

## Case Report

# Laparoscopic fenestration surgery of a large primary splenic cyst

Harsh Bhomaj\*, Aditya Prasad Padhy, Pran Singh Pujari

Department of General Surgery, Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha, India

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**\*Correspondence:**

Dr. Harsh Bhomaj,

E-mail: [harshbhomaj@gmail.com](mailto:harshbhomaj@gmail.com)

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### ABSTRACT

Splenomegaly is a major and perhaps the only concern pertaining to spleen for surgeons. Splenic cysts are rare presentations as splenomegaly, with about 800 cases reported so far. Presenting a case report of a 19 years old boy presented with a mass in the abdomen below the rib cage on the left side since 1 year. No other associated complaints. On clinical evaluation a soft cystic mass of size 10×10 cm approximately, was felt extending upto and just above the umbilicus, occupying the left hypochondrium, epigastrium, left lumbar and part of umbilical region. On contrast enhanced computed tomography (CECT) abdomen and pelvis, a well-defined, rounded cystic swelling arising from the spleen and abutting the surrounding structures was noted. Clinically diagnosing it as a primary splenic cyst and after thorough preoperative evaluation the patient was planned for laparoscopic fenestration surgery of the cyst. Surgery involved aspirating, deroofting of the cyst with omental packing of the cyst cavity. This surgery is a novel minimally invasive spleen preserving approach to such types of splenic cysts. This approach carries the least morbidity and recurrence rate among its other options.

**Keywords:** Splenic cyst, Laparoscopic fenestration surgery, Deroofing, Omental packing

### INTRODUCTION

Splenomegally is a major and perhaps the only concern pertaining to spleen for the surgeons. For more than 2 millenium years spleen has been the least understood and the most underappreciated organ of the body. Spleen is an important body organ which has many autoimmune functions and hence plays a vital role in the prevention of the various infections.<sup>2</sup> Hence spleen is aptly called the “graveyard of red blood cells (RBC’s) and white blood cells (WBC’s)”.

So, recognizing these functions of the spleen, various spleen preserving surgeries have been coming up unlike previous times when splenectomy was the rule for any splenic ailments.<sup>2,3</sup>

This is a case of a splenic cyst which presented to us with a massive splenomegally and subsequently mentioned are

the techniques of diagnosis management and minimal access surgery that we carried out.

The results of this surgery were promising and highlighted hereafter.

### CASE REPORT

Presenting a case of a 19 year old boy who came to us with a mass in the abdomen below the rib cage on the left side since 1 year.

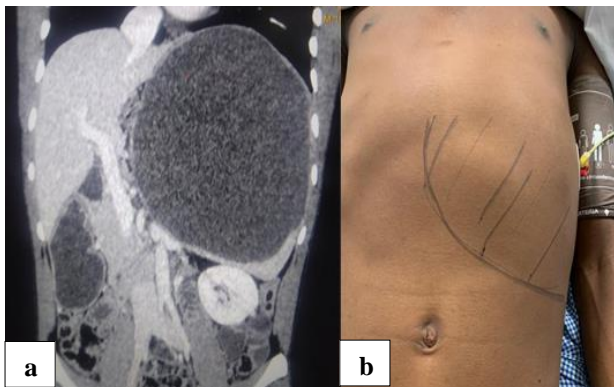
There were no associated complaints and no preceding history of trauma to the same side.

On examination the patient was vitally stable and A solitary soft cystic mass of size approximately 10×10 cm was felt occupying the left hypochondrium, epigastrium,

left lumbar and extending upto umbilical region (Figure 1a).

Upper border of this mass was beyond the rib cage and the fingers could not be insinuated between the mass and the rib cage. Swelling moved with respiration.

We went ahead to do a CECT abdomen and pelvis (Figure 1b) which revealed a well-defined, rounded, thin walled, homogeneous non-enhancing lesion arising from spleen and medially displacing the stomach, gastroesophageal junction, duodenum, and left lobe of liver. Inferiorly displacing the left kidney, pancreas and left renal vessels.



**Figure 1: (a) and (b) preoperative images of the splenic cyst and CECT image of the cyst.**

### Management

So clinically diagnosing it as a primary non parasitic splenic cyst we went ahead with laparoscopic fenestration surgery after doing a thorough preoperative evaluation.

The surgery was carried out in French position for better ergonomics. The surgery proceeded with first localising the extent of the splenic cyst.

