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Case Report

An unusual case of splenic hydatid cyst perforating into posterior wall of stomach ☆,☆☆

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ABSTRACT

Hydatid disease (cystic echinococcosis) is a parasitic infection caused by *Echinococcus granulosus*. Hydatid cysts are typically found in the liver and lungs, but they can also rarely occur in the spleen. This case report describes an unusual occurrence of a splenic hydatid cyst that perforated the posterior wall of the stomach. The patient, a 55-year-old female, presented with severe pain in the left hypochondrium and nausea. A computed tomography (CT) scan revealed a large, complex mass in the spleen with multiple hydatid cysts and a perforation of approximately 5 × 5 cm into the stomach wall. The patient underwent peri-cystectomy for the infected splenic hydatid cyst and repair of the gastric perforation. Histopathological examination confirmed the presence of hydatid cysts. This case highlights the importance of considering hydatid cysts in the differential diagnosis of abdominal masses that erode into the stomach to prevent overtreatment and ensure an accurate diagnosis.

Introduction

Cystic echinococcosis (CE) is a parasitic disease that is caused by the organism *Echinococcus granulosus*. *E granulosus* undergoes a life cycle that involves a definitive host, typically dogs, and an intermediate host, such as sheep or goats [1]. Humans can potentially serve as accidental intermediate hosts vulnerable to infection; however, this is uncommon. The first infection is usually without any symptoms, and the latent period, which is the time interval between initial contact with an infectious agent and the appearance of the first clinical signs or symptoms of disease, is long in most cases. Cystic echinococcosis (CE) involves the liver in approximately 70% of instances,

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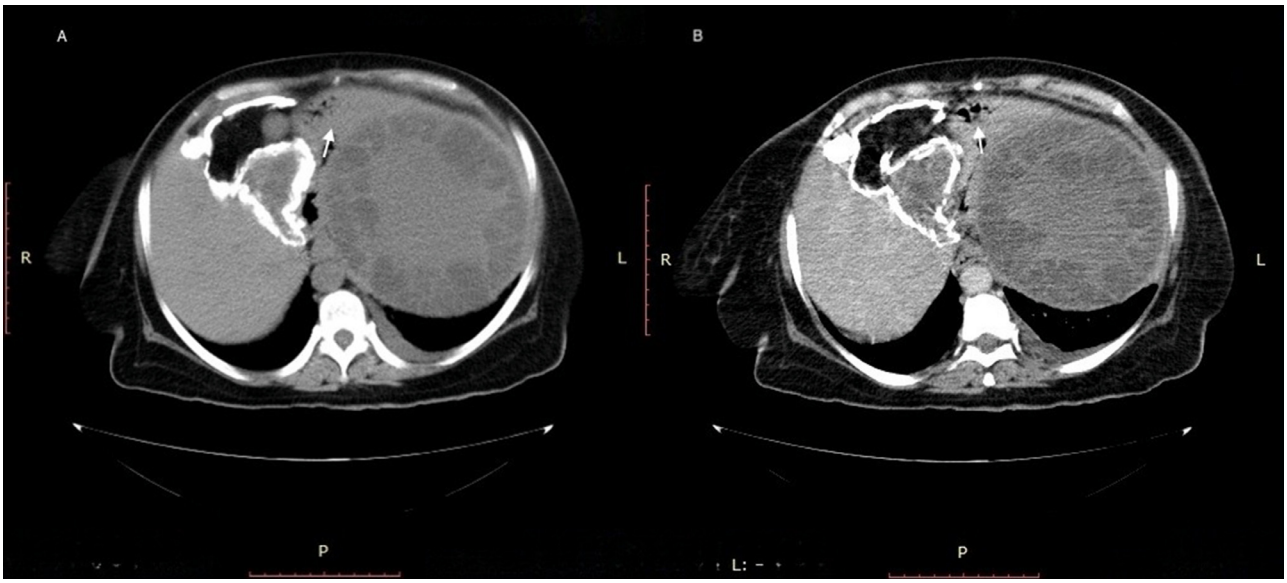

Fig. 1 – (A, B) Axial sections of the CT scan show a well-defined mixed attenuation and almost non-enhancing lesion involving almost all parts of the spleen. The lesion shows thin-walled, peripherally arranged daughter cysts with a central irregular soft-tissue component giving a spoke-wheel appearance, representing a type II hydatid cyst: cyst with daughter cysts and matrix. White arrows show disruption of the splenic capsule, which is in communication with a partly collapsed stomach.

the lungs in 25%, and the spleen in 0.5%-8% [2]. Approximately only 10% to 20% of the hexacanth embryos manage to evade the double liver-pulmonary circulation, which includes the first and second Lemman's filters, and migrate to other organs [3]. The spleen is the third most prevalent site for hydatid cystic illness [4]. Typically, it is incidentally detected as a palpable mass in the abdominal region, either in the left upper quadrant or, less frequently, in the epigastrium of the abdomen. In addition, it may exhibit symptoms such as discomfort, constipation, or dyspepsia [5]. Surgical intervention is the mainstay of treatment, in addition to the administration of antihelminthic medications such as albendazole.

