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A CASE REPORT OF A DIAGNOSTIC DILEMMA IN RECURRENT ABDOMINAL PAIN

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ABSTRACT

Wandering spleen is an uncommon clinical condition characterized by the abnormal localization of the spleen within the abdominal or pelvic cavity. This is attributed to the hyperlaxity, underdevelopment or even absence of splenic suspensory ligaments.[1] The mobile spleen is attached only by an elongated vascular pedicle, allowing its free migration to any part of the abdomen or pelvis.[1] In addition, this condition has an unusual association with gastric, sigmoid and pancreatic volvulus, as described in the literature.[2,4,6] As a rare clinical entity with a variety of clinical presentations, wandering spleen requires a high index of clinical suspicion and often requires timely investigation and intervention.[1] Here we present a case of 32-year- old female with recurrent emergency visits for abdominal pain.

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INTRODUCTION

Wandering spleen has been more often described in the paediatric population (Faridi, 2014). Among adults, it is most commonly found in females of reproductive age (Faridi, 2014 and Ahmadi, Hamid, 2016). Case presentation ranges from an asymptomatic, palpable abdominal mass to an acute abdominal emergency (Faridi, 2014 and Ahmadi, Hamid, 2016). Other presentations can also include chronic, or intermittent symptoms of abdominal pain (Faridi, 2014). Due to the rarity and various modes of presentation, wandering spleen remains a diagnostic and therapeutic challenge for clinicians (Faridi, 2014). CT-scan, MRI, and Doppler scanning are useful imaging modalities used to assess vascularity and aids in reaching a final diagnosis (Faridi, 2014; Ahmadi, 2016 and Hosseini, 2018).

Case report

A 32-year-old woman with a past medical history of psoriasis and a past surgical history of two lower caesarean sections, the latest being two years prior to admission, had multiple previous ER admissions for complaints of abdominal pain initially suspected as renal colic.

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There was no imaging evidence of stones/hydronephrosis**.** In all occasions, the patient was given symptomatic treatment and sent home. She again presented to the emergency department with epigastric and LUQ pain along with vomiting for 2 days. Vital signs were within normal limits and physical examination was significant for LUQ tenderness with no guarding or rigidity. Initial laboratory investigations were unremarkable. An US of the abdomen revealed minimal free fluid in the right iliac fossa and in the subhepatic region as well as mild splenomegaly. CT scan of abdomen was subsequently performed. Findings were suggestive of thrombosis of the splenic vein at the splenic hilum with poor enhancement of the spleen. Imaging also revealed a high position of the cecum and ileocecal junction located in the RUQ. There was focal dilation of splenic flexure with mild proximal and distal narrowing of colonic segment and no features suggestive of obstructive changes. In view of the described findings, the patient was started on low molecular weight heparin anticoagulation (LMWH). Extensive autoimmune workup was performed due to her medical history of psoriasis, all of which was unremarkable. The patient was diagnosed as a case of incidental isolated splenic vein thrombosis. As her clinical condition continued to improve, she was discharged home on Warfarin and LMWH anticoagulation therapy for 6 months. During her follow up appointments, the patient continued to report recurrent bouts of

vague abdominal pain of about 3-4 times a week. Upon the completion of anticoagulation therapy, a follow up CT scan performed 8 months after the initial scan revealed normal enhancement of the spleen and no evidence of filling defect of splenic artery, splenic vein, or the portal circulation to suggest thrombosis. However, the splenic flexure of the colon was abnormally distended with gas and seemed to be herniated through the gastrosplenic ligament into the left upper quadrant of the abdomen, appearing as a closed loop incomplete obstruction. It is worth noting that in this examination, the cecum with the ileocecal junction were in position in the right lower quadrant. A barium examination of the colon was requested for further evaluation. It showed a dilated tortuous splenic flexure with proximal mild narrowing. There was stasis of contrast and no further passage in the transverse colon and the possibility of an internal hernia could not be ruled out.

Consequently, the patient underwent a CT colonography 7 months after the second CT scan due to intermittent abdominal pain with examination done in supine and prone positions as per protocol. In the prone position, the study demonstrated a spleen displaced medially and anteriorly with a dilated segment of splenic flexure displaced posteriorly. In addition, pancreatic and proximal descending colon displacement to the right side were noted. Oral contrast was seen in the rectum, therefore no obstruction was present on the scan. Due to poor preparation of the colon, lots of residual oral contrast and faecal loading was noted. Correlating with all previous images of an abnormally displaced spleen in the prone position as well a moveable left colon with frequent mispositioning and relocations, the findings were in keeping with wandering spleen. In this case, as the possibility of volvulus occurrence was highly probable, the patient was given an urgent referral to the general surgery clinic.

