

# Wandering Spleen and Its Laparoscopic Management: A Comprehensive Case Report and Review

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DOI: <https://doi.org/10.58624/SVOAPD.2024.03.074>

Received: June 27, 2024 Published: July 22, 2024

## Abstract

Wandering spleen (WS), a rare clinical entity characterized by the absence or laxity of the spleen's normal suspensory ligaments, can lead to splenic torsion and subsequent acute abdominal presentation. This case report describes the successful laparoscopic management of a 12-year-old female patient who presented with acute abdomen secondary to a wandering spleen with torsion. A comprehensive review of the literature highlights the diagnostic challenges, therapeutic options, and the importance of timely intervention in managing this rare condition.

**Keywords:** Wandering spleen (WS); Laparoscopic Management; Splenopexy

## Introduction

Wandering spleen (WS) is an uncommon condition resulting from the congenital absence or weakening of the splenic suspensory ligaments, namely the gastrosplenic, splenorenal, and phrenicocolic ligaments. This lack of support allows the spleen to migrate from its normal anatomical position in the left upper quadrant of the abdomen, potentially leading to torsion of the splenic pedicle. While WS is a rare entity, its incidence is estimated to be less than 0.2%, with a higher prevalence in females. Early diagnosis and appropriate management are crucial to prevent splenic infarction and its associated complications.

## Case Presentation

A 12-year-old female patient presented to our emergency department with a 24-hour history of acute abdominal pain, accompanied by vomiting and the presence of a palpable abdominal mass. Physical examination revealed a firm, non-tender, 10 x 10 cm mass located in the hypogastrium, with well-defined borders and partial mobility.

## Imaging Findings

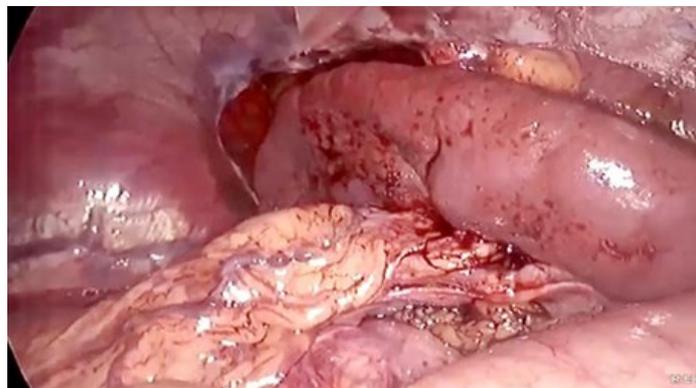
- **Abdominal ultrasound:** Demonstrated a solid mass measuring 112 mm in the hypogastric region, suggestive of an ectopic spleen.
- **Computed tomography (CT) scan** with contrast of the abdomen and pelvis: Confirmed the presence of a 146 x 66 x 112 mm spleen located in the hypogastrium. Notably, the CT scan revealed a "whirlpool sign," characterized by the swirling of the splenic pedicle and adjacent bowel loops, indicative of splenic torsion. (FIG 1).



**Figure 1.** Solid mass measuring 112 mm in the hypogastric region, suggestive of an ectopic spleen.

### **Surgical Intervention:<sup>1</sup>**

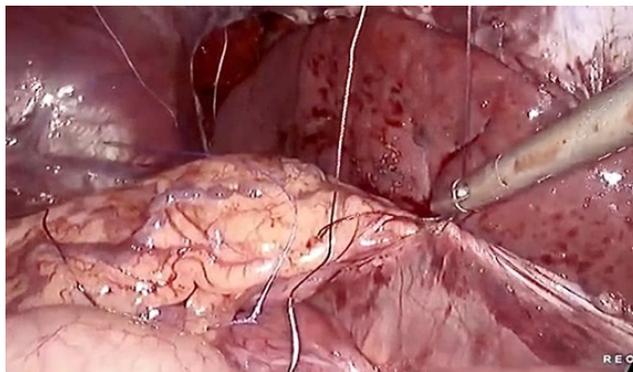
Based on the clinical and imaging findings, a diagnosis of complicated WS with torsion was established, necessitating urgent surgical intervention. The patient underwent laparoscopy, which revealed an ectopic spleen with preserved vascularity in the central abdominal and hypogastric regions. The splenic pedicle was elongated, filiform, and twisted two complete turns, resulting in the observed torsion. The laparoscopic procedure involved the following steps. (FIG 2).



**Figure 2.** Detorsion of the spleen to restore normal blood flow.

1. Detorsion of the spleen to restore normal blood flow.
2. Creation of a preperitoneal pocket in the left hypochondrium, the spleen's normal anatomical location.
3. Repositioning of the spleen into the newly created pocket.
4. Splenopexy, a surgical fixation of the spleen, achieved by securing the spleen to the abdominal wall with a continuous suture. (FIG 3).

During the procedure, a 10 mm opening in the diaphragm was identified and repaired with a 3-0 vicryl suture. A chest tube was not deemed necessary.



**Figure 3.** Creation of a preperitoneal pocket in the left hypochondrium.

### Postoperative Course and Follow-up:

The patient recovered uneventfully and was discharged on the third postoperative day. A follow-up ultrasound scan demonstrated adequate splenic perfusion, confirming the success of the splenopexy.

### Discussion

Wandering spleen is a rare but important differential diagnosis in patients presenting with acute abdomen. Imaging studies, particularly Doppler ultrasound and contrast-enhanced CT scans are essential for accurate diagnosis and preoperative planning. The "whirlpool sign" is a pathognomonic imaging finding that strongly suggests splenic torsion. While splenectomy has historically been the treatment of choice for WS, splenopexy is now considered the preferred approach when the spleen remains viable. This case report highlights the feasibility and efficacy of laparoscopic splenopexy in managing WS with torsion.

### Conclusion

Prompt recognition and surgical intervention are critical in the management of wandering spleen with torsion. Laparoscopic splenopexy offers a minimally invasive and effective approach to preserve splenic function and prevent complications associated with splenectomy. Continued research and reporting of such cases are vital to further our understanding of this rare condition and refine its management.

### Conflict of Interest

The authors declare they have no potential conflicts of interest to disclose.

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**Citation:** Ríos M, Pulice L, Lariguet I, Berger M, Esnaola J, Marchisella M. Wandering Spleen and Its Laparoscopic Management: A Comprehensive Case Report and Review. *SVOA Paediatrics* 2024, 3:4, 106-109. doi:10.58624/SVOAPD.2024.03.074

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