Basrah Journal Of Surgery

Case Report
Bas J Surg, September, 16, 2010

SPLENIC TORSION, AN UNUSUAL CAUSE OF ACUTE ABDOMEN

Hashim S Alkhayat & Jasim D Saud
Department of Surgery, Basrah General Hospital, Basrah, IRAQ

Abstract
Wandering spleen is a clinical rarity, torsion of a wandering spleen is a rare cause of an acute abdomen. The etiology of wandering spleen is not precisely understood and this clinical condition presents a diagnostic challenge for clinicians. Available treatment options include splenectomy. This is the first reported cases of such an anomaly in our hospital.

Introduction

There is a wide spectrum of congenital anomalies of spleen, ranging from the common splenic lobulation and accessory spleen to rare conditions such as a wandering spleen and polysplenia[1,2]. The majority of these anatomical variants have no clinical significance. On the other hand, a wandering spleen may rotate around its pedicle and present as an acute abdomen due to splenic infarction[3,4]. It is usually seen in the age range of 20-40 years and is rare in children[5]. Absence or laxity of the splenic suspensory ligaments results in increased splenic mobility thereby allowing it to rotate axially on its long pedicle[6]. Torsion may vary from ½ to 6 complete turns around its axis depending upon the weight of spleen, length of pedicle and degree of ligamentous laxity[7]. Here, we describe two cases of wandering spleen complicated by splenic infarction. Early recognition of the condition and timely surgical intervention are highlighted to prevent complications.

Case No.1

A 29-year old child bearing female patient presented acutely with a one week history of worsening lower abdominal pain associated with nausea and vomiting. The pain was started 3 months ago when she was in early third trimester as a vague lower abdominal pain. Examination revealed tachycardia, fluctuating pyrexia and a tender supra-pubic mass, which appeared to be arising from the pelvis. Abdominal ultra-sonography demonstrated a 27 x 14 cm mass arising from the pelvis, in addition to a trace of free fluid in the pelvis. Contrast-enhanced tomography de-monstrating splenic enlargement with replacement of splenic parenchyma by hematoma. Laparotomy confirmed an infarcted spleen secondary to torsion of a long splenic pedicle (Figure 1). The spleen was located in the left iliac fossa wrapped by omentum with no ligamentous attachments (wandering spleen).

Splenectomy was performed. Histo-pathology examination confirmed an infarcted spleen. The patient made an uneventful recovery and was asymptomatic at two months follow up.

Figure 1: Case No. 1 at laparotomy

Case No. 2

A previously healthy, 9 year old girl presented with a history of abdominal pain in left iliac fossa for 3 days. Pain was sudden in onset associated with episodes of vomiting and mild abdominal distension. Clinical examination revealed a tender, smooth, mobile lump, 20 x 10 cm, in the left flank. Ultrasonography diagnosed this lump to be a mobile mass in left iliac fossa. Urgent laparotomy was undertaken. An enlarged infarcted spleen approximately 22 x 10 cm, it was found completely devoid of its ligamentous attachments (fig.2), it was situated anterior to abdominal organs & twisted on its pedicle by 360 degrees. After derotation, viability of spleen appeared compromised. Splenectomy was done. Postoperatively the child was vaccinated against pneumococcus and H. influenza along with long acting Penicillins. There was no postoperative complications and the patient was discharged in satisfactory condition.

Figure 2: Case No. 2 at laparotomy.

