

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20252357>

Case Report

Ovarian torsion in early pregnancy: a rare case of twisted functional cysts with preserved pregnancy

Regragui Abdelmajide*, Boukroute Marouane, Hafsa Taheri,
Hanane Saadi, Ahmed Mimouni

Department of Obstetrics and Gynecology, Mohammed VI University Hospital Center, Oujda, Morocco

Received: 23 June 2025

Accepted: 16 July 2025

*Correspondence:

Dr. Regragui Abdelmajide,

E-mail: Reg.majid98@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Ovarian torsion during early pregnancy is a rare but critical surgical emergency. We present a case of a 28-year-old G6P4 patient at 7 weeks gestation who presented with acute pelvic pain and was diagnosed with bilateral ovarian torsion secondary to functional cysts. Ultrasound revealed two large cysts (57 mm and 49 mm) with characteristic "whirlpool sign." Emergency laparoscopic detorsion and cystectomy were performed, preserving ovarian tissue and maintaining the pregnancy. Postoperative management included progesterone support with favorable outcomes at 2-month follow-up. We review the pathophysiological mechanisms predisposing to torsion in early pregnancy, including β -hCG-induced cyst formation and increased adnexal mobility. The discussion emphasizes that ovarian preservation should be attempted even in cases of apparent ischemia, as functional recovery is often possible. This report adds to the limited literature on bilateral torsion in pregnancy and demonstrates that excellent outcomes can be achieved with timely, minimally invasive surgery combined with appropriate hormonal support.

Keywords: Ovarian torsion, Early pregnancy, Functional cysts, Conservative surgery, Laparoscopy, Fetal viability

INTRODUCTION

Ovarian torsion is a rare but serious surgical emergency characterized by the rotation of the ovary and/or fallopian tube around their vascular axis. This rotation compromises venous return and subsequently arterial supply, potentially leading to ovarian ischemia. Its occurrence during pregnancy is unusual, with an estimated prevalence between 1/5,000 and 1/10,000 pregnancies.^{1,2}

Diagnosis is often challenging due to nonspecific clinical manifestations and misleading complementary examinations. Prompt surgical management is necessary to preserve ovarian function and ensure the continuation of pregnancy. We report here an original case of bilateral ovarian torsion involving functional cysts in early pregnancy, successfully treated with the conservative surgery.

CASE REPORT

A 28-year-old woman, G6P4 (4 living children/1 spontaneous abortion), presented at 7 weeks and 3 days of gestation with acute lateralized pelvic pain. Clinical examination revealed a normotensive patient (12/8 mmHg), tachycardia (110 bpm), respiratory stability, and absence of fever. Obstetric examination showed a soft abdomen with tenderness in the left iliac fossa, an enlarged uterus, and a long, closed posterior cervix on digital examination, with no metrorrhagia.

Pelvic ultrasound confirmed an evolving monofetal pregnancy with a craniocaudal length consistent with 7 weeks of gestation. A right latero-uterine anechoic image suggested two functional cysts measuring 57×57 mm and 49×37 mm (Figure 1), accompanied by a 42-mm pelvic effusion (Figure 2).

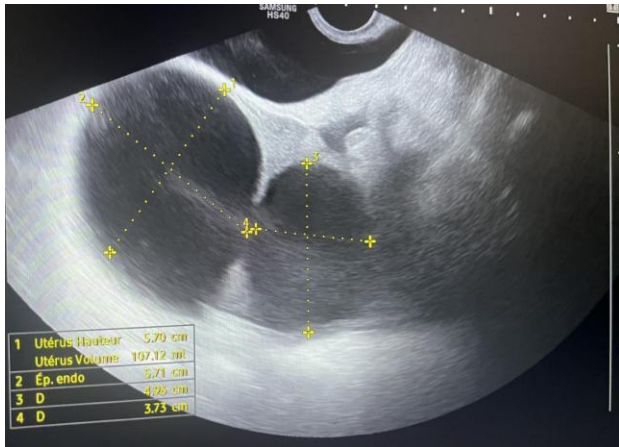


Figure 1: Transvaginal ultrasound reveals a right latero-uterine anechoic cystic structure, suggestive of functional ovarian cysts, measuring 57×57 mm (likely hemorrhagic or follicular) and 49×37 mm.

