

## CLINICAL IMAGE

## Partial splenectomy for a giant epidermoid cyst of the spleen

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### Funding Information

No sources of funding were declared for this study.

Received: 28 March 2016; Accepted: 3 August 2016

*Clinical Case Reports* 2016; 4(10): 1013–1016

doi: 10.1002/ccr3.670

### Key Clinical Message

The splenic epidermoid cysts are rare benign tumors, and a definitive treatment remains unclear. Although some spleen-preserving approaches have been reportedly used, splenic cyst recurrence usually occurs in true cyst cases, wherein the cyst is incompletely removed. In our case, partial splenectomy was performed and the giant cyst was completely removed.

### Keywords

Epidermoid cyst, spleen, splenectomy, surgery

## Introduction

Giant epidermoid splenic cysts are rare benign tumors. They are detected more frequently after development of modern technology. They are classified into true cyst (primary, 25%) and pseudocyst (secondary, 75%), according to the presence of an epithelial cellular lining inside the cyst. Splenic epidermoid cyst, a true cyst, constitutes approximately 10% of total cysts and is more commonly encountered in individuals under 40 years of age and in females. Their treatment is becoming increasingly less aggressive and more conservative. We report the case of a young female with a giant epidermoid cyst, which required a partial splenectomy [1–3].

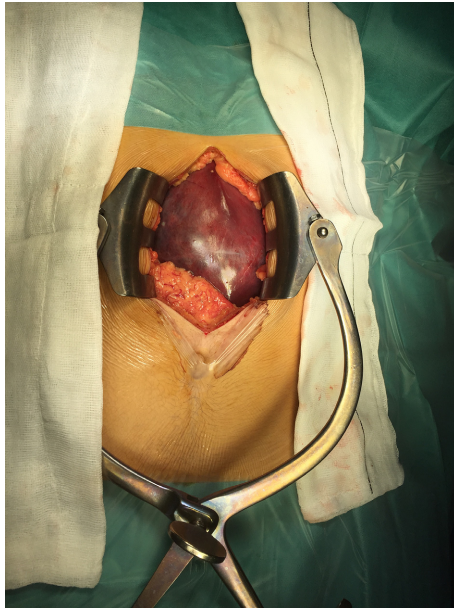
## Case Report

A 16-year-old female was referred to our hospital for a huge mass that she was noted in her upper quadrant a few weeks ago. She was asymptomatic and had no significant past medical, surgical, or traumatic history. The physical examination revealed only distended and asymmetric abdomen with a palpable mass in the left hypochondrium.

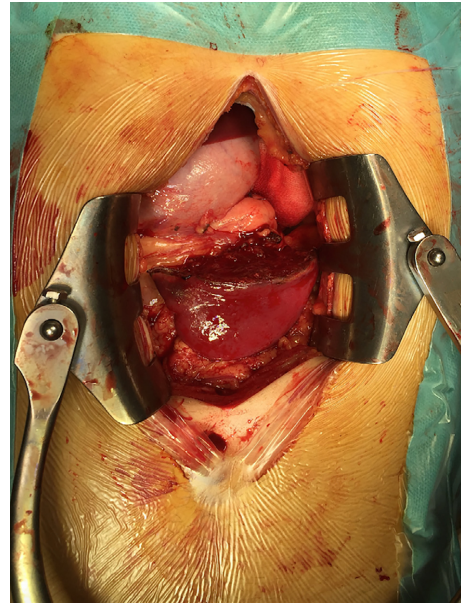
Routine blood tests were within normal ranges including serum CA19-9 and CEA levels. Chest and abdominal X-rays showed the elevation of the left hemidiaphragm and asymmetric intestinal gas distribution. The abdominal USG revealed a giant, round hypoechoic cyst lesion (maximum diameter of the cyst was 21 cm). The abdominal CT scan demonstrated a well-limited, large (21 × 16 × 13) and hypoattenuated cystic lesion occupying all the splenic parenchyma causing medial displacement of the stomach, pancreas, colon, and left kidney. These findings oriented for the diagnostic of congenital cyst of the spleen (Figs. 1–3).

Under general anesthesia, the patient was placed in decubitus position and open technique was carried out. On exploration, a giant cystic lesion of the spleen was adhered to the diaphragm and the left side of the parietal peritoneum, pushing the stomach, pancreas, colon, and kidney to the left. First, to reduce the cystic volume, a needle puncture was performed and a brown liquid was drained. The CA19-9 in the cystic fluid was normal (29.54 UL/mL), and the CEA was high (2142.01 ng/mL). The splenic hilum was dissected, and a partial splenectomy was performed (Figs. 1–6).

