Singapore Med J 2007; 48(4) : e122

Recurrent abdominal pain in a woman with a wandering spleen

Tan H H, Ooi L L P J, Tan D, Tan C K

ABSTRACT

A 28-year-old Malay woman presented with recurrent abdominal pain for five years. She had delivered her child seven months earlier. She was found to have bicytopenia, with a haemoglobin level of 7·9 g/dL and a platelet count of 85 × 10^9/L. Computed tomography revealed a wandering spleen. Complications of a wandering spleen, for which splenectomy is advocated, include functional asplenia (due to torsion of the splenic pedicle), splenic infarction or splenic vessel thrombosis. A splenectomy was performed and at operation, splenomegaly with a long mesentery was found. Splenic histology was negative for malignancy. The bicytopenia resolved postoperatively, and she remains well.

Keywords: recurrent abdominal pain, spleen torsion, thrombocytopenia, wandering spleen

Singapore Med J 2007;48(4):e122–e124

INTRODUCTION

A wandering spleen is one of the causes of recurrent abdominal pain. Early suspicion and diagnosis make a difference to the outcome of this disease.

CASE REPORT

A 28-year-old Malay woman presented in April 2005 with recurrent abdominal pain for five years. The pain was intermittent, lasted less than an hour each time, and resolved spontaneously. It was migratory in nature, with no known precipitating, aggravating or relieving factors. She had no change in bowel habits or abnormalities of her menstrual cycle. There was no other significant medical history. She had consulted many doctors for her pain in the past and was told that she had a palpable abdominal mass. However, no further tests were done.

We first saw her during one of her episodes of pain. She had just delivered her second child seven months earlier. She was found to be pale, with a central abdominal mass. However, a repeat physical examination two hours later revealed the mass to be right-sided. There was bicytopenia, with a haemoglobin level of 7·9 g/dL and a platelet count of 85 × 10^9/L. Nutritional deficiencies were excluded. Bone marrow studies showed marrow erythroid and megakaryocytic hyperplasia that were compatible with a peripheral cause of bicytopenia, in this case from hypersplenism.

Computed tomography (CT) of the abdomen revealed a malrotated spleen and bowel, narrowed portal vein, portal hypertension and gastrosplenic varices (Fig. 1). A splenectomy was performed in view of a symptomatic wandering spleen, with hypersplenism and portal hypertension. Intraoperative findings were splenomegaly 25·5 cm × 10·5 cm × 4·5 cm, dry weight 680 g, with multiple small infarcts and a long mesentery (Fig. 2). Splenomegaly from congestion, with transmitted portal hypertension, in our patient,

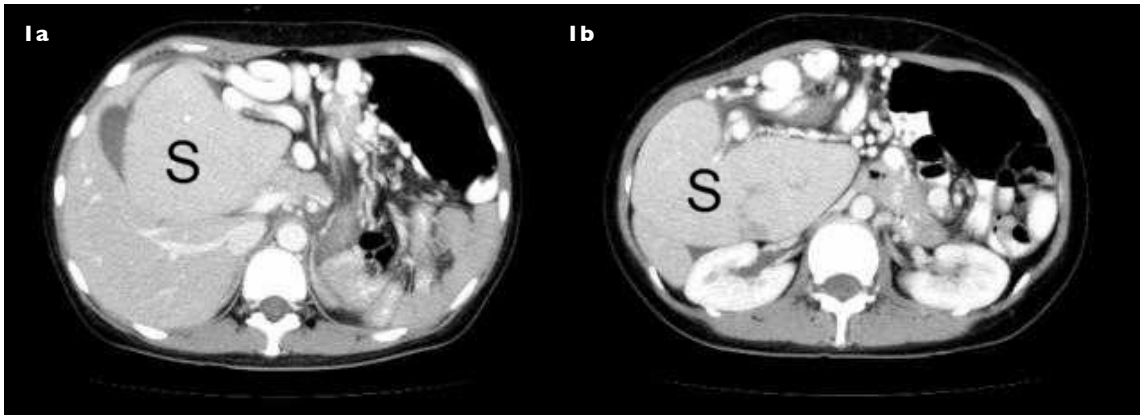

Fig. 1 Axial CT images (a & b) show a malrotated spleen (S) and bowel with associated intra-abdominal varices and splenic infarcts.

