CASE REPORT

Laparoscopic Management of Splenic Pseudocyst

R. Parshad, D. Bhamrah, S. Prabhu, S. Chandana

Abstract

Splenic cysts are rare entities. They are either true cysts or pseudocysts. Former is thought to be congenital or parasitic while the latter are considered post-traumatic. Developments in imaging and operative surgery have led to significant changes in the management of these cysts. We present a case of young male with a large splenic pseudocyst who was managed successfully by minimally invasive surgical approach. Pertinent literature is reviewed briefly.

Key words

Splenic pseudocyst, Laparoscopy

Introduction

Splenic cysts are uncommon. Most of these cysts have a parasitic etiology and are caused by Echinococcal infection. Pseudocyst is the commonest non-parasitic cyst of the spleen (1). Various surgical techniques have evolved over the years to manage these cysts. We present a case of splenic pseudocyst that was managed sucessfully using minimally invasive surgical approach.

Case Summary

A 33-yr. old male, N. D., presented to us with complaints of pain left upper abdomen and flank for 2 months. He had no history of fever, dysuria, hematuria or bowel symptoms. He had no history of hematological disorders or any other systemic complaints. He gave no history of abdominal trauma. On examination, his vitals were stable. Examination of the chest, cardiovascular and central nervous system revealed no abnormality. On examination of the abdomen, he had left hypochondrial tenderness. There was no hepatosplenomegaly or any lump in the abdomen. Investigations revealed normal blood counts and peripheral blood smear. Liver functions and renal function tests were normal. Urine examination was normal. X-ray KUB revealed no abnormality. Ultrasonography of the abdomen showed a large splenic cyst (Fig.1). Subsequently a contrast enhanced CT of the abdomen was done. CT scan revealed large cystic space occupying lesion in spleen measuring 10 cms. (Fig. 2) There was no evidence of internal debris or daughter cysts inside the cyst. There was only a thin rim of splenic parenchyma surrounding the cyst. Hydatid serology was negative.

With the diagnosis of large symptomatic uncomplicated splenic cyst, patient was planned for laparoscopic splenectomy. The procedure was done under general anesthesia in Sept. 2000. The patient was catheterized and a naso-gastric tube was passed. Patient was kept in semi-lateral position with a pillow under left chest. Puenmo-peritoneum was created using a Veerses needle. Laparoscopic ports were placed as shown in (Fig. 3). The essential steps of the procedure were as follows :

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1. Identification of splenic cyst and a diagnostic laparoscopy to rule out other pathology. (Fig 4)
2. Divisional of Spleno-colic ligament using a harmonic scalpel.
3. Division of splenic vessels between ligaclips.
4. Following the division of splenic vessels, aspiration of the cyst was done to facilitate medial dissection. Division of spleno-gastric ligament and short gastric vessels.
5. Division of spleno-phrenic ligament and spleno-renal ligament.
6. Extraction of the spleen from peritoneal cavity using a bag.
7. Hemostasis was checked and a suction drain was kept in the sub diaphragmatic space.

Post-operative course of the patient was uneventful. Nasogastric tube was removed on Day 1 and patient was allowed oral feeds the same day. Drain was removed on Day 2 and patient was discharged on postoperative day three. (Fig 5). He joined his duties on tenth post-operative day. At a follow-up of 6 month; patient is asymptomatic and is doing well. Histological examination of resected specimen revealed a large cyst in spleen with no lining. Cyst wall revealed fibrosis with features of chronic inflammation; these features were compatible with a diagnosis of splenic pseudocyst.

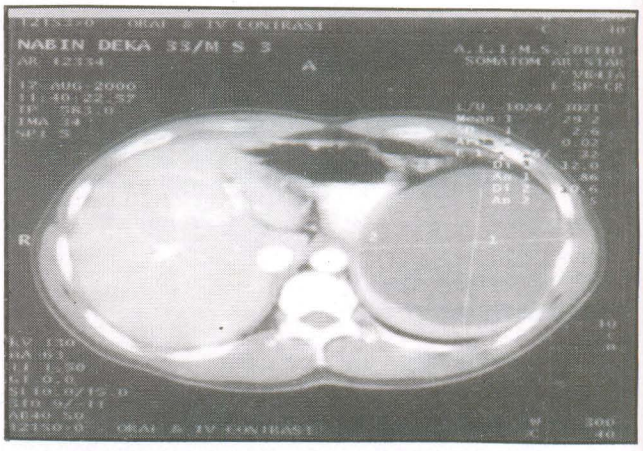


Fig. 2. CT scan revealing large cystic space in spleen.

