Case Report

Wandering Spleen- A diagnostic Challenge: Case Report and Review of Literature

Mohammad Shazib Faridi[1], Ashish Kumar[1], Lubna Inam[2], Razi Shahid[3]

Submitted: 15 Jun 2014
Accepted: 17 Dec 2014

[1] *Department of Surgery, University College of Medical Sciences and Guru Tegh Bahadur Hospital, Delhi 110095, India*

[2] *Department of Obstetrics and Gynaecology, Era's Lucknow Medical College and Hospital, Lucknow, 226 003, Uttar Pradesh, India*

[3] *Era's Lucknow Medical College and Hospital, Lucknow, 226 003, Uttar Pradesh, India*

Abstract

Wandering spleen or hypermobile spleen results from the elongation or maldevelopment of the spleen's suspensory ligaments. It is a rare clinical entity that mainly affects children. Among adults, it is most commonly found in females of active reproductive age. It may present as an asymptomatic mass in the abdomen, or it may present with intermittent abdominal discomfort because of torsion and spontaneous detorsion of the spleen. We present the case of a 37-year-old female who had features of intestinal obstruction with mass per abdomen. Exploratory laparotomy showed an infarcted spleen. A total splenectomy was performed.

Keywords: *spleen, wandering spleen, floating spleen, splenectomy, spleen disease*

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 characterised 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.

Case Report

A 37-year-old female presented to the emergency department with complaints of pain, distension of the abdomen for two days, and vomiting and constipation for one day. Every 5–6 months for four years she complained of similar episodes. However, these episodes were of a mild intensity, and every time these symptoms were present she sought treatment from a local practitioner and obtained relief (no documentation of this treatment was available). Her parity was five with four live issues, of which the youngest baby was four months old. All deliveries were conducted by spontaneous normal vaginal route. There was no past history of any surgery.

On general examination, patient was afebrile (temperature of 99 °F) with mild pallor, pulse rate of 80 bpm, and blood pressure of 110/70 mmHg. An abdominal examination revealed mild abdominal distension with mild diffuse abdominal tenderness and guarding. A tender lump of size 13 × 9 cm with smooth surface, well defined margins, and firm consistency with visible peristalsis was present over the periumbilical area. Digital rectal examination was normal. Laboratory parameters showed hemoglobin 9.5 gm/dL and white blood cells 10,100/mm^3. The platelet count was normal.

Ultrasonography (USG) showed a solid mass and the absence of the spleen from its normal location. Due to financial constraints, a computed tomography (CT) scan of the abdomen could not be performed, and the patient was scheduled for an exploratory laparotomy on the basis of the USG report.

During the laparotomy, a mass measuring 12 × 9 × 4 cm and weighing approximately 350 g was found. The bowels were adhered to this mass

(Figure 1). The mass was identified as the spleen by visualising its notch (Figure 2) and the absence of the spleen from its normal position. All splenic ligamentous attachments were completely absent. The spleen was found to be partly infarcted (Figure 2) due to twisting of the spleen around its long pedicle (Figure 3). A total splenectomy was performed. Histopathological examination showed multiple infarcted areas.

The patient's post-operative recovery was uneventful, and the patient was discharged on the 5th post-operative day. Vaccinations against pneumococcal disease, meningococcal disease, and hemophilus influenza were given. The patient had uneventful follow-ups for four months.

Discussion

Wandering spleen is characterised by excessive mobility and migration of the spleen from its normal position in the left hypochondrium due to lack of fixation and unduly long splenic pedicle. The spleen is normally fixed in this 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 artery. Failure of fusion produces an abnormally long pedicle (1,2). Some congenital anomalies, such as hypermobile colon and prune belly syndrome, are associated with this disease (1). The acquired anomalies usually occur in active reproductive women, which suggests that pregnancy may contribute to ligamentous lengthening due to laxity of the abdominal wall and hormonal changes. This is especially common in multiparous women (3) such as our patient, who had delivered a child four months prior to presentation. Both congenital and acquired conditions result in a long pedicle, which is predisposed to torsion. The splenic vessels course within the pedicle; therefore, torsion of the pedicle results in a partial or complete infarct of the spleen (4). Torsion of a wandering spleen is diagnosed in about 0.2–0.3% of patients who require splenectomy (5). Weight of > 500 g is also responsible for torsion of the spleen (1).