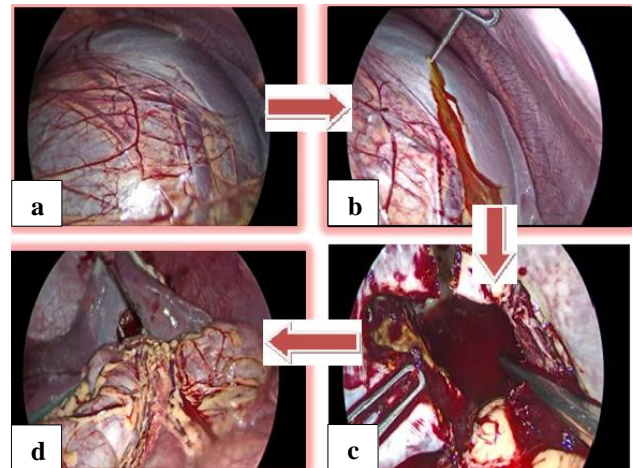
We then used a Veress needle to aspirate the contents of the splenic cyst. After total decompression of the splenic cyst, a 6×6 cm of the roof of the cyst was excised using harmonic scalpel. Thorough wash of the cavity was done.

And in order to prevent adhesion formation in to the cyst cavity and also to reduce the chance of recurrence. An omental vascularised leaf was used to pack the cavity and a passive gravity drain was placed under this. (Figure 2a-d).

Around 2 litres aspirated brownish black cyst fluid and the cyst wall were sent for histopathological examination.

The patient was allowed oral diet on post-operative day 2 and asked to mobilize. The drain was removed post-operative day 5 as it was persistently minimal (~20 ml) for last 3 days.

### Lap fenestration surgery



**Figure 2: (a) splenic cyst (intraop), (b) Veress needle aspiration, (c) deroofing and aspiration, and (d) omental packing with drain.**

The cystic fluid biochemical analysis revealed normal levels of serum amylase and lipase. However serum carbohydrate antigen (CA) was 19.9 -186.4 U/l was raised pointing us towards primary splenic cyst.

Histopathological examination of the wall revealed fibrocollagenous tissue lined by flattened epithelial cells with inflammatory cell infiltration. No evidence of parasite in the cystic wall.

The patient was discharged on post op day 7 in haemodynamically stable condition later to be followed up after 1 month and 6 months.

The follow up of the patient was uneventful and the Serum CA 19.9 was back to normal.

### DISCUSSION

Splenic cysts are rare entities presenting to us with splenomegally.

Splenic cysts are of 2 basic types: type 1 – primary splenic cysts (true cysts) and type 2 - secondary splenic cysts (pseudocysts).

Primary splenic cysts are the ones which are lined by a definitive epithelial lining and are present since birth or of neoplastic origin.<sup>1</sup>

Primary splenic cysts are of two types according to their origin parasitic and non-parasitic cyst out of which parasitic cyst are most common.

These primary non parasitic cyst have a epithelial lining which secrete the carcinoembryonic antigen and CA

19.9.5 With the help of which we can diagnoses as well as prognosticate these cysts.

The secondary cysts also called the pseudocysts of spleen are post infective collections formed after infectious mononucleosis, malaria, tuberculosis (TB) or trauma. They are the most common entity.<sup>1</sup>

The indications for surgery are: cysts larger than 5 cm and symptomatic cysts.

The approaches to these types of cyst in the olden times was splenectomy but however now many splenic preservation surgeries have been coming up. They are carried out both as an open procedure and a minimally invasive procedure.

Laparoscopic fenestration surgery as in our case is a novel approach which was first mentioned by Salk in the late 1980's.

The surgery has proved to be one with a least morbidity and least recurrence rate.<sup>7-9</sup>

## CONCLUSION

Splenic cysts are rare entities and are now a days managed by various splenic preservation surgeries. These surgeries can be carried out both open and laparoscopically according to the surgeons' expertise. The recent addition to these procedures are partial splenectomy, total cystectomy, marsupilization and percutaneous drainage.<sup>4-7</sup> Laparoscopic fenestration surgery achieves minimal morbidity by minimizing the leakage intraperitoneal.<sup>9</sup> Hence laparoscopic fenestration surgery is the best approach to these kinds of cysts which has least morbidity and least recurrence.

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