Annals of Clinical Case Reports

Case Report
Published: 06 May, 2022

Ruptured Splenic Epidermoid Cyst Mimicking a Hydatid Cyst

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Abstract

Splenic cysts are considerably rare findings, and if present they are mostly asymptomatic. However, if symptoms present, they may include epigastric pain, nausea, vomiting, and abdominal distention relative to the size of the cyst. Splenic cysts are classified as either primary (parasitic or non-parasitic) or secondary (traumatic/pseudocyst). Herein we present a case of a 17-year-old male patient who presented to our emergency department with an acute abdomen. Investigated and planned for urgent exploratory laparotomy with interesting intraoperative findings. A quick literature review was done, and a conclusion was made.

Keywords: Splenic cyst; Abdominal pain; Rupture; Trauma; Laparotomy

Introduction

Splenic cysts are considerably rare findings, and if present they are mostly asymptomatic. However, if symptoms present they may include epigastric pain, nausea, vomiting, and abdominal distention relative to the size of the cyst. Splenic cysts might be attributed to many causes which include congenital, neoplastic, infectious, vascular, and inflammatory causes. Moreover, congenital splenic cysts include epidermoid cyst which is characterized by inner endothelial cells, which is a collection of mesothelium cells present at the splenic sulci at the time of birth [1]. Furthermore, the inflammatory splenic cyst can be subdivided into a pyogenic abscess, fungal abscess, and *Echinococcus* cyst which are also known as hydatid cyst [2]. A pyogenic abscess can be caused by infection, penetrating trauma, or a previous thromboembolic event affecting the spleen [2]. On the other hand, a hydatid cyst is caused by a parasitic infestation by a tapeworm known as *Echinococcus* genus [1]. Differentiating between those subtypes of the splenic cyst by imagining and clinical presentation alone is challenging. Therefore, Tissue sampling is required to establish a definitive. Here, we are reporting a case of a ruptured epidermoid splenic cyst diagnosed initially as a hydatid cyst.

Case Presentation

Seventeen years old male was brought to Prince Sultan Military Medical Center ER with the main complaint of severe sudden abdominal pain, stabbing in nature, more pronounced on the epigastric area. The patient stated that this abdominal pain is associated with nausea, right shoulder pain, and decreased oral intake. He added that those symptoms don't seem to be aggravated or relieved by anything. The patient denies any fever, previous trauma, animal contact, or ingestion of raw milk or meat. He has no history of hematological disease or similar attack. Upon further questioning, he said that he felt a left abdominal swelling a year before his presentation, but it was asymptomatic, and did not seek medical counsel for that swelling. On examination, he was alert, oriented, saturating well on room air, afebrile, vitally, and clinically stable. His abdominal examination revealed guarding, tender, and mildly distended abdomen, with no mass palpated. The systematic examination was unremarkable. Along with abdominal and pelvis computed tomography with intravenous contrast, routine laboratory blood tests including CBC, renal, and liver functions were ordered. Other than elevated white blood cells (13), his labs were unremarkable. Ct scan showed a large cystic lesion on the spleen measuring 15 cm × 9 cm × 8.5 cm in craniocaudal, transverse, and anterior-posterior dimensions respectively. Moreover, there were multiple peripheral small cysts and small peripheral calcifications. Additionally, there was a moderate amount of abdominopelvic free fluids and peritoneal nodularity, implying secondary cyst rupture (Figure 1). The differential diagnosis at that time included a hydatid cyst, epidermoid cyst, and pyogenic abscess. Based on the endemic

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Received Date: *02 Apr 2022*
Accepted Date: *19 Apr 2022*
Published Date: *06 May 2022*

Citation:
Al-Shareef TH, Al-Najashi MA, Al-Omran AO, Al-Zahrani A, Alanazi M, Ali B. Ruptured Splenic Epidermoid Cyst Mimicking a Hydatid Cyst. Ann Clin Case Rep. 2022; 7: 2188.

