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Case Report

Obstetrics and Gynaecology Section

Twisted Paraovarian Cyst with Secondary Torsion of the Fallopian Tube: A Rare Cause of Abdominal Pain with Diagnostic Dilemma

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ABSTRACT

Acute abdominal pain is one of the common reasons for patients to seek medical attention. There are multiple medical and surgical causes of abdominal pain. One uncommon cause is a twisted paraovarian cyst, which requires prompt intervention to decrease the patient's morbidity. A paraovarian cyst is a fluid-filled sac that develops in the broad ligament and is often asymptomatic. A 38-year-old woman presented with dull aching pain in her right lower abdomen for four days. Abdominal ultrasonography revealed thickening of the segmental bowel in the right lower abdomen with adjacent oedema. The uterus and both ovaries appeared normal. Contrast-enhanced Computed Tomography (CT) showed a cystic density lesion measuring 4.0×3.3 cm, adjacent to the uterus, and the right ovary could not be visualised separately. Inflammatory changes were observed in the small bowel, extending into the right iliac region, and the appendix could not be visualised separately. An emergency laparotomy was performed, which, however, revealed a twisted paraovarian cyst along with a right fallopian tube showing signs of complete necrosis. The paraovarian cyst and the right fallopian tube were removed, and the patient had an uneventful recovery. Torsion of the paraovarian cyst with secondary torsion of the fallopian tube is a rare phenomenon and should be considered as a cause of abdominal pain in females of reproductive age group.

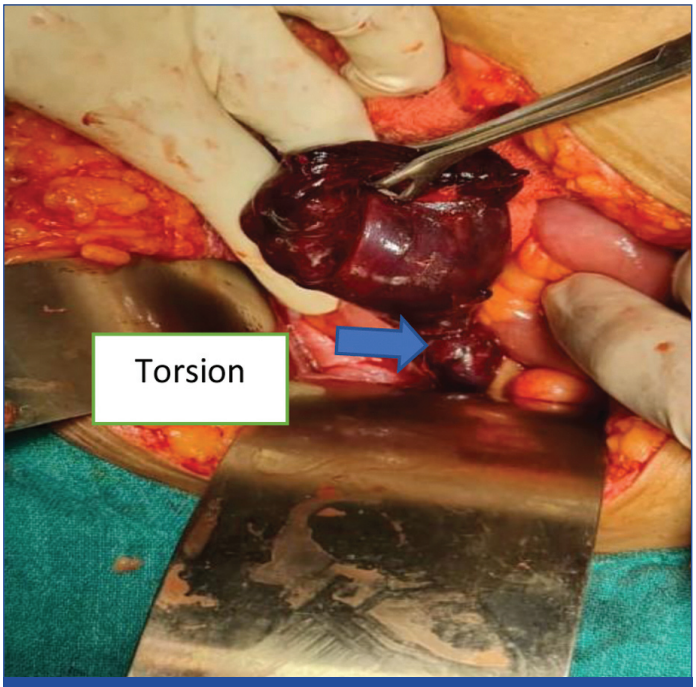
Keywords: Adnexal mass, Laparotomy, Necrosis, Ovary

CASE REPORT

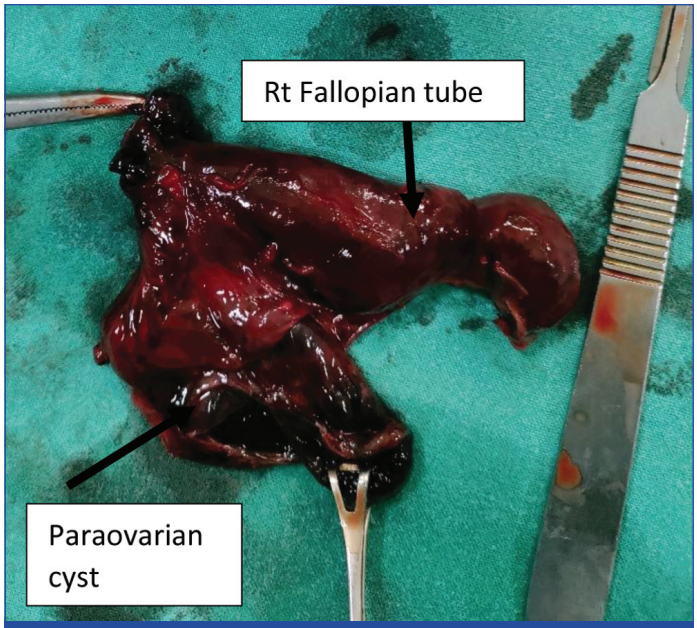
A 38-year-old female, with a parity of one and one live birth, arrived at the Emergency Department with lower abdominal pain that had been occurring on and off for four days. She had previously taken a three-day course of antibiotics and oral analgesics at another hospital, but her symptoms did not improve. Due to persistent generalised dull aching pain, which was continuous and accompanied by nausea and vomiting, she sought medical attention at hospital. She did not have a history of loose motions, constipation, or urinary complaints.

