Twisted Right Corpus Luteum Cysin Pregnancy - Case Report

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ABSTRACT

Background: Corpus luteum cysts are common in early pregnancy and usually regress spontaneously by 12 weeks of gestation. However, torsion of a corpus luteum cyst during pregnancy is rare and poses a significant threat to maternal and fetal well-being if not promptly recognized and managed.
Case Presentation: A 29-year-old primi-gravida at 12 weeks of gestation presented with acute abdominal pain following a single episode of vomiting and severe right iliac fossa and groin pain. On examination, she was hemodynamically stable with localized tenderness in the right iliac fossa. Ultrasonography revealed a single live intrauterine pregnancy (11 weeks 5 days) with a right ovarian cyst (5 × 4 × 4 cm). Conservative management provided transient relief, but pain recurred with bradycardia and worsening tenderness. Despite a differential diagnosis of appendicitis, clinical suspicion of ovarian torsion was high. Emergency laparotomy revealed a twisted right ovarian cyst (7 × 6 × 4.5 cm), for which right oophorectomy was performed.
Outcome: Histopathology confirmed a corpus luteum cyst. Postoperative recovery was uneventful. Careful antenatal monitoring and follow-up were continued throughout pregnancy. The patient later delivered a healthy female infant weighing 2.8 kg via lower-segment caesarean section on 25 December 2024. Both intraoperative and postoperative periods were uneventful.
Conclusion: Twisted corpus luteum cyst in early pregnancy is a rare but critical emergency. Early diagnosis, prompt surgical management, and vigilant antenatal follow-up are essential for favourable maternal and fetal outcomes.

Keywords: Corpus luteum cyst torsion; early pregnancy; ovarian torsion in pregnancy; acute abdomen in pregnancy

INTRODUCTION

Corpus luteum cysts are among the most common functional ovarian cysts observed during early pregnancy. They form as a result of physiological enlargement of the corpus luteum, which produces progesterone essential for maintaining early gestation until placental takeover around 10–12 weeks.[1] Most corpus luteum cysts are small, asymptomatic, and regress spontaneously by the end of the first trimester. However, in rare instances, they may enlarge, rupture, haemorrhage, or undergo torsion, presenting as acute abdomen and posing diagnostic and therapeutic challenges.[2]

Take Home Message
Torsion of corpus luteum cyst in the right ovary should be suspected in pregnant women with acute right iliac fossa pain, a rare and dangerous medical emergency where ovary twist around its blood supply.
Ultrasonography aids diagnosis, but surgical exploration remains the gold standard.
Early intervention with progesterone supplementation supports pregnancy continuation after oophorectomy.
Vigilant antenatal follow-up ensures safe maternal and fetal outcomes.

Ovarian torsion accounts for approximately 2–3% of all gynaecologic emergencies and is most often associated with benign ovarian cysts. Torsion of a corpus luteum cyst during pregnancy is particularly uncommon, with an incidence estimated at 1 in 5,000 pregnancies. The condition is more frequently observed on the right side, possibly due to dextro-rotation of the gravid uterus and the restraining effect of the sigmoid colon on the left ovary.[3,4] The pathophysiology involves twisting of the ovary and its vascular pedicle, leading to venous and lymphatic obstruction, stromal

oedema, and, if untreated, arterial compromise and ischemic necrosis.

Diagnosis is often challenging due to nonspecific symptoms such as lower abdominal pain, nausea, and vomiting that mimic appendicitis, ruptured ectopic pregnancy, or degenerating fibroid. Ultrasonography is the mainstay of diagnosis, though doppler flow may remain normal in partial torsion. Given these diagnostic ambiguities, maintaining a high index of suspicion is crucial.

This case is presented to highlight the diagnostic difficulties and to emphasize that early recognition and timely surgical intervention can prevent ovarian loss, preserve pregnancy, and ensure a favourable maternal–fetal outcome.

CASE REPORT

A 29-year-old primi-gravida in early pregnancy presented at 11:30 PM with complaints of a single episode of vomiting followed by severe lower abdominal pain, more pronounced in the right iliac fossa and radiating to the groin. On examination, the patient was afebrile, diaphoretic, with a pulse rate of 58 bpm, blood pressure 100/60 mmHg, and SpO_2 96%. There was no pallor or abdominal distension. Abdominal palpation revealed localized tenderness in the right iliac fossa, just below McBurney's point, the uterus was just palpable. Per speculum examination showed cervix and vagina healthy with no visible bleeding. Per vaginal examination showed a 12-week-sized uterus with fullness in pouch of Douglas and marked tenderness in the right fornix.

Diagnostic Assessment

Urgent ultrasonography demonstrated a single live intrauterine pregnancy of 11 weeks 5 days with a right ovarian cyst measuring 5 × 4 × 4 cm containing anechoic fluid, probe tenderness present without free fluid in the pelvis. [Figure 1]. Hematological and biochemical parameters were within normal limits. Hemoglobin was 10.8 g/dL, total leukocyte count 11,100/mm^3, and differential count showed P 74%, L 16%, E 4%, M 6%. Platelet count was 2.8 × 10^5/mm^3. Blood group was B positive. Liver and renal function tests were normal with blood urea 20.15 mg/dL, serum creatinine 0.62 mg/dL, and serum bilirubin 0.81 mg/dL (direct 0.34 mg/dL, indirect 0.47 mg/dL). Serology for HBsAg and HIV I & II were non-reactive. Random blood sugar was 86 mg/dL, and thyroid function was normal. Urine microscopy was negative. Prothrombin Time (PT) 14.4 sec, Control 12.4 sec, PT Index 1.16, PT Ratio 1.16, and INR 1.21. Patient clotting time was 28.1 sec with a control value of 23.4 sec.

These findings indicated a normal coagulation status, suitable for surgical intervention.

