

# WANDERING SPLEEN - A CASE REPORT

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**Abstract:** Wandering spleen is a rare clinical entity in which the spleen is attached by a long vascular pedicle and can be found in any part of the abdomen or pelvis. It can be complicated by torsion leading to a surgical abdominal emergency. A case of a patient with wandering spleen is reported here that presented with chronic abdominal pain.

**Keywords:** Wandering Spleen, Pedicle, Torsion, Abdominal Pain.

## I. INTRODUCTION

The spleen develops from the mesoderm in the dorsal mesogastrium. It lies in the left hypochondrium behind the stomach, and is approximately 12 cm long and 7 cm wide<sup>1</sup>. The spleen is fixed in position by the lieno-renal and gastrosplenic ligaments; the phrenico-colic ligament provides additional support. The ligaments are embryological condensations that take place in the peritoneum, and congenital peritoneal anomalies may result in splenic displacement.

Wandering spleen, also known as displaced, ectopic, drifting, floating spleen or splenoptosis is a rare condition defined as a huge, single spleen in an abdominal position rather than its anatomical site, owing to laxity of its pedicles and absence of ligamentous attachments<sup>2</sup>. The spleen can be found in any part of the abdomen or pelvis because of the length of its pedicle. The abnormally fixed spleen can twist on its vascular pedicle, creating ischemia that may progress to infarction if not promptly treated<sup>3</sup>.

Clinical presentation of wandering spleen is varied and the diagnosis is often elusive. The presence of a wandering spleen can give rise to symptoms similar to those of other common abdominal diseases like intermittent abdominal pain of varying severity, acute abdomen secondary to haemorrhagic splenic infarction due to torsion of the vascular pedicle, the presence of a palpable mass that can be located anywhere from the left hypochondrium to the pelvis<sup>2</sup>. Early preoperative diagnosis is difficult without radiological aids.

Laboratory tests can support the diagnosis by revealing thrombocytopenia (secondary to congestive hypersplenism),

increased creatine phosphokinase (CPK) and leucocytosis. The usual treatment is fixation of the spleen (splenectomy), except in cases of infarction where there is no evidence of blood flow to the spleen after detorsion. In such cases splenectomy should be considered.

We report a case of wandering spleen in a 45 years old male that presented with chronic abdominal pain. This is the first case of its kind reported from the Kashmir valley.

## II. CASE REPORT

A 45 year old multiparous female, with no underlying co-morbidity got admitted in the department of internal medicine of our hospital for the evaluation of abdominal fullness and pain for the last few years. The pain was describe as intermittent, self-relieving, dragging in nature, in the left hypochondrium and generally between 4-6/10 on Visual Analogue Pain Scale. This was associated with early postprandial fullness and occasional nausea. The patient used to take over the counter antacids, antispasmodics, protein pump inhibitors but without any permanent relief of her symptoms. The patient was referred by a local medical practitioner to our hospital for full evaluation and treatment. On general physical examination, she was of normal body built, afebrile and had stable vital signs. Abdominal examination revealed a mobile mildly tender mass, spanning over the left lumbar area, left iliac fossa and the hypogastrium. Rest of the general and the systematic examination revealed no apparent abnormality. On investigation, hemogram revealed haemoglobin of 10gms/dl, total leukocyte count of 3790/dl (with a differential of 66.3% polymorphs, 26.9% lymphocytes, 5.5% monocytes) and platelet count of 70,000/cc. Coagulation profile and the bio-chemical investigations were within normal limits.

Ultrasonography (USG) of the abdomen with a curve linear transducer (5MHz) showed that the spleen was not in its usual site, and was located in the left lumbar region extending to left iliac fossa measuring about 19.3 cm in size. Spleen appeared to change position on changing the position of patient during the scan. Splenic vein was 8mm. No features of chronic liver disease were seen as also rest of the structures were also normal and the diagnosis of wandering spleen was made (Figure-1). Contrast Enhanced Helical Computed Tomography

(CECT) of abdomen showed spleen enlarged in size measuring about 19.3cm and located in ectopic location extending from the left lumbar region to the hypogastrium with no detectable splenoculi. The diagnosis of wandering spleen was hence confirmed (Figure-2). Splenectomy was planned in view of the features of hypersplenism. Informed consent was secured and anti-Pneumococcal, Hemophilus Influenza-B and anti-meningococcal vaccines were administered in the pre-operative phase. Open splenectomy after gaining access into abdomen through a lower transverse abdominal incision. She had an uncomplicated postoperative period and was discharged with an advice of regular follow up. Histological examination of the splenic specimen revealed normal splenic tissue.

