

Received: 2019.04.06
Accepted: 2019.06.05
Published: 2019.08.02

A Case of Small Intestinal Ileus Due to Wandering Spleen with a Large Cyst

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

ABCDEF **Takehisa Matsuyama**
BCD **Toshimasa Nakao**
BCD **Shumpei Harada**
EF **Tsukasa Nakamura**
EFG **Shuji Nobori**
DEFG **Hidetaka Ushigome**

Department of Transplant Surgery, University Hospital Kyoto Prefectural University of Medicine, Kyoto City, Kyoto, Japan

Corresponding Author: Takehisa Matsuyama, e-mail: tm0904@koto.kpu-m.ac.jp
Conflict of interest: None declared

Patient: Female, 28
Final Diagnosis: Ileus due to wandering spleen with a cyst
Symptoms: Acute abdominal pain
Medication: —
Clinical Procedure: Tube decompression • laparotomy
Specialty: Abdominal Surgery • Transplant Surgery

Objective: Rare disease

Background: Splenic cysts are rare. Most are due to previous trauma, infection, or infarction. They are generally handled by laparoscopic surgical removal if they are larger than 5 cm. However, very large cysts may require splenectomy. Another factor in the choice of therapy is the patient's underlying condition. We present the case of a giant splenic cyst in a woman 1 year after a renal transplant.

Case Report: A 28-year-old woman presented with acute abdominal pain and nausea. One year before, she had received an ABO-identical living donor renal transplantation from her father, and was maintained on oral tacrolimus and prednisolone. A CT scan with contrast showed enteric ileus and an abnormal position of the spleen, which was involved by a cyst measuring 12×12.5×9 cm. A nasogastric tube, and later a small bowel tube, were inserted to decompress the ileus. The patient underwent laparotomy 11 days after admission. We confirmed an internal hernia with volvulus due to migration of the spleen; however, there was no evidence of necrosis. The patient was treated with splenectomy and reduction of the hernia. There were no complications.

Conclusions: This was a very unusual emergency following renal transplantation. Splenectomy has been performed in the past for immunosuppression in cases of donor ABO-incompatibility. We therefore considered that it would be more expedient to remove the spleen than to remove the cyst and perform splenopexy.

MeSH Keywords: Hernia • Ileus • Intestinal Volvulus • Spleen

Full-text PDF: <https://www.amjcaserep.com/abstract/index/idArt/916845>

708 — 3 10



Background

Splenic cysts are unusual. Approximately 25% are primary (i.e., containing an epithelial lining), and can be congenital or the result of parasitic infestation or neoplasm. Secondary cysts are usually due to trauma, and can also be associated with infection and prior splenic infarct. Cysts larger than 5 cm are generally removed laparoscopically [1]. Very large cysts, or cysts in patients with comorbidities, present more of a challenge. Successful laparoscopic cystectomy has been performed in a pregnant patient [2]. A cyst in a wandering spleen is also quite challenging; with its associated risk of splenic torsion, it is usually treated with splenectomy [3–5].

Case Report

A 28-year-old woman presented with acute lower abdominal pain and nausea. Her past history was significant for a live donor renal transplant from her father 1 year prior to presentation. Physical examination revealed a mass in the mid-lower abdomen. There was no rebound tenderness. She denied recent trauma. Laboratory tests revealed dehydration but normal renal function. A contrast-enhanced abdominal CT (Figure 1)

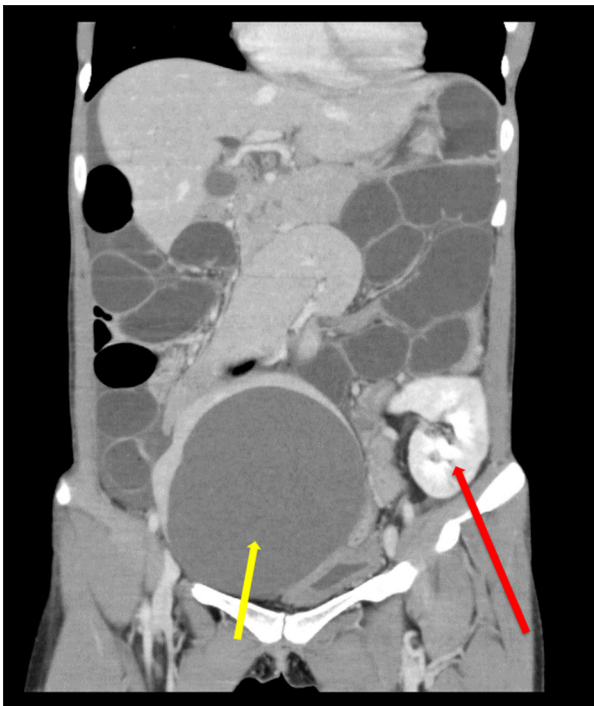


Figure 1. Contrast-enhanced CT (coronal). A thinned wandering spleen with a giant cyst in the pelvic cavity (yellow arrow) is surrounded by a distended small bowel and compresses the bladder in the left lower pelvis. A functioning transplanted kidney is present in the left iliac fossa (red arrow).

