

Case Report

Torsion of wandering spleen as acute abdominal pain emergency: case report

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ABSTRACT

Anatomic variations of the normal position of the spleen in the left upper quadrant is an uncommon condition called wandering spleen or ectopic spleen. This condition has an incidence rate $<0.2\%$ and is most often diagnosed in children under one year of age or in women who are in their third decade of life, the most referred symptoms presented by patients are abdominal pain, either acute or intermittent, associated with a palpable mass in lower abdomen. There are two main causes, congenital or acquire, treatment is surgery being two main approaches splenectomy and splenopexy depending on clinical features, diagnosis is bases on images, gold standard computed tomography and ultrasound.

Keywords: Wandering spleen, Ectopic spleen, Splenic torsion, Splenectomy, Case report

INTRODUCTION

Anatomic variations of the normal position of the spleen in left upper quadrant is an uncommon condition called wandering spleen or ectopic spleen.¹ It can be found in a variety of positions in the abdomen or pelvis, result of congenital malformations, agenesis of spleen ligaments, ligament laxity consequence of trauma, pregnancy, or connective tissue disease.²

This condition has an incidence rate $<0.2\%$ and is most often diagnosed in children under one year of age or in women who are in their third decade of life.³

There is a wide form of clinical presentation of this entity, from an incidental finding in radiologic studies, to acute, chronic, or intermittent symptoms due to vascular spleen torsion.³ The anatomical features that play a role in the severity of the splenic torsion and vascular compromise are the weight of the spleen, the length of vascular pedicle and ligament laxity degree that favors rotation in its own axis.⁴

The most referred symptoms presented by patients are abdominal pain, either acute or intermittent, associated with a palpable mass in the lower abdomen, early satiety, and constipation, although in some cases it can be incidentally detected in asymptomatic patients.⁵

Radiologic studies have an important diagnostic role, the preferred study modalities are the computed tomography and the ultrasound.

When using the conventional ultrasound study the spleen can be find located on the left flank, the pelvis or hypogastrium, with size increase and heterogeneity due to venous congestion.⁶

In color doppler there is a partial or complete absence of flow in the parenchyma as well as in the splenic vascular hilum, the twisted pedicle can simulate a whirl appearance, it is possible to identify tortuous veins that drain into the portal venous system reflecting collateral circulation secondary to chronic splenic vein occlusion.⁷

With simple abdominal tomography, absence of spleen in its usual location with splenomegaly defines an ectopic or wandering spleen, in contrast enhanced tomography, total or partial absence of enhancement of the parenchyma is indicative of poor perfusion and an indirect sign of torsion of the pedicle, the whirl sign is considered a specific finding of vascular torsion.⁸

Surgery is the election treatment, non-surgical treatment in asymptomatic patients has a complication risk of more than 60%.⁵ Splenopexy and splenectomy are two treatment modalities and depends on factors such as patient age, vascular compromise due to torsion, and size of the spleen.⁹

If detected incidentally, torsion is not severe and the spleen is viable, election treatment is splenopexy, especially in pediatric patients, this preserves the organ and prevents future complications, otherwise splenectomy is the treatment of choice when torsion is not reducible, spleen is necrotic or there is hypersplenism or asplenia as result of the torsion.¹⁰

The importance of early recognition of this condition is due to the possible complications such as torsion and splenic infarction, early intervention is of great importance.

We present the case of a feminine patient with acute abdominal pain that arrives to emergency room, during diagnostic approach torsion of wandering spleen was detected, and surgical intervention was performed to resolve condition, as well as a review of literature.

CASE REPORT

A 23-year-old female patient, with a negative personal history of smoking, negative alcoholism, drug addiction denied, medical history without chronic diseases, denied surgical interventions, denied allergies, date of last menstruations 10 days prior to hospitalization, active sexual life without previous pregnancies.

She began with symptoms 24 hours of evolution prior to admission to the emergency room with presence of sudden onset of abdominal pain, located in right flank and mesogastrium, reported intensity of 8/10 on visual analog scale, oppressive type, radiating to right iliac fossa, accompanied by nausea and vomiting on two occasions gastrointestinal content, fever denied, pain partially attenuated with the intake of analgesic medication, which is why she decided to go to emergency department for evaluation.

On arrival at emergency department with vital signs of blood pressure 110/75 mmHg, heart rate 90 bpm, respiratory rate 19 bpm, temperature 36°, oxygen saturation 98% without supplementary oxygen.

On physical examination, abdomen was soft, depressible, painful on medium and deep palpation in a general way, positive rebound in right hypochondrium, right flank and mesogastrium, negative Mc Burney, negative Blumberg, an abdominal mass was palpable of solid consistency covering the entire right hemiabdomen.

Laboratory test

Leukocytes 18.9, neutrophils 81.4%, hemoglobin 9.3, hematocrit 29.7, platelets 255 000, glucose 104.1, urea 24.5, bun 11.45, creatinine 0.5, sodium 136, potassium 3.4, chloride 103.5, TP 15.3, INR 1.3, TTP 30.

