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CASE REPORT

# Acute rupture of a peritoneal hydatid cyst

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rupture;
trauma

**Summary** *Echinococcus granulosus*, the pathogen responsible for hydatid disease, mostly settles in the liver and lungs but affects the peritoneum less frequently. Rupture of a cyst into the peritoneal cavity is a potentially life-threatening incident. Although numerous studies on ruptured hepatic hydatid cysts have been published, few cases of peritoneal cyst rupture have been reported. We describe the case of a 19-year-old woman who presented with an acute abdomen and allergic reactions after a fall. Ultrasonography and computed tomography revealed a hydatid cyst of the liver and ruptured pelvic hydatid cyst. First, the patient received appropriate measures to prevent anaphylactic shock and later underwent emergency surgery. Partial cystectomy of the ruptured pelvic hydatid cyst, peritoneal washing, and unroofing of the large unruptured hepatic hydatid cyst were conducted. Albendazole was administered postoperatively for 3 months. No recurrence was noticed during 3 years of follow-up. Although rarely documented, acute rupture of a peritoneal hydatid cyst is the most severe complication of peritoneal echinococcosis. Typically after trauma, it must be considered in the presence of an acute abdomen with allergic reactions. Ultrasonography and computed tomography have high sensitivity in demonstrating rupture of a hydatid cyst. Emergency surgery is the only effective treatment and should aim at the complete removal of a cyst, if possible, and peritoneal washing with scolicidal agents. Additional studies should be conducted to evaluate the feasibility of laparoscopy. Albendazole should be prescribed postoperatively to prevent recurrence. Mortality is closely related to anaphylaxis; hence, early and accurate diagnosis and appropriate preventive measures are crucial.


Conflicts of interest: The author declares no conflicts of interest.

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## 1. Introduction

Hydatid disease is a zoonosis caused by the larval form of *Echinococcus granulosus*. Humans become intermediate hosts of the parasite after accidental ingestion of its eggs. When these eggs penetrate the intestinal wall, most of them migrate into the liver (75%) and lungs (24%), while peritoneal involvement is much less frequent.[1] Rupture of a hydatid cyst into the peritoneal cavity is a potentially life-threatening incident. Numerous cases and retrospective studies on ruptured hepatic hydatid cysts have been published, whereas few cases of a ruptured peritoneal hydatid cyst (PHC) have been reported.

We report a case of a young patient with acute traumatic rupture of a PHC.

## 2. Case Report

A 19-year-old woman presented to our emergency department with acute abdominal pain, nausea, headache, cough, and palpitations, which occurred just after she suffered a fall. She had a 2-year history of progressive growth of her abdomen but denied any digestive, gynecological, or urological symptoms. On examination, diaphoresis, conjunctival injection, and tachypnea were observed. Arterial blood pressure was 90/50 mmHg with a pulse rate of 125 beats/min and temperature of 37.8°C. The abdomen was distended with intense pain, guarding, and dullness to percussion in the lower abdomen. Digital rectal examination was painful and showed a bulging pouch of Douglas.

White blood cell count, hemoglobin level, hematocrit, and parameters of clinical blood serum chemistry, hepatic tests, and renal function tests were normal. Plain radiographs of the abdomen and chest showed an elevated right hemidiaphragm (Fig. 1). Abdominal ultrasonography (US) and computed tomography (CT) demonstrated an anechoic homogeneous unilocular cyst of 121 mm × 129 mm with well-defined borders. The lesion was located in segments IV, V, VII, and VIII of the liver with no peripheral contrast enhancement or calcifications (Fig. 2). In addition, a large intraperitoneal cyst of 139 mm × 88 mm with some daughter vesicles inside was shown. This cyst seemed to be ruptured in its lower pole into the Douglas space (Fig. 3). Furthermore, a small amount of free fluid in the abdominal cavity and a right ovarian cyst of 29 mm in diameter were observed. US/CT imaging revealed a hydatid cyst of the liver staged CE1 and a ruptured pelvic hydatid cyst staged CE2.