### III. DISCUSSION

Wandering spleen is a rare entity and reported in both the genders and only about 500 cases have been reported in literature till date<sup>4</sup>. Van Horne, a Dutch physician, is credited in literature with describing this condition in 1667 after performing an autopsy. In 1875, Martin, a German obstetrician was first to perform the first splenectomy for a wandering spleen<sup>5</sup>.

The usual occurrence is at 20 to 40 years of age and is more frequent in women of reproductive age group<sup>4</sup>. The incidence, based on several large series of splenectomies, is less than 0.5%. Wandering spleen is most often as a result of congenital anomaly in the of development of dorsal mesogastrum, but acquired factors may have a role in certain instances. Congenital form occurs due to failure of the development of dorsal mesogastrum, when the lesser sac is formed. However, the acquired anomalies have been described and are attributed to laxity of the ligaments due to weakness of the abdominal wall, multiple pregnancies, hormonal changes, or increase in the size of the spleen. The acquired form mostly occurs in multiparous females as the ligaments which are holding the spleen in its position become lax and such spleens are usually enlarged. The spleen in our patient was palpated as a significantly enlarged, mobile, mildly tender and ectopically located lump spanning over left lumbar quadrant, left iliac fossa and hypogastrium.

The condition in adults may be most detected incidentally as an asymptomatic lump or in imaging studies undertaken for a different indication or the patient may report with chronic gastrointestinal complaints or with an acute abdominal emergency<sup>5</sup>. Complications related to torsion or compression of abdominal organs by the spleen or the pedicles are reported in literature. The most common presentation in children is an acute surgical abdomen occurring due to infarction from torsion of the splenic pedicle. The triad of a firm ovoid mass with a notched edge, tender movements of the mass except when the mass is moved toward the left upper quadrant and resonance to percussion in the left upper quadrant has been described to point towards the diagnosis of a wandering spleen. Ben Aly A et al have reported one instance of familial

wandering spleen where two sisters presenting with acute torsion of a spleen within a 3-year interval<sup>6</sup>.

Haematological and biochemical investigations may be non-specific. Laboratory tests may reveal elevated inflammatory markers and evidence of hypersplenism or functional asplenia. Splenomegaly is usually a result of torsion of the pedicle and splenic sequestration. Complications of wandering spleen include infarction, gangrene, splenic abscess, variceal haemorrhage, colonic volvulus, gut obstruction and pancreatic necrosis<sup>7-8</sup>.

The diagnosis can be confirmed by imaging studies including Duplex USG, nuclear scintigraphy, computed tomography and magnetic resonance imaging. Doppler sonographic helps in evaluation of organ blood flow. CT findings of wandering spleen include absence of spleen in the left upper quadrant and a soft tissue mass resembling spleen elsewhere in the abdomen. Radio-isotopic scanning (technetium 99 sulfur colloid scan) allows the assessment of location as well as the functioning of spleen. Arteriography allows definitive evaluation of the splenic vasculature and features of left-sided portal hypertension<sup>5</sup>.

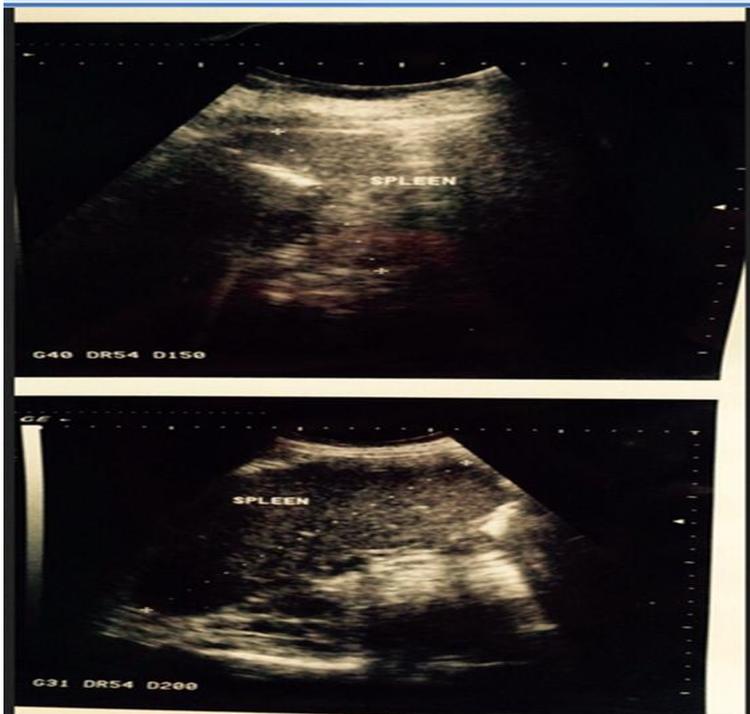
If significant torsion of the splenic pedicle occurs, the torqued pedicle may mimic bowel intussusceptions in appearance. The most specific sign of splenic torsion is a "whirl-like" (or 'whorled') appearance of splenic vessels and surrounding fat usually noted at the splenic hilum<sup>9</sup>.

