

CASE REPORT

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Spontaneous rupture of 90 mm splenic epidermoid cyst with subcapsular splenic hematoma and hemoperitoneum

Xin Yi Goai, Wendy Chang, Zaw Myo Htut, Christian Jean Beardsley, Casper Francois Pretorius

ABSTRACT

Introduction: This report explores the rare occurrence of spontaneous splenic rupture in a healthy individual, attributed to a benign epidermoid splenic cyst.

Case Report: The patient, a 28-year-old male, presented with one-week history of abdominal pain due to ruptured splenic cyst leading to subcapsular splenic hematoma and hemoperitoneum without any traumatic history nor underlying conditions. The diagnostic journey, including CT scans, guided the decision for splenectomy. Postoperative recovery was uneventful, with histopathological examination identifying an epidermoid cyst.

Conclusion: This case emphasizes the importance of recognizing atraumatic splenic ruptures, even in the absence of underlying conditions, and underscores the significance of prompt intervention through techniques like splenectomy.

Keywords: Acute abdomen, Hemoperitoneum, Splenic cyst rupture, Splenic hematoma

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INTRODUCTION

Rupture of the spleen is largely reported as an atraumatic sequelae of underlying conditions. Splenic cysts have an incidence of 0.07%. Complications from splenic cysts are rare—they may become symptomatic when enlarged, or rupture and cause peritonism. We describe a case of spontaneous rupture of splenic cyst progressing into subcapsular splenic hematoma with hemoperitoneum in a fit, young and healthy male. The patient underwent a splenectomy and recovered. The only abnormality identified was possible rupture from a benign epidermoid splenic cyst. Informed consent was obtained and patient anonymity preserved.

CASE REPORT

A 28-year-old man presented with a one-week of upper abdominal pain radiating to both shoulders and scapulae. He had no history of trauma, constitutional nor infective symptoms, and nil significant travel, medical and surgical history. He was a non-smoker with infrequent alcohol intake. While hemodynamically stable, he had generalized peritonism on examination, likely due to hemoperitoneum. This was confirmed via computed tomography (CT) angiography, which demonstrated a

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large subcapsular splenic hematoma measuring maximal 10 cm diameter with moderate hemoperitoneum (Figure 1). Computed tomography angiography also excluded vascular aneurysms, noting splenic cysts with possible septations, intracystic densities, and possible rupture. Splenic cysts were again identified on ultrasonography, with no discrete daughter cysts. Hydatid serology was non-reactive. Initial consultation to an interventional radiologist from a tertiary facility recommended conservative management. The patient required an analgesia pump and high-dependency care. A second opinion was sought from a senior surgeon the next day due to lack of clinical improvement. Given risks of rebleeding and subsequent splenic cyst and/or aneurysmal rupture/s, he underwent a splenectomy at day-three of admission (Figure 2). After approximately 1.2 L of hematoma evacuated, nil active bleeding was encountered intraoperatively. He made an uneventful postoperative recovery. He received post-splenectomy education, vaccinations and was discharged on long-term antibiotics. Histopathology revealed a benign 90×7848 mm epidermoid cyst of the spleen lined by stratified squamous epithelium, with possible partial cyst rupture and nil features of a hydatid cyst.



Figure 1: Computed tomography angiography of abdomen and pelvis, coronal view. (A) Hemorrhage within a splenic cyst (SC) with subcapsular hematoma (SH). (B) Moderate subhepatic hemoperitoneum (H).

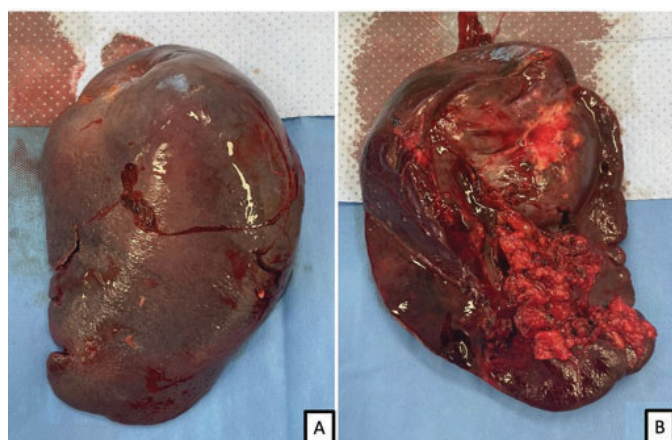


Figure 2: Operative specimen. (A) Lateral and (B) medial aspects of excised spleen, with cyst at superior aspect on medial view of spleen.

DISCUSSION

Atraumatic splenic rupture is usually secondary to underlying diseases—infectious diseases, hematological pathologies, and non-hematological malignancies. Colonoscopy is the most frequently associated procedure, whereas medications include anticoagulants, thrombolytics, and recombinant granulocyte-colony stimulating factor (G-CSF) [1, 2]. Abuse of alcohol and cocaine has been implied [3, 4].

Primary splenic cysts are rare, and complications from a splenic cyst are of greater rarity [5]. Fragandreas et al. described two cases of splenic rupture secondary to internal (coughing on background of asthma) and external (blunt abdominal injury) trauma with incidental findings of epithelial splenic cysts [6]. Splenic cysts may become symptomatic as they enlarge, and predispose to rupture and cause peritonism [5–9]. Symptoms vary but typically present as an acute abdomen, with left flank or upper quadrant pain radiating infrascapular or to the left shoulder [2, 3–5].

A hemoglobin drop and elevated tumor markers may be present [3–5, 8]. Computed tomography angiography is diagnostic, delineating splenic infarct versus rupture, and may detect underlying causes [2–4, 10]. Splenectomy is usually indicated in rupture of splenic cyst. Drainage, cyst excision, and laparoscopic fenestration are other options [2, 6, 7].

