

A Rare Case of Splenic Pseudocyst with Secondary Infection

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Splenic cyst are rare lesion. It occurs in approximately 0.07% of the population and it accounts for only less than 1% of abdominal cysts. They are classified as parasitic and non-parasitic. Non-parasitic cysts are further classified into true cyst and pseudocyst on the basis of presence or absence of lining epithelium. Here we present a case of a 24 years old female presented with pain in abdomen with vomiting and fever. She underwent radiological and hematological investigations and was diagnosed as a case of splenic cyst. After the diagnosis she underwent laparoscopic deroofing of the cyst with aspiration of fluid under general anesthesia. Intraoperatively pus was seen, later the culture report confirmed the presence of *staphylococcus aureus*. Final histopathological report of the cyst wall was suggestive of pseudocyst of spleen with hemorrhage and inflammation. The final diagnosis of pseudocyst of spleen with secondary infection was made.

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Introduction

Splenic cysts are known rare clinical encounter. The occurrence of splenic cyst is about 0.07%,¹ it accounts for only less than 1% of abdominal cysts. There are around 800 cases reported in the world literature, and one of their rarest types is the splenic pseudocyst.² They are classified into primary (true) and secondary cysts (pseudocysts), based on the epithelial lining. Primary cysts are also divided into parasitic and non-parasitic splenic cyst (NPSC). The NPSC's make-up <1/3 of all splenic cysts.³ True cysts have epithelial lining and are commonly parasitic caused by *Echinococcus granulosus* infection and are also called as hydatid cyst of spleen. The NPSC are form from embryonal rests and include dermoid and mesenchymal inclusion cysts. On the other hand splenic pseudocyst are non-parasitic secondary splenic cyst that lacks epithelial lining,⁴ the most common cause is post blunt trauma over abdomen⁵ due to hematoma and further cyst formation. Other causes include infarction, infection and inflammation.

The condition may remain asymptomatic and may often presents with nonspecific symptoms, such as abdominal pain, and fatigue, making it difficult to diagnose early. The diagnosis majorly rely on radiological investigations like ultrasonography or contrast enhance computed tomography.

Case Report

A 24-year-old female came with complaint of pain in abdomen the pain was initially vague and dull aching but she presented with sudden increase in the pain for last 3 days. She also complained of multiple episodes of vomiting and fever which was intermittent and associated with chills, her symptoms partially relieved on taking medications.

These complaint were not accompanied by chest pain, cough or urinary symptoms

There was no significant past history of trauma over abdomen and no significant family history was given. She was married, non-smoker, non-alcoholic and she consumed mixed diet. On physical examination abdomen was soft and tenderness was present in left hypochondriac region without any palpable lump.

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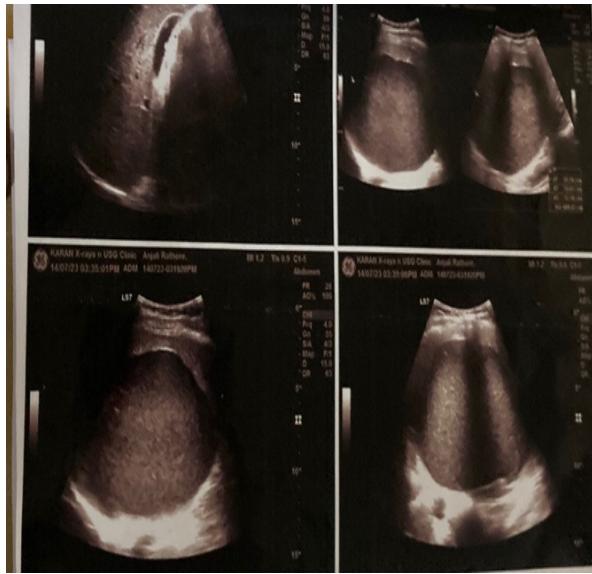


Figure 1: Ultrasonography of the splenic cyst



Figure 2: CECT image of the patient's splenic cyst.



Figure 3: Intraoperative view of the cyst

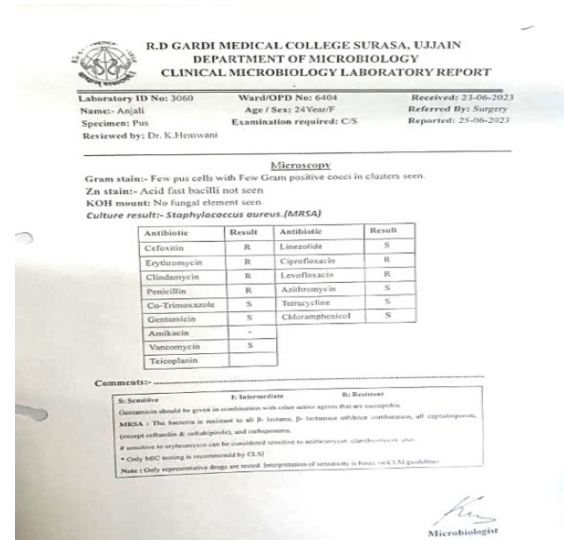


Figure 4: Culture and sensitivity report of the fluid

Investigations

Ultrasonography (Figure 1)

