Case Report

ANNALS OF MEDICINE & SURGERY

OPEN

A case report of a large Splenic epidermoid cyst treated with partial splenectomy

Mohamed Ali Chaouch, MD[a,*], Ahmed Hadj Taieb, MD[a], Sadok Ben Jabra, MD[a], Mohamed Noomen, MD[b], Mohamed Zayeti, MD[a], Emna Mili, MD[b], Besma Gafsi, MD[b], Faouzi Noomen, MD[a]

Introduction and importance: Splenic epidermoid cysts are rare primary congenital cysts composed of an epithelial lining that represent a small proportion of nonparasitic splenic cysts. Despite their infrequency, there is a lack of uniform diagnostic and treatment guidelines for these cysts, emphasizing the need for further research and standardized reporting.

Case presentation: A 45-year-old female presented with left upper quadrant abdominal pain, characterized by a pressing sensation. Physical examination revealed a palpable mass in the upper left quadrant. Laboratory test results were normal. Abdominal ultrasonography and CT tomography confirmed a large splenic unilocular cyst consistent with an epidermoid cyst. Surgical intervention involved aspiration of the cystic fluid, partial splenectomy, and pathological examination. The patient's postoperative recovery was uneventful.

Clinical discussion: The origin of splenic epidermoid cysts remains unclear, with theories suggesting entrapment of mesothelial cells during embryonic development. The clinical presentation varies with cyst size, often causing abdominal pain and a palpable mass. Diagnostic modalities include ultrasonography and CT scans. Surgical intervention is recommended for symptomatic or suspicious cysts to prevent complications. The chosen approach depends on cyst characteristics and patient factors. This case highlights the challenges and considerations in managing splenic epidermoid the cysts and emphasizes the need for individualized treatment approaches.

Conclusion: This case contributes to the understanding of splenic epidermoid cysts and demonstrates a successful subtotal splenectomy as a treatment approach. Further research and standardized guidelines are essential to improve the management of these rare lesions and to provide better insights into their etiology and optimal treatment strategies.

Keywords: case report, partial splenectomy, splenic epidermoid cyst, surgery

Introduction

Splenic epidermoid cysts are uncommon, with a few documented cases[1]. Unlike secondary cysts, which are composed of fibrous tissues, epidermoid splenic cysts are primary congenital cysts that contain an epithelial lining, unlike secondary cysts which are composed of fibrous tissues[2]. They are a specific subtype of cystic nonparasitic splenic lesions that are even rarer and comprise less than 10% of all nonparasitic splenic cysts[3]. The incidence is exceptionally low and they are considered extremely rare, and documented cases in the medical literature are limited. They tend to manifest more frequently in females, a trend substantiated by the existing literature, with an average age of ~17 years[4,5]. The diagnostic modalities and treatment guidelines for splenic cysts are currently far from uniform. This case report presents a comprehensive analysis of a 45-year-old female patient through meticulous application of the Surgical Case Report (SCARE) guidelines 2023[6], highlights the need for further research, and emphasizes the role of standardized reporting in advancing our understanding of this rare pathology.

HIGHLIGHTS

- The presented case involves a 45-year-old female with a symptomatic splenic epidermoid cyst, a rare occurrence with limited documented cases in the literature.
- Clinical presentation of epidermoid cysts in the spleen is often correlated with the tumor size. Small cysts usually remain asymptomatic.
- Treatment is typically recommended when the cyst causes symptoms or if there is suspicion of malignancy and intervention is necessary to prevent serious complications such as rupture, bleeding, and infection of the cyst as mentioned above.
- This case contributes to the collective knowledge, emphasizing the importance of individualized approaches.

[a]Department of Visceral and Digestive Surgery and [b]Department of Anesthesia, Monastir University Hospital, Monastir, Tunisia

Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

*Corresponding author. Address: Department of Visceral and Digestive Surgery, Monastir University Hospital, Monastir, Tunisia. Tel.: +216 26205105; fax: +216 734 501 25. E-mail: Docmedalichaouch@gmail.com (M.A. Chaouch).

