Case Report

Incidental Finding of Wandering Spleen

Catalya Christina Cantika[1], Ekarini Aryasatiani[2], Ali Reza[3], Mahendro Aji Panuntun[4], Tania[5], Luminto[5]

[1]Co-assistant Department of Obstetrics and Gynecology
[2]Department of Obstetrics and Gynecology
[3]Department of Surgical
[4]Department of Radiology
[5]Intern Doctor Department of Obstetrics and Gynecology
Tarakan Regional Public Hospital
Jakarta

Abstract

Objective: This case was reported because incidental WS during cesarean section is exceptionally uncommon and poses diagnostic and management challenges for obstetric surgeons.

Methods: Case report

Case: a thirty six-years-old woman in her third pregnancy, with one previous live birth and no history of abortion, was admitted at 41–42 weeks' gestation for a cesarean section due to preeclampsia and premature rupture of membranes. Intraoperative exploration revealed an ectopic spleen in the pelvic cavity, lateral to the uterus, with a normal appearance and no signs of torsion or infarction. The patient remained asymptomatic, and no intraoperative intervention was performed. A follow-up splenopexy was planned to preserve splenic function and prevent future torsion.

Conclusion: Incidental detection of WS during obstetric surgery is extremely rare. Although asymptomatic, WS carries a risk of acute complications such as torsion, infarction, or hemorrhage if unrecognized. Awareness of this condition is crucial for obstetric and general surgeons when an unexpected intra-abdominal mass is encountered during cesarean section. Early recognition and splenopexy are recommended to prevent complications while maintaining splenic function.

Keywords: ectopic spleen, pregnancy, rare diseases, spleen.

Correspondence author. Catalya Christina Cantika. Department of Obstetrics and Gynecology. Tarakan Regional Public Hospital. Jakarta.
Email; catalyachristinac@gmail.com | Phone : (+62) 85215942899

INTRODUCTION

Wandering Spleen (WS) is a rare clinical entity in which the spleen migrates from its normal anatomical location in the left upper quadrant to anywhere within the abdominal or pelvic cavity due to the loss or weakening of its suspensory ligaments.[1] The incidence of splenic displacement is extremely low, accounting for less than 0.5% of all splenectomies, and only about 500–600 cases have been documented in the literature.[2] This condition affects all age groups but is most frequently observed in women of reproductive age, especially multiparous females, due to hormonal and mechanical changes that increase ligamentous laxity during pregnancy.[3]

The absence or laxity of the splenic ligaments allows excessive mobility of the spleen, predisposing it to torsion of the splenic vascular pedicle. This torsion may compromise blood flow, resulting in ischemia, infarction, or even rupture, leading to acute abdomen and life-threatening hemorrhage if not promptly recognized.[4-6] The torsion angle can vary from 90° to 2160°, with severe torsion (>180°) often resulting in complete infarction. Chronic or intermittent torsion may also lead to splenomegaly, hypersplenism, or secondary complications involving adjacent organs such as the stomach, pancreas, and bowel.[3]

Clinically, WS has a broad spectrum of presentations from asymptomatic cases detected incidentally to acute abdominal emergencies mimicking appendicitis, ovarian torsion, or adnexal masses.[3] Because of its nonspecific symptoms, imaging plays a pivotal role in diagnosis. Ultrasonography, Doppler studies, and contrast-enhanced CT scans can reveal the absence of the spleen in its usual site and the characteristic "whorled" or "whirlpool" sign of twisted splenic vessels. MRI may further delineate splenic infarction and vascular compromise, guiding surgical decisions between splenopexy and splenectomy.[7-10]

Complications arise in up to 65% of untreated WS cases, including torsion, infarction, portal hypertension, and hemorrhage.[2] These risks are heightened in pregnancy and obstetric surgeries, where anatomical distortion from the gravid uterus and ligamentous relaxation may obscure intra-abdominal landmarks.[4,11] Unrecognized WS during cesarean delivery carries potential for inadvertent splenic injury or postoperative torsion, emphasizing the importance of intraoperative awareness among obstetric surgeons.

This case report presents an incidental finding of a wandering spleen during cesarean section, an exceedingly rare occurrence. It underscores the diagnostic challenges and surgical implications of WS in obstetric practice and aims to increase awareness among clinicians regarding its recognition, potential complications, and appropriate intraoperative management.

