Case Report

Multiorgan Hydatid Cyst: A Case Report

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ABSTRACT

Hydatid disease is endemic in some parts of the world. This disease can occur in any organ. We present a 22-year-old farmer who was suffering from hydatidosis for 4 years. He was admitted to the hospital because of fever, cough, and chest pain in 2004. A chest radiograph revealed multiple nodules in both of lungs. A transthoracic echocardiogram showed cystic lesion in the apex of right ventricle. IgG Ab ELISA for hydatid cyst was positive and albendazole was administrated. One year later, he was admitted to the hospital because of hemoptysis, a transthoracic lung biopsy was performed. Pathologic examination revealed laminated membrane of hydatid cyst in associated with fibrinoleukocytic exudates. Three years after the second admission, he was admitted to the hospital because of dyspnea. Iranian people especially who live in village need more information about the routes of prevention because therapy is difficult in some cases.

Keywords: Hydatid cyst, Multiorgan, Iran

Received: 20 October 2010
Accepted: 20 January 2011
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Introduction

Hydatid disease or Echinococcosis is endemic in some parts of the world like Middle East, Africa, Australia, and Turkey (1), and it is still a severe public health problem in Iran. It is an infection caused by the larval stage of a tapeworm called *Echinococcus.* Most infected persons are asymptomatic and clinical manifestation varies according to the anatomic location of the cyst (2).

Multiorgan hydatid cyst caused by larval growth of *E. granulosus*, is a rare condition in children although it frequent in adulthood (3, 4). Mamishi *et al.* reported 31 Iranian children with hydatidosisfrom which three patients (10%) had multiorgan involvement. All patients underwent surgery and medical treatment (5). Some patients have widespread disease that makes surgical removal impossible and medical treatment remains the only option.

This disease can occur in any organ and many authors reported rare presentations of echinococcosis (6). It is not important which organ is involved but the problem is how we can prevent this disease.

This report describes the clinical, radiologic, and pathologic findings of hydatid cyst in lungs, heart, and pancreas of a patient.

Case report

A 22-year-old Iranian farmer was referred to Rasoul-E-Akram Hospital, Tehran, Iran with a 2- month history of cough, chest pain, malaise, fever, and chills in 2004. He took some antibiotics, but his symptoms persisted. Physical examination and laboratory data were unremarkable.

A chest radiograph obtained on admission revealed multiple nodules in both lungs. Computed tomography of the chest showed multiple nodules in both lungs without calcification in 1-3 cm diameters, and one cavitary lesion was seen in the base of right lung (Figure 1).

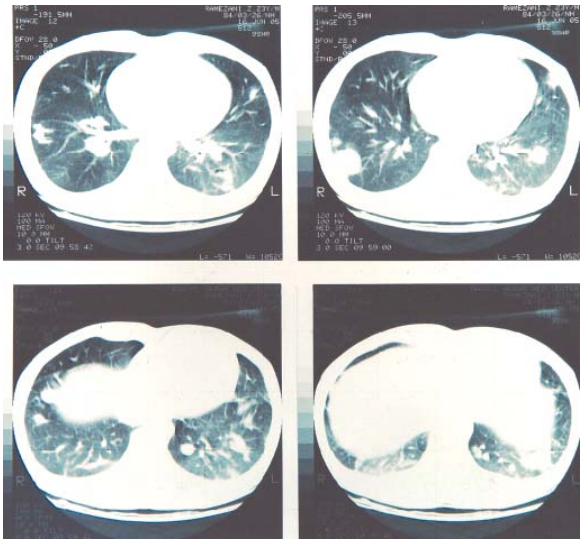

Fig. 1- Multiple nodules in different sizes in both of the lungs

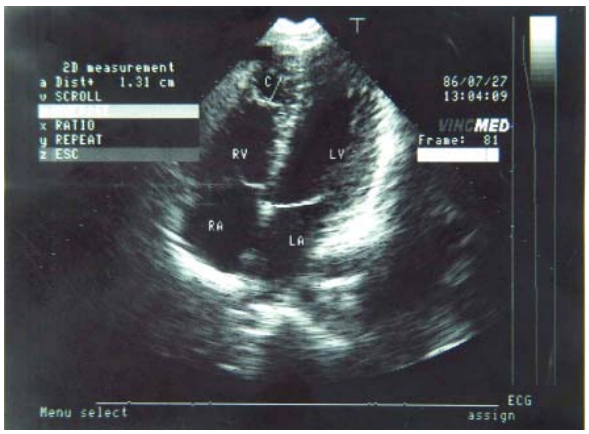

Fig. 2- A cystic lesion is seen in the apex of right ventricle.

In abdominal CT. scan liver and spleen were normal and a cystic lesion was seen in tail of pancreas. A transthoracic echocardiogram showed cystic lesion in the apex of right ventricle (Figure 2).

Sputum smear for acid-fast bacilli (AFB) in three times was negative. Therapy with albendazole, in the hope of medically treating the multiorgan hydatid cyst was administrated because hydatid IgG Ab ELISA was positive. One year later (2005), the patient was admitted

to the hospital because he had several episodes of hemoptysis, accompanied by dyspnea. Physical examination was unremarkable. In chest CT. Scan multiple nodules in both of the lungs were seen. Bronchoscopy with bronchoalveolar lavage and transbronchial biopsy was performed.