Annals of Medicine & Surgery (2024) 86:1220–1223

Received 22 November 2023; Accepted 21 December 2023

Published online 3 January 2024

http://dx.doi.org/10.1097/MS9.0000000000001675

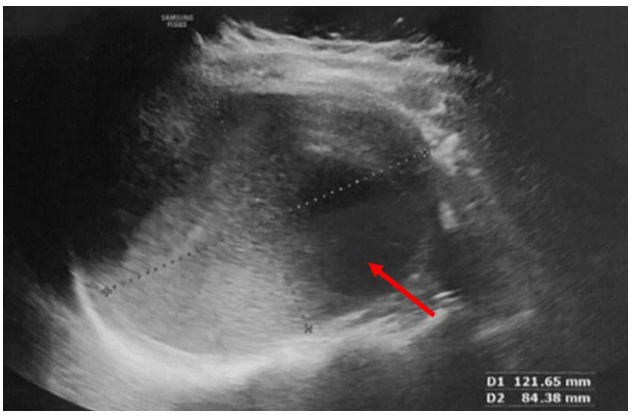

Figure 1. Abdominal ultrasound found a large splenic unilocular cystic mass of 12 × 9 cm, oval-shaped, with clear and regular borders, a thin wall with fine hyperechoic speckles (red arrow).

Case presentation

A 45-year-old female patient with no significant medical history presented with a year-long history of left upper quadrant abdominal pain characterized by a pressing sensation. The patient reported no associated fever or trauma, and no correlation with food intake. Physical examination revealed a firm, smooth, slightly tender mass in the left upper quadrant that was palpable during abdominal examination. Notably, other abdominal findings were unremarkable. The laboratory test results were normal. Abdominal ultrasonography revealed a large oval-shaped splenic unilocular cystic mass with clear and regular borders, a thin wall devoid of endo- or exophytic vegetations, homogeneous echogenic content with fine hyperechoic speckles, and nonvascularized features on color Doppler, measuring 120 × 90 mm (Fig. 1). Abdominal CT scan confirmed a large splenic unilocular cyst measuring 105 × 95 × 117 mm with thin walls and homogeneous liquid content (15 Hounsfield units). The mass displayed exophytic growth inferiorly, displacing the left kidney without signs of infiltration, consistent with an epidermoid cyst (Fig. 2). The patient underwent surgery under general anesthesia. A left subcostal incision was then made. Intraoperatively, we found a splenic cyst at the lower pole (Fig. 3). Approximately 300 ml of cystic fluid was aspirated to reduce the cyst's size. After isolating and clamping the lower splenic segmental vessels and verifying the ischemic parenchymal level, partial splenectomy was considered feasible (Fig. 4). We sectioned the splenic parenchyma 1 cm inside the ischemic demarcation area (Fig. 5). We checked for hemostasis and satisfactory vascularization of the remnant spleen. External drainage was performed, and we addressed the operative specimen for pathological examination (Fig. 6). The postoperative course was uneventful. Histopathological examination confirmed the diagnosis of splenic epidermoid cyst. The patient was seen in the outpatient clinic after one month with no abnormalities.

Discussion

The origin of true cysts remains somewhat enigmatic, but the prevailing hypothesis posits the entrapment of peritoneal mesothelial cells within splenic tissue during in utero embryonic development. This is commonly known as mesothelial invagination theory or endodermal inclusion theory. Subsequent research efforts have delved into these theories to demystify this complex phenomenon[5,7]. Epidermoid cysts in the spleen are more commonly observed in women than in males. The current case report describes a 45-year-old female patient presenting with a symptomatic splenic epidermoid cyst. Such presentations are relatively rare, with only a limited number of cases documented in the medical literature. The clinical manifestation of splenic epidermoid cysts is closely associated with tumor size. Smaller cysts tend to be asymptomatic, whereas larger lesions often lead to significant symptoms, owing to their size. Symptoms typically include left upper abdominal pain, palpable upper abdominal mass, and sensations of epigastric pain and fullness[8]. Although most cysts are uncomplicated at diagnosis, some may present with complications such as infection, rupture, and bleeding[9].