ISSN: 2474-1655

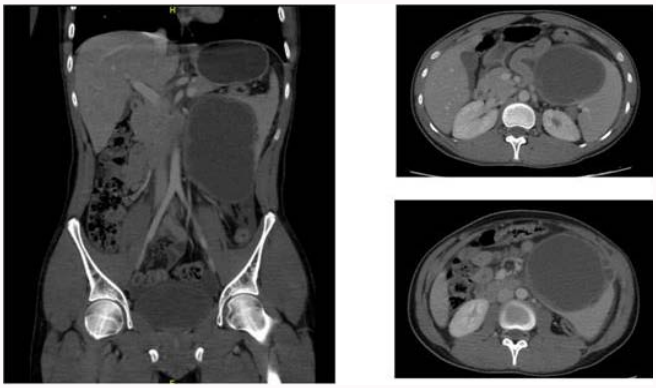

Figure 1: CT scan of the abdomen showed a large cystic lesion on the spleen measuring 15 cm × 9 cm × 8.5 cm in craniocaudal, transverse, and anterior-posterior dimensions respectively.

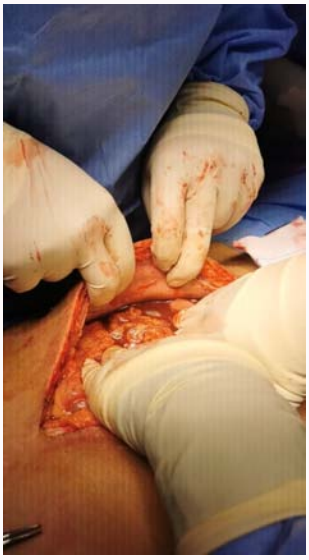

Figure 2: Exploratory laparotomy. Upon skin incision, there was a large amount of anchovy sauce.

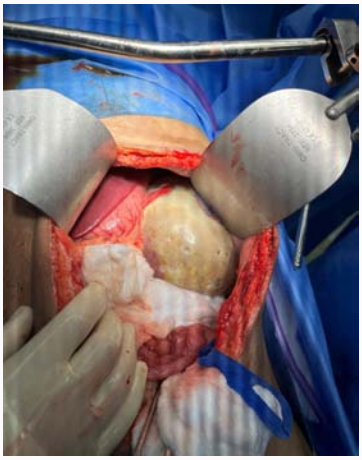

Figure 3: The spleen was enlarged with a sizable cyst arising from the medial aspect of the spleen.

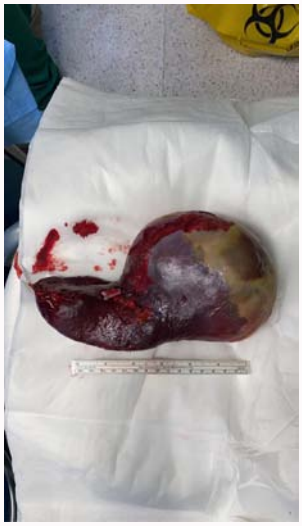

Figure 4: The gross specimen of Splenectomy was performed, and the spleen.

prevalence and clinical presentation our impression at that time was ruptured hydatid cyst. The decision was made to take the patient to the operating room and do an exploratory laparotomy. Upon skin incision, there was a large amount of anchovy sauce (Figure 2), so 6 L irrigation was done. The spleen was enlarged with a sizable cyst arising from the medial aspect of the spleen (Figure 3). Splenectomy was performed, and the spleen was sent to the pathology lab (Figure 4). Two drains were inserted in the splenic bed and pelvis. The fascia was closed with PDS, and the skin was closed with clips. The operation lasted 3.5 h. It was uneventful, and the patient experienced minimal blood loss. Postoperatively, he was started on Albendazole and Tazocin. The preventive medicine consulting physician informed us that the patient will not receive any vaccine during his admission and that they will follow up with him after discharge. The patient experienced an increased level of platelets reaching up to 634 on day 4, so the Hematology consulting physician was contacted regarding post-splenectomy reactive thrombocytosis, and he recommended a low dose of aspirin or enoxaparin 4 to 6 weeks. On day 5 postoperatively he was doing well, vitally and clinically stable. He was mobilizing, voiding freely, and passing bowel motions. His surgical incision was closely assessed; there was no sign of infection, seroma, or hematoma. He was discharged home on day 5 with outpatient follow-up, to review the pathology report and to reassess the patient. After two weeks the patient was seen in the clinic, the pathology report showed a multilocular cyst lined by benign squamous epithelium consistent with epidermoid cyst (Figure 5). The cyst wall showed marked fibrosis with focal old hemorrhage and calcification (Figure 6). So, the antibiotics were ceased immediately, and the patient was informed of the cytology report and given a follow-up appointment.