CONCLUSION

Splenic rupture can occur in an atraumatic setting, and in young, fit, and healthy individuals. Computed tomography continues to be the most suitable imaging modality in cases presenting with acute abdomen, and splenectomy recommended as treatment in splenic rupture.

REFERENCES

1. Aubrey-Bassler FK, Sowers N. 613 cases of splenic rupture without risk factors or previously diagnosed disease: A systematic review. *BMC Emerg Med* 2012;12:11.
2. Tonolini M, Bianco R. Hemoperitoneum from splenic rupture in an expatriate. *J Emerg Trauma Shock* 2012;5(1):100–2.
3. Fenando A, Tatineni S, Raziq FI, Alratroot A. Subcapsular haematoma of the spleen complicating acute pancreatitis. *BMJ Case Rep* 2019;12(9):e231716.
4. de Freitas Ribeiro BN, Correia RS, Salata TM, Antunes FS, Marchiori E. Subcapsular splenic hematoma and spontaneous hemoperitoneum in a cocaine user. *Radiol Bras* 2017;50(2):136–7.
5. Inokuma T, Minami S, Suga K, Kusano Y, Chiba K, Furukawa M. Spontaneously ruptured giant splenic cyst with elevated serum levels of CA 19-9, CA 125 and

- carcinoembryonic antigen. Case Rep Gastroenterol 2010;4(2):191–7.
6. Fragandreas G, Papadopoulos S, Gerogiannis I, et al. Epithelial splenic cysts and life-threatening splenic rupture. Chirurgia (Bucur) 2011;106(4):519–22.
 7. Tassopoulos A, Wein M, Segura A. Traumatic rupture of a giant congenital splenic cyst presenting as peritonitis. Radiol Case Rep 2017;12(2):401–4.
 8. Pitiakoudis M, Zezos P, Oikonomou A, Laftsidis P, Kouklakis G, Simopoulos C. Total splenectomy due to an unexpected “complication” after successful extended laparoscopic partial decapsulation of a giant epidermoid splenic cyst: A case report. Case Rep Med 2011;2011:318208.
 9. Imoto Y, Einama T, Fukumura M, et al. Laparoscopic fenestration for a large ruptured splenic cyst combined with an elevated serum carbohydrate antigen 19-9 level: A case report. BMC Surg 2019;19(1):58.
 10. Tonolini M, Ierardi AM, Carrafiello G. Atraumatic splenic rupture, an underrated cause of acute abdomen. Insights Imaging 2016;7(4):641–6.

Author Contributions

Xin Yi Goai – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Wendy Chang – Conception of the work, Design of the work, Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Christian Jean Beardsley – Conception of the work, Design of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Casper Francois Pretorius – Conception of the work, Design of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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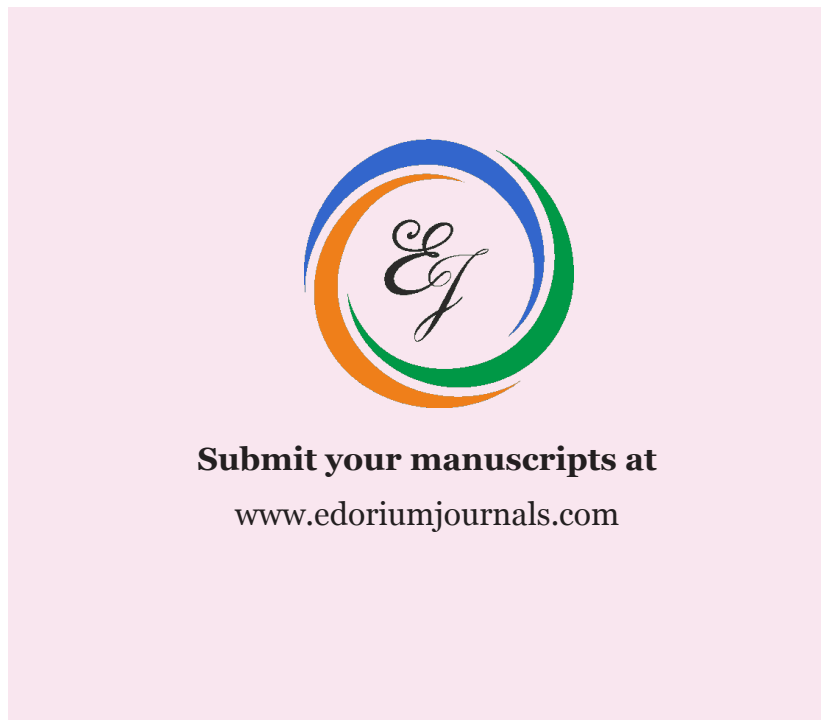
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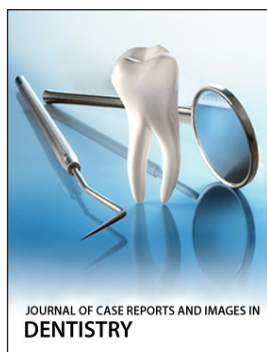
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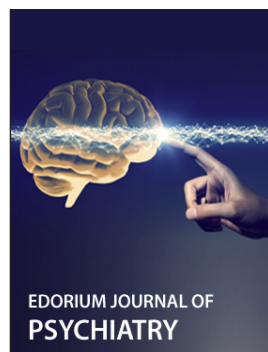
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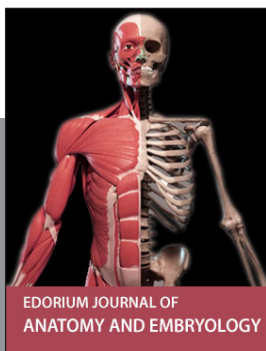
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