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Case Report

Hydatid cysts of the liver with concomitant massive peritoneal hydatidosis: a case report ☆

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ABSTRACT

The worldwide distribution of Echinococcus granulosus and its capability to persist in the human organism by causing serious medical and economical damage makes this parasite popular in terms of diagnosis and treatment implementation. Besides the liver as the primary target organ for this parasite, cases of secondary peritoneal hydatidosis are reported. Although rarely, they present with unusual abdominal symptoms with a bizarre presentation on abdominal ultrasound and Computerized Tomography scans. We present a case of a 44 years old male patient with concomitant presence of liver hydatid cysts and massive peritoneal hydatidosis treated with a combination of surgery and postoperative medications. The treatment of peritoneal hydatidosis consists of surgical removal of all the present cysts. In addition, anti-parasitic drugs are recommended to prevent a recurrence. The concomitant presence of liver hydatid cysts and peritoneal echinococcosis can appear as a result of abdominal trauma or iatrogenic spillage during abdominal surgery.

Introduction

The liver is the primary target organ of Echinococcus granulosus infestation in humans. As a consequence, cystic echinococcosis occurs. The liver is affected in about 70% of cases but many other organs (lungs, spleen, brain, kidneys, peritoneum, and bones) can be affected at the same time or present as primary target organs [1]. Peritoneal hydatidosis occurs after traumatic rupture of the liver or splenic cystic echinococcosis during surgery in about 10%-16% of the cases [2]. The dissemination can also occur through the lymphatic [3] or systemic circulation [4]. Primary peritoneal hydatidosis is rare and it accounts for 2% of all cases of intra-abdominal hydatidosis. It can be asymptomatic for a certain period of time or can present with symptoms caused by the cyst pressure effects [5]. Emergency presentation of primary abdominal hydatidosis is also reported and it appears when

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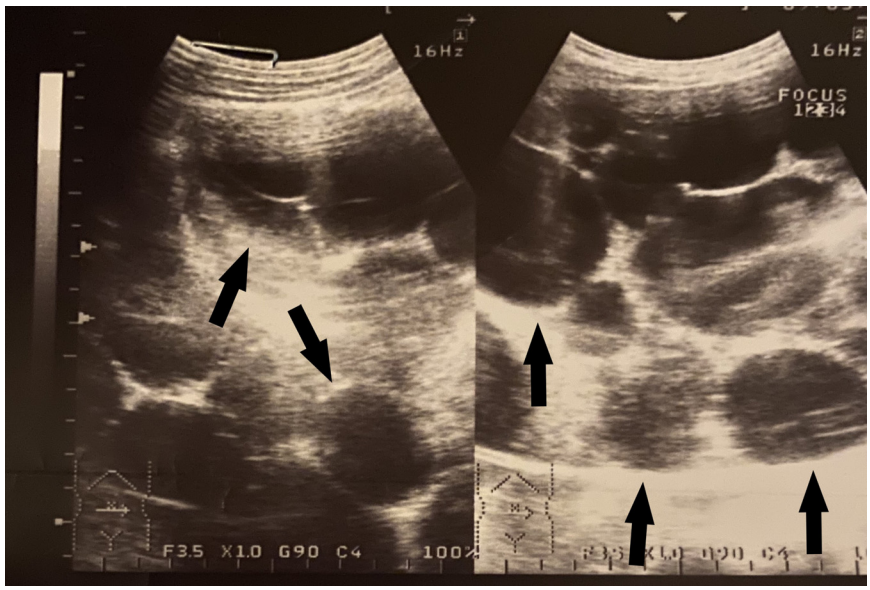

Fig. 1 – Abdominal ultrasound with cysts (arrows).