Discussion

Splenic cysts are classified as either primary (parasitic or non-parasitic) or secondary (traumatic/pseudocyst) [3]. Primary Non-parasitic cysts are mainly epidermoid cysts (90%) [3] and 10% of all non-parasitic cysts [3]. The parasitic cyst is usually caused by Echinococcus granulosus (referred to as hydatid cyst) that most commonly affect the liver followed by the spleen than the lung [4]. The incidence of splenic cyst is known to be low and the parasitic type is the most common worldwide while the primary non-parasitic congenital cyst is the predominant type in the western world and predominantly affects young and middle-aged adults [4]. The clinical presentation may vary from incidental findings to acute abdomen

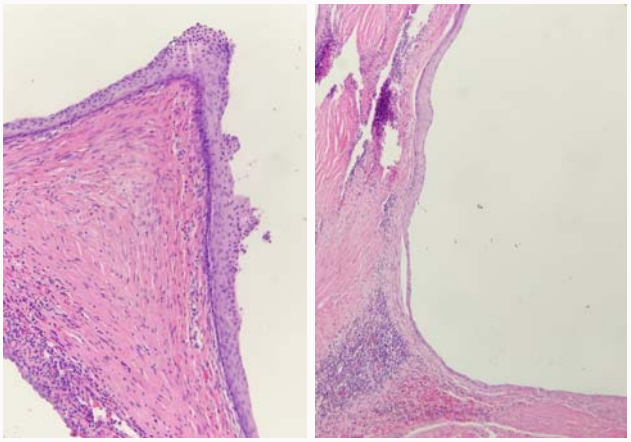

Figure 5: Histopathology report showed multilocular cyst lined by benign squamous epithelium consistent with epidermoid cyst.

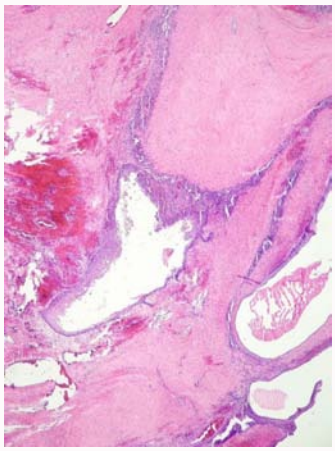

Figure 6: The cyst wall showed marked fibrosis with focal old hemorrhage and calcification.

presentation [4]. Mild symptoms include fullness, early satiety, or abdominal pain [4]. The mass effect may produce a more prominent picture like obstruction or shortness of breath. Rupture of the splenic cyst will produce more severe sudden onset signs and symptoms such as abdominal pain, vomiting, and peritonitis with tachycardia as in our case report [3]. These acute symptoms like rupture hemorrhage and infection are considered rare presentations for such entity [2]. CA 19-9 has been strongly associated with epidermoid cyst [3,4]. US and CT scans play important role in identifying the presence of splenic cyst but with difficulty to differentiate the parasitic (hydatid) from epidermoid cyst [5]. The presence of septation and intramural calcification as in our case will favor the diagnosis of Hydatid cyst as the epidermoid cyst usually present as well-circumscribed unilocular cystic [5]. But radiological features alone cannot role in or role out parasitic cyst without serological testing (ELISA). Biopsy or aspiration will carry a risk for anaphylaxis or dissemination [5]. Management of splenic cyst depends on the pathology, size, and patient presentation [4]. Open total splenectomy is the standard of care for large and symptomatic cases [4,6,7]. Also, the partial splenectomy option is feasible to preserve the splenic parenchyma to reduce the post-operative complication [4,6]. Additionally laparoscopic is also considered for those cases with smaller cyst size and benign presentations [4,8]. On the other hand, our patient was initially suspected to be ruptured hydatid cyst measuring 15 cm presenting with peritonitis and tachycardia which limited our options to open total splenectomy.

Conclusion

Splenic cyst is a rare entity with the majority diagnosed incidentally or with mild symptoms. Splenic cyst presenting with rupture and acute abdomen is an extremely rare presentation with only a few cases has been reported in the literature. In our case, it was initially misdiagnosed as hydatid cyst as reported in the imaging in addition to the presence of peritonitis along with tachycardia which directed our management for open total splenectomy which was uneventful, and the patient recovered well post-operatively.

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