

# Non-Traumatic Pseudocyst of Spleen Presenting as Chronic Abdominal Pain: Case Report

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## ABSTRACT

**Introduction:** Splenic pseudo cysts are extremely uncommon. Most of these cysts are asymptomatic and may result from previous blunt abdominal trauma. We report an interesting uncommon case of a large splenic pseudo cyst without a history of previous abdominal trauma.

**Case Presentation:** 44 years old female with normal BMI, married, non-smoker, non-alcoholic, and housewife. She had no past medical or surgical history and was not on any oral medications. She presented with upper abdominal pain and discomfort for 6 months. Irregular pain with mild intensity associated with shortness of breath, her physical examination was unremarkable. The abdominal ultrasound and contrast-enhanced CT showed a large splenic cyst occupying the lower pole of the spleen, Echinococcus multilocularis antibody test was negative (Titer < 1:16), Thus the Echinococcosis was excluded from the differential diagnosis. The differential diagnosis, in this case, was a non-parasitic splenic cyst. The patient underwent elective diagnostic laparoscopic with laparoscopic splenectomy.

**Discussion:** The patient had an uneventful postoperative recovery course. He was discharged from the hospital on the third postoperative day (within the expected time frame), and instructed to avoid heavy lifting for a few months and to complete the post-splenectomy vaccination protocol.

**Conclusion:** Pseudocyst of the spleen is quite uncommon in routine clinical practice and should be differentiated from more common lesions such as hydatid cysts, abscess of the spleen, etc. The Pseudocyst of the spleen is usually asymptomatic and is detected incidentally during the abdominal scan for other reasons. Splenectomy is the gold standard treatment for splenic pseudocysts. Partial splenectomy is the recommended procedure if at least 25% of splenic parenchyma is achievable.

**Keywords:** Splenic Pseudocyst • Non-Parasitic Splenic Cyst • Splenectomy

## INTRODUCTION

Splenic cysts are extremely uncommon, occurring in only 0.07% of individuals [1]. The splenic pseudocyst is one of the most uncommon kinds of this condition, with only about 800 occurrences reported worldwide [2-6]. In 75% of cases, recent blunt abdominal trauma is the most common cause of splenic pseudocysts [7-9]. Infection, infarction, and illnesses are some additional potential causes. The majority of these cysts are asymptomatic and may be the result of prior abdominal traumatic trauma. We describe a unique and unusual exam. In symptomatic situations, it typically manifests as left upper abdomen discomfort, nausea, and vomiting. If a secondary infection develops, it may also show with fever. In cases of rupture, it may also present with abdominal distension symptoms or very rarely,



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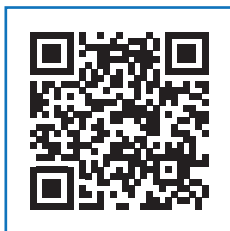
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peritonitis. Making a diagnosis of splenic pseudocyst is crucial, as is differentiating primarily between hydatid cysts because the therapy strategy varies depending on the type of splenic cyst. Massive splenic pseudocyst was reported in accordance with the SCARE Criteria [10].

## CASE PRESENTATION

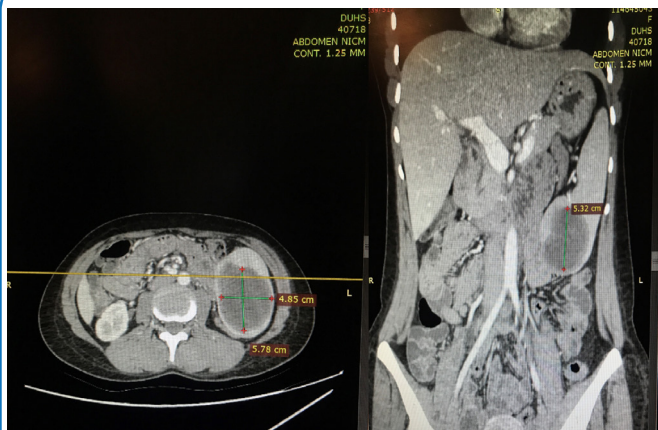
44 years old female with a normal BMI, married, non-smoker, non-alcoholic, and housewife. She had no past medical or surgical history and was not on any oral medications. She presented with upper abdominal pain and discomfort for 6 months. Irregular pain with mild intensity associated with shortness of breath.

## Physical Examination

She is a thin lean lady, abdominal examination shows her spleen was palpable in her left hypochondrium, her abdomen was soft, non-tender and no visible scar mark was present.

## Diagnostic Intervention

The abdominal ultrasound and contrast-enhanced CT showed a large splenic cyst occupying the lower pole of the spleen. Echinococcus multilocularis antibody test was negative (Titer<1:16) (Figure 1).