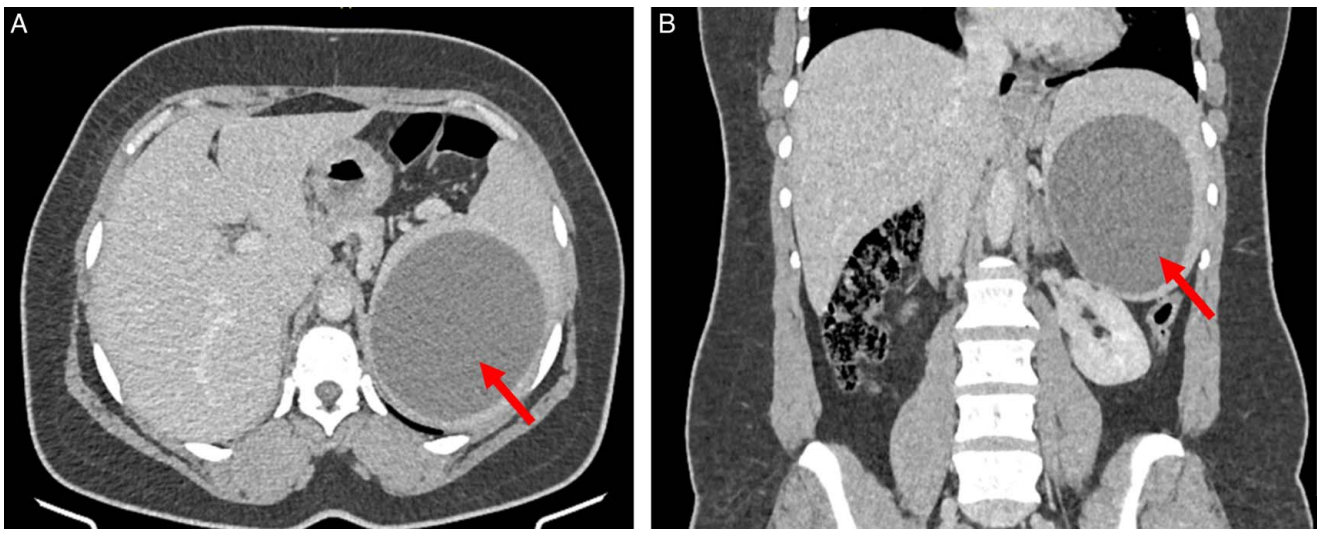

Figure 2. Abdominal CT scan views (A: axial and B: coronal) showing a large splenic unilocular cyst measuring 105 × 95 × 117 mm, with thin walls and homogeneous liquid content (red arrow).

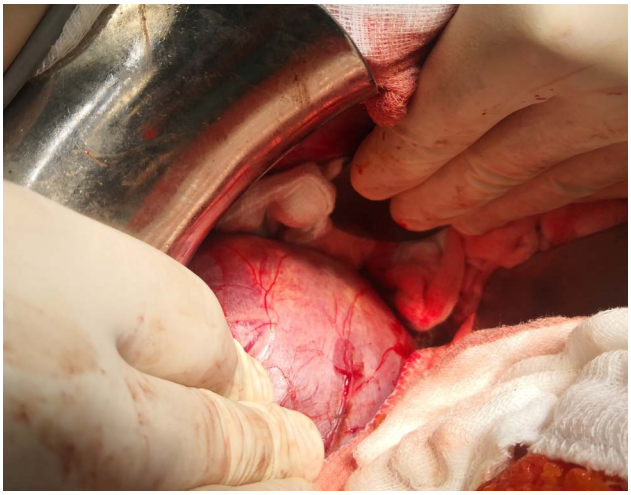

Figure 3. Intraopeative view of the spleen cyst.

