Case Report

Triple Torsion of a Large Left Ovarian Cyst in a 28-Year-Old Woman: A Case Report

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Abstract

Background: Ovarian torsion is an important gynaecological emergency that can compromise ovarian blood supply and lead to ovarian necrosis. Triple torsion, involving three complete rotations (1080°) of the ovarian pedicle, is a rare presentation.

Case Presentation: A 28-year-old woman presented to the emergency department with severe left flank pain of 24-hour duration and vomiting. Physical examination revealed left iliac fossa tenderness with guarding. Laboratory investigations showed leucocytosis with neutrophilia (white blood cell count: 15.76 × 10^3/µL). Pelvic ultrasonography revealed a large pelvic cystic lesion. Emergency exploratory laparotomy identified an 11.2 × 9.5 cm left ovarian cyst with three complete rotations (1080°) of the ovarian pedicle, resulting in torsion and marked vascular compromise, with a dusky appearance of the ovary. Left oophorectomy was performed. The postoperative recovery was uneventful, and the patient was discharged on the third postoperative day.

Conclusion: Triple torsion of an ovarian cyst is a rare but serious presentation of ovarian torsion. This case highlights the importance of prompt recognition and emergency surgical management to prevent complications associated with prolonged vascular compromise.

Keywords: Ovarian Torsion; Ovarian Cysts; Acute Abdomen; Oophorectomy; Emergency Treatment.

Introduction

Ovarian torsion is an uncommon but potentially serious gynaecological emergency that occurs when the ovary, often along with the fallopian tube, rotates around its vascular pedicle, compromising its blood supply and potentially resulting in ischaemic necrosis. It predominantly affects women of reproductive age and is frequently associated with ovarian masses or cysts. The condition typically presents with acute unilateral lower abdominal or pelvic pain, often accompanied by nausea and vomiting. Prompt diagnosis and surgical intervention are essential to minimise ovarian damage and preserve fertility.[1,2] Although ovarian torsion is well recognised, triple torsion involving three complete rotations (1080°) is an unusual presentation. We report a rare case of triple torsion of a large left ovarian cyst in a 28-year-old woman, resulting in extensive ischaemic necrosis and requiring left oophorectomy.

Case Presentation

A 28-year-old woman presented to the emergency department with severe left-sided abdominal pain and vomiting of 24-hour duration. She reported intermittent abdominal pain over the preceding month, which had been relieved by analgesics. The current episode involved sudden-onset, sharp, continuous pain in the left flank, radiating to the lower abdomen and associated with multiple episodes of non-bilious vomiting. She denied urinary symptoms, fever, or vaginal bleeding. Her menstrual cycles were regular, and her last menstrual period had occurred two weeks before presentation. She had no significant medical or surgical history.

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On physical examination, the patient appeared anxious and was in severe distress. Her vital signs were stable. Abdominal examination revealed tenderness and guarding in the left iliac fossa, without rebound tenderness. A provisional diagnosis of a complicated ovarian cyst, with suspected ovarian torsion, was made.

Laboratory investigations revealed leucocytosis (white blood cell count: 15.76 × 10^3/µL) with neutrophil predominance (89.2%). Her haemoglobin was 12.4 g/dL, and haematocrit was 37.4%. Liver function tests showed a total bilirubin level of 0.8 mg/dL, alanine aminotransferase (ALT) of 26 U/L, and alkaline phosphatase of 165 U/L. Renal function was within normal limits, with a blood urea level of 21 mg/dL and serum creatinine of 0.4 mg/dL. Random blood glucose was 102 mg/dL. Screening tests for HIV, hepatitis C virus (HCV), and hepatitis B surface antigen (HBsAg) were non-reactive.

Transabdominal ultrasonography showed normal bilateral kidneys and urinary bladder. A large hypoechoic cystic lesion was identified in the pelvis, probably of ovarian origin. Preoperative echocardiography demonstrated a normal left ventricular ejection fraction of 60%.

The patient underwent emergency exploratory laparotomy under general anaesthesia.



Figure 1A



Figure 1B

Figure 1. Intraoperative findings showing the large gangrenous left ovarian mass (A and B).

Intraoperative examination revealed a large left ovarian cyst measuring 11.2 × 9.5 cm, with three complete rotations (1080°) of the left adnexa. Intraoperative examination revealed a large left ovarian cyst measuring 11.2 × 9.5 cm, with three complete rotations (1080°) of the left adnexa. The twisted pedicle was markedly dusky and congested, indicating significant vascular compromise. The left ovarian tissue also appeared markedly dusky, with features suggestive of severe ischaemic injury. Based on these intraoperative findings, ovarian viability was considered compromised, and ovarian preservation was deemed unlikely. Therefore, detorsion was not attempted, and left oophorectomy was performed following careful ligation of the twisted pedicle. The right ovary and uterus appeared normal, with no ascitic fluid or peritoneal deposits. The excised specimen was sent for histopathological examination.