Pathologic examination of a transbronchial biopsy specimen revealed no malignant cells or granuloma.

Since no single disease could explain all the features in this case, we proceeded to a transthoracic lung biopsy. Pathologic examination of a transthoracic biopsy revealed laminated membrane of hydatid cyst in associated with fibrinoleukocytic exudates and diagnosis was hydatid cyst (Figure 3).The patient was kept on medical (albendazole 800 mg/d+ Praziquntel 40mg/kg/d, twice a week) treatment and was discharged.

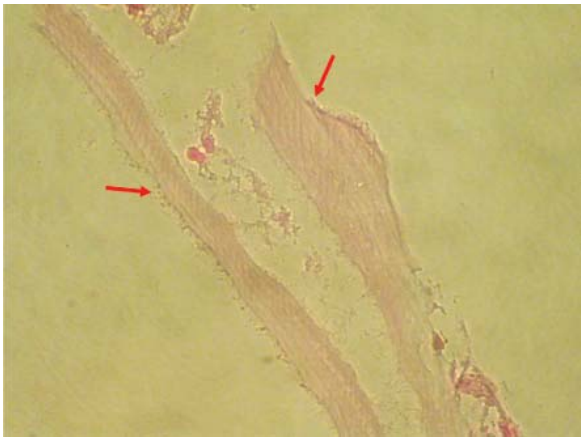

Fig. 3- Acellular multilayer eosinophilic membrane of hydatid cyst (×400 H&E staining)

Three years after the second admission (September 2008), he was admitted to the hospital because of dyspnea. Chest X- Ray and echocardiography were performed, the number and size of lesions in chest X- Ray did not decrease, and cystic lesion in the right ventricle was seen.

Discussion

We present this case as announce diagnosis and treatment of hydatid cyst can be difficult and hydatid disease should be considered in the differential diagnosis of all cystic masses in any organ especially in the geographic area. Echinococcus is endemic in many parts of the world and greater awareness of rare disease and unusual forms of prevalent diseases are of importance in facilitating the recognition of similar cases. Human are intermediate hosts and are being exposed to the parasite by fecal-oral and hand-to-mouth spread ways. The infection is ordinarily self-limited, such that <10% of patients develop serious complication (7).

Hydatidosis can affect the brain, heart, kidney, ureter, spleen, uterus, fallopian tube, pancreas, diaphragm, bone, and muscles (6). "The clinical presentation of hydatid disease depends on the size and site of the lesion and the accessibility of the organ involved in the clinical examination" (8). Our patient has been suffering from lungs, pancreas, and cardiac hydatid cyst for three years. Pancreatic location of hydatid disease is rare. Moosavi *et al.* reported an Iranian patient who suffered from hydatid cyst of the pancreas. A diagnosis of a pancreatic cyst was established by ultrasonography and CT scan before surgery. The patients underwent surgery and medical therapy (albendazole 800 mg/d). Recovery was uneventful and the patient has remained symptom free so far (9). Cardiac involvement with hydatid cyst is rare (less than 2% of cases) (10). Cardiac echinococcosis is mostly symptomatic. Jannati *et al.* reported a patient who suffered from asymptomatic cardiac hydatid cyst. Patient underwent surgery because mortality of asymptomatic cases of cardiac cyst, are relatively high. Patient put on albendazole for a period of five years (11). Our patient

was symptom free and his ECG did not show any abnormality. We could not recommend for surgery because he had multi-organ involvement. Guven *et al.* reported an asymptomatic case which was successfully treated by albendazole(12), but we were unsuccessful in medical therapy.

Bronchoscopy or transthoracic biopsy is unnecessary in patients with pulmonary hydatid disease to diagnose. However, it may be performed when clinical presentation is unusual (13).

Several studies have shown that treatment with albendazole in *E. granulosus* infection can result in an apparent cure in up to 30% of cases (14). Some studies have demonstrated that even patients have not shown obvious evidence of response, may be cured when followed up over several years (14). Benzimidazoles are parasitostatic rather than parasitocidal but parasite death has been shown to occur in some patients after many years of therapy (15). So, in patients with unresectable or incompletely resected, long-term chemotherapy is recommended, in this way we can improve the quality and length of survival.

The best efficacy of drugs is observed with liver, lung, and peritoneal cysts (16). Keshmiri *et al.* reported some cases with pulmonary echinococcosis who treated by medical therapy (17), although albendazole has a favorable effect in patients even with multiorgan disease, unfortunately our patient did not show any improvement during 2 ½ years.

Mamishi *et al.* reported 31 patients with hydatidosis underwent surgery, and recurrence was observed in 2 cases with multiorgan involvement (5). This report shows patients with multiorgan disease have poor outcome even with medical and surgical therapy.

Combination therapy with albendazole plus praziquantel is effective in the treatment of hydatid cyst and can be used as an alternative to surgery in disseminated and nonoperable cases (18), but unfortunately, in our patient this regimen was ineffective.

Prevention of echinococcosis often can be achieved merely by avoiding close contact with dogs. Careful washing of vegetables and contaminated fresh product can also reduce infection. Prohibition of home slaughter of sheep will prevent dogs from consuming infected viscera, thus disrupting the cycle of the parasite. Our people especially who live in village need more information about the routes of prevention.

Acknowledgment

We thank Ms. Nasim Reiahi for her excellent assistance. The authors declare that they have no conflict of interest.

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