Conservative management was initiated with intravenous Ringer's lactate, antispasmodics (drotaverine), antiemetics (ondansetron), antibiotics (ceftriaxone + metronidazole), and progesterone support (hydroxyprogesterone 250 mg IM and oral dydrogesterone). Pain subsided temporarily for 4–5 hours but recurred severely with perspiration and bradycardia (54–56 bpm).

Repeat ultrasonography showed a 4.4 × 4.9 × 4 cm right ovarian cyst with normal vascularity and no evidence of torsion or free fluid. Colour Doppler not suggestive of ovarian torsion. Surgical review suggested possible appendicitis, but clinical findings favoured ovarian torsion.

Therapeutic Intervention

The patient was counselled regarding possible surgical intervention if pain recurred. Eighteen hours later, she developed excruciating pain with vasovagal symptoms and an increase in abdominal girth by 1 cm. Emergency laparotomy under spinal anesthesia revealed a twisted right ovarian cyst (7 × 6 × 4.5 cm) impacted in the pouch of Douglas, associated with a 12-week gravid uterus. Approximately 100 mL of free peritoneal fluid was present. A right oophorectomy was performed while preserving the right fallopian tube; the left adnexa were normal. The appendix was retrocecal and healthy. Peritoneal lavage was carried out. [Figure 2]

Postoperative Care and Follow-up

Postoperatively, higher doses of injectable progesterone, progesterone gel, and oral dydrogesterone were administered. Ultrasound on the fourth postoperative day confirmed a single live intrauterine pregnancy of 12 weeks 5 days. The patient was discharged on day 4 in stable condition,stitches removed on Day 9.

Histopathological examination revealed ovarian tissue with a cyst consistent with a corpus luteum cyst showing marked congestion.

Antenatal follow-up was uneventful. At 18 weeks, uterine height corresponded to gestational age, and fetal heart sounds (150 bpm) were noted by Doppler. The patient continued regular antenatal visits with no complications.

At 39 weeks, she went into spontaneous labour but underwent a lower-segment caesarean section for deep transverse arrest, delivering a healthy female infant weighing 2.8 kg with Apgar scores 8/10 and 10/10 at 1 and 5 minutes, respectively. Both mother and child recovered well; postoperative wound healing was satisfactory, and they were discharged on the tenth postoperative day.

DISCUSSION

The most frequent ovarian tumors encountered in pregnancy include cystic teratomas, para-ovarian cysts, serous cystadenomas, corpus luteum cysts, and luteomas.[1,2] Serous cystadenomas are typically thin-walled, translucent, unilocular, and may range from 20 to 30 cm in diameter. Around 10–15 % are borderline malignant and 20–40 % are malignant.[2]
In contrast, corpus luteum cysts are physiologic, small (< 6 cm), and generally regress spontaneously. Complications such as torsion or rupture are rare but potentially life-threatening.[1,3] Ovarian torsion occurs in approximately 1–5 per 10,000 pregnancies, most commonly during the first trimester when the corpus luteum is active.[3,4]
The mechanism of torsion in pregnancy is multifactorial. Hormonal stimulation, increased ovarian mobility due to the relaxation of ligaments, and displacement of the adnexa by the enlarging uterus predispose to twisting of the ovarian pedicle.[1] The right ovary is more commonly affected because the sigmoid colon limits left ovarian mobility and because dextrorotation of the gravid uterus increases torsional stress on the right adnexa.[4]
Diagnosis is often challenging, as the clinical presentation can mimic acute appendicitis, ruptured ectopic pregnancy, or other intra-abdominal emergencies. Common symptoms include sudden onset of lower abdominal pain, nausea, and vomiting, with variable degrees of tenderness and guarding. Laboratory investigations are nonspecific, and ultrasound remains the first-line imaging modality during pregnancy. Typical sonographic findings include an enlarged ovary with peripheral follicles, stromal oedema, and free fluid. However, normal vascularity on Doppler does not exclude torsion due to possible dual arterial supply from the uterine and ovarian arteries.[5] Hence, persistent or worsening pain despite conservative management warrants surgical exploration.
Prompt surgical intervention, preferably via laparotomy or laparoscopy, is essential once torsion is suspected, to prevent ovarian necrosis, maternal shock, and fetal loss.[6-8] In early pregnancy, detorsion and ovarian conservation may be attempted when viability is preserved, but oophorectomy is indicated when gangrenous or necrotic changes are present. Early surgery has been shown to be safe for both mother and fetus, especially when combined with perioperative progesterone supplementation to maintain luteal support.[9,10]
In this case, timely diagnosis and intervention prevented further complications, and postoperative progesterone therapy successfully maintained pregnancy, culminating in the delivery of a healthy term infant. This highlights the importance of rapid clinical decision-making, judicious use of imaging, and multidisciplinary management in achieving favourable outcomes in cases of adnexal torsion during pregnancy

CONCLUSION

Twisted corpus luteum cyst in early pregnancy is an uncommon cause of acute abdomen. High clinical suspicion, timely imaging, and early surgical management are vital to avoid maternal and fetal morbidity. Adequate postoperative luteal support and careful antenatal surveillance can ensure successful pregnancy continuation and delivery.

AUTHOR DECLARATION

Patient Consent: Written informed consent was obtained from the patient for publication of this case and accompanying details.

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FIGURES

Figure 1: Transvaginal ultrasonography showing a single live intrauterine gestational sac with fetal pole (left) and a cystic lesion in the right ovary (right), consistent with a corpus luteum cyst in early pregnancy.

Figure 2. Markedly congested twisted ovarian cyst measured approximately 7 × 6 × 4.5 cm and was impacted in the pouch of Douglas, consistent with torsion of a corpus luteum cyst visualized during laparotomy.