Case presentation

A 55-year-old female patient presented to us with the chief complaint of pain in the left hypochondrium for 2 months. The pain was sudden in onset, severe, nonradiating, and relieved with painkillers. It was associated with nausea. Her sleep was disturbed, and she experienced a decreased appetite. She had no history of any recent travel. On physical examination, the abdomen was soft but tender in the left hypochondrium. The spleen was palpable up to the umbilicus. The chest was clear bilaterally. Ultrasound of the abdomen and pelvis showed a huge complex mass measuring approximately 22 × 18 cm in the left flank, with multiple hydatid cystic lesions. Multiple calculi were seen within the gallbladder, with edematous changes in the wall; however, no definitive collection was seen. A computed tomography (CT) scan of the abdomen and pelvis showed a well-defined, mixed attenuation, almost nonenhancing lesion with thin, soft tissue attenuation walls involving nearly all parts of the spleen. It measured approximately 17 × 15 × 19 cm (AP × TR × CC) with smooth but minimally lobulated margins and caused proportionate enlargement of the spleen (the splenic volume was approximately 7500 cc) (Fig. 1). The lesion showed thin-walled, peripherally arranged daughter cysts with centrally irregular soft tissue components, giving it a spoke wheel appearance. There was no definitive evidence of calcifications, acute hemorrhage, or air-fluid levels within the lesion. The adjacent residual spleen parenchyma was otherwise normal. A well-defined, heterogeneously low-to-soft tissue attenuation lesion having well-perceptible, irregular, calcified peripheries with a maximum thickness of 8.2 mm was seen in segment IV of the left lobe of the liver, partially involving parts of segment III (Fig. 2). It measured approximately 9 × 8 × 8 cm (AP × TR × C). There was no evidence of air-fluid levels or acute hemorrhage seen within the lesion. It was extending inferiorly beyond the hepatic margins. The remaining visualized liver was otherwise normal in size and texture, having smooth margins. Intra- and extrahepatic biliary channels were within normal limits. The portal vein and hepatic veins were not dilated.

A peri-cystectomy for the splenic hydatid cyst was planned. The patient was counseled, and written informed consent was obtained. Under general anesthesia, a left subcostal incision was given. Following were the findings:

i) Infected splenic hydatid cyst with daughter cysts.
ii) The posterior wall of the stomach eroded with about 5 × 5 cm of perforation.

A peri-cystectomy for infected splenic hydatid cysts was performed, and the gastric perforation was repaired. Hemostasis was secured. A drainage catheter was placed.

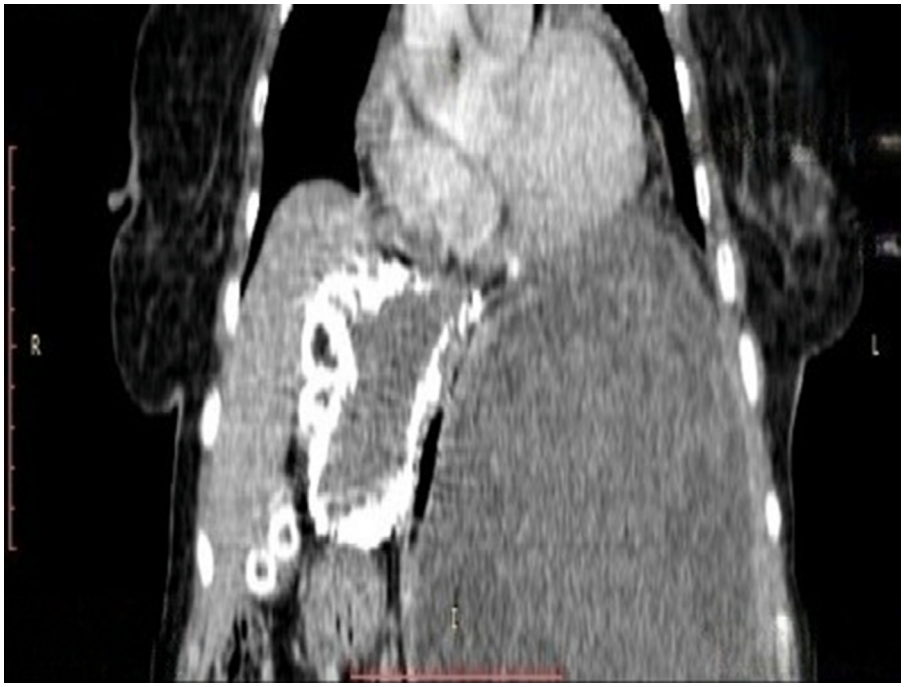

Fig. 2 – The sagittal section of the CT scan shows a well-defined, heterogeneously low-to-soft tissue attenuation lesion with well-perceptible irregular calcified peripheries involving the left lobe of the liver, representing a type III hydatid cyst: calcified cyst (dead cyst).