CASE

A thirty six years old woman in her third pregnancy, with one previous live birth and no history of abortion, 41-42 weeks gestation, came to the Department of Obstetrics and Gynecology emergency department, Tarakan Regional General Hospital, Jakarta. The inspection results showed that amniotic fluid was flowing from the ostium uteri externum, which was cloudy in color. Blood tests revealed leukocytes 21820/ul and proteinuria +3. The patient was diagnosed with severe preeclampsia and premature rupture of membranes and planned to have a cesarean section. The baby was born with a birth weight of 3000 grams and an APGAR score of 8/9 without signs of congenital malformations.

On intraoperative intra-abdominal exploration, the spleen was accidentally in the pelvic cavity. Spleen size 10 cm x 5 cm, located lateral to the uterus, showed no signs of volvulus and splenic infarction, as shown in Figures 1a and 1b. No intervention was performed on the spleen, considering that no abnormalities were seen intraoperatively, and there were no complaints related to the intrapelvic ectopic spleen.

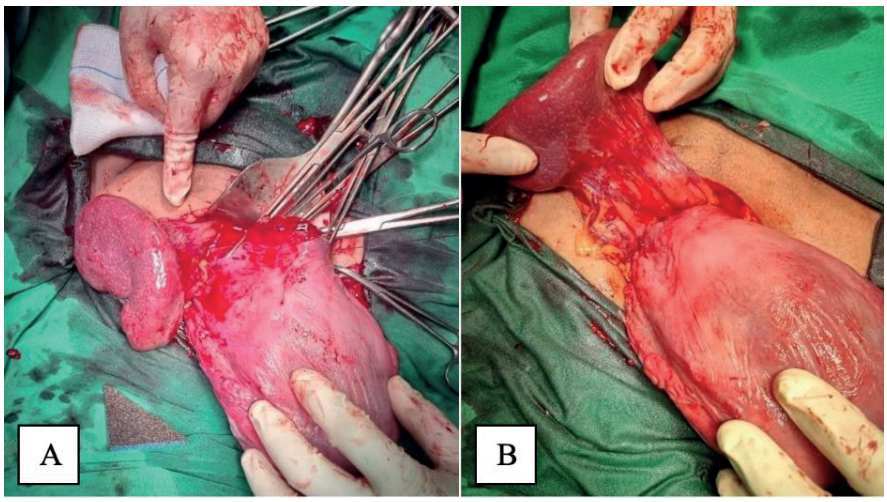

Figure 1. (a) Intraoperative finding showing the spleen located in the pelvic cavity, lateral to the uterus, following cesarean section. (b) The spleen appears viable with no evidence of torsion or infarction.

Postoperatively it was continued with an abdominal CT-scan examination because, during the operation, it was impossible to explore the upper left region to find out if there was another spleen on the upper left side. In conclusion, an abdominal CT scan showed an ectopic spleen in the pelvic area, anterior uterus position, and left superolateral to the bladder.

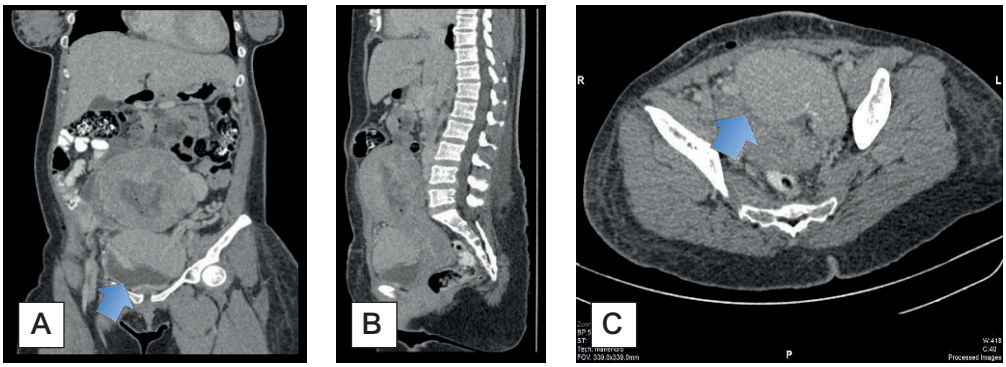

Figure 2. Postoperative CT scan demonstrating the spleen (blue arrows): (a) coronal section, (b) sagittal section, and (c) axial section.