The procedure was completed without intraoperative complications. Postoperatively, the patient received intravenous antibiotics, analgesics for pain control, and antiemetics as required. She was ambulatory on the first postoperative day and recovered uneventfully. She was discharged on the third postoperative day with oral antibiotics and analgesics. Before discharge, she was counselled regarding the fertility implications of unilateral oophorectomy

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and reassured about the expected functioning of the remaining ovary.

Histopathological findings confirmed extensive ischaemic necrosis and gangrenous changes without evidence of malignancy, supporting the clinical diagnosis of severe ovarian torsion. The prolonged vascular compromise associated with the three complete rotations likely contributed to the irreversible tissue damage.

Discussion

Ovarian torsion is a gynaecological emergency that requires a high index of clinical suspicion and prompt surgical intervention. It accounts for approximately 3% of gynaecological emergencies and predominantly affects women of reproductive age.[1] It occurs when the ovary, often along with the fallopian tube, rotates around its vascular pedicle, initially compromising venous and lymphatic drainage and potentially progressing to arterial obstruction and ovarian ischemia.[2]

In the present case, the patient presented with typical clinical features of ovarian torsion, including acute unilateral abdominal pain and vomiting. The presence of a large ovarian cyst measuring 11.2 × 9.5 cm was an important predisposing factor, as adnexal masses larger than 5 cm are associated with an increased risk of torsion due to greater ovarian mobility.[3] The finding of triple torsion, involving three complete rotations (1080°) of the left adnexa, was particularly noteworthy. Such extensive rotation can cause substantial vascular compromise and may result in severe ischaemic injury.

The patient's laboratory investigations revealed leucocytosis with neutrophilia, which may accompany ovarian torsion as a consequence of tissue ischemia and the associated inflammatory response. However, these findings are nonspecific and cannot independently establish the diagnosis. Normal inflammatory markers, when present, do not exclude ovarian torsion.[4] Therefore, clinical assessment and appropriate imaging should guide timely surgical evaluation.

The differential diagnosis of a large ovarian mass includes both benign and malignant lesions. Although ovarian malignancy should be considered when evaluating a large adnexal mass, the acute clinical presentation in this young patient, together with the intraoperative demonstration of adnexal torsion, established torsion as the cause of her acute symptoms. Previous studies have also described ovarian fibromas as potential causes of large adnexal masses,[6] while reports from Pakistan highlight the importance of considering gynaecological malignancies in the differential diagnosis of ovarian masses.[7] In the present case, histopathological examination demonstrated extensive necrosis and gangrenous changes without evidence of malignancy. However, the specific histological nature of the underlying cyst was not established in the reported findings.

The decision to perform left oophorectomy rather than attempt conservative management through detorsion was based on the intraoperative appearance of the ovary and pedicle. Both appeared markedly dusky and congested, with extensive ischaemic changes suggesting severe vascular compromise. Although current evidence generally favours ovarian preservation through detorsion, particularly in women of reproductive age, the operative team considered ovarian preservation unlikely to be successful in this case. Histopathological examination subsequently confirmed extensive tissue necrosis.[8] This case highlights the importance of individualising surgical management according to the clinical and intraoperative findings.

The occurrence of triple torsion makes this case particularly noteworthy. Although ovarian torsion is well recognised, rotation involving three complete turns is an unusual operative finding.[5] Extensive rotation may contribute to severe vascular compromise, although the degree of torsion alone does not reliably determine the extent of ovarian damage. The case also highlights the importance of prompt recognition and emergency surgical management to address the risk of progressive ischaemic injury and associated complications.

Conclusion

Ovarian torsion should be considered in women of reproductive age presenting with acute pelvic pain, particularly in the presence of an ovarian mass. This case highlights the rare occurrence of triple torsion (1080°) and its potential to cause severe ovarian ischaemic injury. Although ovarian preservation through conservative

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surgery is generally preferred, extensive tissue necrosis may necessitate oophorectomy. Early recognition and prompt surgical intervention are essential to minimise ovarian damage and reduce the risk of serious complications.

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Informed Consent: Written informed consent was obtained from the patient for publication of her clinical details and accompanying images.

Author Contributions: **RA:** Data acquisition, manuscript drafting, and critical review. **NS:** Analysis and interpretation of case-related data, manuscript drafting, and critical review. Both authors approved the final version of the manuscript and agreed to be accountable for all aspects of the work, ensuring that questions related to its accuracy or integrity were appropriately investigated and resolved.

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