

# Wandering Spleen with Infarction in a Non-Symptomatic Patient

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## Abstract

Wandering spleen is a very rare defect characterized by the weakness or absence of one or more of the ligaments that hold the spleen in its normal position in the left upper quadrant. Patient symptomatology is variable and ranges from totally asymptomatic, feeling of an abdominal lump to sudden mild to severe abdominal pain due to infarction. Due to variable nonspecific symptoms, clinical diagnosis can be non-easy; hence, imaging plays an important role in the diagnosis. The major complication of wandering spleen is splenic torsion, which is the cause of acute abdomen. We present a case of torted wandering spleen with infarction in asymptomatic patient who was discovered incidentally after a history of mild trauma. The apparently chronic splenic vein thrombosis had result in a portal hypertension & multiple gastric varices. Preoperative diagnosis was made on the basis of both ultrasonography and computed tomography. Findings were later confirmed on surgery. Patient was treated successfully by laparoscopic splenectomy.

**Keywords:** Wandering spleen; Splenic infarction; Laparoscopic splenectomy

## Case Presentation

A 13-years-old female patient presented to the Emergency Unit with history of mild left chest & upper abdominal pain after slipping at home 2 days back on her left side. On examination: the patient was stable, afebrile, no pallor & all vitals are within normal. Abdomen was soft on palpation with mild tenderness in the left renal angle only. Laboratory investigations were unremarkable. A routine post trauma ultrasound of the abdomen was done and it reveals absence of the spleen in its normal position in the left hypochondrium, instead it was seen at the midline of the pelvis measuring ~12.6 cm in length. There was a suspected area of altered echogenicity superiorly could represent an area of infarction. There was also minimal fluid in the pelvis. The other organs of the abdomen were normal. CT examination of the abdomen confirmed the ectopic splenic location in the pelvis. There was a wedge shaped non-enhanced area in the superior aspect of the spleen measuring 3.3x4.5x4.6 cm suggestive of splenic infarction. "Whorled-appearance" of the splenic vessels & the left gastric vein were seen extending from left upper abdomen down to the pelvis where they join the splenic hilum (in keeping with torsion) (Figures 1-4). Focal hypodensity was seen along one of the splenic vessels, likely to represent a non-enhanced splenic vein/thrombosis. The left gastric vein appeared dilated with tortuosity and multiple varices were seen along the gastric wall. Mild free fluid was seen in the pelvis. Other abdominal structures were unremarkable. Operative findings revealed: ectopic spleen in the pelvic area with torsion of the vascular pedicle and half of its parenchyma was infarcted (Figure 5 and 6). The surgeons did a laparoscopic splenectomy with ligation of the splenic vessels.

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**Figure 1:** CT examination of the abdomen shows absent spleen from its normal location & confirms its ectopic location in the pelvis.



**Figure 2:** The “Whorled-appearance” of the splenic vessels & the left gastric vein were seen extending from left upper abdomen down to the pelvis were they join the splenic hilum (in keeping with torsion).



**Figure 3:** The “Whorled-appearance” sign in selected coronal CT image.



**Figure 4:** Selected sagittal CT image shows the wedge shaped non-enhanced area in the superior aspect of the spleen suggestive of splenic infarction.

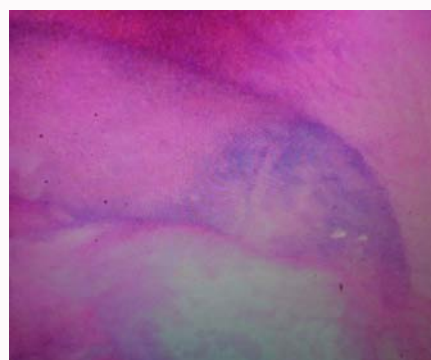
Other internal organs were normal. The surgery went uneventful. Follow-up ultrasound examination was unremarkable.

## Discussion

Wandering spleen is a rare clinical entity (incidence <0.5%), which affects children and adolescents mainly. This condition is not hereditary. Wandering spleen is a very rare birth defect characterized by the weakness or absence of one or more of the ligaments that hold the spleen in its normal position in the upper left quadrant. Instead of ligaments, the spleen is attached by a stalk-like tissue supplied with blood vessels (vascular pedicle). If the pedicle is twisted in the course of the movement of the spleen, the blood supply may be interrupted or blocked (ischaemia) to the point of severe damage to the blood vessels



**Figure 5:** Operative findings showing the torted vessels similar to CT finding.



**Figure 6:** Operative findings showing ectopic spleen in the pelvic area with torsion of the vascular pedicle and half of its parenchyma was infarcted.

(infarction) [1]. Because there is little or nothing to hold it in place, the spleen “wanders” in the lower abdomen or pelvis where it may be mistaken for an abdominal mass [1]. “Acquired” wandering spleen may occur during adulthood due to injuries or other underlying conditions that may weaken the ligaments that hold the spleen in its normal position (connective tissue disease or multiparity) [2,3]. Van Horne, a Dutch physician, is credited with describing this condition in 1667 after performing an autopsy. In 1875, Martin, a German obstetrician, performed the first splenectomy for a wandering spleen [4,5]. The common locations for wandering spleen are the pelvis & the left iliac fossa. Non-complicated wandering spleen is usually non-symptomatic. Abdominal pain due to infarction, intestinal obstruction, nausea, vomiting, fever and a lump in the abdomen or the pelvis are the common symptoms in all reported cases. Ultrasound examination is the initial examination of choice. It will show the abnormal location of the spleen. However, Infarcts may be difficult to visualize on greyscale ultrasound owing to their variable appearance, depending on the timing and grade of torsion [6]. Usually they are wedge shaped & hypoechoic, but if the torsion is recent, they may be isoechoic. Doppler ultrasound may be suboptimal in some patients. If positive, it will show: areas of signal absence, which suggests perfusion defects. Computed tomography is the imaging method of choice for diagnosing wandering spleen. It will confirm the ectopic location of the spleen. Typically with torsion, the splenic hilum appears twisted; the “Whorled-appearance” which is a very specific sign of torsion of the splenic pedicle [7]. Splenopexy was described and considered superior to splenectomy. In other cases, splenopexy is preferred with the advantage of preserving the spleen function avoiding the risk of “overwhelming post splenectomy sepsis” (OPSS) [8]. Splenectomy is

the treatment of choice in case of infarction. In our patient, Owing to the suspected diagnosis of torsion of a wandering spleen -which was confirmed intra-operatively-a laparoscopic splenectomy was performed. The patient had an uneventful recovery with follow-up ultrasound examination unremarkable.

## Conclusion

Whenever spleen is not seen in its usual position during US or CT examinations, the possibility of wandering spleen diagnosis should be always kept in mind. The main complication is torsion, which can be challenging to diagnose owing to non-specific symptoms. However, being asymptomatic cannot exclude torsion as shown in our case. Both abdominal ultrasound (with or without Doppler) and CT examinations are useful investigative tools. An awareness of this rare condition together with the use of proper medical imaging can lead to a correct & fast diagnosis with fewer complications.

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