Definitive treatment for wandering spleen is surgical, since conservative/ non-operative treatment has been found to be associated with a complication rate as high as 65%<sup>5</sup>. Splenopexy is the treatment of choice for a non-infarcted wandering-spleen. Splenectomy is ideally reserved for patients presenting with acute abdomen and splenic infarction or thrombosis or with hypersplenism and patients in whom splenopexy is technically infeasible. Subtotal splenectomy and splenic auto-transplantation may be of limited value. Our patient also had an enlarged spleen (hypersplenism), thus splenectomy was preferred to splenopexy by the operating surgeon to avoid any postoperative complications. Recently laparoscopic procedures have been introduced for splenic surgery and it has shown to offer the benefits of minimally invasive surgery<sup>10-11</sup>.

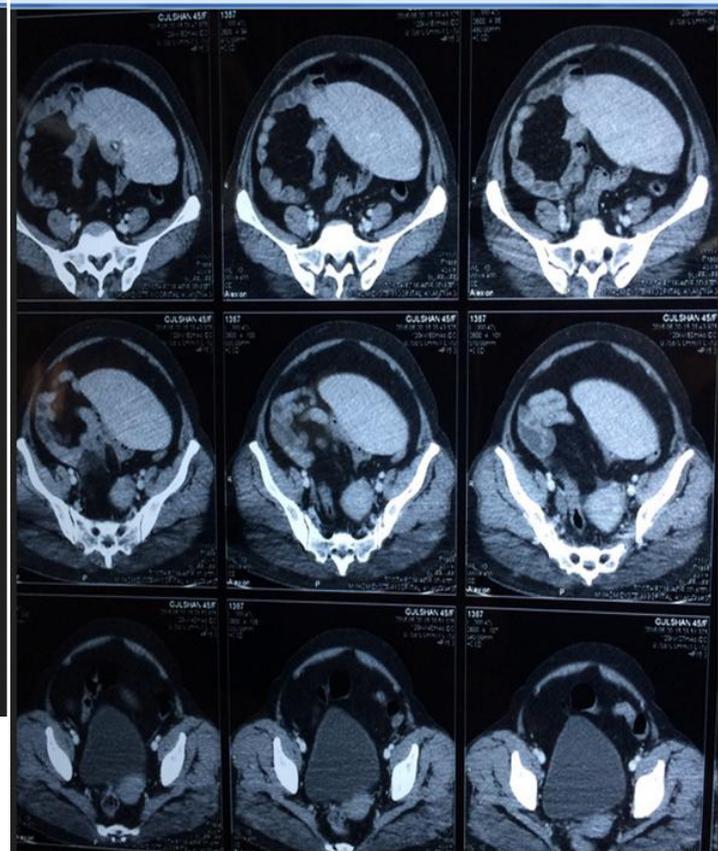
Anti-Pneumococcal, Hemophilus influenza and meningococcal vaccines are indicated before elective splenectomy and shortly after nonelective splenectomy<sup>11</sup>. Significant morbidity and mortality rates seem to be considerably less and are limited primarily to patients presenting initially with acute abdominal findings<sup>4</sup>.

### IV- ACKNOWLEDGMENTS

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**FIG 1 : USG SHOWING SPLEEN IN ECTOPIC LOCATION EXTENDING FROM LEFT LUMBAR REGION TO LEFT ILIAC FOSSA MEASURING 19.3 CM. SPLEEN CHANGED THE POSITION ON CHANGE OF POSTURE**



**FIG 2: CECT SCAN SHOWING ECTOPIC AND ENLARGED SPLEEN EXTENDING FROM THE LEFT LUMBAR REGION INTO THE PELVIS**

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