The clinical presentation of wandering spleen is variable; it is either asymptomatic or noted incidentally during physical and radiographic examination or presents as acute abdominal abdomen due to torsion with subsequent infarction. Our patient also had complaints of acute abdominal pain. The most common presentation is a mass with non-specific abdominal symptoms or intermittent abdominal discomfort due to congestion resulting from torsion and spontaneous detorsion (6). Our

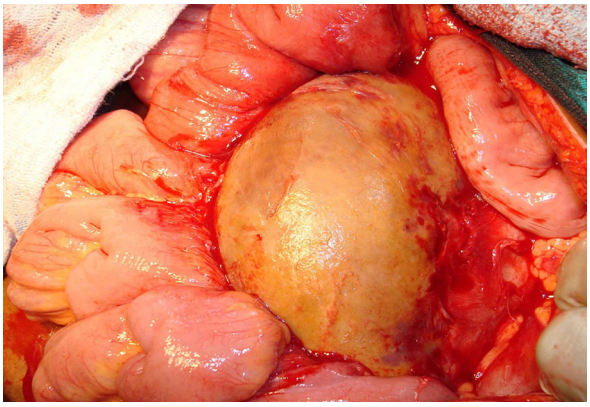

Figure 1: Bowel adhered to spleen.

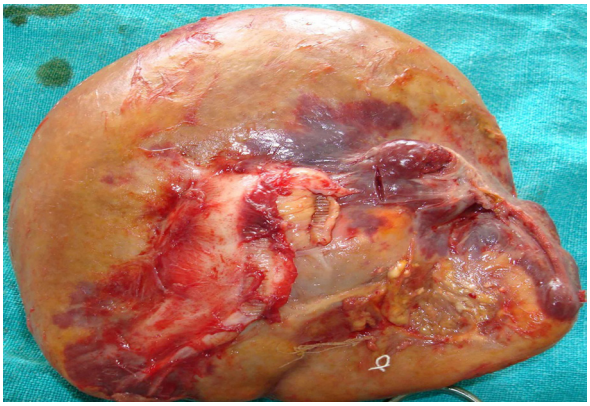

Figure 2: Multiple infarcted areas in spleen.

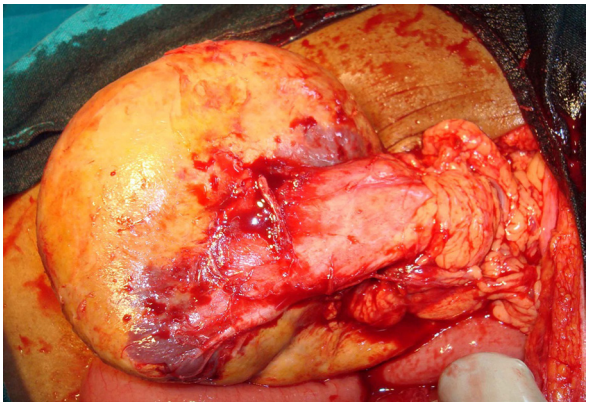

Figure 3: Long and twisted splenic pedicle.

patient also presented with similar recurrent episodes over a period of four years, but these episodes were of a mild intensity.

Splenic torsion may be acute or chronic. Acute torsion may mimic peritonitis, acute appendicitis, twisted ovarian cysts, or bowel obstruction (7). Chronic torsion may present as an abdominal mass, which may be located in any quadrant (6).

Multiple imaging modalities can be used to diagnose this condition. USG findings of a solid mobile mass, absence of the spleen from its normal location, and Doppler USG of the splenic vessels can be used to evaluate flow.

Duplex USG is more specific and has gained popularity, but it is operator dependent, and bowel gases can obscure the findings (6,8). A CT scan remains the investigation of choice and can demonstrate the organ's circulation and the viability of splenic parenchyma (9). Due to financial constraints, a CT scan could not be performed on our patient. The typical CT findings for wandering spleen are (1) absence of the spleen anterior to the left kidney and posterior to the stomach, (2) a lower abdominal or pelvic mass with homogenous or heterogenous splenic parenchyma, and an attenuation value less than that of normal splenic tissue. Multislice spiral CT is helpful in diagnosing the condition early, before the spleen progresses to infarction (10).

Today, the only recommended treatment for wandering spleen is operative (7). Splenectomy is indicated for infracted spleen and sometimes for huge splenomegaly precluding splenopexy. For all other cases, splenopexy is the treatment of choice (6). Splenic preservation is highly recommended for young patients—those under one year of age up to those in their thirties—who are at particular risk for overwhelming post-splenectomy sepsis (11).

The various techniques of splenopexy have been described in the literature:
(a) splenopexy in an extra peritoneal pouch (12); (b) disconnecting the gastrocolic ligament, placing the spleen at its anatomical position, and then replacing the stomach and colon; suturing the greater curvature of the stomach to the anterior abdominal wall (2); (c) suturing the splenic hilum to the splenic bed (3); and (d) splenic snood fixation with absorbable mesh wrap (14).