Histological findings revealed that the lesion was a benign true cyst. The patient made an uneventful



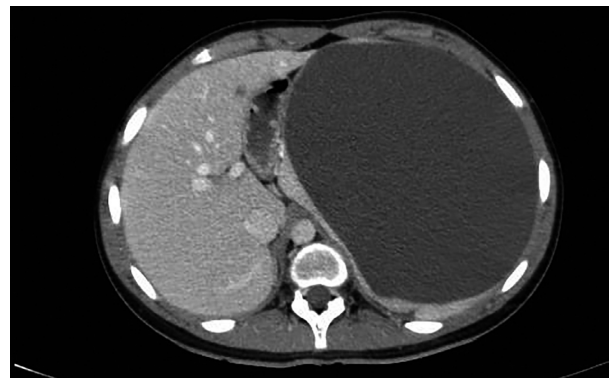
**Figure 1.** A reddish strained cystic lesion was identified in the spleen.



**Figure 3.** Partial splenectomy. The giant cystic lesion has been completely removed.



**Figure 2.** The cystic lesion after emptying its contents.



**Figure 4.** The computed tomography findings showed a huge cystic lesion in the spleen.

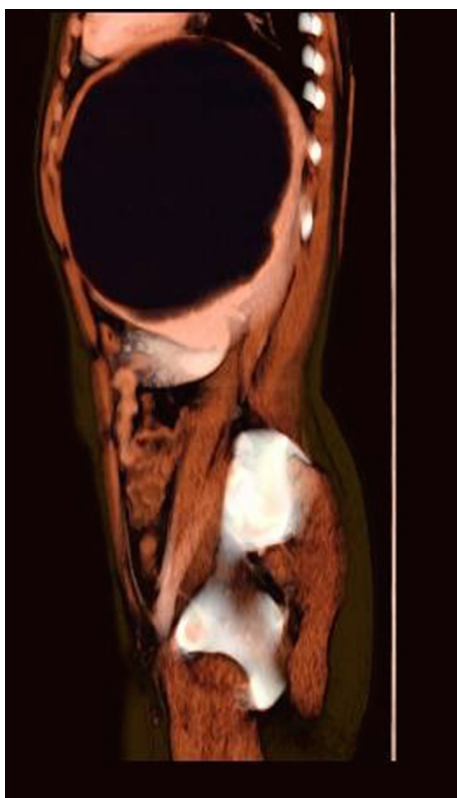
recovery, and the serum CA19-9 and CEA levels continued normal.

## Discussion

Splenic true cysts, constituting 25% of splenic cysts, are subclassified into epithelial, endodermoid, and parasitic cyst. Of these three types of cyst, epithelial cysts comprise epidermoid and dermoid cysts. In the present case, the diagnosis of the epidermoid cyst was made by histological examination of the excised spleen because the inner surface of the cyst was lined by squamous epithelial cells without skin appendages such as hair roots or sweat glands. A splenic epidermoid cyst is generally congenital and is very rare. The size of most splenic epidermoid cysts is <15 cm, and only a few splenic

epidermoid cysts larger than 20 cm have been reported. The origin of epidermoid cells is still unclear; however, they are considered to develop from mesonephric tissue in the developing spleen in early embryonic life [4]. In general, small epidermoid cysts are asymptomatic, but left upper abdominal quadrant pain and tenderness are the most common clinical findings. Our case was asymptomatic despite the giant size of the cyst of 21 cm in diameter.

The conventional treatment of splenic symptomatic, large, or complicated cysts has been total splenectomy, open or laparoscopic. In recent years, a spleen-preserving surgical approach is recommended as it is well known that the spleen plays an important role in normal



**Figure 5.** Abdominal CT scan. Lateral coronal view.

homeostasis (regulation of the circulating blood volume, hematopoiesis, immunity, and protection against infections and malignancies). In fact, the risk of postsplenectomy sepsis is about 4%, with a mortality rate of 1.5%. Partial splenectomy (preserving >25%) is the best known spleen-preserving procedure and is based on the segmentation of the splenic vascularization [5–7]. The first successful partial splenectomy for an epidermoid cyst was carried out in 1980, but it is a difficult procedure with higher risks of major intraoperative and postoperative blood loss [8]. Recently, advances in operative techniques, hemostasis with fibrin glue, radiofrequency ablation, and stapler techniques have made spleen-preserving procedures safe and feasible. Total splenectomy remains the treatment of choice if the cyst is big enough to involve all the spleen which is reduced to a small and atrophic remnant [9, 10]. In our case, the cyst did not involve the hilum.

## Conclusion

In summary, the epidermoid cyst is a rare splenic and usually presents as a large cystic mass producing abdominal symptoms. There is no reliable preoperative diagnostic method to surely identify an epidermoid cyst.



**Figure 6.** Abdominal CT scan. Coronal view.

The laparoscopic management offers the benefits of minimally invasive surgery but has a higher recurrence rate, especially in partial splenectomy.

If possible, a spleen-preserving approach is preferable for treating splenic cysts. The surgical approach should be determined by the type, shape, location, and CA19-9 levels in the splenic cyst. The main objectives of treatment are cyst removal, splenic function preservation, and if possible, prevention of recurrences.

We believe that in our patient, partial splenectomy was a safe and effective procedure to treat giant epidermoid splenic cyst.

## Conflict of Interest

None declared.

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