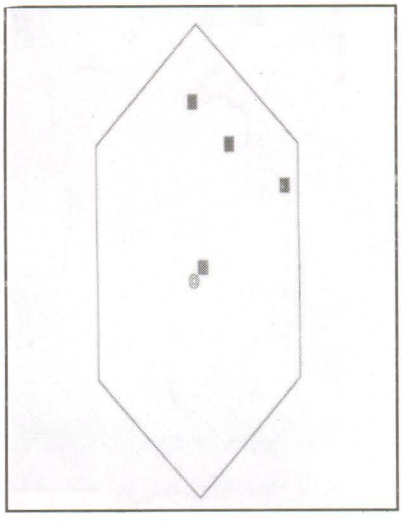


Fig. 3. Picture showing various laproscopic ports.

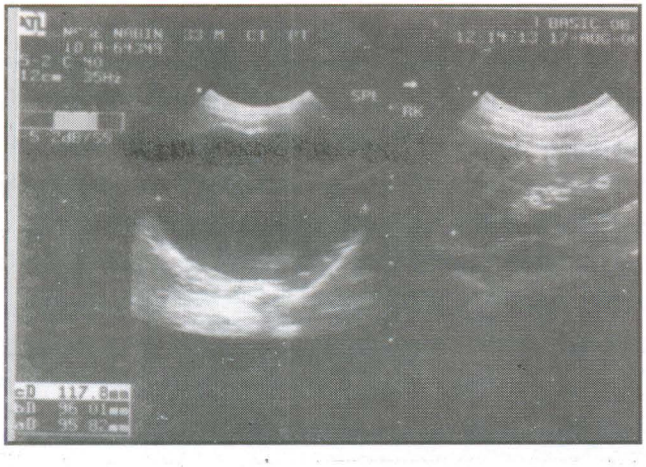


Fig. 1. Ultrasonograph showing large splenic cyst.

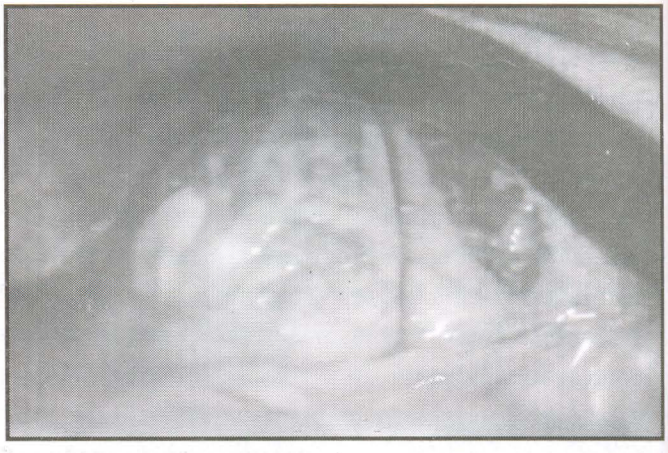


Fig. 4. Identification of splenic cyst on laproscopy.

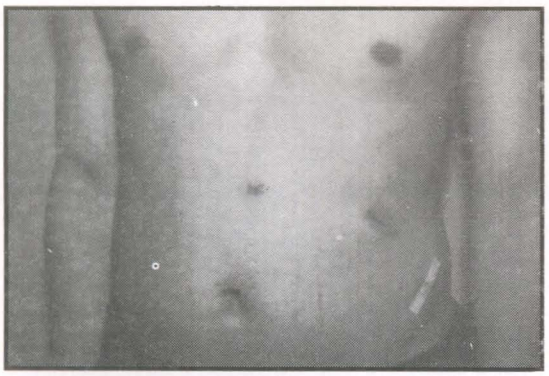


Fig. 5. Clinical photograph of the patient in immediate postoperative period

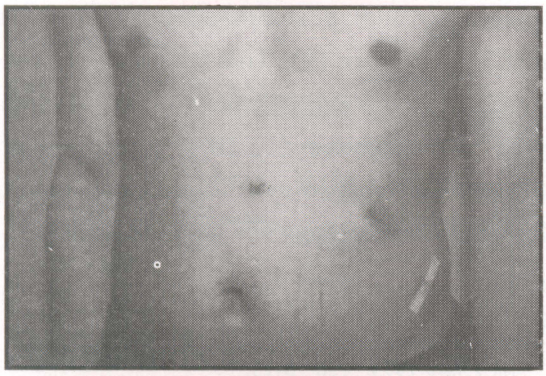
Discussion

Splenic cysts are rare entities. They are usually asmptomatic and detected mostly on autopsy or during laparotomy or now-a-days mostly as incidental findings during imaging of abdomen. Over 900 cases of splenic pseudo cyst have been reported in literature over the past 150 years (2).

