Case Report

Wandering spleen post trauma abdomen pain: Case Report and Review of Literature

Salem Asselhab, Malik Alkhanfas, Hanan Arrgebe.
Department of surgery, National Cancer Institute, Subratha, Libya.

Abstract:

Wandering spleen is a rare entity, with a reported incidence less than 0.2% and accounts for only 2 per 1000 splenectomies [1]. Both congenital and acquired causes have been proposed to explain the hypermobility of the spleen. Some conditions including an enlargement or absence of a kidney, infectious mononucleosis, splenomegaly, Hodgkin's disease and Gaucher's disease have been incriminated. There are two peak ages of onset: childhood especially below one year, followed by the third decade of life, and it is more frequently seen in females of reproductive age. The most common presentation in children is acute abdominal pain. Wandering spleen may also present with no specific symptoms such as occasional nausea, emesis or mild abdominal pain and sometimes it may be completely asymptomatic. Traumatic splenic rupture has been reported [2-3] the condition is distinct from ectopia (development of splenic tissue in unusual sites) in that a normally situated spleen is absent [4]. We present the case of a 37-year-old male who presented with abdomen pain post blunt trauma and mass per abdomen. CT-scan showed a pelvic spleen with splenomegaly. A total splenectomy was performed.

Keywords:
Spleen disease, splenectomy, wandering spleen, splenopexy.

Introduction:

The spleen is typically located in the left upper quadrant of the abdomen where it is held in position by various suspensory ligaments. Wandering spleen is a rare clinical entity characterized by splenic hypermobility that results from elongation or maldevelopment of the spleen's suspensory ligaments. It can present as an asymptomatic, palpable abdominal mass or with acute, chronic, or intermittent symptoms due to torsion of the wandering spleen. Due to rarity and various modes of presentation, it has been a diagnostic and therapeutic challenge for the clinician[5].

Case Report:

A 38 years old male presented to our department with chronic abdomen pain. Pain started about 1 month prior to admission when the patient was admitted to A&E due to blunt abdomen trauma post motor vehicle accident. FAST exam revealed an absent spleen at its normal position with presence of large homogenous mass at pelvis. Was discharged. However the pain continued and in mild intensity enticing the patient to pursue further evaluation.

On examination, patient was in good health, afebrile and with normal vital signs. Abdomen examination elicited a soft lax abdomen with slight protrusion of the left lower quadrant, without tenderness, palpation revealed a mid-abdomen mass that is painless, tenderless and freely mobile.

(CT) scan showed a hugely enlarged and pelvic located spleen that measures 16.5×14.2×6 cm at the level of L4-5 lumbar vertebrae, compressing the urinary bladder and other pelvic organs **(Figure 1,2)**,

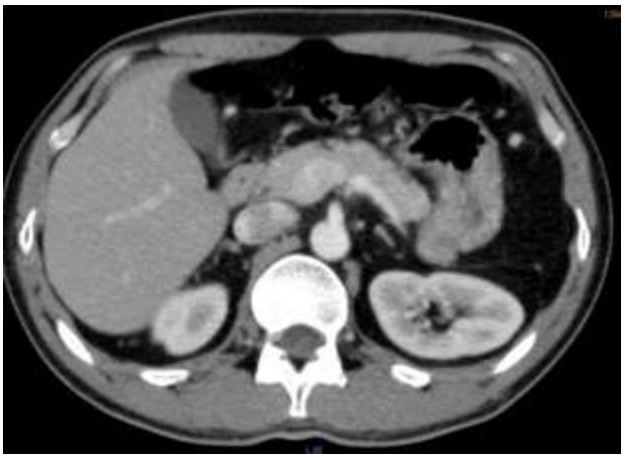

Figure 1

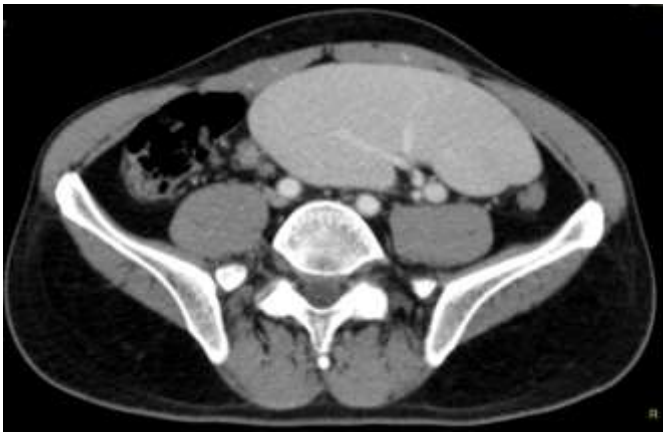

Figure 2

(CT) scan section showing spleen at the level of L4-5 lumbar vertebrae

the splenic vessels originate from the normal anatomical site and then at the tail of the pancreas they course down on the left side crossing the left iliac vessels. The mesospleen is with innumerable small splenuoles distributed from the left hypochondrial region (the normal site of the spleen and down along the course of splenic vessels).