Our patient first received appropriate measures, namely high-flow oxygen therapy, cardiac monitoring, saline solution, and intramuscular medications (epinephrine 0.5 mg and ranitidine 50 mg), to prevent anaphylactic shock. Once hemodynamic and respiratory parameters normalized 15 minutes after the initial management, the patient underwent emergency surgery for an acute abdomen caused by a likely rupture of a PHC. Her abdomen was opened using a large midline incision and 150 mL of clear peritoneal fluid was sucked out. A huge pelvic hydatid cyst fissured in its inferior wall was found. From this cyst, a large parasite and multiple daughter vesicles were extracted (Fig. 4). The cyst adhered to the small intestine, mesentery root, uterus, urinary bladder, and posterior parietal peritoneum. The peritoneal cavity was washed with hydrogen peroxide and partial cystectomy was conducted (Fig. 5). A large unruptured hydatid cyst on the right hepatic lobe was observed with the rest of the liver in an intact form. Puncture and aspiration of a clear fluid, injection of hydrogen peroxide, cystotomy, and extraction of a unique germinal membrane were performed. After a meticulous search, no biliocystic fistula was found and the cyst was managed by conducting an unroofing procedure. Cystectomy was conducted for the serous right ovarian cyst. At the end of the surgery, a drain was inserted in the hepatic residual cavity and another in the Douglas space.

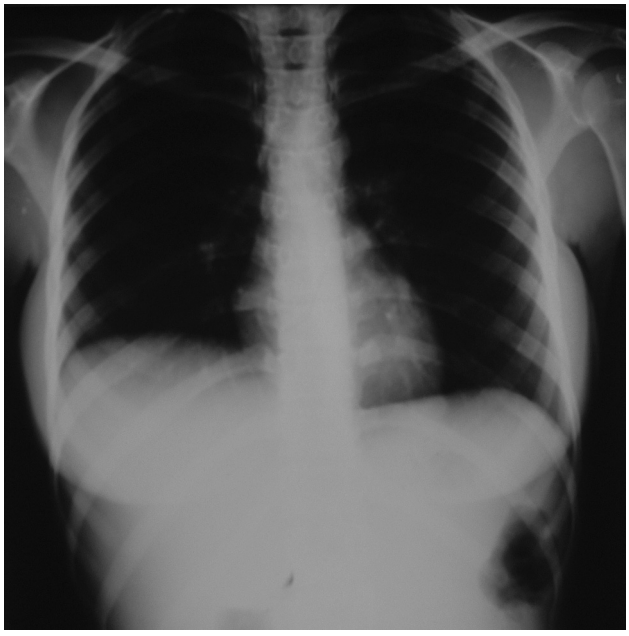

**Figure 1** Elevation of the right hemidiaphragm.

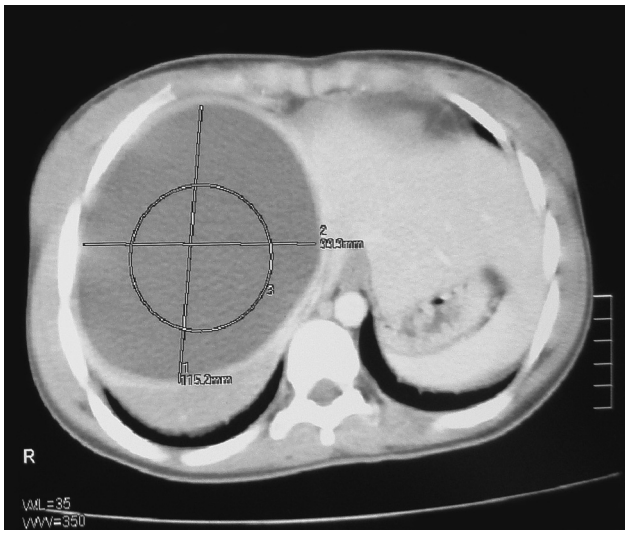


**Figure 2** Computed tomography scan showing the unruptured hydatid cyst in the right hepatic lobe.