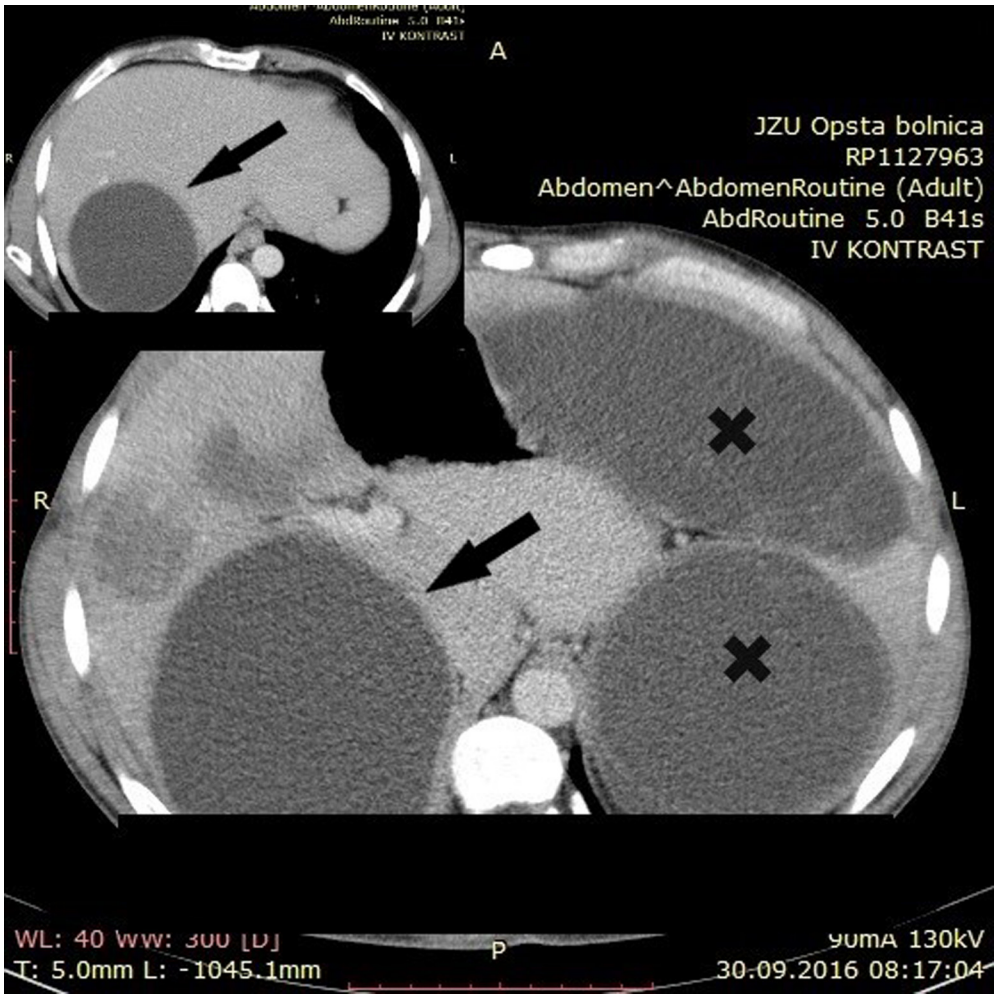

Fig. 2 – Axial CT scan of the abdomen showing cysts in the abdomen (crosses) and cyst in the right liver lobe (insertion), marked with black arrows.