Currently, splenic surgery by laparoscopic approach is the preferred technique and is used extensively (15) because it is less painful and allows for better cosmesis, early ambulation, overall less morbidity, and a faster return to work (16,17). The methods include creating a pouch in the omentum, stomach, or colon and the use of absorbable mesh to fix the spleen in its normal anatomical location.

Conclusion

In our case, splenic preservation was not possible because the spleen was infarcted. The decision to perform an emergency laparotomy was made because the operating surgeon has less experience in the surgery by laparoscopic approach.

Acknowledgement

None.

Conflict of Interest

None.

Funds

None.

Authors' Contributions

Conception and design, provision of study materials or patient: AK
Analysis and interpretation of the data, critical revision of the article for the important intellectual content, final approval of the article: MSF
Drafting of the article, administrative, technical or logistic support: LI
Collection and assembly of data: RS

Correspondence

Dr M S Faridi
MBBS, MS (Era's Lucknow Medical College)
Department of Surgery
University College of Medical Sciences and Guru Tegh Bahadur Hospital
Delhi 110095
India
Tel: +91-9868399529
Fax: +011-22582105
Email: drshazibfaridi@gmail.com

Reference

1. Satydas T, Nasir N, Bradpiece HA. Wandering spleen: case report and literature review. *J R Coll of Surg Edin*. 2002;**47**:512–514.

2. 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.

3. Stringel G, Soucy P, Mercer S. Torsion of the wandering spleen: splenectomy or splenopexy. *J Pediatr Surg*. 1982;**17(4)**:373–375 doi: 10.1016/S0022-3468(82)80492-2.

4. El Bouhaddouti H, Lamrani J, Louchi A, El Yousfi M. Torsion of a Wandering Spleen. *Saudi J Gastroenterol*. 2010;**16(4)**:288-291 doi: 10.4103/1319-3767.70618.

5. Kapan M, Gumus M, Onder A, Gumus H. A wandering spleen presenting as an acute abdomen: Case report. *J Emerg Med*. 2012;**43(5)**:e303-e305. doi: 10.1016/j.jemermed.2010.06.029.

6. Buehner M, Baker MS. The wandering spleen. Collective review. *Surg Gyne Obst*. 1992;**175**:373–387.

7. Dawson JHM, Roberts NG. Management of the wandering spleen. *Aust N Z J Surg*. 1994;**64(6)**:441–444. doi: 10.1111/j.1445-2197.1994.tb02249.x.

8. Nemcek AA, Miller FH, Fitzgerald SW. Acute torsion of a wandering spleen: diagnosis by CT and Duplex Doppler and color flow sonography. *AJR*. 1991;**157(2)**:307–309. doi: 10.2214/ajr.157.2.1853811

9. Gayer G. Zissin R, apter S, Atar E. Portnoy O. Itzchak Y. CT findings in congenital anomalies of the spleen. *Br J Radiol*. 2001;**74(884)**:767–772. doi: 10.1259/bjr.74.884.740767.

10. Taori K, Ghange N, Prakash A. Wandering spleen with torsion of vascular pedicle: early diagnosis with multiplaner reformation technique of multislice spiral CT. *Abdom Imaging*. 2004;**29(4)**:479–481. doi: 10.1007/s00261-003- 0142-7.

11. 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. doi: 10.1007/s00595-006-3389-0.

12. Seashore JH, McIntosh S. Elective splenopexy for wandering spleen. *J Ped Surg*. 1990;**25(2)**:270-272. doi: 10.1016/0022-3468(90)90438-F.

13. Stringel G, Soucy P, Mercer S. Torsion of the wandering spleen: splenectomy or splenopexy. *J Ped Surg*. 1982;**17(4)**:373–375. doi: 10.1016/S0022-3468(82)80492-2.

14. Allen KB, Andrews G. Pediatric wandering spleen — the case for splenopexy: review of 35 reported cases. *J Ped Surg*. 1989;**24(5)**:432-435. doi: 10.1016/S0022- 3468(89)80395-1.

15. Kinori I, Rifkin MD. A truly wandering spleen. *J Ultrasound Med*. 1988;**7(2)**:101– 115.

16. 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. doi: 10.1016/j.jpedsurg.2010.03.003.

17. Palanivelu C, Rangarajan M, Senthilkumar R, Parthasarathi R, Kavalakat AJ. Laparoscopic Mesh Splenoplexy (Sandwich Technique) for Wandering Spleen. *JSLS*. 2007;**11(2)**:246–251.