Her previous menstrual cycles had been regular, with average bleeding and no associated pain. Her last menstrual period occurred ten days ago, and she had no significant medical or surgical history. During the physical examination, she had a fever, with a temperature of 100°F. Her pulse was regular and measured 98 beats per minute, and her blood pressure was 100/70 mmHg. Generalised tenderness was observed during the abdominal examination. A pelvic examination revealed right forniceal fullness with a palpable mass measuring approximately 3×4 cm. There was no cervical motion tenderness. All routine blood investigations were performed, and intravenous antibiotics were initiated.

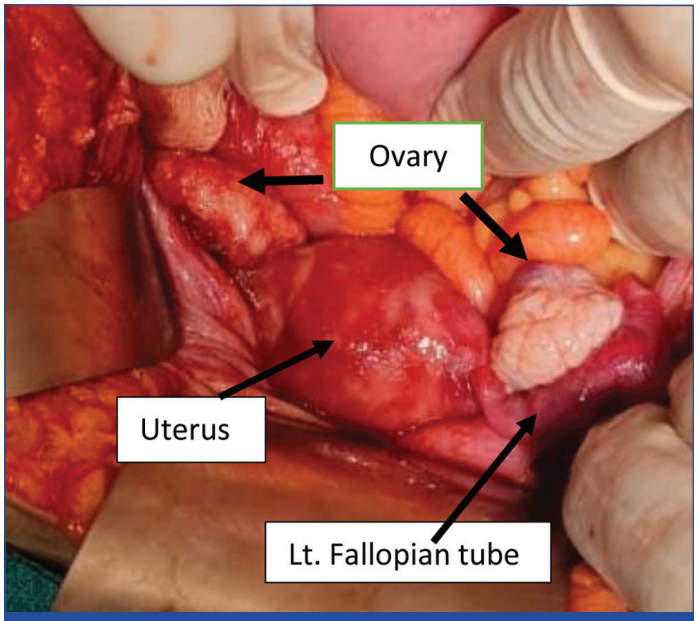
An ultrasound was conducted, which revealed thickening of the segmental bowel in the lower right abdomen with adjacent oedema. The uterus and both ovaries appeared normal. Subsequently, a contrast-enhanced CT scan was performed, which showed heterogeneous hypodense areas along with evidence of an adjacent round cystic density non enhancing lesion. The lesion measured 6.5×3.4×6.5 cm, and the cystic density lesion measured 4.0×3.3 cm. The lesion was abutting the uterus, and the right ovary could not be visualised separately. A loop of small bowel was observed adjacent to the lesion, and inflammatory changes were seen extending into the right iliac region. The appendix could not be visualised separately. Therefore, with the differential diagnosis of appendicular abscess and tubo-ovarian mass, the patient underwent exploratory laparotomy. Intraoperatively, a paraovarian cyst was found, which was twisted along with the right fallopian tube, resulting in five turns [Table/Fig-1]. The right fallopian tube was completely necrotic, necessitating a right salpingectomy along with the removal of the paraovarian cyst [Table/Fig-2]. The uterus, right ovary, left ovary, and left fallopian tube were all normal [Table/Fig-3]. The appendix was also normal. Following the surgery, the patient remained stable. The histopathology report confirmed the presence of a haemorrhagic paraovarian cyst with torsion of the fallopian tube [Table/Fig-4]. The patient's postoperative recovery was uneventful and she was discharged after seven days in a stable condition. She returned for a follow-up after 15 days with no complaints.