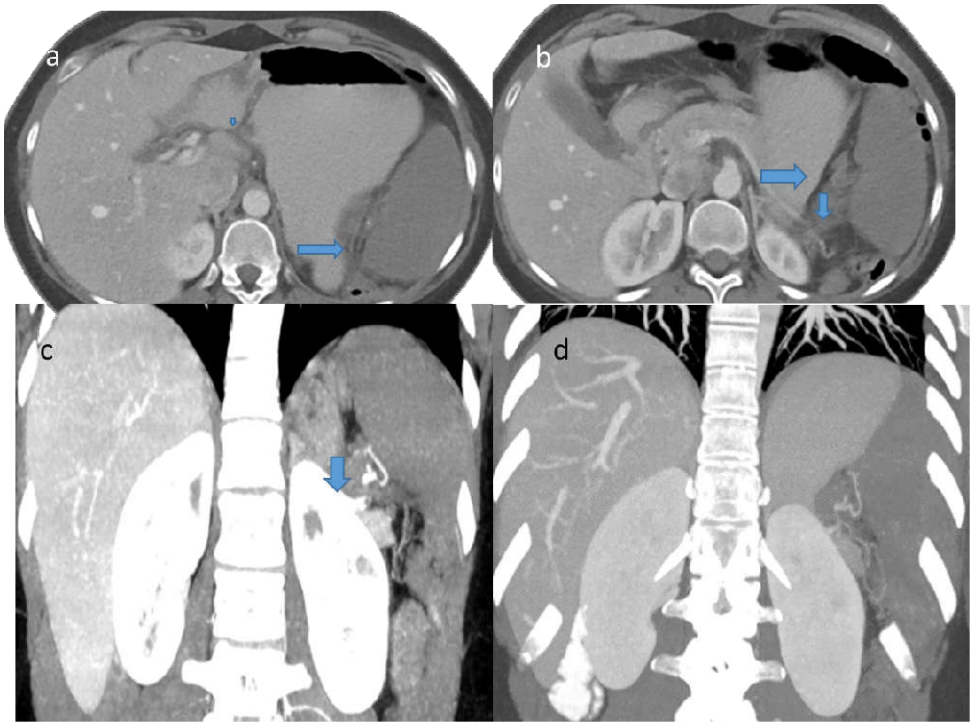

Figure 1: a & b (Portovenous phase), c& d(3-d coronal reformation)

First CT scan of the abdomen and pelvis with oral and IV contrast
There is ill-defined soft tissue density with fat stranding and fluid in the splenic hilum (Transverse arrow in image a &b).
Filling defect in splenic vein near the splenic hilum (vertical arrow in image c) suggestive of thrombus. No splenic enhancement in all images.
Twisted splenic artery near hilum with distal narrowing. Appears as filling defect (vertical arrow in image c & d).

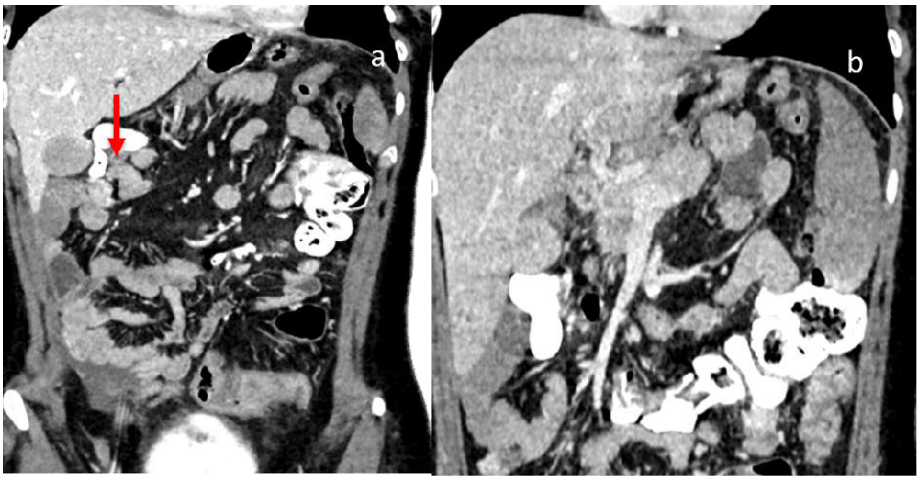

Figure 2: First CT scan of the abdomen (coronal reformation)

Malposition of the colon with the caecum located in the right upper quadrant. Ileocecal junction as identified by the arrow in image a.