The patient in this case reported prolonged left upper quadrant abdominal pain and pressing sensation, but no fever, trauma, or food-related issues, presenting a diagnostic challenge. Physical examination revealed a palpable mass in the left hypochondrium, which necessited further diagnostic procedures. There is no uniformity in diagnostic modalities or treatment guidelines for splenic cysts. Ultrasonography plays a crucial role in identifying splenic cysts, differentiating between solid and cystic lesions, and

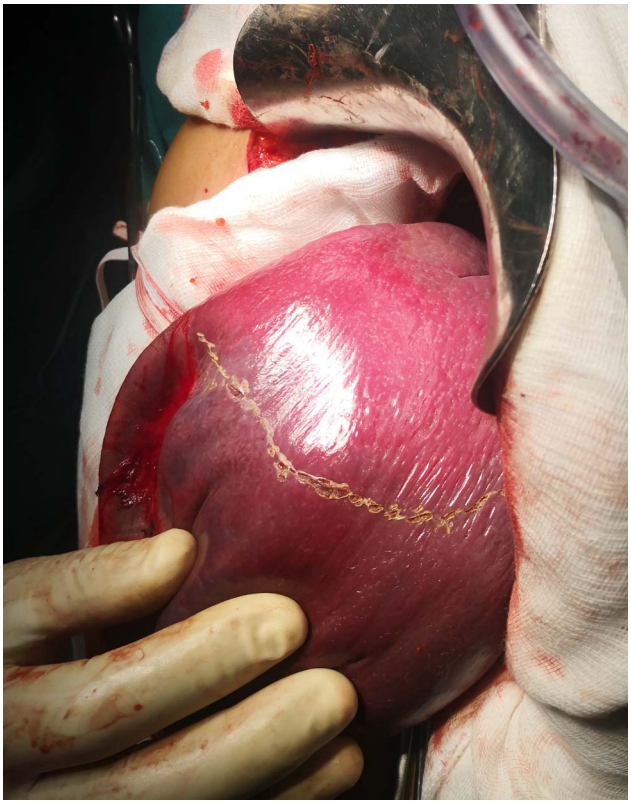

Figure 4. The ischemia parenchymal level.

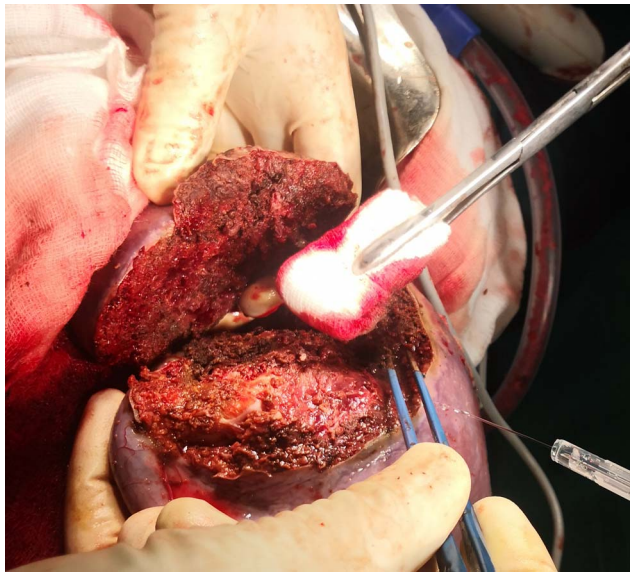

Figure 5. Spleneic parenchym speling of partial splenectomy.

detecting intracystic septa or irregular walls[2]. A CT scan was employed to provide detailed information about the cyst's morphology, fluid nature, exact location, and its relationship to adjacent structures[2]. It is essential to consider various differential diagnoses, including parasitic echinococcal disease, congenital cysts, post-traumatic pseudocysts, infarction, infection, pyogenic splenic abscess, metastatic disease, and cystic neoplasms[2]. Treatment is typically recommended for symptomatic cysts or when malignancy is suspected. In this case, surgical intervention was deemed necessary to prevent complications, such as rupture, bleeding, or infection[5,10]. The decision for elective laparotomy was influenced by the location of the location of the cyst at the lower pole of the spleen. Intraoperative aspiration reduced the cyst size and facilitated spleen preservation. The ensuing partial splenectomy was performed with precision, demonstrating a meticulous surgical technique. A comprehensive review of the literature has revealed various approaches to partial