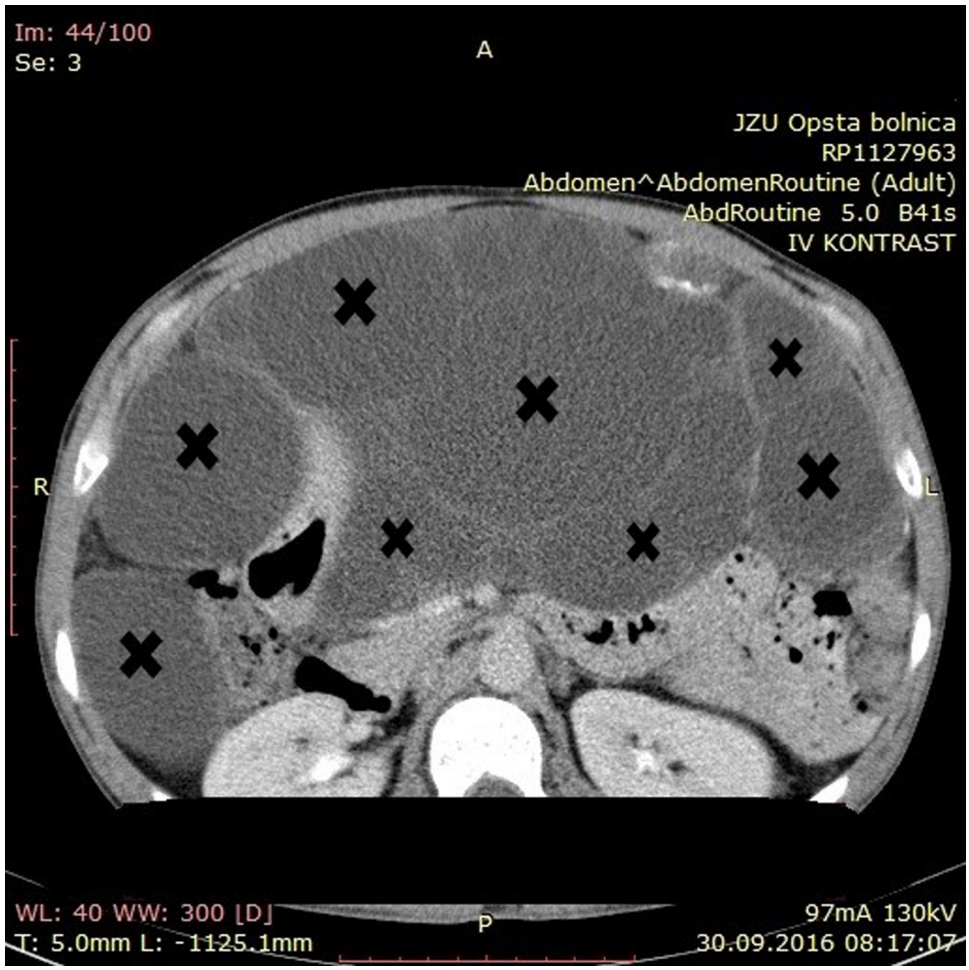

Fig. 3 – Axial CT scan of the abdomen demonstrates large multiple intra-abdominal cysts (crosses).

the cyst ruptures in the abdominal cavity [6]. We present a case of a 44 years old male patient with two liver hydatid cysts and with massive disseminated peritoneal hydatidosis.

Case presentation

A 44-year-old male patient with low socioeconomic status and a history of chronic alcohol abuse presented with undefined abdominal discomfort lasting for months in the outpatient ward. The physical exam revealed a palpable diffuse mass in the abdomen without clearly defined boundaries. Serologic biochemistry analysis was unremarkable with the exclusion of C-reactive protein and alanine aminotransferase which were slightly elevated (10.6 mg/L and 87 U/, respectively). The abdominal ultrasound was ordered by his family physician. The abdominal ultrasonography report described a bizarre finding of countless intra-abdominal cysts (Fig. 1). Abdominal computerized tomography showed the presence of two liver cysts and countless peritoneal cysts with an intestinal mass effect (Figs. 2–5). Cysts were also described in the pelvis. A suspicion of liver and peritoneal hydatid disease was raised. Serologic agglutination test for Echinococcus antibodies presented highly positive with a value of 1:1024 (<1:128 – negative; 1:256 – near the border of positivity; >1:512 – positive). The patient was referred to a surgeon and a laparotomy was scheduled. Hypertonic saline (15%) was used as a scolicidal agent during surgery. The procedure consisted of peritoneal cysts evacuation and maximal reduction of the liver pericyst. The pathology report confirmed the existence of cysts coated with germinative cells, with the presence of sporadic scolices and parts of daughter cysts. The postoperative period was uneventful and the patient was discharged on postoperative day 10. Additionally, Albendazole was prescribed orally. The patient did not show up for regular check-ups for the scheduled post-treatment serologic agglutination test.

Discussion

Echinococcus granulosus is one of the 4 species of the parasitic disease Echinococcosis causing infection in humans [1]. Its geographical distribution is wide and the highest prevalence is reported in the Mediterranean region, China, Russia, Africa, South America, and Australia [7]. Primary peritoneal