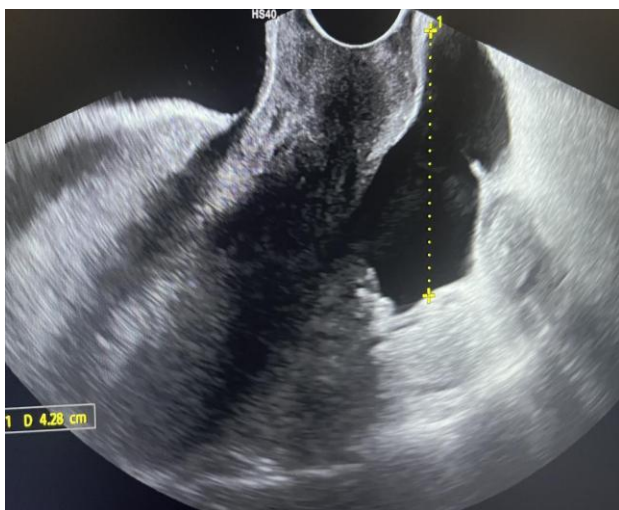


Figure 2: Transvaginal ultrasound reveals a moderate pelvic effusion (42 mm in depth).

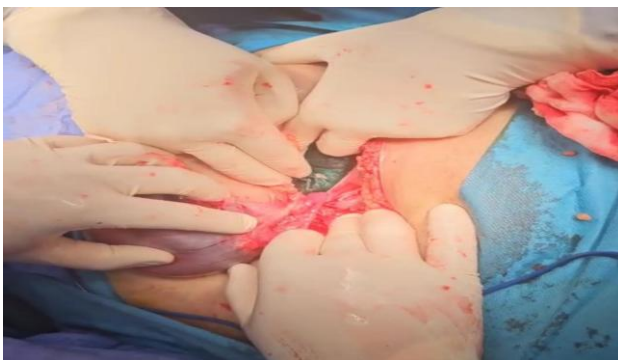


Figure 3: Intraoperative findings: Two torsioned ovarian cysts with two complete spiral turns (360° each), causing vascular congestion and ischemic changes. No signs of necrosis or rupture were noted.



Figure 4: Intraoperative view after cystectomy: Both torsioned ovarian cysts were successfully excised with preservation of ovarian tissue. Meticulous hemostasis was achieved, and the ovaries demonstrated restored vascularity following detorsion.

The patient received analgesic treatment and preoperative workup before being taken to the operating room for suspected ovarian torsion. Surgical exploration revealed two twisted ovarian cysts with two spiral turns (Figure 3). Cystectomy was performed, hemostasis was secured (Figure 4), and immediate postoperative ultrasound confirmed persistent fetal cardiac activity. The patient was placed on progesterone therapy with close monitoring. Postoperative recovery was uneventful, and the pregnancy progressed favorably over the following two months under progesterone support.

DISCUSSION

Adnexal torsion results from the rotation of the ovary and/or fallopian tube around their vascular axis. In early pregnancy, several mechanisms predispose to this complication. Elevated β -hCG levels stimulate the development of corpus luteum cysts, which are physiological but increase ovarian size and mobility.¹ The uterus, still pelvic in the first trimester, allows greater adnexal mobility, facilitating torsion. Risk factors also include polycystic ovaries, prior torsion, ligamentous laxity, ovarian stimulation (ART), and ovarian masses (>5 cm).^{2,3} A right-sided predominance is often reported due to the sigmoid colon limiting left adnexal mobility.⁴

The clinical presentation is variable and often misleading. Most cases involve: Acute, unilateral, sudden pelvic pain, possibly radiating to the back or thigh; nausea and vomiting (50-70% of cases); absence of metrorrhagia in an evolving pregnancy; pain upon uterine mobilization during vaginal examination; Occasionally, peritoneal signs (guarding, rebound), particularly with ovarian necrosis.⁵

These symptoms may mimic ectopic pregnancy, appendicitis, or cyst rupture, contributing to frequent diagnostic delays.

Transvaginal ultrasound is the key diagnostic tool. Findings suggestive of torsion include: Unilateral adnexal mass, often cystic and >5 cm; enlarged, globular ovary with thickened central stroma; Twisted pedicle sign: "whirlpool sign" (spiral appearance of the suspensory ligament), pelvic effusion indicating peritoneal irritation; Reduced or absent Doppler flow, though normal flow does not exclude torsion due to the dual ovarian vascularization.^{6,7}

MRI may be useful if diagnosis remains uncertain, particularly to differentiate necrosis from hemorrhagic infarction.

