



Case Report

# A Rare Case of Twisted Large Luteal Cyst in the First Trimester of Pregnancy

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## Abstract

Ovarian torsion is a rare but serious complication during early pregnancy, often associated with corpus luteum or functional cysts. We report the case of a 23-year-old woman, gravida 4 abortion 3 (G4A3), presenting with acute abdominal pain at 6 weeks and 2 days of gestation. Imaging revealed a large right luteal cyst measuring 88 × 84 × 51 mm with absent Doppler flow, suggestive of torsion. Prompt laparotomy with detorsion and cystectomy, followed by postoperative progesterone support, resulted in successful preservation of the ovary and continuation of the pregnancy. Early diagnosis and timely intervention ensured a favourable maternal and fetal outcome.

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**KEYWORDS:** Ovarian torsion, cyst, Pregnancy

## INTRODUCTION

Ovarian torsion refers to the partial or complete rotation of the ovarian pedicle, compromising vascular supply. It is rare in early pregnancy, with an incidence of about 1 in 5,000 pregnancies. The corpus luteum is critical during the first trimester for progesterone production until placental takeover at 10–12 weeks. Torsion of a corpus luteum cyst presents the dual challenge of preserving maternal ovarian function while maintaining early pregnancy.

## Case Presentation

### Patient Profile

A 23-year-old female, gravida 4, abortion 3 (all first-trimester spontaneous abortions), presented at 6 weeks 2 days gestation with sudden severe lower abdominal pain for 5 hours, associated with nausea and vomiting. There was no vaginal bleeding or discharge.

### Examination Findings:

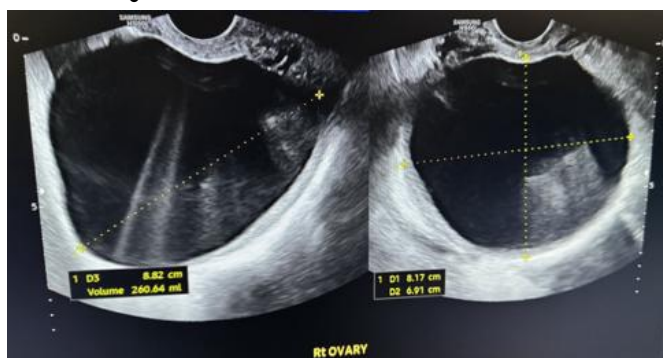
- **Vitals:** BP 102/60 mmHg, HR 110 bpm, afebrile
- **Abdomen:** Tenderness in the right iliac fossa with mild guarding
- **Pelvic Exam:** Uterus ~6 weeks size, right adnexal tenderness, no vaginal bleeding

### Investigations:

#### Transvaginal Ultrasound:

- Intrauterine gestation sac 15 mm with CRL 4.4 mm, corresponding to 6 weeks 1 day; fetal cardiac activity present
- Right ovary enlarged ( $88 \times 81 \times 69$  mm) with a cystic lesion ( $92 \times 84 \times 51$  mm, volume 210 cc)
- Absent vascularity on color Doppler – suggestive of torsion

**Laboratory Findings:** Hb 11.6 g/dL, WBC 8,900/mm<sup>3</sup>,  $\beta$ -hCG 46,300 mIU/mL



**Figure 1:** Transvaginal ultrasound showing a large right ovarian luteal cyst measuring  $92 \times 84 \times 51$  mm.



**Figure 2:** Transvaginal ultrasound confirming live intrauterine pregnancy at 6 weeks 2 days with fetal cardiac activity.

### Management:

Emergency laparotomy was performed due to the large cyst size and torsion. Intraoperatively, the right ovary was twisted with a large luteal cyst; the uterus was intact. The following steps were undertaken:

1. Detorsion of the right adnexa
2. Cystectomy with ovarian preservation
3. No oophorectomy performed due to the acute setting

Postoperatively, the patient received progesterone support to maintain early pregnancy.

### Histopathology and Microbiology

- **Gross Examination:** Two tissue pieces measuring  $6.0 \times 2.0$  cm and  $6.5 \times 2.0$  cm
- **Microscopy:** Luteinized theca and granulosa follicles with polygonal cells and abundant cytoplasm within ovarian stroma
- **Diagnosis:** Luteal cyst / Luteoma of pregnancy
- **Cyst Fluid Analysis:** 1 ml reddish, hazy fluid with coagulum; cytology negative for malignancy

## DISCUSSION

Corpus luteum cysts are common in early pregnancy and usually regress spontaneously. Cysts larger than 5 cm are at risk of torsion, which may lead to acute pain, ovarian necrosis, and compromise of progesterone support for the ongoing pregnancy.

In this case, early recognition and emergency laparotomy allowed for successful detorsion and cystectomy with ovarian preservation. As the corpus luteum was disrupted, postoperative progesterone support was initiated to maintain early gestation. Literature supports that prompt surgical intervention with ovarian conservation is safe and improves maternal and fetal outcomes in early pregnancy.

## CONCLUSION

Ovarian torsion in early pregnancy is a rare but critical emergency. High clinical suspicion, timely ultrasonography,

and early surgical management are vital to preserve ovarian function and support pregnancy. Postoperative progesterone support is essential when the corpus luteum is surgically compromised.

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