

Videolaparoscopic Approach of the Splenic Cyst: A Case Report

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ABSTRACT

The authors report a case of an asymptomatic 30-year-old female patient with an extensive cystic lesion continuous with the splenic parenchyma. A review of the literature and use of a videolaparoscopic approach to the treatment of these lesions is presented.

Key Words: Splenic cyst, Videolaparoscopy.

INTRODUCTION

Splenic cysts are rare clinical entities. Although rare in occurrence, splenic cysts have the potential to enlarge, rupture, or become infected. About 30% of patients with splenic cysts are asymptomatic. Splenectomy has been considered the treatment of choice until more recent studies have shown the immunologic importance of the spleen. Because of its immunologic significance, conservative therapeutic approaches have been developed for the management of splenic cysts. A laparoscopic approach to the spleen and parenchyma-preserving techniques are now feasible. We reviewed the literature and found three articles that report four patients who underwent conservative laparoscopic treatment for splenic cyst.¹⁻³

PATHOLOGY

Worldwide, 50 to 60% of splenic cysts are due to hydatidosis. The liver and lungs are the most affected organs following an infection by *Echinococcus granulosus*. Unusual sites are observed in 5 to 30% of cases, and the spleen may be affected in 2.5%, with highest rates in endemic areas.⁴⁻¹⁰

In 1958, Martin¹¹ classified splenic cysts as follows:

- I. Primary or true (with epithelial lining)
 - A. Parasitic
 - B. Non-parasitic
 1. Neoplastic
 2. Congenital

- II. Secondary or false (without epithelial lining)

Pseudocysts of the spleen are uncommon, but represent 75 to 80% of all nonparasitic splenic cysts, and generally result from blunt abdominal trauma. Other causes of splenic cysts have been described as due to splenic infarct, parenchyma infection, and splenic congestion. These cysts are trabeculated, with no epithelial lining, containing fluid with various aspects.¹²⁻¹⁴

True nonparasitic splenic cysts are very rare. Epidermoid cysts feature an epidermoid epithelial cyst lining of the inner surface and account for most of the neoplastic

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cysts. The epidermoid splenic cyst is either of teratomatous derivation or originates from inclusion of fetal squamous epithelium. Congenital splenic cysts make up 40% of all true cysts.^{12,15-17}

CLINICAL FEATURES

Clinical manifestations vary, with about 30% of the patients being asymptomatic. Vague pain associated with a palpable mass in the left hypochondrium is the most common presentation. Other presentations are due to compression by the cyst and include early satiety, nausea and vomiting, epigastric discomfort, hydronephrosis, left lumbar pain, arterial hypertension (renal compression), and bleeding from gastric varices (obstruction of the splenic vein).^{12,16,18}

Major complications include acute peritonitis from rupture of the cyst, intracystic hemorrhage, and malignant transformation. These events, however, are very uncommon.^{19,20}

DIAGNOSIS

The diagnosis of splenic cysts is based on echography and abdominal computed tomography. Generally, imagery can rule out a hydatid cyst of the spleen but cannot differentiate between the different types of non-parasitic cysts. A microscopic examination of the surgical specimen is the only way to make an etiologic diagnosis of splenic cyst.^{17,21}

A plain abdominal radiograph may reveal elevation of the left diaphragm and calcificated masses. Scintigraphy may show involvement of the splenic parenchyma. Immunobiological tests for hydatidosis can solve a difficult differential diagnosis when combined with imaging device procedures.²¹

Terada et al. reported a giant splenic epithelial cyst that produced carbohydrate antigen 19-9 (CA 19-9), which returned to a normal level after splenectomy.²¹

TREATMENT

Some authors argue that the treatment of splenic cysts requires surgery and is necessary to prevent serious complications, while others question whether surgery is always necessary for small asymptomatic cysts of the spleen. Usually, surgery is indicated for patients with large or symptomatic cysts, while smaller cysts may be

followed by periodic echographic studies.^{12,17,22}

Splenic cysts have traditionally been treated by splenectomy or, more recently, by percutaneous drainage. However, percutaneous drainage cannot permanently obliterate splenic cysts.^{4,18}

Spleen-saving surgical procedures are advocated. This achieves removal of the lesion while preserving splenic function, thereby reducing the risk of uncontrolled postoperative infection. Treatment may consist of resection of the cyst-bearing portion of the spleen with preservation of the remaining normal splenic parenchyma or enucleation of the cyst. Total splenectomy may be required in some cases.¹⁸

Successful enucleation of hydatid cysts and preservation of the spleen is the treatment of choice when technically feasible. A combination of pharmacological and surgical treatment results in complete resolution without recurrences or further dissemination of the infection. Suggestions for the management of hydatidosis include routine intravenous drip of corticosteroids to alleviate the possible occurrence of allergic reaction during the operation and postoperative hyperpyrexia; mebendazole or albendazole (ABZ) 20 mg/kg/d for one week before operation and 1-2 courses (1 course = 30 days) postoperatively to destroy the protoscoleces left in the body during operation; and antibiotics administration in complicated cases. Albendazole has replaced mebendazole as the drug of choice.⁴

Minimally invasive surgery provides an alternative to conventional open surgical procedures for selected patients with splenic cysts and has recently been demonstrated to be useful for the treatment of splenic disorders.¹⁻³

Four articles regarding a laparoscopic approach for a total of five patients with splenic cysts revealed the following: of these patients, four underwent successful laparoscopic conservative procedures, with no reported morbidity. In the other case, laparoscopic splenectomy was attempted for a true cyst arising in a wandering spleen. However, the procedure was aborted and the spleen was removed through a 5 cm incision. Again, no morbidity was reported.

CASE REPORT

A 30-year-old asymptomatic female patient presented

with a palpable mass in the left hypochondrium during routine physical examination. Ultrasound and tomographic studies revealed an extensive cystic lesion continuous with the splenic parenchyma.

A laparoscopic conservative approach was performed. The procedure was done under general anesthesia. The patient was placed in the right-lateral position and a closed pneumoperitoneum was established utilizing a Veress needle. Abdominal pressure was kept under 15 mm Hg to avoid the negative effects of pneumoperitoneum. The first trocar was inserted 3 cm on the left side of the midline (parallel to the umbilicus). A second trocar was inserted in the left hypochondrium, 2 cm below the left costal margin. The third trocar was inserted in the left flank, 4 cm from the anterior iliac spine. During surgery, the spleen was found covered by epiploon, which was removed. A large splenic cyst located on inferior pole was revealed. The cyst was punctured and aspirated. The cyst wall was resected close to splenic parenchyma. The entire cyst was removed and bleeding was controlled by electrocoagulation. The cyst was fragmented and retrieved from the abdomen through a 20-mm trocar.

The patient was discharged within 48 hours after the procedure, with no complaints. Pathology revealed a pseudocyst (without epithelial lining), and subsequent abdominal sonography revealed no other splenic cysts.

CONCLUSION

The laparoscopic approach of well-selected, benign splenic cysts is a valuable alternative to splenectomy. It preserves splenic parenchyma and offers all the advantages of laparoscopic management.

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