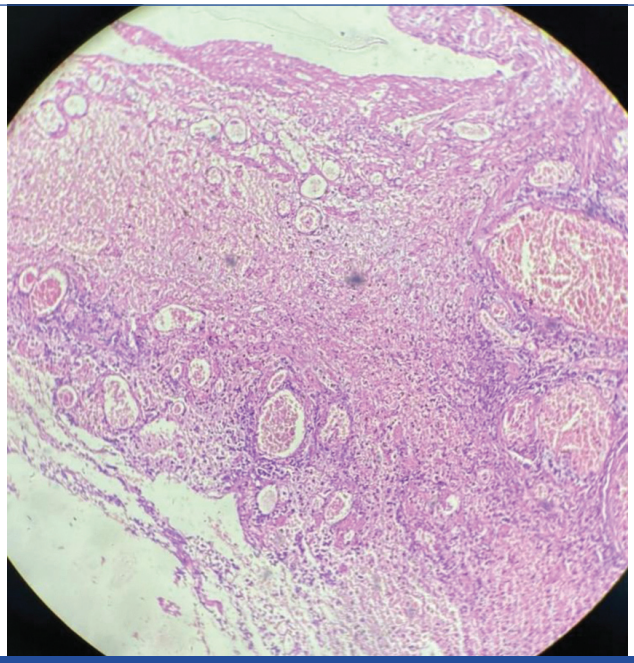
[Table/Fig-1]: Torsion of the paraovarian cyst with fallopian tube (blue arrow).



[Table/Fig-2]: Specimen of paraovarian cyst with the necrosed fallopian tube.



[Table/Fig-3]: Uterus and both ovaries were normal.



[Table/Fig-4]: Cyst wall showing necrotic and haemorrhagic tissue {Haematoxylin and Eosin (H&E), 10X}.

DISCUSSION

Acute abdominal pain is a common reason for patients to seek medical attention. While there are many potential causes of abdominal pain, one uncommon but significant cause is a twisted paraovarian cyst. Paraovarian cysts account for around 10% of adnexal masses [1]. They are fluid-filled sacs that develop near the ovary, in the broad ligament, and can originate from paramesonephric, mesonephric, or mesothelial tissue [2]. The occurrence of paraovarian cysts is not limited to a specific age group, but a study by Dietrich JE et al., found that cystic dilatation often occurs during adolescence and pregnancy due to increased hormonal activity, leading to more reported cases in these groups [3]. These cysts are typically asymptomatic and are often discovered incidentally during ultrasonography or surgery. However, in rare cases, they can become twisted, resulting in severe pain and other complications [4]. The distension of the cyst increases the mobility of adnexal tissues and may lead to torsion of the cyst itself or predispose to torsion of adnexal structures, such as the fallopian tube. According to studies by Dietrich JE et al., and Breitowicz B et al., the average diameter of the cyst in cases of torsion is approximately 5 cm [3,5].

The clinical presentation of a twisted paraovarian cyst can resemble that of other causes of acute abdominal pain, which can pose a diagnostic challenge. The differential diagnosis should include acute appendicitis, pelvic inflammatory disease, torsion of an ovarian cyst, ruptured ovarian cyst, hydrosalpinx, ectopic pregnancy, and acute diverticulitis [6]. Patients may present with gradual or persistent or intermittent abdominal pain, which can range from mild to severe. Vomiting may also be present as a response to the abdominal pain. On examination, these patients often exhibit generalised tenderness, and peritoneal signs may be observed in advanced cases [7]. According to a study by Mazouni C et al., the risk of adnexal necrosis increases with a delay of more than 10 hours in surgical intervention. Similarly, a study by Webster KW et al., reported that patients with more than 24 hours of abdominal pain were more likely to undergo salpingectomy rather than a conservative surgical approach [8,9].

Diagnosing a twisted paraovarian cyst can be challenging, and an ultrasound or CT scan may be required to confirm the diagnosis [10]. According to Jokic´ R et al., Magnetic Resonance Imaging (MRI) and ultrasound can be very helpful for diagnosing pregnant patients, as they do not carry the risks associated with radiation exposure [11]. Once diagnosed, treatment of a twisted paraovarian cyst often involves surgical intervention, such as laparoscopy or laparotomy, to remove the cyst and prevent further complications [12]. In some cases, conservative management with pain relief and follow-up may be sufficient if symptoms are mild [13].

CONCLUSION(S)

A twisted paraovarian cyst is a rare but potentially severe cause of abdominal pain. Since this condition is an uncommon surgical emergency with no definitive diagnostic signs, delays in management can lead to irreversible damage to the fallopian tube. Early diagnosis and appropriate treatment are necessary to prevent complications and reduce morbidity. Healthcare professionals should consider this condition in the differential diagnosis of patients with acute abdominal pain and promptly refer them for further evaluation and management.

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