

Minimal Invasive Approach in a Pediatric Non-Infective Splenic Cyst- Case Report and Review of Literature

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Abstract

Splenic cyst is a rare occurrence especially in paediatric age group, hence challenging to treat. It is usually diagnosed incidentally while doing scans for other abdominal complaints. We report a minimally invasive approach of treating a large splenic cyst with review of the literature.

A teenage boy presented to the emergency room who complained of pain in the left upper quadrant of abdomen of 2 days duration, with a history of blunt abdominal trauma 2 years back. Clinical examination and relevant radiologic investigations were done for the proper diagnosis.

Patient underwent laparoscopic deroofing of the large splenic cyst followed by omental pedicle insertion. Histopathological exam showed presence of an epithelial cyst.

Keywords

- Splenic cyst
- Epithelial cyst
- Laparoscopic deroofing
- Minimal invasive

Introduction

Splenic cyst is an uncommon entity and is a challenging condition for both diagnosis and treatment. Size of the cyst, its relation to the vessels and residual splenic tissue determine the treatment approach. Here we report a minimally invasive approach to the treatment of a large splenic cyst in a teenage boy, and discuss the literature.

Case Report

A 15-year-old boy presented to the emergency room with complaints of sudden onset continuous pain in the left upper quadrant of abdomen of 2 days duration. There was no history of fever, vomiting, jaundice or animal contact. However, a history of blunt abdominal trauma to the upper abdomen while playing kabaddi 2 years back was elicited. Clinical examination was essentially within normal limits. Patient was evaluated initially by abdominal ultrasound which showed a

hypoechoic lesion with dimensions of $10 \times 10 \times 8$ cm and volume of 450 ml in the spleen, abutting over stomach, suggesting a splenic cyst. Contrast enhanced CT scan of the abdomen **figures 1 - 3** was done, which showed splenomegaly (span of 13.9 cm) with a well-defined subcapsular cystic lesion ($11.7 \times 9.3 \times 11$ cm) with a thin wall, predominantly involving mid- and upper pole of the spleen with a few thin septations.

The patient underwent laparoscopic deroofing of the large splenic cyst (Figure 2), followed by omental pedicle insertion. Post-operative recovery of the patient was uneventful. Histopathologic examination of the cyst wall showed densely hyalinized fibro-collagenous tissue and lined by a single layer of uniform cuboidal to flattened cells, suggestive of an epithelial cyst. Pale yellow cyst fluid cytology showed macrophages admixed with inflammatory infiltrate.

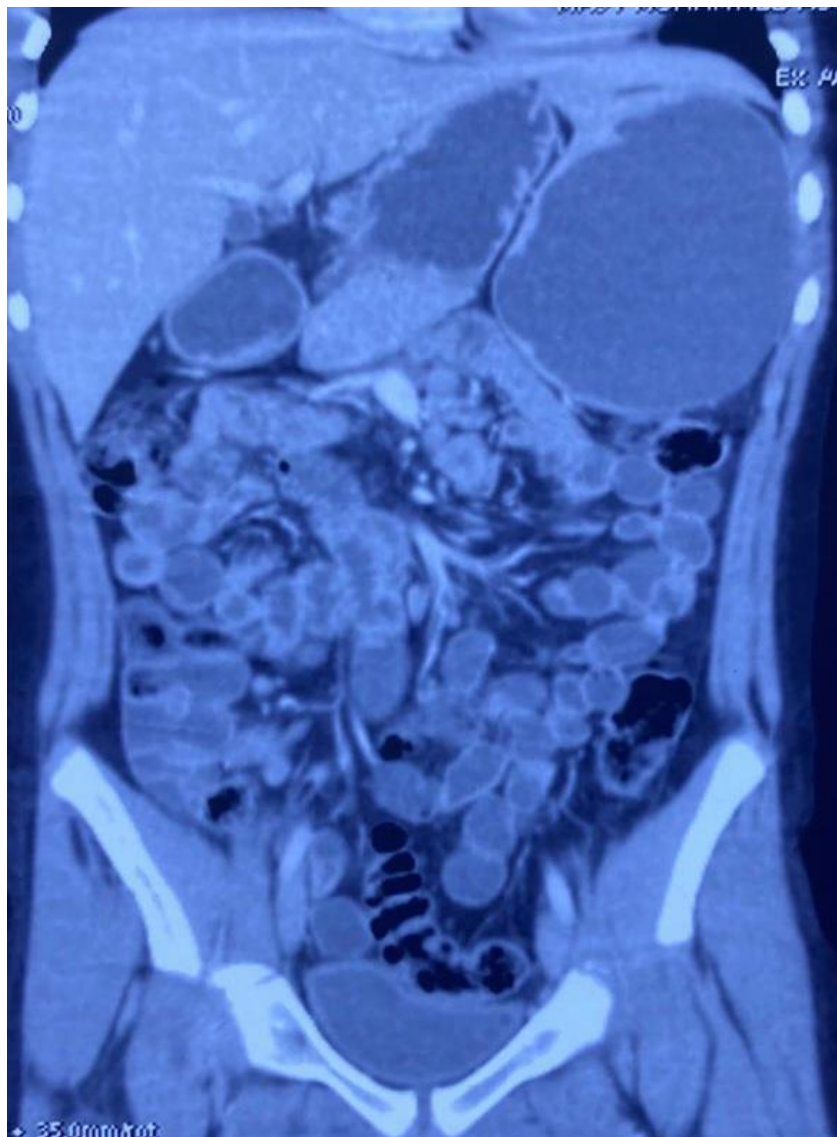


Figure 1: Abdominopelvic CT scan, coronal view, showing splenomegaly (13.9 cm), with subcapsular cystic lesion ($11.7 \times 9.3 \times 11$ cm) involving mid- and upper pole of the spleen with few thin septations.



