

Asymptomatic hepatic echinococcosis. A case report

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ABSTRACT

Echinococcosis, is a parasitic disease of tapeworms in the genus *Echinococcus*. We report an unusual case of a 17-year-old girl with asymptomatic hepatic echinococcosis. The patient was admitted to the hospital after a car accident to perform routine radiological exams. Abdominal ultrasonography revealed a cystic mass of size 65 × 52 mm in the right lobe of liver. Computed tomography (CT) confirmed the cystic mass of size

67 mm x 59 mm x 56 mm in the right lobe of the liver. A routine brain CT was normal. Laboratory tests revealed a high count of eosinophil count (6.9%). Serological tests confirmed *Echinococcus granulosus*. The patient was transferred to the department of infectious diseases for further treatment.

Key words: Hepatic echinococcosis, girl, ultrasonography, computed tomography

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INTRODUCTION

Echinococcosis is also referred to as hydatid disease, hydatidosis, or echinococcal disease, is a parasitic disease of tapeworms in the genus *Echinococcus*. It affects both humans and other mammals, such as sheep, dogs, rodents and horses. In the human manifestation of the disease, *Echinococcus granulosus*, *E. multilocularis*, *E. oligarthus* and *E. vogeliare* localized in the liver (in 75% of cases), the lungs (in 5-15% of cases) and other organs in the body such as the spleen, brain, heart and kidneys (in 10-20% of cases). In the patients who are infected with *E. granulosus* and therefore, have cystic echinococcosis, the disease develops as a slow-growing mass in the body [1, 2].

E. granulosus is present worldwide and it caused about 1200 deaths, in 2010. It has been rarely reported in Poland. Usually, *E. granulosus* coincide with rural, grazing areas where dogs are able to ingest organs from infected animals.

Depending on the location of the cyst in the body, the patient could be asymptomatic even though the cysts have grown to be very large or be symptomatic even if the cysts are absolutely tiny. If the patient has cysts in the lungs and is symptomatic, they will have a cough, shortness of breath and/or pain in the chest. If the patient has cysts in the liver and is symptomatic, they will suffer from abdominal pain, and abnormal abdominal tenderness.

The clinical features of cystic echinococcosis are highly variable. The spectrum of symptoms depends on the following; 1) Involved organs; size of cysts and their sites within the affected organ or organs; 2) Interaction between the expanding cysts and adjacent organ structures, particularly bile ducts and the vascular system of the liver; 3) Complications caused by rupture of cysts; 4) Bacterial infection of cysts and spread of protoscolices and larval material into bile ducts or blood vessels, and 5) Immunologic reactions such as asthma, anaphylaxis, or membranous nephropathy secondary to release of antigenic material [3].

Case report

A 17 - year-old female hit by a car. She was admitted to emergency department at the Children's University Hospital in Białystok, in 5 November 2013. Physical examination was normal. Laboratory tests revealed a high count of eosinophil count (6.9%). The girl lives in the Podlaskie province. The patient was referred for abdominal ultrasound to the Department of Pediatric Radiology. Ultrasonography did not detect in the abdomen post-traumatic lesions, or the presence of free fluid. Ultrasonography examination showed an

abnormal heterogeneous cystic mass of size 65 × 52 mm in the right lobe of liver (Fig.1) Because of the traffic accident and the unclear ultrasound imaging, the abdominal computed tomography (CT) was performed. CT was performed with and without contrast. CT confirmed the cystic mass (heterogeneous and hypodense mass with calcifications) of size 67 mm x 59 mm x 56 mm in the right lobe of the liver (Fig 2, 3). Similar changes it was revealed in the retroperitoneal space, near the head of the pancreas. Based on the CT scans parasitic cyst-echinococcosis was suspected. Serological tests confirmed *Echinococcus granulosus*. The patient was transferred to the department of infectious diseases for further treatment.

DISCUSSION

Annual incidence rate in Poland is low (40 cases in 2007, 28 in 2008). Provinces with the highest incidences are Warmińsko-Mazurskie, Podlaskie and Lubelskie.

Diagnosis of hydatid disease is difficult and based on clinical findings, imaging studies and serology. Clinical manifestation depends primarily on localization and size of hepatic lesion and may include hepatomegaly, obstructive jaundice or cholangitis [4].

Most simple cysts are diagnosed incidentally on ultrasonography. In patients with liver echinococcosis ultrasound imaging of the liver shows a large cystic lesion with fine debris within it. The diagnosis of a simple cyst is based on the following USG criteria: anechoic (*i.e.*, fluid filled cavity), no septations, sharp smooth borders, strong posterior wall echoes (indicating a well-defined fluid/tissue interface), spherical or oval shaped and a relative accentuation of echoes beyond the cyst compared to echoes at a similar depth transmitted through normal adjacent hepatic tissue [4,5]. CT shows a sharply defined homogeneous hypodense lesion [6]. Magnetic resonance imaging T1-weighted sequence shows low signal intensity, whereas the T2-weighted sequence shows extremely high signal intensity, which does not enhance after contrast injection [7].

Laboratory findings are predominantly normal, but a minority of patients have raised serum γ -glutamyl-transferase. Several studies have shown that serum and cyst fluid levels of carcino-embryonic antigen and cancer antigen may be elevated. In the present case we did not perform these tests [5]. However, we found high count of eosinophil.

Serological tests are important in the differential diagnosis but a negative result does not exclude the infection. The specific IgG ELISA tests are of 26–60% sensitivity. These tests are not

specific for *E. granulosus* so it might give false positive results in patients with other parasitic infections. The most sensitive (96.5 %) is specific IgG ELISA AgB (antigen B-rich fraction) [8, 9].

Currently, surgery is the accepted method for treatment of complicated liver hydatid cysts. However, there is no consensus about the most appropriate management of incidentally discovered asymptomatic echinococcal cysts of the liver. Albendazole also plays an important role in the treatment of hydatid cysts either alone or as a pre-procedure or post procedure prophylaxis [5].

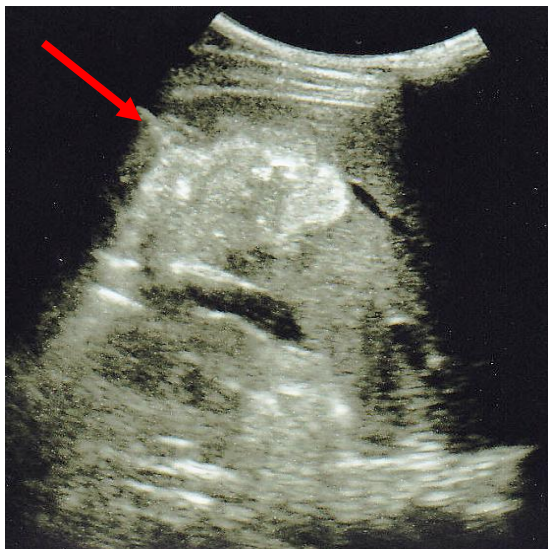


Figure 1. Abdominal ultrasonography demonstrating in the liver right lobe of a 17 years-old female; there are cystic lesions with calcifications, frontal view (red arrow). Authors' photo.



Figure 2. Abdominal CT demonstrating in the liver right lobe of a 17 years-old female; there are multiple hypointense lesions with calcifications, transversal view (red arrow and circle). Authors' photo.



Figure 3. Abdominal CT demonstrating in the liver right lobe of a 17 years-old female; there are multiple hypointense lesions with calcifications of the patient with liver echinococcosis, frontal view. (red arrows). Authors' photo.

Conflicts of interest

The authors declared no conflict of interest.

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