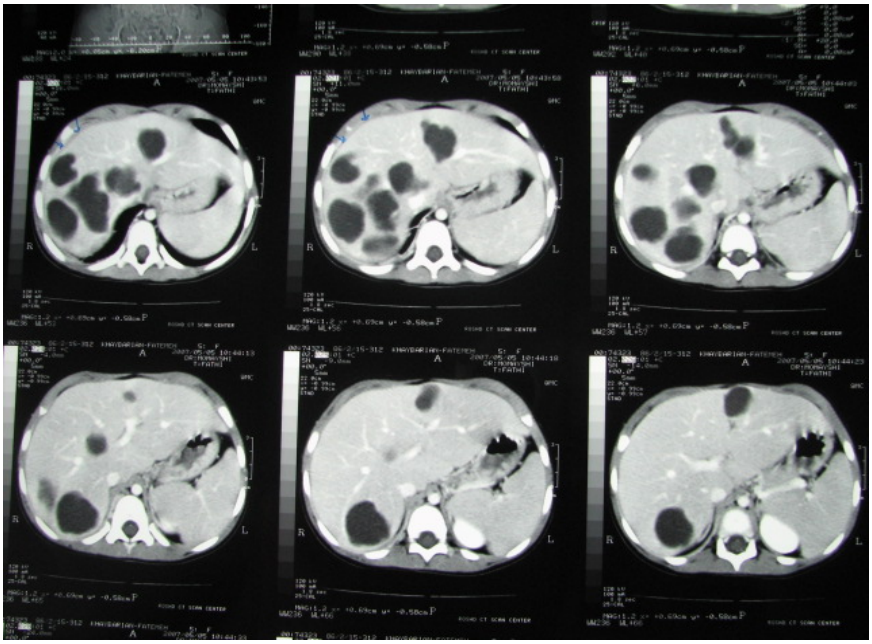

Fig. 3: Abdominal CT scan of the patient

Discussion

Hydatid disease occurs worldwide and is mainly associated with sheep farming. Human infection occurs by hand-to-mouth transfer of tapeworm eggs from dog faeces. Hydatid disease is not transmitted from person to person (1-3). Young children are more likely to be infected as they are more likely to have closer contact with infected dogs and they are less likely to have appropriate hygiene habits. There is no evidence to suggest that children are more

susceptible to infection than adults are (4). Hydatidosis is the most frequent cause of liver cyst in the world. The ingested ova borrow through the intestinal mucosa and pass through the liver (1). With the spontaneous or iatrogenic rupture of these cysts, the daughter vesicles that are disseminated to the exterior are localized in the neighboring organs and tissues with their scolexes (3, 4). Unilocular cysts are frequently single (75%). However, they can also have a multifocal or multiorgan localization. The frequency of multiple localization ranges between 11% and 30% (5). Unilocular cysts can remain asymptomatic for 5-20 years (3). The cysts may rupture, and the cyst content may be released into biliary or bronchial systems (3, 6, 7). This may cause infection of the cyst and an obstruction of the biliary or bronchial tree with severe clinical consequences (e.g., pneumonitis, pleural effusion, and pneumothorax, secondary echinococcosis of the pleural and peritoneal cavity).

Always consider the possibility of an echinococcal cyst, especially with patients coming from endemic areas, and try to exclude it with serology. If serology is inconclusive, diagnostic puncture may be indicated with the presence of an anesthesiologist.

This patient was missed about 30 months. Since multiple organs involvement is more common in children, once a cyst is detected in one organ one has to search and rule out other organs for involvement, especially lungs. Occasionally bilateral involvement of lungs is seen such as our patient with hydatic cysts, which were multiple, and with different sizes and numbers, and widespread localization with infected cyst and pleural effusion.

Basic hygiene such as washing hands with soap after gardening or touching the dog and washing vegetables that may have been contaminated by dog faeces, are important in prevention of this disease (8, 9).

If the operation is performed after a brief course of albendazole or mebendazole, the success rates will be higher (5, 6, 10). Recurrence rates are decreased by administering medical treatment in the preoperative and postoperative periods (11, 12).

In conclusion, hydatic cyst involvement in children in liver and lungs has silent symptoms and signs. Simultaneous involvement of both liver and lung is more frequent in children. With early diagnosis and proper managements hydatid cyst in children has an excellent outcome. Surgical management in lungs and medical management in liver cysts or both concomitantly are suggested and their outcome is better (6, 8). However, more extensive studies and longer follow-up is necessary for better understanding about its recurrence, need for using of scolicidal agents and drugs.

Acknowledgements

The authors declare that they have no Conflict of Interests.

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