DISCUSSION

This case presents an incidental finding of a wandering spleen (WS) during cesarean section in a term pregnant woman. The spleen was unexpectedly located in the pelvic cavity, anterior to the uterus and posterior to the urinary bladder, with a short vascular pedicle and no evidence of torsion or infarction (Figure 1a–b). The intraoperative finding, as seen in Figure 1a, shows the spleen lying lateral to the uterus within the pelvic cavity, confirming its ectopic position. Meanwhile, Figure 1b demonstrates the absence of vascular torsion, correlating with the patient's asymptomatic presentation. The patient had been asymptomatic, and the ectopic spleen was not detected on antenatal imaging. Such incidental findings are extremely rare, and this case adds to the limited literature on asymptomatic pelvic wandering spleen discovered during obstetric surgery.[12-14]

The spleen is an intra-abdominal organ located in the left upper quadrant (left hypochondriac region) and serves as the largest organ of the lymphatic system. It is stabilized by four peritoneal ligaments gastrosplenic, splenorenal, splenocolic, and phrenicosplenic that maintain its position in the left upper quadrant. These ligaments develop from the dorsal mesogastrium and anchor the spleen to the posterior abdominal wall, ensuring stability within the abdominal cavity. During embryogenesis, the spleen begins to form around the sixth week of gestation from mesenchymal condensations of the dorsal mesogastrium. When these ligaments are absent, lax, or abnormally developed, the spleen becomes excessively mobile and may migrate from its normal position, a condition known as wandering spleen.[15-19]

WS is a rare clinical entity, with fewer than 600 cases reported worldwide. It accounts for less than 0.5% of all splenectomies and is most often seen in women of reproductive age, particularly multiparous women, due to hormonal and mechanical factors that cause laxity of the supporting ligaments.[11,20] The condition may be congenital, related to developmental anomalies of the dorsal mesogastrium, or acquired as a result of ligamentous weakening during repeated pregnancies.[12-14] In our case, the patient's multiparous status likely contributed to the ligamentous laxity, but the short pedicle prevented torsion and maintained splenic stability despite its pelvic location, as confirmed intraoperatively.

The clinical presentation of WS varies widely, from asymptomatic incidental findings to acute abdomen due to torsion.[21-24] Most asymptomatic cases are discovered incidentally during imaging or surgery for unrelated indications. In contrast, patients with torsion often present with abdominal pain, nausea, or vomiting, and may develop splenic infarction or rupture if diagnosis is delayed. [17] Mild torsion may cause intermittent abdominal pain due to splenic congestion, while severe torsion results in infarction and acute abdomen.[25–30] In pregnancy, diagnosis is more challenging because the physiological displacement of abdominal organs can obscure the ectopic spleen, and routine obstetric ultrasonography does not assess maternal splenic position.[4,11,13] However, absence of the spleen in the left upper quadrant or the presence of a homogeneous mass elsewhere in the abdomen should raise suspicion. [31] Doppler ultrasound can assess vascular flow, while CT or MRI can confirm splenic displacement and evaluate for vascular compromise. MRI is particularly useful during pregnancy because it avoids ionizing radiation and provides detailed visualization of abdominal

structures. [11,32,33]

The management of WS depends on the presence of symptoms, splenic viability, and the risk of torsion. Splenopexy is preferred for viable spleens to preserve immune function, while splenectomy is indicated for nonviable spleens or when infarction is present. [17,34–38] Laparoscopic splenopexy has become the standard approach, offering less postoperative pain, faster recovery, and reduced risk of wound complications compared to open surgery. [6,11,34–38] In this case, since the spleen was viable, had a short pedicle, and appeared fixed in the pelvis without torsion, conservative management without splenopexy was chosen. This decision aligns with several studies suggesting that asymptomatic, stable WS can be safely observed if the spleen is not at risk of torsion. [11,39]

Several reports have described WS during pregnancy or postpartum with varying presentations and outcomes. Previous study reported a pregnant patient at 22 weeks gestation who required laparoscopic splenectomy due to infarction, while another researcher described a postpartum torsion following cesarean section that necessitated splenectomy.[11,13] These cases highlight the potential for life-threatening complications when torsion occurs. [12,30,40] In contrast, our patient remained asymptomatic, and no postoperative complications were observed, supporting a conservative approach in stable, non-torsed WS.