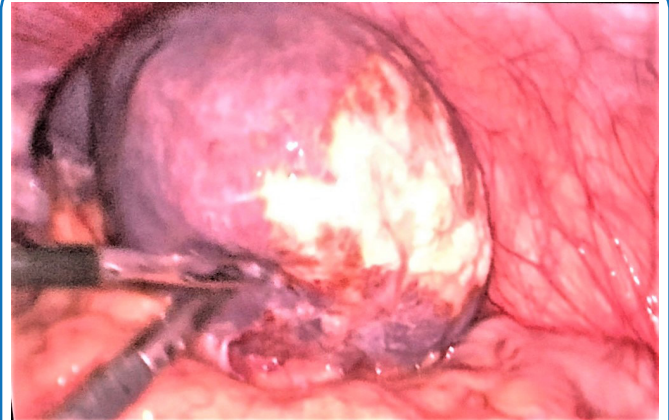


**Figure 1:** Enhanced CT imaging of the abdomen showed a giant splenic cyst with calcification at the edges.

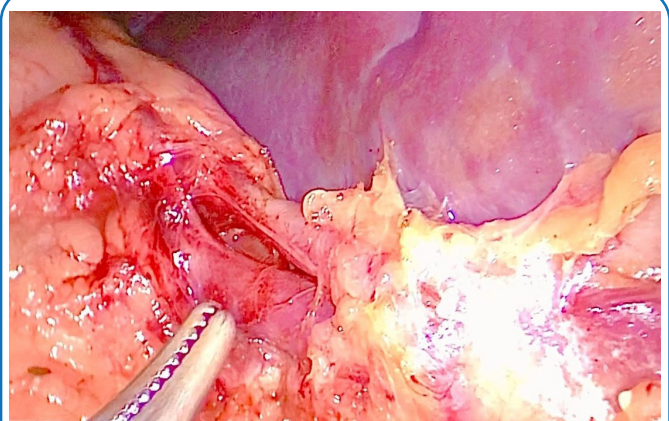
## Intervention

The patient underwent elective diagnostic laparoscopic with laparoscopic splenectomy (Figure 2 and 3). After induction of pneumoperitoneum at 14 mmHg with a Veress needle in the left paraumbilical region, a 10-mm trocar was positioned in the same site. After a careful exploration of the

abdomen, the first step was the incision of the splenicocolic and phrenicocolic ligament to mobilize the left flexure of the colon. Section of the splenicocolic ligament permitted the subsequent dissection of the splenorenal ligament. After a complete division of the gastrosplenic ligament, the short gastric vessels were closed and sectioned along greater gastric curvature using a radiofrequency dissector, and an exploration of the lesser sac was allowed. After a careful exploration of the abdomen, the first step was the incision of the splenicocolic and phrenicocolic ligament to mobilize the left flexure of the colon. After a complete division of the gastrosplenic ligament, the short gastric vessels were closed and sectioned along greater gastric curvature using a radiofrequency dissector, and an exploration of the lesser sac was allowed. The spleen was placed in a retrieval bag and removed from the 15 mm port hemostasis secured. At the end of the procedure, a drain was placed (Figures 4-6).



**Figure 2:** Laparoscopic view of a huge splenic cyst.



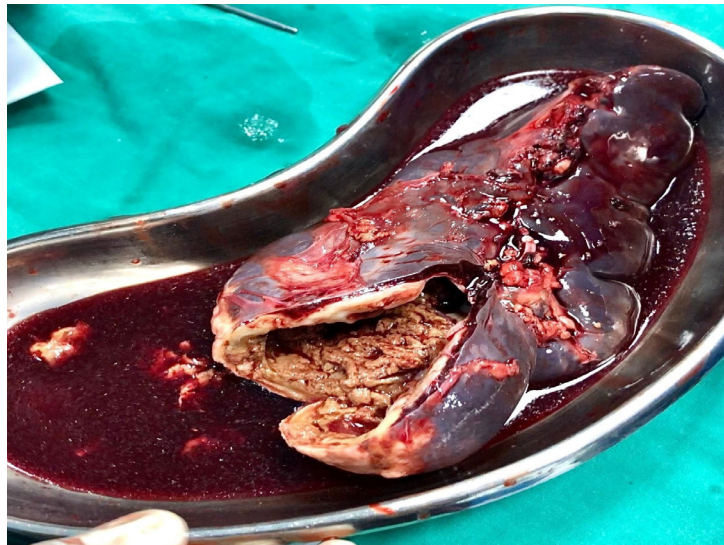
**Figure 3:** Laparoscopic view of splenic hilum having splenic artery and vein.



**Figure 4:** A large solitary cyst of the spleen in the lower pole of the gross specimen.



**Figure 5:** Resected gross specimen of spleen containing cyst.



**Figure 6:** Resected specimen of the spleen with part of splenic cyst opened.

## DISCUSSION

Only 800 cases of splenic cysts have been reported worldwide. In 1867, Pean performed the first splenectomy for splenic cysts. True cysts (with lining epithelium) and false cysts (without lining epithelium) were the two forms of splenic cysts included in the initial classification. Martin classified the splenic cysts into two categories: type I cysts, which are primary (genuine) cysts with an epithelial lining and can be parasite or nonparasitic in origin, and

type II cysts, which are secondary (false) cysts without an epithelial lining. Later, the splenic cysts were classified as either parasitic or ethically acceptable [11-14].