Department of Gastroenterology and Hepatology, Singapore General Hospital, Outram Road, Singapore 169608

Tan HH, MBBS, MRCP
Registrar

Tan CK, MBBS, FRCPE, FAMS
Senior Consultant

Department of Haematology

Tan D, MBBS, MRCP, MMed
Registrar

Department of Surgical Oncology, National Cancer Centre, 11 Hospital Drive, Singapore 169610

Ooi LLPJ, MBBS, MD, FRCSE
Senior Consultant and Head

Correspondence to:
Dr Hui-Hui Tan
Tel: (65) 6321 4684
Fax: (65) 6227 3623
Email: mhyhui@gmail.com

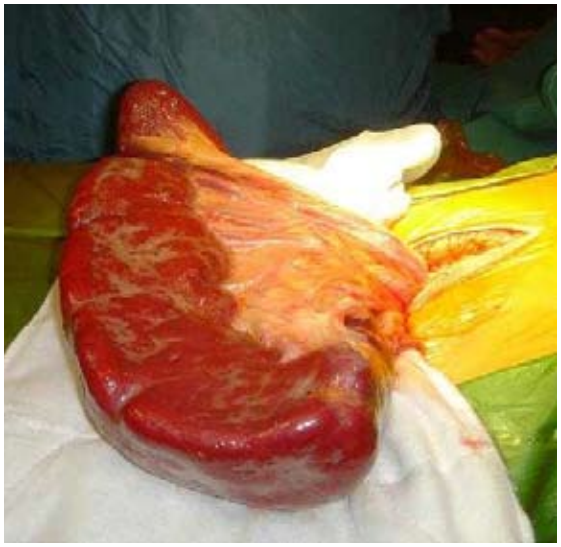

Fig. 2 Clinical photograph taken during splenectomy shows splenomegaly with multiple small infarcts and a long mesentery.

probably resulted from recurrent torsion and detorsion of the splenic pedicle. The large size of the spleen can also compress against the portal venous system during torsion, causing further pre-sinusoidal portal hypertension. Splenic histology was negative for malignancy. Bicytopenia subsequently resolved postoperatively.

DISCUSSION

A wandering spleen occurs from a failure of fusion of the mesogastrium and the lining body wall epithelium to form suspending ligaments.[1] Acquired factors that increase splenic mobility include abdominal wall laxity, hormonal effects of pregnancy and splenomegaly.[2] Other synonyms include "ectopic", "floating", "aberrant" spleen, splenoptosis, or "lien mobile".[3] The torsion of the pedicle is described as splenic volvulus or torsion. Although more common among males in childhood, its prevalence is more common among females by the time they reach childbearing age.[4] Age of presentation ranges from the neonatal period to the eighth decade of life. In a review over a 40-year period at the Mayo Clinic, only two of 1,003 splenectomies had a wandering spleen.[5] Van Horne first described a wandering spleen in 1667 at necropsy.

The first successful splenectomy for a wandering spleen was in 1878 by Martin and marked the beginning of surgical treatment for this condition.[6] Rydygier described the first successful splenopexies using various techniques[7] and from 1890 to 1920, most authors advocated splenopexy for the treatment of this condition.[7-10] Later, however, the development of an effective pneumococcal vaccine would then see splenectomy become the standard of care for the wandering spleen. Since Martin's first splenectomy, the recommended surgical treatment has changed at least four times.[3] Although there is still no consensus, most authors now advocate splenectomy if there is functional asplenia due to torsion, splenic infarction, splenic vessel thrombosis or any suspicion of malignancy. Conversely, splenopexy is preferred when a viable wandering spleen is found at laparotomy.