Similar to cases reported by another researcher, the ectopic spleen in our case was found within the pelvis.[10,12,31] However, unlike their cases, which involved torsion and required splenectomy, our case demonstrated a stable spleen with no vascular compromise. Another study highlighted hormonal relaxation during pregnancy and the puerperium as key predisposing factors.[12] These findings suggest that the mobility and stability of the spleen in WS can vary, and clinical management should be individualized according to intraoperative findings. [17]

In summary, this case illustrates the diagnostic and management challenges of WS in pregnancy. Awareness of this condition is important for obstetricians and surgeons to recognize potential intraoperative findings and prevent complications. Conservative observation is justified in asymptomatic and stable cases, while timely surgical intervention is essential when torsion or infarction occurs. This case reinforces that individualized intraoperative assessment remains the cornerstone of safe and effective management of wandering spleen.[11]

CONCLUSION

Detection of a pelvic or genital mass during obstetric ultrasonography should raise suspicion of an ectopic kidney or spleen. Wandering spleen (WS), although rare, must be considered among the differential diagnoses of acute abdomen, as splenic torsion represents a potentially life-threatening complication. In the present case, WS was incidentally identified during cesarean delivery performed for preeclampsia and premature rupture of membranes. Intraoperative exploration revealed a spleen located in the pelvic cavity without evidence of torsion or infarction; therefore, no surgical intervention was required due to the low risk of future complications. This case emphasizes the need for heightened awareness among obstetric and gynecologic surgeons regarding the possible incidental occurrence of WS during cesarean section. Prompt recognition of this anomaly facilitates appropriate intraoperative decision-making, prevents unnecessary procedures, and provides an important learning point for surgical practice in obstetrics.

REFERENCES

1. Williams J, Ima S, Milrod C, Krishnamurthy M. Left lower quadrant pain: an unlikely diagnosis in a case of acute abdomen. J Community Hosp Intern Med Perspect. 2018 Sep 3;8(5):296–9.
2. Naqash MM, Bhat AN, Salati SA, Bari SU. Wandering Spleen-a Case Report. 2016 Feb. www.ijtra.com
3. Khan H, Fatima K, Aman M, Khan F, Khan P, Safi MI. Wandering spleen with acute torsion mimicking an adnexal mass. Radiol Case Rep. 2023 Nov 1;18(11):4094–8.
4. Chekol AM, Abzaw AT, Abebe SH, Semagn ZA, Hassen BM. Torsion of a wandering spleen in a pregnant patient presented with acute abdomen: A case report. Int J Surg Case Rep. 2024 Jun 1;119.
5. Gligorievski A. Ectopic spleen presenting as pelvic mass. Trends Med. 2017;17(1).
6. Nastiti NA, Niam MS, Khoo PJ. Emergency laparoscopic splenectomy for torsion of wandering spleen in a geriatric patient: A case report. Int J Surg Case Rep. 2019 Jan 1;61:91–5.
7. Kashbour M, Abdulgalil A, Allafi A. Emergency radiological evaluation of wandering spleen: a case report. Radiol Case Rep. 2025;20:1000–4.
8. Lugo-Fagundo E, Fishman EK. Wandering spleen with torsion and infarction: a case report. Radiol Case Rep. 2022;17(11):3377–9.