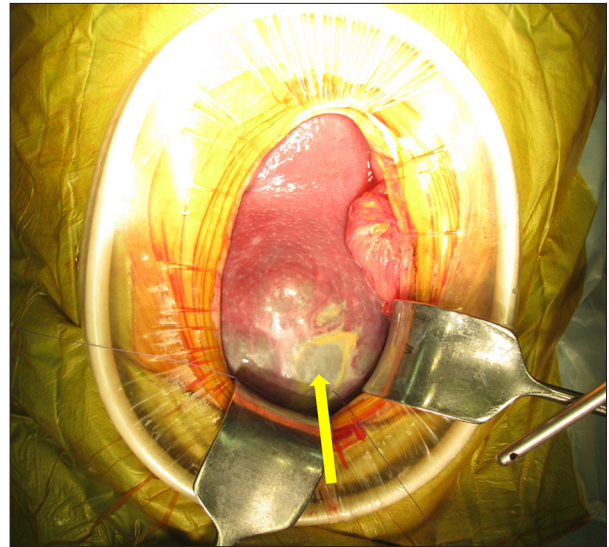


Figure 2. The spleen with cyst.



Figure 3. Internal hernia was confirmed.

showed evidence of ileus, and a wandering spleen with a large cyst (12×12.5×9 cm) was identified in the lower abdomen. We first inserted a nasogastric (NG) tube, which was then substituted with a 16-Fr small bowel tube to decompress the small intestine, and then started infusion of fluids and electrolytes. Tacrolimus and prednisolone were administered intravenously. The abdominal distention and pain gradually resolved, and C-reactive protein (CRP) improved from 44.4 nmol/L on admission to 6.29 nmol/L 10 days later. Laparotomy was performed under general anesthesia via a midline lower abdominal incision on POD 11. A wandering spleen with giant cyst was confirmed (Figure 2) and was noted to compress the small intestine. A small amount of ascites was noted. We drew fluid from the giant cyst by fine-needle aspiration to reduce its volume. An internal hernia was present, with small bowel incarcerated between the spleen and splenic hilum (Figure 3). There was no evidence of intestinal ischemia. We performed a splenectomy and reduced the internal hernia. The histopathological

diagnosis was epithelial cyst of the spleen. The postoperative course was uneventful and she left the hospital 7 days after the operation.

Discussion

The spleen is fixed by the gastrosplenic, splenorenal, phrenosplenic, and splenocolic ligaments. Wandering spleen occurs when these ligaments are not fully developed or are abnormally attached [6]. The male-to-female ratio is 1: 4 and occurrence is highest in young people aged less than 40 years [7]. In the case of splenic infarction, splenectomy is indicated, but splenopexy is an option if the spleen is not ischemic. To date, few studies have reported a wandering spleen with giant cyst [6], and the approach to treatment is controversial. In the present case, no splenic infarction was identified on CT, and the kidney graft she received 1 year previously required protection. Accordingly, we inserted a long tube for decompression and corrected her dehydration. Eleven days after admission, she underwent elective surgery. The size of the incision was not conducive to splenopexy, so we performed splenectomy. The postoperative course was uneventful.

Splenectomy in liver transplantation has been controversial; it is usually avoided in deceased donor transplants due to an increased risk of sepsis, but is often used with living donor transplantation to reduce portal venous pressure, especially in small-sized grafts, without increasing the risk of sepsis [7].

References:

1. Craig DH, Campbell DC, Powell MS: Laparoscopic splenectomy for giant splenic cyst. *Am Surg*, 2015; 81: E390–91
2. Kapp J, Lewis T, Glasgow S et al: Spleen preserving management of a non-parasitic splenic cyst in pregnancy. *Ann R Coll Surg Engl*, 2016; 98: e114–17
3. Flippin JA, Fisher P, Long J: Splenic torsion presenting as splenic vein thrombosis. *J Pediatr Surg Case Rep*, 2017; 18: 13–15
4. Samarasinghe RN, Protyniak B, Bethel CAI: Wandering spleen and splenic torsion associated with upper respiratory tract infection. *J Pediatr Surg Case Rep*, 2013; 1: 129–31
5. Güngör Ş, Öztürk M, Varol Fİ et al: Torsion of a wandering spleen in an adolescent with Gaucher disease. *Turk J Gastroenterol*, 2017; 28: 303–6
6. Baglaj M, Czernik J: Epidermoid cyst in a wandering spleen. *Pediatr Surg Int*, 1998; 14: 113–15
7. Liu HT, Lau KK: Wandering spleen: An unusual association with gastric volvulus. *Am J Roentgenol*, 2007; 188: W328–30
8. Badawy A, Hamaguchi Y, Satoru S et al: Evaluation of safety of concomitant splenectomy in living donor liver transplantation: A retrospective study. *Transpl Int*, 2017; 30: 914–23
9. Ashimine S, Watarai Y, Yamamoto T et al: Neither pre-transplant rituximab nor splenectomy affects *de novo* HLA antibody production after renal transplantation. *Kidney Int*, 2014; 85: 425–30
10. Macklin P, Morris PJ, Knight SR: A systematic review of the use of rituximab for desensitization in renal transplantation. *Transplantation*, 2014; 98: 794–805

In renal transplantation, splenectomy, or its medical equivalent, rituximab, has been employed to reduce *de novo* [8] or pre-existing [9,10] HLA antibody production. An inhibitory effect for rituximab or splenectomy has not been found against *de novo* Ab production [3], while different, desensitizing procedures (plasmapheresis, IVIg) to remove pre-existing antibodies have been shown to be equally effective as rituximab or splenectomy [9], although early death rates in ABO-incompatible recipients were higher [10].

Conclusions

Here, we present an unusual case of wandering spleen with a large cyst causing internal herniation and ileus of the small bowel in a living related-donor renal transplant patient. Given the need for immunosuppression and the need to protect the graft from the risks of a long operation, the decision to remove the spleen was based on limiting the extent of surgery.

Acknowledgement

We thank Libby Cone, MD, MA, from DMC Corp. (www.dmed.co.jp) for editing drafts of this manuscript.

Conflict of interest

None.