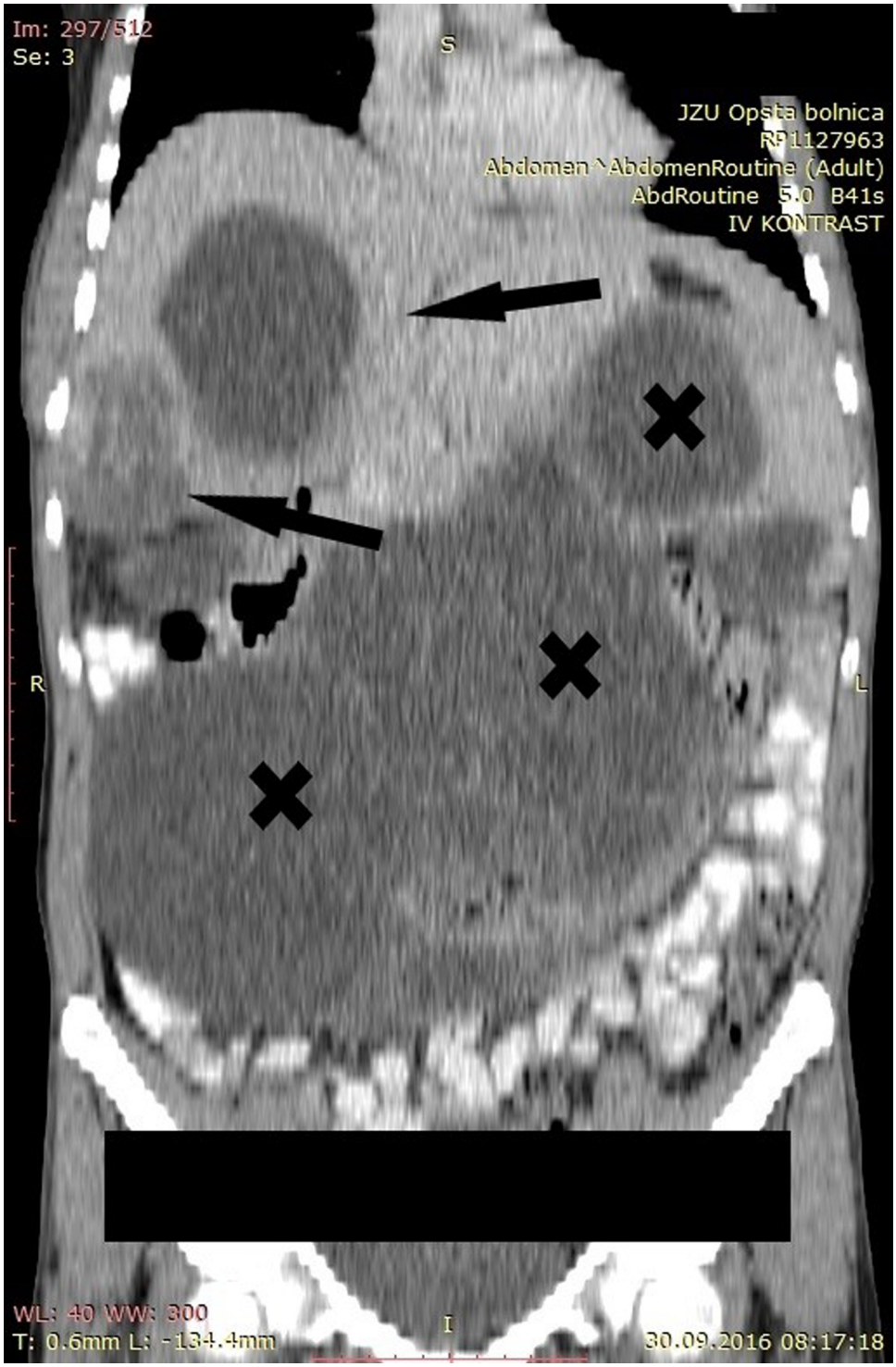

Fig. 4 – Coronal CT scan of the abdomen showing large multiple intra-abdominal cysts (crosses) and two cysts in the liver (arrows).

hydatidosis is rare and it is defined with any peritoneal localization without a solid organ involvement [5,8]. Besides the liver as the most affected organ, cases of secondary peritoneal hydatidosis are described. In patients without a previous surgery for liver hydatid disease, asymptomatic (silent) spontaneous microruptures or even traumatic microruptures are assumed to be the reason for this condition [9,10]. In our case, knowing that the patient was a chronic alcohol abuser, having reviewed his medical data history, we found several former hospitalizations due to trauma from falling. None of