The patient was scheduled for an exploratory laparotomy and preoperative vaccinations

against pneumococcal disease, meningococcal disease, and hemophilus influenza were given.

The patient underwent exploratory through midline laparotomy **(Figure3)**.

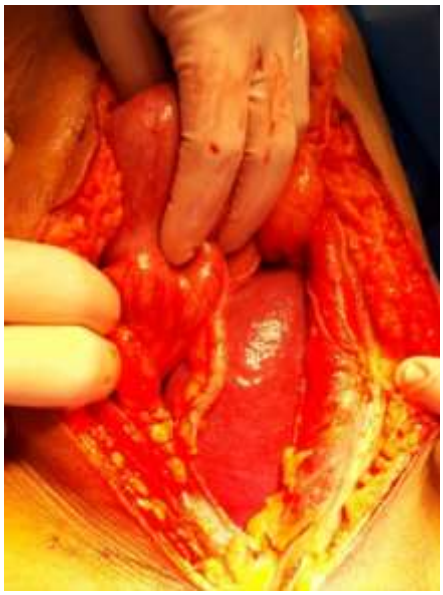

Figure3
midline incision showing spleen, cecum and appendix

Exploration revealed a mass weighing approximately 1032 g, freely mobile without adhesions. The mass was identified as the spleen by visualizing its gross anatomy and the absence of the spleen from its normal position. With absence of all splenic ligamentous attachments and short gastric vessels with bigger and congested spleen in the pelvis **(Figure 4)**.

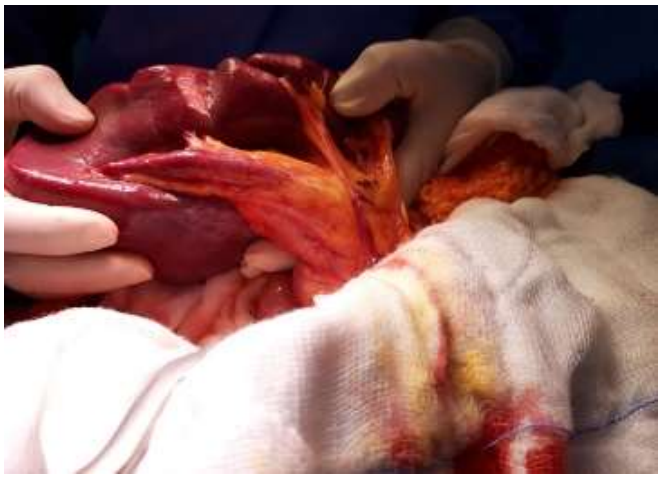

Figure 4
Delivered spleen with apparent congestion

A total splenectomy was performed. Histopathological examination showed a normal splenic tissue; Pancreatic tissue with marked atrophy of the acini, fibrosis and chronic inflammatory changes. The patient's post-operative recovery was uneventful, and the patient was discharged on the 3rd post-operative day.

Discussion:

The wandering spleen is characterized by excessive mobility and migration of the spleen from its normal position in the left hypochondrium due to lack of fixation to its adjacent structures and the abnormally long splenic pedicle. The normal spleen is fixed in its position by gastrosplenic and lienorenal ligaments. Congenitally, wandering spleen is the result of failure of development of these ligaments, which results in long splenic mesentery. The spleen develops in the dorsal mesogastrium, and through rotation of the gut it moves posterolaterally to the left. Fusion of the dorsal mesogastrium to the posterior abdominal wall and the left kidney forms the lienorenal ligament, which contains the tail of the pancreas and the splenic vascular supply. Failure of fusion permits the spleen to move freely in the abdomen and gravitational traction produces an abnormally long pedicle [10-11]. Some congenital anomalies, such as hypermobile colon and prune belly syndrome, are mentioned in the literature associated with this condition [10]. This type of anomaly could be acquired especially in active reproductive women, it's hypothesized that parity maybe a contributing factor to the stretch and lengthening and the subsequent laxity of the abdominal wall [5, 12]. The clinical presentation of a wandering spleen is variable. Most patient remain asymptomatic and the condition is discovered incidentally as with our patient, where a trauma resulted in pain lead the patient to further investigate. Both the congenital and acquired wandering spleen and its long pedicle, predisposes to torsion which might lead to partial or complete infarction [19], which is diagnosed in about 0.2-0.3% of patients who are elected for splenectomy [20].