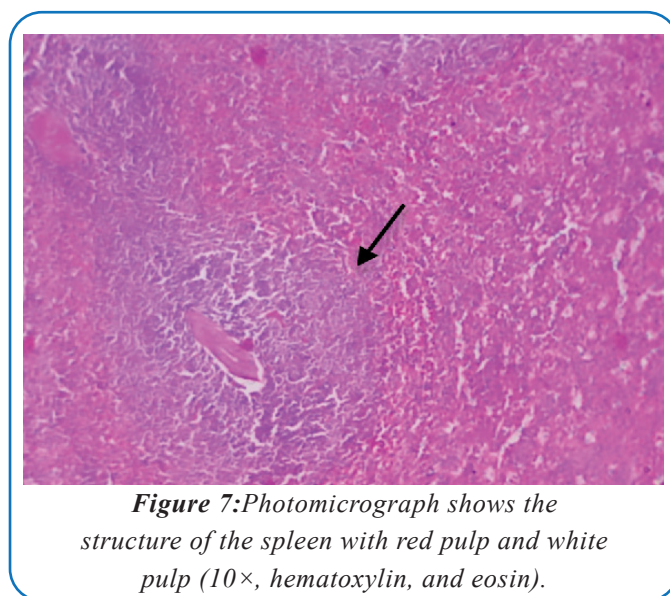
30% to 60% of splenic pseudocysts have no symptoms [15-16]. Due to the lack of specific clinical signs in the early stages, the majority of reported cases are mistakenly diagnosed, however oversized cysts frequently exhibit symptoms [10,17]. The signs and symptoms are related to the cyst's size and location [18]. Atypical soreness and

heaviness in the left hypochondrium brought on by the splenic capsule's distension or space-occupying organs in the abdominal cavity are the most typical symptoms. Other symptoms may include a palpable mass, left shoulder pain, chest pain, nausea, vomiting, dysphagia, dyspnea, and persistent cough [19-21]. Large splenic pseudocysts have been associated with serious consequences, including intracystic hemorrhage, secondary infection, and spontaneous intraperitoneal rupture [2-6]. Ultrasonography Tests (USG), Contrast-Enhanced Computed Tomography (CECT), Magnetic Resonance Imaging (MRI), and Magnetic Resonance Angiograms (MRA) are a few examples of radiological diagnostic techniques [14-18]. Splenic pseudocysts can be unintentionally discovered during an abdominal ultrasound or can be seen on radiographs due to calcification. The nature of the cyst content, the presence of calcification, the presence of septa, and the regularity of the cystic wall can all be identified with USG. The nature of the cyst content, the presence of calcification, the presence of septa, and the regularity of the cystic wall can all be identified with USG [22]. Therefore, histopathology continues to be the gold standard for the clinical diagnosis of splenic cysts. Surgery is typically necessary for splenic pseudocysts larger than 5 cm. Giant cysts are defined as cysts larger than 15 cm in diameter. Total splenectomy has been the standard treatment for splenic pseudocysts bigger than 5 cm, but more conservative methods are now being used, such as partial splenectomy, aspiration, deroofting, marsupialization, decapsulation, and cystectomy [19-21], 20-40% recurrence incidence after laparoscopic deroofting and aspiration have been documented. Despite all the treatments utilized to treat residual cavities (omentum package, argon destruction), Schier reported that the laparoscopic deroofting had a recurrence incidence of 64% within an average of 1 year. Percutaneous drainage with or without the infusion of sclerotic substances has been associated with a high recurrence rate. Laparoscopic deroofting and aspiration have been described with a recurrence rate of 20-40%. Percutaneous drainage with or without the infusion of sclerotic substances has been associated with significant rates of recurrence. Despite all the methods utilized to treat residual cavities (omentum package, argon destruction), Schier reported that the laparoscopic deroofting had a recurrence incidence of 64% within an average of 1 year. Percutaneous drainage has been linked to a high recurrence rate and does not provide long-term control, of whether or not sclerotic drugs are infused, recurrence rate, and does not provide long-term control [24-25].

Certain characteristics of splenic cysts including hilar location, large size with near complete replacement of parenchyma, associated hypersplenism, and doubtful

diagnosis are the few important situations where total splenectomy may not be avoidable [26-30]

A definite diagnosis of the SP is set with the help of the histologic examination, where the lack of epithelial lining, the thickness of the fibrotic wall, and the detection of calcifications within the wall, point toward a non-parasitic, false cyst. The cytologic examination of the content of the cyst will reveal the absence of malignant cells and parasites (Figure 7).



**Figure 7:** Photomicrograph shows the structure of the spleen with red pulp and white pulp (10×, hematoxylin, and eosin).

## CONCLUSION

Splenic pseudocysts treatment is to relieve symptoms and avoid complications. Partial splenectomy is the recommended procedure when the size and location of the cyst allow the preservation of at least 25% of splenic parenchyma. Otherwise, Total splenectomy is unavoidable. Definitive diagnosis is possible only by histopathological examination.

## CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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## CONSENT FOR PUBLICATION

Verbal and written informed consent was obtained from the patient for the publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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