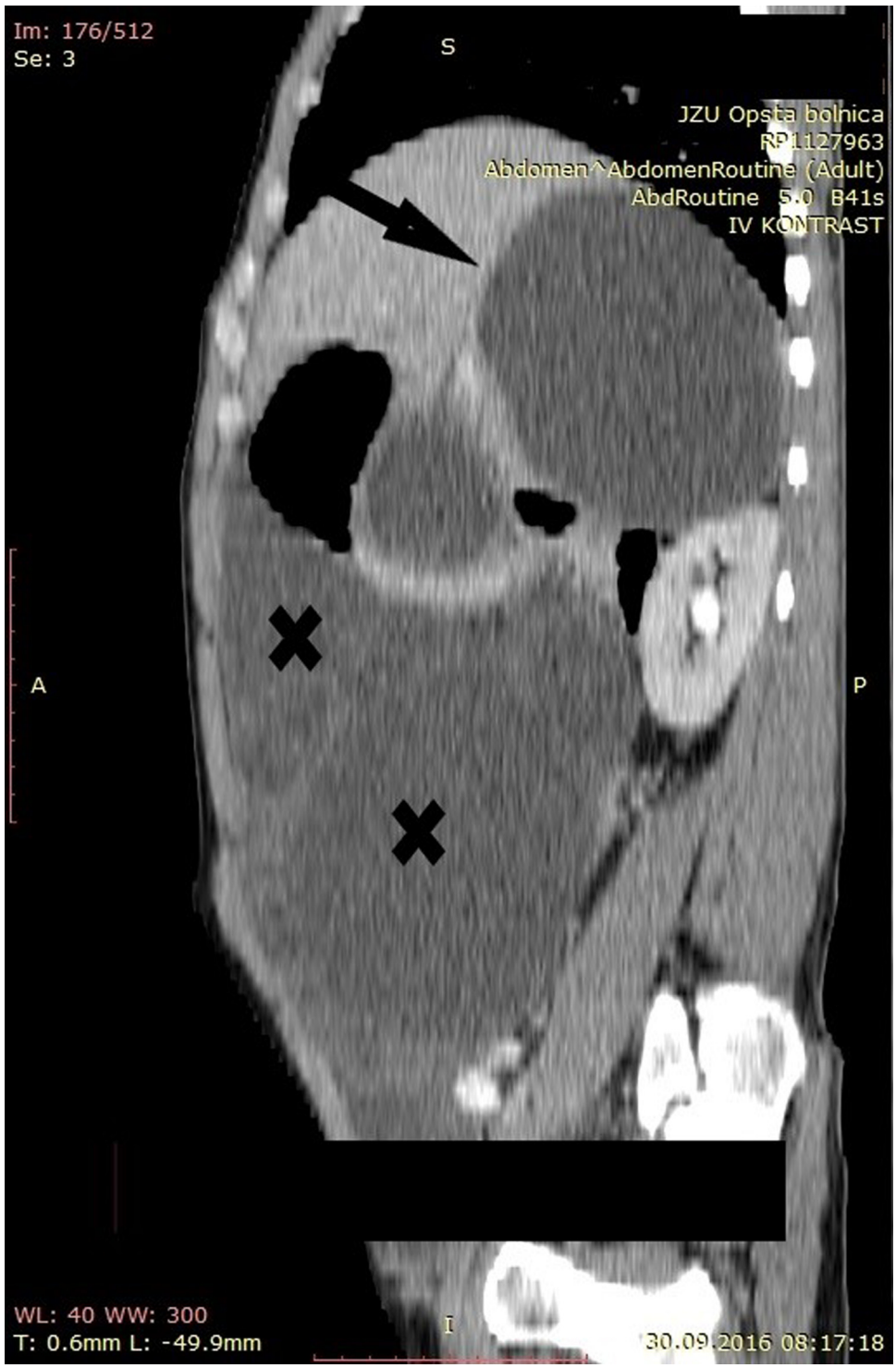

Fig. 5 – Sagittal CT scan of the abdomen with intra-abdominal (crosses) and liver cyst (arrow).

this data revealed a moment of blunt abdominal trauma. However, a silent traumatic microrupture is a possible etiologic factor in our patient. Another possible explanation of the secondary peritoneal hydatidosis is the lymphogenic or hematogenic spread from the liver cysts.

The symptoms of peritoneal hydatidosis depend on the size and number of the cysts. It can be asymptomatic or nonspecific (abdominal pain, fullness, vomiting, anorexia, dyspepsia) [11]. Our patient's symptoms presented with abdominal discomfort and fullness.

Diagnosis of peritoneal and hepatic hydatidosis relies mostly on abdominal ultrasound and CT scan. Magnetic resonance is rarely used for liver and peritoneal lesions [12]. Different immunological serum tests (enzyme-linked immunosorbent assay, immunoglobulin G antibodies detection, and antigen detection from the cyst fluid) follow for further diagnosis confirmation [13].

The mainstay for the treatment of peritoneal hydatidosis is surgery (open and laparoscopic) [12]. In some cases, complete removal of the peritoneal lesions is not possible. Therefore medications such as albendazole, mebendazole, and praziquantel are used for treatment [9]. Medications are recommended in addition to surgery to avoid the presence of residual parasitic cysts and recurrence [14].

In conclusion, both, hydatid cysts of the liver and disseminated peritoneal hydatidosis, can persist in one patient at the same time. The peritoneal dissemination is described to appear as a consequence of previous abdominal minor or major trauma in patients with liver/spleen hydatidosis or as a result of intraoperative spillage during surgery.

Informed consent statement

We declare that an informed written consent for publication of the case report article:"Hydatid cysts of the liver with concomitant massive peritoneal hydatidosis: a case report" is obtained from the patient.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.radcr.2022.04.008.

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