Early attempts at splenic preservation involved simple detorsion of the pedicle with replacement of the organ in its normal anatomical position. However, this invariably failed, as without fixation, the spleen would undergo re-torsion and subsequently need a splenectomy.[11] Newer techniques now include anatomical repositioning with some method of fixation. Common techniques include suturing of the spleen directly[12] or supported by an absorbable mesh wrap[13] to the diaphragm or anterior abdominal wall; placement of the spleen in a retroperitoneal pouch[14]; suturing the splenic hilum to the splenic bed;[15] or colonic displacement in front of the replaced spleen with gastropexy to the anterior abdominal wall.[16]

In recent years, the laparoscopic approach has been employed successfully and this offers the benefit of a shorter hospital stay and quicker recovery period. In the case of our patient, in view of the presence of splenic infarcts and functional hypersplenism with gross splenomegaly, a splenectomy was performed instead of a simple splenopexy. Some authors have also advocated surgical treatment for all wandering spleens as up to 50% of those who present with non-viable spleens were previously asymptomatic.[17] Pain is a common complaint, occurring in up to 60% of patients.[18] This is usually due to acute torsion of the mesentery, symptomatic splenic infarcts or splenic congestion. Intermittent pain may be due to spontaneous torsion and de-torsion of the splenic pedicle.

In a review of 140 cases, the commonest clinical presentations were an abdominal mass with intermittent pain, an asymptomatic abdominal mass or an acute abdomen.[4] Thrombocytopenia is rarely reported; even fewer have an associated malignancy. In cases associated with malignant lymphomatous disease, the patients were middle-aged or elderly patients who already manifested disease in other organs at the time of diagnosis (e.g. liver, lymph nodes).[19] Our case is a reminder that although a wandering spleen is an unusual cause of recurrent abdominal pain, early recognition of the condition is important for a favourable surgical outcome.

REFERENCES

1. Quinlan RM. Anatomy and physiology of the spleen. In: Shackelford RT, Zuidema GD, eds. Surgery of the Alimentary Tract. Vol 4. Philadelphia: Saunders, 1983: 631-7.
2. Raissaki M, Prassopoulos P, Daskalogiannaki M, Magkanas E, Gourtsoyiannis N. Acute abdomen due to torsion of wandering spleen: CT diagnosis. Eur Radiol 1998; 8:1409-12.
3. Peitgen K, Schweden K. Management of intermittent splenic torsion ("wandering spleen"): a review. Eur J Surg 1995; 161:49-52.
4. Buehner M, Baker MS. The wandering spleen. Surg Gynecol Obstet 1992; 175: 373-87.
5. Pugh HL. Splenectomy, with special reference to historical background: indications and rationale, and comparison of reported mortality. Int Abstr Surg 1946; 84:209-24.
6. Martin A. A successful case of splenotomy. Br J Med 1878; 61:191-2.
7. Rydygier D. Die Behandlung der Wandermilz durchsplenopexis. Arch Klin Chir 1895; 50:880-6.
8. Plucker P. Uber Splenopexis bei wandermilz. Centr Bl Chir 1885; 40:905-7.
9. Robinson AP. Wandering spleen: case report and review. Mt Sinai J Med 1988; 55:428-34.
10. Sykoff S. Uber die Behandlung der wandermilz mit slenopexie. Lan Arch Chir 1885; 51:606-10.
11. Abell I. Wandering spleen with torsion of the pedicle. Ann Surg 1933; 98:722-35.
12. Jones BJ, Daly M, Delaney PV. Torsion of the spleen managed by splenopexy. Br J Surg 1991; 78:887-8.
13. Allen KB, Andrews G. Pediatric wandering spleen – the case for splenopexy: review of 35 reported cases in the literature. J Pediatr Surg 1989; 24:432-5.
14. Seashore JH, McIntosh S. Elective splenopexy for wandering spleen. J Pediatr Surg 1990; 25:270-2.
15. Stringel G, Soucy P, Mercer S. Torsion of the wandering spleen: Splenectomy or splenopexy. J Pediatr Surg 1982; 17:373-5.
16. Caracciolo F, Bonatti PL, Castrucci G, Fusco A, Citterio F. Wandering spleen: treatment with colonic displacement. J R Coll Surg Edinb 1986; 31:242-4.
17. Dawson JH, Roberts NG. Management of the wandering spleen. Aust NZ J Surg 1994; 64:441-4.
18. Desai DC, Hebra A, Davidoff AM, Schnaufer L. Wandering spleen: a challenging diagnosis. South Med J 1997; 90:439-43.
19. Moll S, Igelhart D, Ortel TL. Thrombocytopenia in association with a wandering spleen. Am J Hematol 1996; 53:259-63.