Figure 2: Intra-operative view of the Splenic cyst.

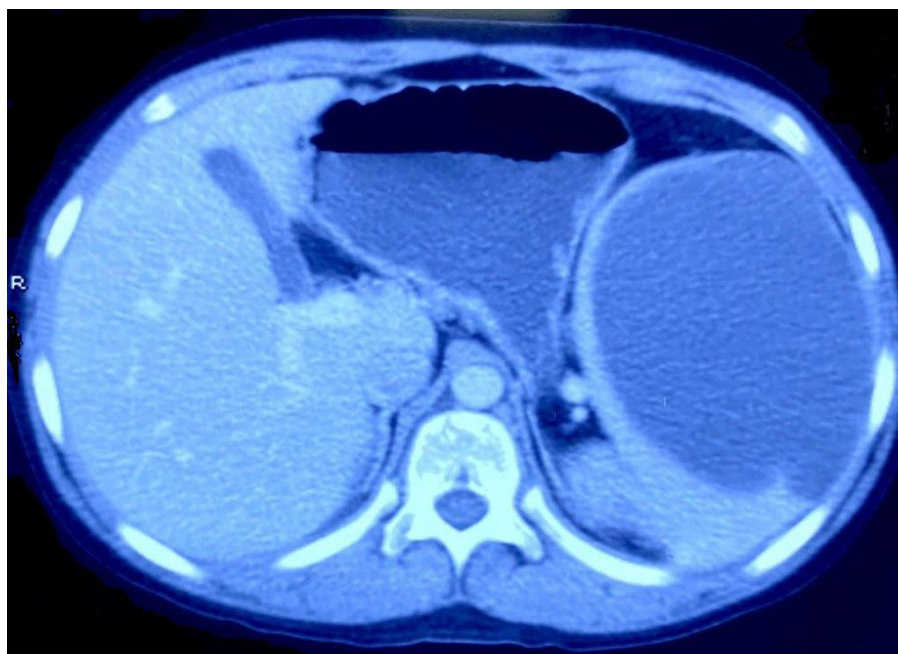


Figure 3: Abdominopelvic CT scan, axial view, showing splenic cyst.

Discussion

Splenic cysts are very rare clinical entity with an incidence of 0.07% in the general population.¹ They have been most commonly observed in the second and third decades of life and most of these patients present with an asymptomatic abdominal mass.²

These cysts are broadly classified into true cysts having a definitive epithelium (primary, 25%), and false cysts or pseudocysts (secondary, 75%) without epithelial or endothelial lining. Based on their etiology, true cysts are further categorized into parasitic (*echinococcus granulosus*) and non-parasitic. The less common non-parasitic cysts can be neoplastic (lymphangioma and haemangioma) or congenital (epidermoid, dermoid and endodermoid).³⁻⁴

The majority of splenic cysts are asymptomatic. Few present with upper abdominal dull pain due to the mass effect or irritation of the splenic capsule. Complications include haemorrhage, infection and rupture leading to peritonitis, which are fortunately very rare.⁵⁻⁶

Ultrasonography is usually the first investigation which identifies the location of the lesion and differentiates cystic from solid components. However, a contrast

enhanced CT scan is more specific in delineating the location, morphology and also gives information regarding residual splenic tissue. It also helps to differentiate between parasitic and non-parasitic cysts.⁷ Non-parasitic splenic cysts, owing to their rarity, have no clearly defined criteria for treatment. However, asymptomatic cysts up to 5 cm size are usually treated conservatively. Cysts > 5 cm must be treated surgically, because of the increased risk of associated complications.⁸

Surgical management varies from percutaneous drainage to complete splenectomy, depending on the patient age, cyst size, location, and its nature.⁸

Minimally invasive approach in the form of laparoscopy has gained credence in the recent years due to the increased success in preserving splenic tissue and hence avoiding a splenectomy and its complications. This is in addition to the usual advantages of laparoscopy, such as shorter hospital stay, less pain, quicker recovery, better cosmesis and enhanced patient satisfaction. The rate of recurrence is also minimal and acceptable when the cyst wall is adequately removed avoiding its closure.⁹

Our patient was symptomatic, and owing to the large cyst size warranted a surgical procedure. Laparoscopic cyst wall excision and omental flap insertion served the patient well, emphasising the adequacy of minimally invasive technique.

Conclusion

The limited availability of definitive criteria in the management of splenic cysts due to their rare incidence has given rise to varied treatment modalities. Minimally invasive approach is a safe and acceptable alternative to the traditional methods where viable. The benefits of low recurrence, less morbidity and preserved splenic function makes it more attractive option in the treatment of non-parasitic splenic cysts.

Ethical Considerations

This study is approved by the Institutional Ethics Committee of Yenepoya (Deemed to be University) with the Protocol No: YEC2/833.

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Conflict of interests

There are no conflicts of interest.

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