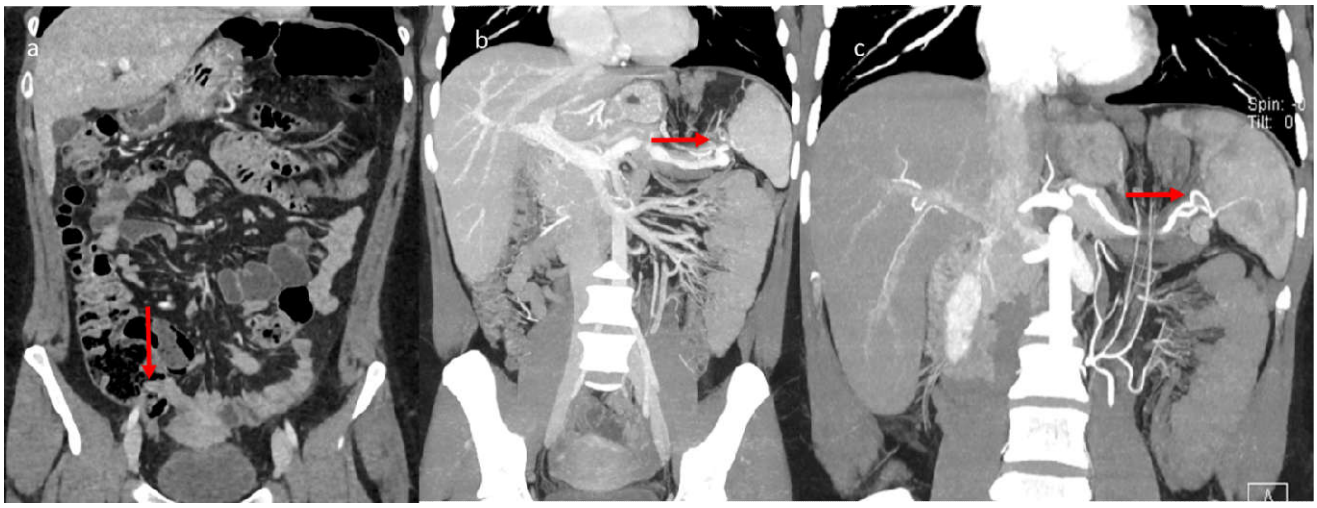

Figure 3. (a= coronal reformation. 3-D MIP coronal reformation, b=venous, c arterial) Second CT scan of the abdomen done 8 months after the initial study

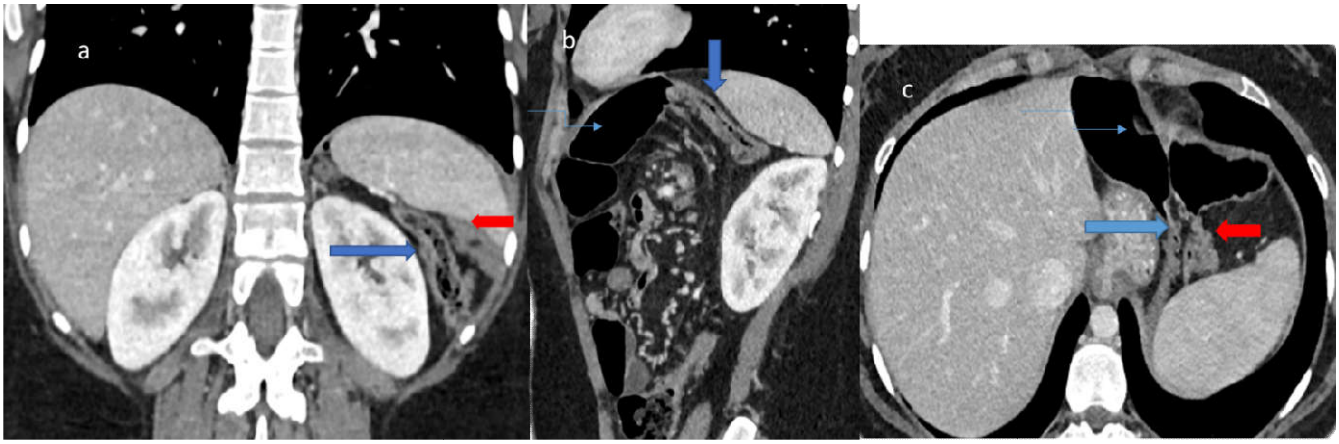

Figure 4. Coronal (a), sagittal (b) reformation and axial post-contrast (c)