Discussion

The wandering spleen is a rare clinical entity with an incidence of less than 1 in 2000 and accounts for only 2 per 1000 splenectomies[1,3]. It is commonly reported in females of childbearing age and rarely seen in children. A male predominance has been found in children less than 10 years with Male: Female ratio of 6:1 while a female predominance is seen in adults[3,4]. the spleen is normally covered by peritoneum and is fixed by the lieno-renal and gastro-splenic ligaments. It therefore has very little mobility. Laxity of the peritoneal attachments of the spleen results in splenic hyper mobility, known as wandering spleen. Both congenital and acquired causes have been proposed to explain this. Incomplete fusion of the dorsal mesogastrium to the posterior abdominal wall during the second month of embryonic development is thought to result in an unusually long splenic pedicle leading to a wandering spleen[1,2]. An acquired mechanism is thought to exist in multiparous women secondary to hormonal changes during pregnancy and associated abdominal laxity. Other factors thought to cause laxity of the supporting structures include splenomegaly, trauma and gastric distension[3,4]. However, the precise etiology of wandering spleen is not completely understood. Wandering spleen may remain asymptomatic therefore, the true incidence is unknown or may present clinically in the form of a freely mobile lump in abdomen, acute pancreatitis or intestinal obstruction. Sudden torsion may result in acute abdomen with life threatening complications like splenic infarction, gangrene, splenic abscess or rupture with a mortality rate as high as 50%[8-10]. Episodes of acute torsion result in intermittent abdominal pain which may cause splenic vein thrombosis leading to left sided portal hypertension, gastric hemorrhage or congestive splenomegaly. Internal herniation of the wandering spleen has also been reported to cause recurrent abdominal pain[8,9]. Multiple imaging techniques have been proposed to diagnose a torted wandering spleen. These include plain radiographs, barium studies, scintigraphy, ultrasound and CT scan[11,12]. Plain radiographs and barium studies are usually non-specific. Ultrasound scan may demonstrate the ectopic position as well as a variable echo pattern if infarcted[12]. Contrast enhanced CT is the preferred study for diagnosing a wandering spleen when torsion is suspected clinically or on imaging studies. It is the whorled appearance of the splenic vessels and surrounding fat that is considered pathognomonic of the condition[7,11]. Initially, splenectomy was the treatment of choice. Currently, owing to overwhelming post-splenectomy sepsis and high mortality, splenectomy is indicated only if the blood supply to the spleen cannot be restored on detorsion[13]. Aiming to preserve splenic function, various techniques of splenopexy have been used. These include pexing the spleen by its capsule to the left upper quadrant laparoscopically, forming a post-erolateral extraperitoneal pocket at the level of 12th rib, mobilizing the splenic flexure of colon and then fixing the greater curvature of stomach to anterior abdominal wall and the use of polyglycolic mesh[13,14]. Splenopexy is followed by a high relapse rate. Auto transplantation of viable splenic tissue in greater omentum or retroperitoneum

is another option if the spleen is viable[14].

References

1. Moore KL, Persaud TVN. The digestive system. In: Moore KL, Persaud TVN, editors. In: The developing human, clinically oriented embryology (6th edn). Philadelphia, PA: WB Saunders Co, 1998: 271–302.
2. Larsen WJ. Development of the gastrointestinal tract. In: Larsen WJ, editor. Human embryology (2nd edn). New York: Churchill Livingstone, 1997: 229–59.
3. Sheflin JR, Lee CM, Kretchmar KA. Torsion of wandering spleen and distal pancreas. AJR Am J Roentgenol. 1984 Jan; 142(1): 100-1.
4. Sodhi KS, Saggar K, Sood BP, et al. Torsion of a wandering spleen: acute abdominal presentation. J Emerg Med. 2003 Aug; 25(2): 133-7.
5. Rodkey ML, Macknin ML. Paediatric wandering spleen: Case report and review of literature. Clin Pediatr (Phila) 1992;31:289-94.
6. Sty JR, Conway JJ. The spleen: development and functional evaluation. Semin Nucl Med 1985;15276–98.
7. Swischuk LE, Williams JB, John SD. Torsion of wandering spleen: the whorled appearance of the splenic pedicle on CT. Pediatr Radiol 1993;23:476–7.
8. Andley M, Basu S, Chibber P, Ravi B, Kumar A. Internal herniation of wandering spleen - a rare cause of recurrent abdominal pain. Int Surg 2000;85:322-4.
9. Moran JC, Shah U, Singer JA. Spontaneous rupture of a wandering spleen: Case report and literature review. Curr Surg 2003;60:310-2.
10. Arda K, Kizilkanat K, Celik M, Turkalp E. Intermittent torsion of a wandering spleen in a child: The role of MRI in diagnosis. JBR-BTR 2004;87:70-2.
11. 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.
12. Shimizu M, Seto H, Kageyama M, Wu YW, Nagayoshi T, Kamisaki Y, et al. The value of combined 99mTc-Sn-colloid and 99m Tc-RBC scintigraphy in the evaluation of a wandering spleen. Ann Nucl Med 1995;9:145-7.
13. Stringel G, Soucy P, Mercer S. Torsion of the wandering spleen: Splenectomy or splenopexy. J Pediatr Surg 1982;17:373-5.
14. Cohen MS, Soper NJ, Underwood RA, Quasebarth M, Brunt LM. Laparoscopic splenopexy for wandering (pelvic) spleen. Surg Laparosc Endosc 1998;8:286-90.