- Spleen slightly enlarged with homogenous texture. It measures 14.5 cm in size.
- A large thin walled high-density fluid filled cyst seen in spleen in hilar region bulging medially compressing stomach upwards.
- It measures 12 x 10 x 10 cm in size and 688 cc in volume.
- Impression- Can be splenic cyst or hydatid cyst of spleen (Figure 2)
- Contrast enhanced computed tomography-
- A large cyst is seen in the spleen it measures 12 x 10 cm. approximately (Figure 3).

Treatment

Laparoscopic deroofing of the cyst with aspiration of fluid was done under general anesthesia and the fluid was sent for cytology and culture sensitivity, roof of the cyst was sent for histopathological examination.

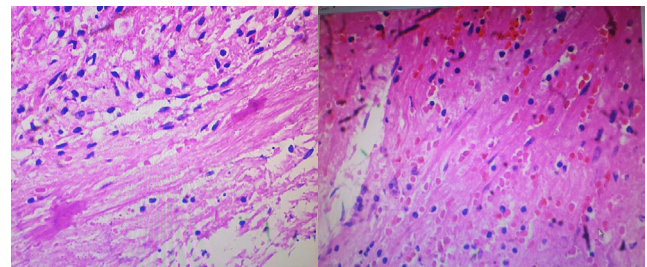


Figure 5: Histopathology reports

Intraop Findings

A large splenic cyst filled with straw colored fluid (Figure 4).

Fluid Reports

Cytology

Smears are cellular show mixed inflammatory cells comprising of lymphocytes polymorph and macrophages degenerated cells in necrotic background

ZN for AFB- not seen

Culture and sensitivity (Figure 4)

- Gram stain: - Few pus cells with few gram-positive cocci in clusters seen.
- Zn stain: - Acid fast bacilli not seen
- KOH mount: - No fungal element seen.
- Culture result: - *Staphylococcus aureus*. (MRSA)

Histopathology Reports

Features are suggestive of pseudocyst of spleen with hemorrhage and inflammation (Figure 5).

Discussion

Splenic pseudocysts are rare lesions. They are defined as non-parasitic secondary splenic cysts that lack an epithelial lining.³ Most commonly they are caused due to blunt abdominal trauma,⁵ followed by local inflammation like intra-splenic pancreatic pseudocyst, infarction and infection.⁶ Most of the splenic cyst are asymptomatic and are identified incidentally during radiological imaging for other reasons,⁷ large cyst present with vague symptoms of abdominal pain in upper left quadrant, palpable mass or symptoms of compression of surrounding structures.

On imaging like ultrasonography or CECT reveals well circumscribed cystic lesion of spleen with fibrous wall and may occasionally have calcified wall.⁸ Grossly it present as unilocular cystic lesion either in the spleen or beneath the capsule, wall of the cyst can be fibrotic or calcified. The cyst may contain haemorrhagic fluid. On microscopy it completely lack epithelial layer lining and shows a thick fibro collagenous wall due to organisation of haemorrhage or degenerative changes,⁹ chronic inflammatory cells and haemorrhagic products like hemosiderin can be seen.¹⁰

Treatment of the cyst depends upon the symptoms and size of the cyst, small asymptomatic cyst can be observed. Total splenectomy is the definitive option for large symptomatic cyst or deep seated cysts and when spleen preserving surgeries are not feasible.⁴ Partial

splenectomy or laparoscopic surgeries are increasing due to the benefit of preservation of immunological function of spleen. Cystectomy or fenestration can be done in accessible cyst with low risk of recurrence.¹¹

In this case the patient was a young female who presented with pain, vomiting and fever, as per the history patient had vague pain in abdomen which she ignored for a period of time and visited the hospital only when she developed symptoms due to secondary infection of the cyst which is one of the complication of the splenic cyst, this could have further complicated with the rupture of the cyst if timely intervention was not done. She was successfully treated with laparoscopic deroofting of cyst with aspiration of fluid. The absence of post-operative complication and her rapid recovery indicates the safety of minimally invasive surgery in such large cyst.¹²

Conclusion

Splenic pseudocyst are rare and challenging to diagnose due to its non-specific symptoms or often presenting only when they are very large or gets complicated with infection or rupture. This particular case indicated the importance of clinical suspicion and radiological imaging. This case supports laparoscopic approach for splenic cyst either laparoscopic deroofting or cystectomy as it is safe and effective treatment option. Splenic cyst require multidisciplinary approach and careful planning for the surgical approach and type of surgery according to individual patient and the characteristic of the cyst.

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