9. Melkamu H, Ayele B. Torsion of a wandering spleen presenting as acute abdomen: case report. Radiol Case Rep. 2025;20:2000–3.
10. Siouri H, Betari H, Mojahid A, Mahi N El, Ziani H, Siham N, et al. Wandering spleen presenting as a pelvic mass: A rare case report and literature review. Radiol Case Rep. 2025 Sep;20(9):4469–73.
11. Crepaz L, Di Leo A, Borzellino G, Pomini P, Genna M. The wandering spleen: case report of laparoscopic splenectomy in a pregnant woman. Bull Natl Res Cent. 2022 Nov 26;46(1).
12. Shale WT, Nureta TH, Omar AY, Philipo GS. A rare case of wandering spleen with splenomegaly in a postpartum female patient: A case report and literature review. Int J Surg Case Rep. 2024 Dec 1;125.
13. Daniela B, Sonia P. About the management of patients with wandering spleen in pregnancy and postpartum. Arch Gynecol Obstet. 2025 Sep 1;312(3):991–6.
14. Rasheed O, Adeola M, Hassan A. Wandering spleen in a postpartum female: case report. Ann Med Surg. 2024;89:102983.
15. Paulsen F, Waschke J. Sobotta Atlas of Human Anatomy. Internal Organs. 17th ed. Munich: Elsevier; 2023;2
16. Standring S. Gray's Anatomy: The Anatomical Basis of Clinical Practice. 42nd ed. London. Elsevier. 2020.
17. Tagliabue F, Chiarelli M, Confalonieri G. The wandering spleen. J Gastrointestinal Surg. 2020;24(3):546–7.
18. Mayer A, Fiedor P, Sledzinski Z. Accessory spleen: anatomical variation and clinical implications. Clin Surg. 2025;1:1–6.
19. Endo A, Ueno S, Yamada S, Uwabe C, Takakuwa T. Morphogenesis of the Spleen during the Human Embryonic Period. Anatomical Record. 2015 May 1;298(5):820–6.
20. Chauhan NS, Kumar S. Torsion of a wandering spleen presenting as acute abdomen. Pol J Radiol. 2016 Mar 15;81:110–3.
21. Koliakos E, Papazarkadas X, Sleiman MJ, Rotas I, Christodoulou M. Wandering spleen volvulus: case report and literature review. Am J Case Reports. 2020;21:e925301.
22. Aljuba A, Ahmed S. Torsed wandering spleen presenting as acute abdomen in a child: case report. Int J Surg Case Rep. 2025;130:1–4.
23. Petrucciani N, Lorenzon L, Ramacciato G. Wandering spleen causing small bowel obstruction: a case report. Int J Surg Case Rep. 2023;109:108233.
24. Yambah JK, Obotu K, Nari GD. Wandering spleen: a rare cause of acute abdomen. Clin Case Rep. 2025;13:e000000.
25. Subunca R, Sriluxayini M, Priyatharsan K. Splenic torsion, a challenging diagnosis in an adult with acute abdomen. Int J Surg Case Rep. 2023;111:108898.
26. Assaf R, Kabbani M, El Zein M. Acute splenic pedicle torsion involving pancreatic tail: recurrent pancreatitis due to wandering spleen. Eur J Case Rep Intern Med. 2021;8(4):1000.
27. Bough GM, Ashrafi AS, Georgiades F. Diagnosis, management and outcome of splenic torsion including wandering spleen: an updated review. Best Pract Res Clin Gastroenterol. 2022;59:101800.
28. Wubie AG, Aweke Z. Splenic infarction following torsion of wandering spleen with pancreatic tail involvement: a case report. J Med Case Rep. 2025;19:1–4.
29. Cui Q, Yang X, Wang C. Wandering spleen with pedicle torsion and pancreatic tail involvement in children: case series and review. Front Pediatr. 2024;12:1429490.
30. Aregawi AB, Melkamu H. Wandering spleen with torsion causing an acute abdomen: case report. Int J Surg Case Rep. 2025;128:10–3.
31. shibiru Y aberra, wondimu S, almaw W. Wandering spleen presenting in the form of right sided pelvic mass and pain in a patient with AD-PCKD: a case report and review of the literature. J Med Case Rep. 2024 Dec 1;18(1).
32. Reisner DC, Burgan CM. Wandering Spleen: An Overview. Vol. 47, Current Problems in Diagnostic Radiology. Mosby Inc.; 2018: 68–70.
33. Kaur R, Dua A, Dalal A. Wandering spleen: A rare entity and a diagnostic dilemma. Indian J Radiol Imaging. 2020 Jul 1;30(3):389–91.
34. Morgan S, Glenn I, Soldes O. Laparoscopic splenopexy for wandering spleen, a video demonstration of technique by encircling the spleen with polyglactin 910 woven mesh. Surg Endosc. 2017 Dec 1;31(12):5427–8.
35. Nhungo CJ, Manuel A. Wandering spleen in a 47 year old female: laparoscopic splenopexy preferred when feasible. Int J Surg Case Rep. 2024;109:3000–3.
36. Sumer F, Tokac M, Gulcicek OB. Laparoscopic splenopexy due to wandering spleen: feasible technique. Cureus. 2022;14(3):e23013.
37. Umeda S, Kimura K, Takama Y. Laparoscopic retroperitoneal splenopexy for wandering spleen: three incision pouch technique. Asian J Endosc Surg. 2021;14(3):488–92.
38. Patterson KN, Banieghbal B. Laparoscopic splenopexy with mesh fixation for wandering spleen in a pediatric patient. Video J Operative Res. 2022;6(1):e2022.0023.
39. Lian HH, Hayati F, Ali AA, Azizan N, Ani MFC, Suhaili MA, et al. Wandering spleen: A unique cause of acute abdomen. Folia Morphologica (Poland). 2018 Jun 6;77(2):400–2.
40. Lourdusamy V, Patel D, Docobo R, Tantry S, Lourdusamy D, Farukh S. The Importance of Recognizing Wandering Spleen as a Cause of Recurrent Acute Pancreatitis. Case Rep Gastrointest Med. 2018 Jun 21;2018:1–3.