Surgical treatment must be immediate. Ovarian detorsion is recommended even if the ovary appears congested, as functional recovery is often possible.^{8,9} Cystectomy is indicated when torsion is secondary to a benign cyst, as in our case. Adnexectomy is reserved for irreversible necrosis or suspected malignancy. Conservative management is prioritized in early pregnancy.

Laparoscopy is the gold standard in equipped centers, but laparotomy remains an option in emergencies, large masses, or resource-limited settings.¹⁰

Ovarian torsion may impair fertility if treatment is delayed. However, functional ovarian recovery is common, even after detorsion of an ischemic ovary. With prompt conservative surgery, obstetric prognosis is favorable, with pregnancy continuation in 80-90% of cases.¹¹

Recent studies highlight that progesterone supplementation post-detorsion may improve pregnancy outcomes, particularly in cases involving corpus luteum cysts.¹² Additionally, the risk of recurrence in subsequent pregnancies is estimated at 10-15%, warranting close surveillance in high-risk patients.¹³

This case is notable for its rarity: bilateral ovarian torsion in early pregnancy involving two distinct functional cysts. Despite severe torsion (two spiral turns) and resource limitations, conservative surgery preserved ovarian function and embryonic viability, as confirmed by postoperative ultrasound. The favorable outcome underscores the importance of early diagnosis and minimally invasive intervention, even in challenging settings.

CONCLUSION

Ovarian torsion during pregnancy is rare but serious. Diagnosis relies on thorough clinical evaluation and pelvic ultrasound, though signs may be subtle or misleading. Treatment involves prompt conservative surgery, often

preserving ovarian function and pregnancy. Our case demonstrates favorable outcomes even in unusual circumstances, provided management is timely.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

- Hibbard LT. Adnexal torsion. *Am J Obstet Gynecol.* 1985;152(4):456-61.
- Damigos E, Johns J, Ross J. An update on the diagnosis and management of ovarian torsion. *Obstet Gynaecol.* 2012;14(4):229-36.
- Peña JE, Ufberg D, Cooney N, Denis AL. Usefulness of Doppler sonography in the diagnosis of ovarian torsion. *Fertil Steril.* 2000;73(5):1047-50.
- Houry D, Abbott JT. Ovarian torsion: a fifteen-year review. *Ann Emerg Med.* 2001;38(2):156-9.
- White M, Stella J. Ovarian torsion: 10-year perspective. *Emerg Med Australas.* 2005;17(3):231-7.
- Vijayaraghavan SB. Sonographic whirlpool sign in ovarian torsion. *J Ultrasound Med.* 2004;23(12):1643-9.
- Lee EJ, Kwon HC, Joo HJ, Suh JH. Diagnosis of ovarian torsion with color Doppler sonography: depiction of twisted vascular pedicle. *J Ultrasound Med.* 1998;17(2):83-9.
- Oelsner G, Bider D, Goldenberg M, Admon D, Mashlach S. Long-term follow-up of the twisted ischemic adnexa managed by detorsion. *Fertil Steril.* 1993;60(6):976-9.
- Oelsner G, Shashar D. Adnexal torsion. *Clin Obstet Gynecol.* 2006;49(3):459-63.
- Hasson J, Tsafrir Z, Azem F, Bar-On S, Almog B, Mashlach R, et al. Comparison of adnexal torsion between pregnant and nonpregnant women. *J Minim Invasive Gynecol.* 2010;17(5):526-30.
- Bornstein E, Barnhard Y, Levi Z, et al. Is conservative surgery for adnexal torsion associated with recurrence in reproductive-age women? *Fertil Steril.* 2009;92(6):2095-9.
- Sasaki KJ, Miller CE. Adnexal torsion: review of the literature. *J Minim Invasive Gynecol.* 2014;21(2):196-202.
- Guthrie BD, Adler MD, Powell EC. Incidence and trends of pediatric ovarian torsion hospitalizations in the United States, 2000-2006. *Pediatrics.* 2010;125(3):532-8.

Cite this article as: Abdelmajide R, Marouane B, Taheri H, Saadi H, Mimouni A. Ovarian torsion in early pregnancy: a rare case of twisted functional cysts with preserved pregnancy. *Int J Reprod Contracept Obstet Gynecol* 2025;14:2765-7.