Splenic cysts have been classified into true/primary cysts and pseudo/secondary cysts by Fowler in 1940. Ture cysts have an epithelial lining, which is absent in false or pseuodo cysts (3). Ture cysts are most commonly parasitic cysts caused by Echinococcal infection. They are lined by germinal epithelium and contain daughter cysts and scolices. World wide, parasitic cysts constitute about one half to two thirds of splenic cysts (1). Other primary cysts are congenital cysts and neoplastic cysts. Congenital cysts are epidermal cysts and dermoid cysts. These form 10% of all splenic cysts and are lined by squamous, cuboidal or columnar epithelium (4). Epidermal cyst are usually solitary. Neoplastic cysts consitute hemangiomas and lymphangiomas. Hemangiomas are multilocular. All neoplastic cysts do not have a predominant cystic nature hence can be termed as benign tumours. True cysts cannot always be distinguished from false cysts due to atrophy of lining epithelium because of intracystic pressure. Some authors have reported true cysts with large areas where epithelium is absent and fibrous capsule wall is identical to that of a false cyst (2,5). On the other hand, squamous metaplasia of lining mesenchyaml cells may occur in pseudocysts due to chronic inflammation. Secondary/pseudo cyst comprise about 50-80% of non-parasitic cysts and are twice as common in males than females (6,7). These cysts are usually solitary and secondary to prior truma (recognized or unrecognized) or splenic infarction due to hematological disorders like sickle cell disease. About 30% of patients may not give any history of prior trauma (8). Cyst wall is composed of dense fibrous tissue, sometimes calcified, with no epithelial lining. Cyst content is a mixture of blood and necrotic debris (9).

Splenic cysts are usually asymtomatic, discovered only on autopsy, laparotomy or as an incidental finding during imaging of abdomen. The patient may present with features of vague left upper quadrant pain, frequently with postprandial fullness and often with pain radiating to back. Other symptoms associated with splenic cysts are due to pressure on the surrounding organs. These include flatulence, nausea, anorexia, diarrhea, dysphagia, hiccups, constipation, dysponea and symptoms mimicking left renal colic. Left upper quadrant mass is palpable in 40% of cases (10,11). Hypertension has been noted in two patients due to renal artery compression (12). Rarely patients may present with acute complications like infections, rupture of cyst or hemorrhage into cyst causing hemoperitoneum, chemical peritonitis and eventually sepsis (13).

Technetium-sulphur colloid scans of the spleen have been replaced by newer investigative modalities. Ultrasound abdomen can accurately diagnose cystic lesions and measure the size of the cyst. This can also be



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used to differentiate cysts from abscesses and hematomas. CECT scan abdomen remains the investigation of choice. Hydatid serology is a must to rule out echinococcal cyst. Serum amylase may be done in suspected cases of pancreatic pseudocyst of spleen (14, 15).

Management of splenic cysts has continued to evolve over the years. Due to the rarity of the disease, definitive treatment guidelines cannot be accurately formulated. There is a role of non-surgical observation in some patients. Patients with asymtomatic, uncomplicated cysts of size less than 5 cm can be followed up with serial ultrasonography. Spontaneous involution of such small cysts has been noticed over 3 months to 3 years (14).

Large, symptomatic splenic cysts require definitive surgical treatment. First splenctomy to be performed for splenic cysts was done by Pean in 1867 (15). Splenic conservation techniques are gaining favour, particularly in children due to risk of post-splenectomy infection. These include percutaneous aspiration and drainage, decapsulation, fenestration, cystectomy and partial splenectomy.

Percutaneous aspiration and drainage is associated with a high incidence of infection, bleeding and cyst reaccumulation. Injection of sclerosant into the splenic cyst makes subsequent surgery more difficult due to formation of dense adhesions (5). Fenestration of cyst also has a high recurrence rate and has been discontinued (6). Decapsulation of cyst and cystectomy are useful procedures to preserve splenic parenchyma (15). Splenctomy however remains the main stay of surgical treatment of large splenic cysts where most of splenic parenchyma has been replaced by the cyst (5). With advent of minimal access surgery, most of these techniques can be performed by laparoscopy. Laparoscopy is beneficial to the patient in terms of early recovery, minimal post-operative pain and better cosmetic appearance (9). This has been shown quite convincingly in our patient who was able to join active duty by post operative day 10. We recommend that surgical management of splenic pseudocyst should be performed by laparoscopy whenever feasible.

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