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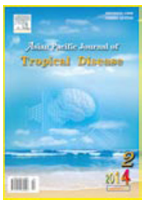

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A case of disseminated hydatid disease by surgery involving multiple organs

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ABSTRACT

Hydatid disease is the most common parasitic infection in the world, and is caused by the parasite *Echinococcus granulosus*. The most common site of this disease is the liver (75%), followed by the lungs, kidney, bones, and brain. Multiple abdominal organ and peritoneal involvement can also be seen in some cases. The dissemination of hydatid cyst disease can develop spontaneously or secondary to trauma or surgery. Here, we present the case of a 69-year-old man with multiple cyst hydatidosis, who underwent surgery for acute appendicitis approximately 20 years previously. Computed tomography of the abdomen shows the multiple active and inactive cystic lesions in the liver, spleen, right kidney, and mesentery. This patient required surgery several times, as well as medical treatment, after the rupture of a mesenteric hydatid cyst during the appendectomy. Combined anthelmintic treatment was recommended to the patient who refused further surgical treatment.

1. Introduction

Echinococcosis is especially endemic to the Mediterranean Region, Australia, the Middle East, Turkey, Africa, and South America, and is the most common zoonotic infection in the world. Echinococcosis in humans is caused by the larval stages of cestode species of the genus *Echinococcus*, predominantly by *Echinococcus granulosus*[1]. These cysts are often seen as a single cyst in humans, although multiple cysts or multiple organ involvement has been observed. Echinococcosis can involve any organ in the human body[2]. The liver (50%-70%) is the most common site of hydatid cysts, followed by the lungs (20%-30%)[3], kidney (2%-3%), brain (1%-2%), spine (1%), and eyes (0.2%)[4]. Occasionally, heart, thyroid, spleen, pancreas, and muscle involvement may be seen[3,5]. Secondary peritoneal involvement can occur due to the spontaneous rupture of a hydatid cyst in the liver or spleen, or accidental spillage during surgery. Primary peritoneal involvement is very rare, and constitutes less than 0.5% of all intra-abdominal hydatidosis[1]. Here, we present an unusual case of multiple cystic hydatidosis with radiological findings.

2. Case report

A 69-year-old man presented to the hospital with abdominal pain and tenderness, and had a known medical history of cystic hydatidosis. Abdominal distention and tenderness were noted upon physical examination; however, the laboratory tests were normal, with the exception of a high erythrocyte sedimentation rate. He had a medical history of acute appendicitis surgery about 20 years previously. The patient had several surgeries for the multiple cyst hydatidosis. All of the prior surgeries were elective except an emergent surgery due the rupture

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of the mesenteric cyst hydatid during appendectomy. The patient subsequently received long-term treatment of albendazole and praziquantel after the surgeries.

Plain X-ray films of the abdomen revealed calcified foci in the right and left upper and lower quadrants. Abdominopelvic computed tomography (CT) with intravenous and oral contrast agents was performed, and multiple cystic lesions were seen in the liver, spleen, and mesenteric fatty tissue (Figures 1-3). Some of these lesions contained a thin rim of calcification in the walls of the hydatid cyst. Two giant lesions with daughter cysts were seen, with the largest diameters of 124 mm×120 mm in the liver and 120 mm×130 mm in the spleen. Additionally, the CT revealed multilocular cystic lesions (the largest measuring 48 mm×55 mm) adjacent to the aorta and gastric fundus, and distinct imprinting to the gastric cardia and fundus were seen (Figure 4). The presence of rim calcification and daughter cysts primarily showed Gharbi type 3 and 5 hydatid cysts. The thoracic spine CT and all bone structures within the field of view were normal, with the exception of degenerative change.

The result of the serum antibody test for hydatid cysts was positive, and the patient was diagnosed with multiple cystic hydatidosis based on the CT findings and positive serum antibody test. The patient did not accept any new elective surgery, so a prolonged course of albendazole and praziquantel therapy is suggested for the patient. The follow-up time was 1 year. No spontaneous rupture was developed. The patient was advised to continue follow-ups with radiologic examinations at determined intervals in order to screen for possible future complications.

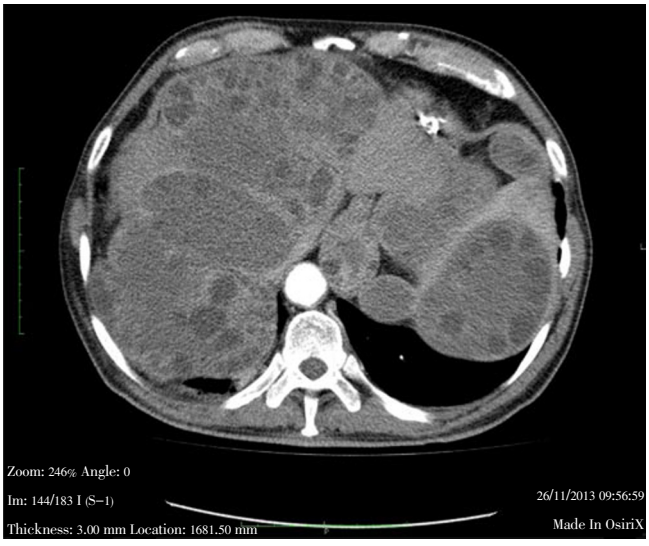

Figure 1. Axial contrast enhanced CT of the upper abdomen.
It shows multiple hydatid cysts with multiple daughter cysts (CE3B) in the liver. Also, large hydatid cysts with multiple daughter cysts were demonstrated in the spleen and paraaortic area.