Transverse arrow: Proximal ascending colon
Red arrow: Distal transverse colon Vertical arrow: collapsed proximal left colon and air-filled prominent splenic flexure (curved arrow)

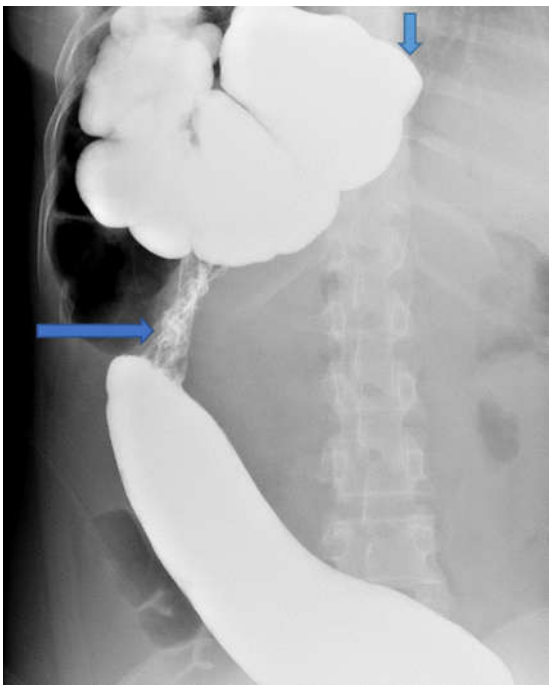

Figure 5. Barium Enema: Narrowing segment of ascending colon (transverse arrow). Focally dilated segment of splenic flexure (vertical arrow).No contrast passage in transverse colon. (Image not shown)