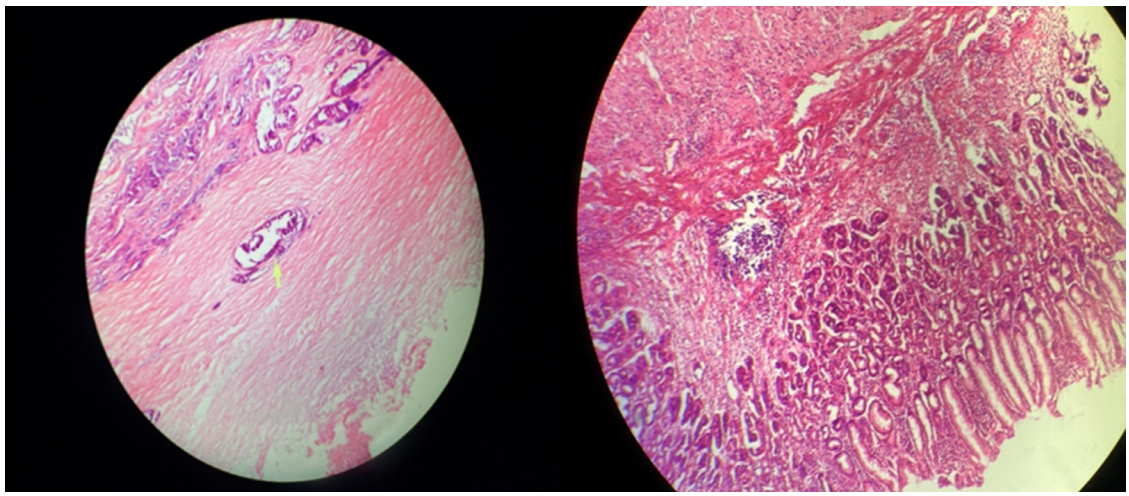

Fig. 3 – Hematoxylin-Eosin stained histopathological images of the cyst wall, with fragments of the cyst wall and an area of ulceration. The stroma shows acute and chronic inflammatory infiltrates, necrosis, fibrosis, and hemorrhage.

Closure was done in reverse order. Specimens were sent for histopathology (Fig. 3).

Discussion

The case of a splenic hydatid cyst perforating into the stomach is a very rare medical entity. Only a few cases have been reported so far in the literature, highlighting the uniqueness of this complication [6].

The diagnosis of splenic hydatid cysts can be challenging due to their nonspecific clinical presentation. Initial diagnostic imaging modalities, such as ultrasound, may not always provide a clear indication of the condition, often leading to confusion with other abdominal pathologies [7]. However, advanced imaging techniques like CT scans are crucial for accurate diagnosis. Computed tomography (CT) scans are often the modality of choice for diagnosing hydatid cysts, showing calcified cysts, daughter cysts, and membrane detachment [8]. In our case, the CT scan revealed a massive hydatid cyst with a splenic volume of 7500 cc, making it one of the largest

reported hydatid cysts. Additionally, the cyst had eroded into the stomach wall, causing a perforation, one of the rarest complications of splenic hydatid cyst, which was reported. However, there are reported cases of splenic hydatid cysts that rupture into the colon [9].

The management of splenic hydatid cysts, particularly those that perforate into the stomach, requires a multidisciplinary approach. Surgical intervention is often necessary to remove the cyst and repair any perforations. The choice of surgical technique depends on the size and location of the cyst, as well as the patient's overall health status. In some cases, a splenectomy may be considered to completely remove the cyst and prevent recurrence.

In conclusion, this case highlights the importance of considering splenic hydatid cysts as a possible diagnosis in patients presenting with abdominal pain and a palpable mass, especially in endemic regions. Therefore, when considering a malignant abdominal mass that erodes into the stomach, a hydatid cyst must be kept in differential diagnosis to prevent overtreatment and correctly identify the nature of the disease. Similarly, while diagnosing hydatid splenic cysts, gastric wall erosion or perforation must be considered, and a proper workup should be carried out to prevent any complications. Clinicians should be aware of the potential complications, such as cyst rupture, and the need for prompt and appropriate management to prevent further complications and ensure the best possible outcome for the patient.

Ethical approval

Ethical approval was obtained from the Ethical Review Board, Khyber Teaching Hospital, Medical Teaching Institute, Peshawar.

Statement

During the preparation of this work, the authors used Quillbot.com/Consensus.app to paraphrase the writing. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

Patient consent

The patient provided written informed consent for the publication and use of his material for research purposes.

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