Radiologic studies

Abdominal contrast – enhanced computed tomography: free fluid is identified in the abdomen in all peritoneal spaced, predominantly in right spaces and adjacent to ectopic spleen. In right hemiabdomen a defined oval structure with soft tissue density compatible with the spleen is identified volume 2, 272 cc, which is enlarged and with migration from its usual place in left hypochondrium, after administration of contrast, presence of torsion site of vascular origin at the level of the splenic hilum was confirmed, which has migrated in position and contains a splenic vein that has decreased in size and with a linear course towards the organ, which does not show its usual intense enhancement, suggestive of organ ischemia (Figures 1 and 2).

Surgical procedure

Exploratory laparotomy midline incision + splenectomy. Findings: splenomegaly 30×15 cm, ectopic spleen, located in mesogastrium and hypogastrium twisted on its own axis with vascular compromise, approximately 100 cc of free serohematic fluid in abdominal cavity (Figures 3 and 4).

Patient with adequate post-surgical evolution, two days after surgical procedure is discharged at home with follow – up in consultation and subsequent discharge from the service.



Figure 1: Spleen located in right hemiabdomen in computed abdominal tomography

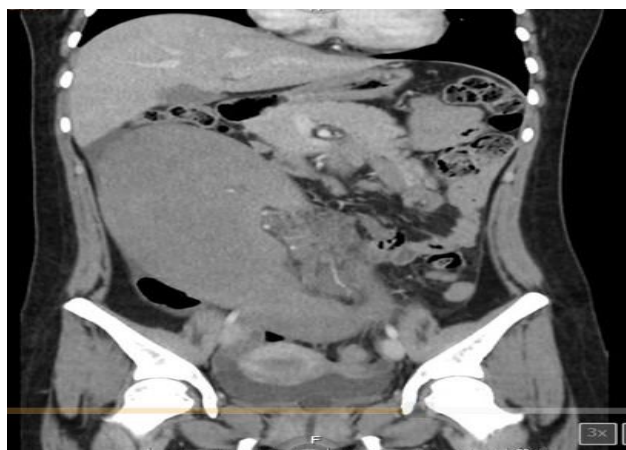


Figure 2: Contrast enhancement abdominal tomography with vascular splenic torsion.



Figure 3: Spleen rotated on its own axis with vascular torsion.

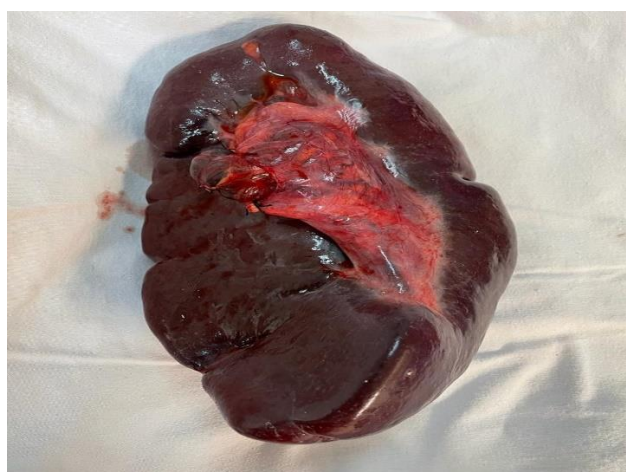


Figure 4: Splenectomy product.

DISCUSSION

In this case report we can read about the wandering spleen, as mentioned before it is a rare disease, only about 500

cases worldwide were reported to date, as it mentions in international literature.¹⁴

There are two main causes of wandering spleen, congenital or acquire, being the second one way more common, the congenital one if mainly a failure in the fusing of the dorsal mesogastrium between the 5-6 week of embryological development, it is cause because there is absence or abnormal development of the ligament that provide support to the spleen.¹¹

The acquire wandering spleen is more frequent in females around 20-40-year-old, some risk factor are multiple pregnancy, weakened abdominal wall, splenomegaly and connective tissue disorders.²

As in this case it is a female, in reproductive age, which presence and acute abdominal pain this being part of the spectrum which its diagnosed, the clinical features of this pathology depends on the external organ which is being compress, like constipation, chronic abdominal pain, palpable mass, early satiety acute abdomen because ischemia cause by torsion of the vascular pedicle or simply being asymptomatic and it being a finding on routine exams or other causes.¹²

The treatment of choice is surgery, there being two main approaches, open surgery and laparoscopic surgery, the first one being way more popular, because its availability and mostly because at the moment of the diagnosis in an emergency room like this case it because ischemia or peritonitis, hemoperitoneum and spleens measuring more than 12-15 cm, if its diagnose in another clinical scenario, laparoscopic surgery is a viable option, to decide between splenectomy or splenopexy, its mainly on the clinical features of the case, being ischemia, massive splenomegaly, hemoperitoneum, unstable patients up for splenectomy, elective surgery patients are up for splenorraphy.^{11,12}

The diagnosis is based mostly on images, being the gold standard the computed tomography scan, showing a hypodense mass in the pelvic floor, right lower quadrant and absence of spleen in the left upper quadrant, if contrast computed tomography available is possible to find a swirl cause by the splenic vessels, ultrasound is a good method but as always is operator dependent.¹³

Clinical exploration might give some sort of indication when palpable mass in lower abdomen, and tympanic sound on upper left quadrant.

In elective surgery patient vaccines must be administer prior to surgery ideally 6 week before, in emergency surgery up to 15 days post splenectomy.¹³

CONCLUSION

This is not a regular finding on patients that attend the emergency room nor patient external consults, it is

important to know the approach to this pathology as in any other surgical procedure to define the right approaches and treatment.

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