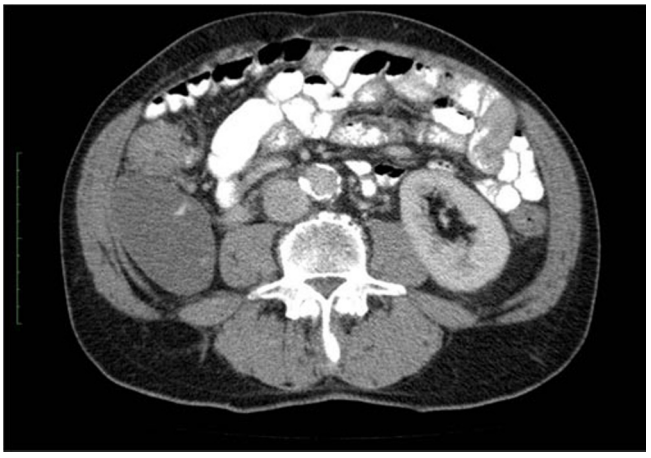

Figure 2. Axial contrast enhanced CT of the upper abdomen at the level of the left kidney.
It shows a hydatid cyst (CE1) adjacent to the ascending colon, with the largest diameter of 81 mm×52 mm.

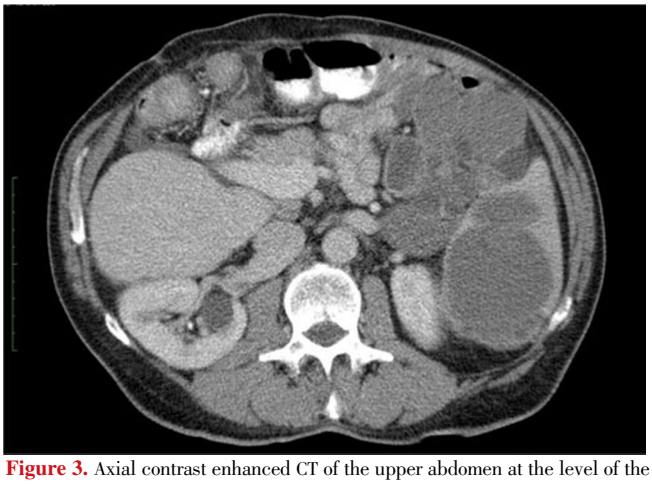

Figure 3. Axial contrast enhanced CT of the upper abdomen at the level of the right kidney.
It shows multiple hydatid cysts (CE1) without daughter cysts in the mesenteric fatty tissue. Also, a CE1 cystic lesion was demonstrated, with the largest diameter of 20 mm×21 mm in the cortex of the right kidney.

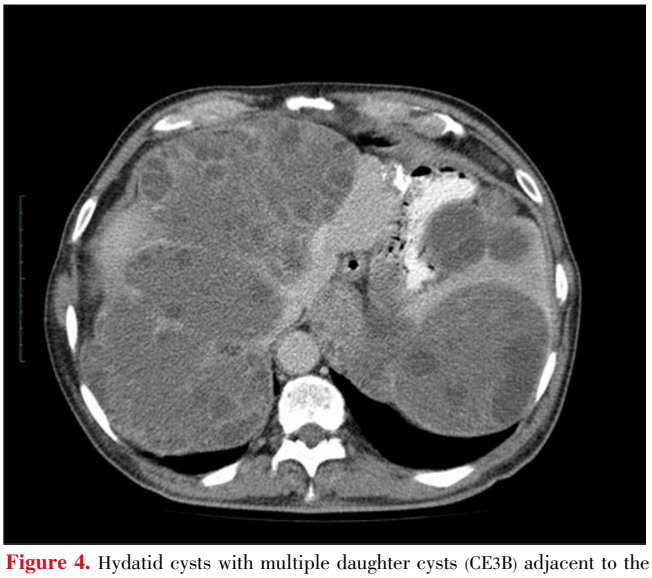

Figure 4. Hydatid cysts with multiple daughter cysts (CE3B) adjacent to the aorta and gastric fundus.
Compression and deviation of the gastric fundus by the paraaortic cystic lesions were revealed by CT. Also, compression of the gastric corpus by the CE3B hydatid cyst in the spleen, with the largest diameter of 48 mm×55 mm, was demonstrated by CT.