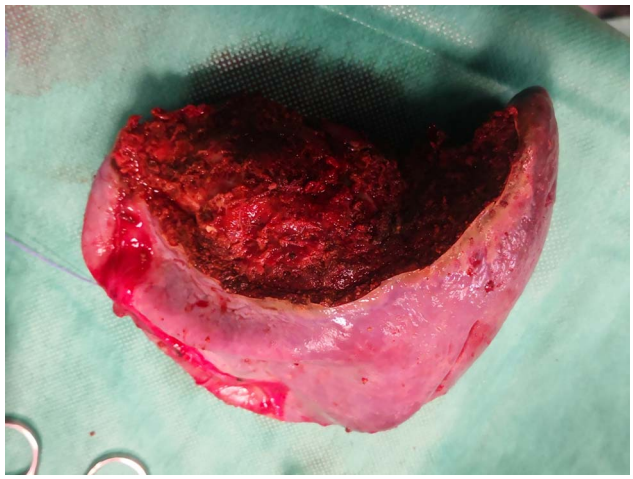

Figure 6. The operative specimen.

splenectomy for epidermoid cysts. These include traditional open surgery, laparoscopic techniques, and more conservative methods depending on the cyst's characteristics and patient factors. Each case in the literature highlights the unique challenges and considerations in managing such conditions. Postoperative recovery was uneventful and satisfactory, emphasizing the effectiveness of the surgical approach. Histopathological examination confirmed the diagnosis, with the identification of characteristic epidermoid cyst features in the splenic tissue. The rarity of splenic epidermoid cysts adds significant value to the discussion. A comparison with the existing literature indicates a limited understanding of the etiology and optimal management of these lesions. This case adds to the collective knowledge, highlighting the need for individualized treatment approaches. Despite the successful outcome in this case, it is crucial to recognize its limitations, such as the lack of long-term follow-up data. There is a need for further studies and collaborative efforts to establish standardized guidelines for managing splenic epidermoid cysts, given the current limited evidence.

Conclusion

In conclusion, this case report provides valuable insights into the diagnostic and therapeutic aspects of a rare splenic epidermoid cyst treated with a subtotal splenectomy.

Ethical approval

Ethical approval is exempt/waived at our institution.

Patient consent

Written informed consent was obtained from the patient to publish this case report and accompanying images. On request, a copy of the written consent is available for review by the Editor-in-Chief of the journal.

Sources of funding

Not applicable.

Author contribution

All the authors revised the final version of the manuscript.

Conflicts of interest disclosure

The authors declare no competing interest.

Research registration number unique identifying number (UIN)

Not applicable.

Guarantor

Mohamed Ali Chaouch.

Data availability statement

Not applicable.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Acknowledgements

There were no acknowledgements to mention.

References

[1] Jatal SN, Jatal S, Ingle S. A giant epidermoid cyst of the spleen and mini review of literature. Asian J Res Surg 2023;6:161–6.
[2] Cianci P, Tartaglia N, Altamura A, *et al*. A recurrent epidermoid cyst of the spleen: report of a case and literature review. World J Surg Onc 2016; 14:98.
[3] Khashab M, Canto M, Singh V, *et al*. Endosonographic and elastographic features of a rare epidermoid cyst of an intrapancreatic accessory spleen. Endoscopy 2011;43(S 02):E193–4.
[4] Younger KA, Hall CM. Epidermoid cyst of the spleen: a case report and review of the literature. BJR août 1990;63:652–3.
[5] Rana APS, Kaur M, Singh P, *et al*. Splenic epidermoid cyst-a rare entity. J Clin Diagnost Res 2014;8:175.
[6] Sohrabi C, Mathew G, Maria N, *et al*. The SCARE 2023 guideline: updating consensus Surgical CAse REport (SCARE) guidelines. Int J Surg 2023;109:1136.
[7] Ingle SB, Hinge CR, Patrike S. Epithelial cysts of the spleen: a minireview. World J Gastroenterol 2014;20:13899.
[8] Ingle SB, Hinge CR, Jatal SN. An interesting case of primary epithelial cyst of spleen. Indian J Pathol Microbiol 2013;56:181.
[9] Chen YY, Shyr YM, Wang SE. Epidermoid cyst of the spleen. J Gastrointest Surg mars 2013;17:555–61.
[10] Tuqan NA. Primary reticulum-cell sarcoma of the spleen. Radiology 1959;72:868–71.