The first detailed description of a wandering spleen in a patient coming to necropsy is generally credited to Van Horne (1667). The condition has been described in patients aged from 3 months to 82 years [6-7]. The incidence is difficult to establish but in three large series of patients undergoing splenectomy [8-9] only 6 cases were described (0.15%). In this day in age, the only treatment available for patients with wandering spleen is operative [14], splenectomy is chosen for patients with infarcted spleen or patients with splenomegaly as in our patient where the weight of the spleen is more than 1 kilogram, other options including splenopexy are preferred especially in young patients and patients with normal spleen and those whom are at risk for overwhelming post-splenectomy sepsis [13]. Different splenopexy techniques were described in the literature, where suturing of the spleen to its bed via its hilum [11], or creating an extra peritoneal pouch [17], or wrapping the spleen with synthetic absorbable mesh to snood it to the abdominal wall [18]. The laparoscopic approach is of preference due to its superiority regarding pain, use of narcotics and the consequent post-operative ileus, also the better cosmesis, the less hospital stay and the earlier ambulation with sooner return to daily normal work [15-16]

Conclusion:

In our case, splenic preservation was not possible because the size and location of the spleen. The decision to perform a laparotomy was made because of technical issues and the operating surgeons has less experience in the surgery by laparoscopic approach.

References:

1. Fujiwara T, Takehara Y, Isoda H. Torsion of the wandering spleen: CT and angiographic appearance. *J Comput Assist Tomogr* 1995 Jan-Feb;19(1):84–6.
2. Horwitz JR, Black CT. Traumatic rupture of a wandering spleen in a child: case report and literature review. *J Trauma* 1996 Aug;41(2):348–50.
3. R SAOUAB and R DAFIRI. Post-traumatic acute abdominal pain. *The British Journal of Radiology*, 83 (2010), 804–806.
4. T M Lane, L M South. Management of a wandering spleen. *J R Soc Med* 1999;92:84-85.
5. Mohammad Shazib Faridi, Ashish Kumar, Lubna Inam, Razi Shahid. Wandering Spleen- A diagnostic Challenge: Case Report and Review of Literature. *Malays J Med Sci*. Nov-Dec 2014; 21(6): 57-60.
6. Abell I. Wandering spleen with torsion of the pedicle. *Ann Surg* 1933;83:722.
7. Carswell JW. Wandering spleen: 11 cases from Uganda. *Br J Surg* 1974;61 :495.
8. Whipple HO. The medical-surgical splenopathies. *Bull NY Acad Med* 1939; 15:174-6.
9. Pugh HL. Collective review: splenectomy. *Int Abstr Surg* 1946;83: 209-24.
10. Satydas T, Nasir N, Bradpiece HA. Wandering spleen: case report and literature review. *J R Coll of Surg Edin*. 2002;47:512 514.
11. Caracciolo F, Bonatti PL, Castrucci G, Fusco A, Citterio F. Wandering spleen: treatment with colonic displacement. *J R Coll of Surg Edin.* 1986;31:242– 244.
12. Stringle G, Soucy P, Mercer S. Torsion of the wandering spleen: splenectomy or splenopexy. *J Pediatr Surg*. 1982;17(4):373-375
13. Soleimani M, Mehrabi A, Kashfi A, Hamidreza F, Buchler MW, Kraus TW. Surgical treatment of patient with wandering spleen: report of six cases with a review of the literature. *Surg Today.* 2007;37:261-269
14. Dawson JHM, Roberts NG. Management of the wandering spleen. *Aust N Z J Surg*. 1994;64(6):441-444.
15. Fiquet-Francois C, Belouadah M, Ludot H, Defauw B, Mcheik JN, Bonnet JP. Wandering spleen in children: multicenter retrospective study. *J Ped Surg*.2010;45(7):1519-1524.
16. Palanivelu C, Rangarajan M, Senthilkumar R, Parthasarathi R, Kavalakat AJ. Laparoscopic Mesh Splenopexy (Sandwich Technique) for Wandering Spleen. *JSLS*. 2007;11(2):246-251.
17. Seashore JH, McIntoch S. Elective splenopexy for wandering spleen. *J Ped Surg*. 1990;25(2):270-272.
18. Allen KB, Andrews G. Pediatric wandering spleen-the case for splenopexy: review of 35 reported cases. *J Ped Surg*. 1989;24(5):432-435.
19. El Bouddouti H, Lamrani J, Louchi A, El Yousfi M. Torsion of a Wandering Spleen. *Saudi J Gastroenterol*. 2010 Oct-Dec;16(4):288-291.

20. Kapan M, Gumus M, Onder A, Gumus H. A wandering spleen presenting as an acute abdomen Case report. *J Emerg Med*. 2010 Sep 18.