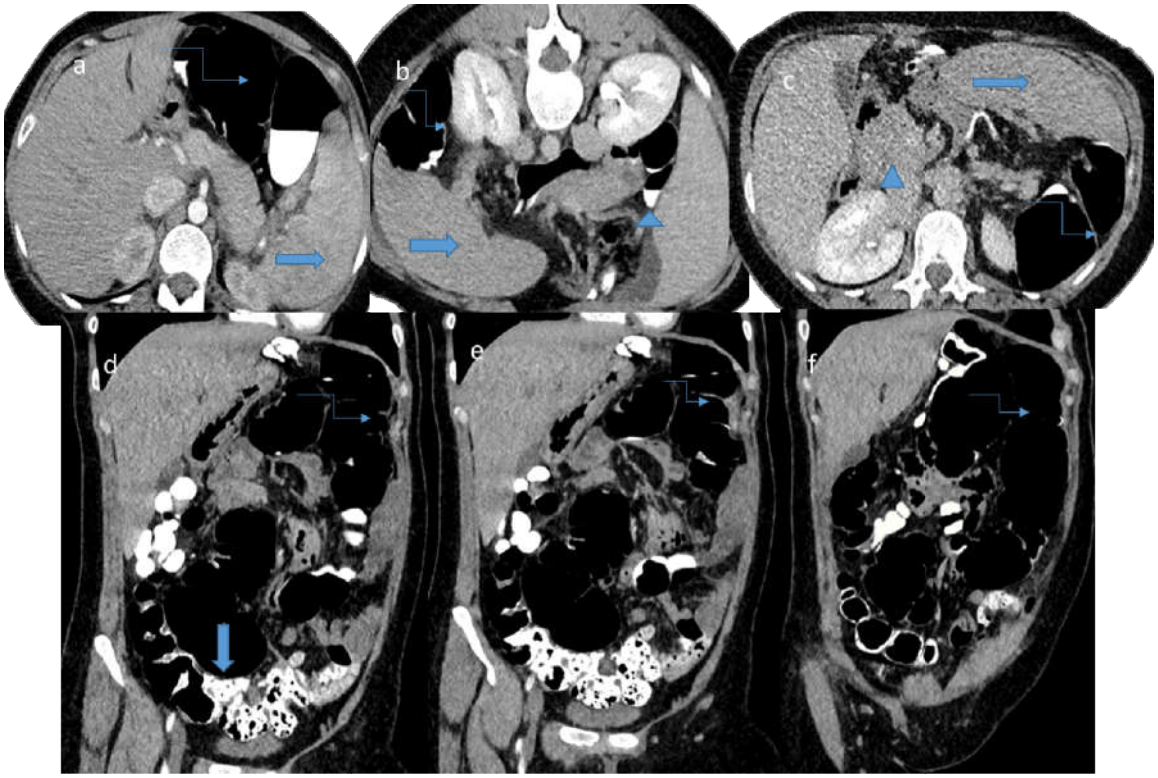

Figure 6. CT colonography; a= Supine axial, b= prone axial and c= prone axial inverted. d,e&f (coronal reformation

Interim study showed normal position of cecum with ileocecal junction located in lower right quadrant (vertical arrow in image a). Normal enhancement of the spleen and no evidence of filling defect, twisting or kinking of the splenic vein and artery (transverse arrow in image b &c). There is demonstration of dilated and tortuous splenic flexure (curved arrow) and proximal descending colon which is seen to be displaced to the right side. There is suggestion of slight rotation of the mesentery of this segment of large bowel. The spleen(transverse arrow) appears to be displaced anteriorly and medially in the prone study with the tail of the pancreas seen away from the spleen and clumped in appearance near head on right side (triangle in image b &c). Ileo-cecal junction at lower quadrant on right side of midline (vertical arrow in image d). Lots of residual contrast in colon (star).

DISCUSSION

Wandering spleen is characterized by excessive mobility and migration of the spleen from its anatomical position in the left hypochondrium to distant locations in the abdominal or pelvic regions. This condition is explained by a lack of ligamental fixation and unduly long splenic pedicle. During development, the gastrosplenic, splenorenal, or phrenocolic ligaments which hold the spleen in its normal position and attach it to adjacent viscera, may have failed to develop, giving rise to this congenital condition. In addition, hypermobile colon is an association of the disease. A long vascular pedicle predisposes patients to torsion with possible infarction if the organ becomes congested. The displacement of other organs such as the pancreas, and caecum is very rare, with only a few reported worldwide thus far. In our case, there was malposition of the colon with the caecum being located in the upper left quadrant (with frequent relocation), as well as the tail of the pancreas seen away from the spleen and clumped in appearance.

The clinical presentation of wandering spleen varies; it is either asymptomatic or noted incidentally during physical and radiographic examination as in our patient. Acute torsion with subsequent infarction can lead to the presentation of an acute abdomen mimicking peritonitis, acute appendicitis, twisted ovarian cysts in females, or bowel obstruction. The most common presentation, however, is a mass with non-specific abdominal symptoms or intermittent abdominal discomfort due to congestion resulting from chronic spontaneous torsion and detorsion. Adults most often present with nonspecific abdominal pain associated with a palpable abdominal mass while children present with acute abdominal pain. Research also reveals that patients describe a colic pain lasting from moments to hours, thus explaining the initial diagnosis of renal colic upon previous ER admissions in our patient. A CT scan remains the investigation of choice and can demonstrate the organ's circulation and the viability of splenic parenchyma. CT confirms the abnormal position of the spleen. Often, the spleen is rotated, more commonly counter-clockwise, and usually has vascular congestion signs, so that it may be also increased in size. Surgery is the treatment of choice of wandering spleen. Splenopexy to reduce the risk of torsion and infarction is recommended when a viable wandering spleen is found in the operating room and in the absence of splenic pathology. Splenectomy should be reserved for patients with massive splenic infarction or splenic pathology.

Conclusion

Wandering spleen is a rare condition caused by the laxity or abnormal development of the peritoneal ligaments surrounding and supporting the spleen resulting in a hypermoveable spleen. These anomalies may also lead to hypermobility of the adjacent viscera depending on which ligaments are absent and which present. The wandering spleen can lead to torsion. The possibility of torsion and its complications like gastric,

pancreas tail and colon volvulus should be kept in mind in the differential diagnosis of the acute abdomen to avoid serious complications. In our case, we think that the absence of suspensory ligaments allows the spleen to be mobile and the absence of left retro-colic fasciae lead to a moveable left colon with frequent mal-positioning and relocations. We recommend performing a CT colonography in supine and prone positions as per protocol to evaluate similar cases of recurrent abdominal pain with no clear underlying aetiology.

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