Isolated fallopian tube torsion associated with appendicitis: A case report

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ABSTRACT

Background: Fallopian tube torsion is a rare finding in women presenting with abdominal pain, and it is exceedingly rare for it to be associated with concomitant appendicitis. The clinical presentation of isolated fallopian tube torsion can be a diagnostic problem because there are no specific clinical features. Early consideration of the diagnosis and prompt surgical management are required, as this can help to preserve the fallopian tube.

Case Presentation: We report a case of dual pathology, with isolated left-sided fallopian tube torsion associated with concomitant appendicitis. The patient's clinical presentation raised clinical concern for a right-sided ovarian torsion, and so exploratory laparoscopy was initiated. A large fluid-filled haemorrhagic structure arising from the left fallopian tube was noted, with associated torsion of the left tube, and also an acutely inflamed appendix. The left fallopian tube was detorted and an appendicectomy was performed. The patient recovered well postoperatively.

Conclusion: Isolated fallopian tube torsion is an extremely rare diagnosis and has a nonspecific clinical presentation. It should be considered in all women who present with acute lower abdominal pain. Tubal pathology in conjunction with acute appendicitis is exceedingly rare. Laparoscopy is the ‘gold standard’ for diagnostic and therapeutic intervention.

1. Introduction

Fallopian tube torsion is a rare finding in a woman of reproductive age presenting with acute lower abdominal pain, with an incidence of 1 in 1.5 million women. \([1]\) Isolated fallopian tube torsion and concomitant appendicitis are exceedingly rare. Fallopian tube torsion is often a difficult diagnosis because there are no classic clinical features and definitive diagnostic criteria. \([2]\) Prompt surgical intervention is necessary, and diagnosis and correct management are often delayed until laparoscopy. \([3]\) We report a rare case of left-sided fallopian tube torsion associated with hydrosalpinx and appendicitis in a young woman.

2. Case Presentation

An 18-year-old woman presented to the emergency department with a four-day history of lower abdominal pain. The pain initially started in the suprapubic region, and subsequently radiated to both left and right iliac fossae, but predominantly in the left iliac fossa at the time of presentation. The pain was associated with nausea, decreased appetite and subjective fevers. There were no bowel or urinary symptoms. The patient was on day 2 of her menstrual cycle at the time of presentation, and not sexually active. On examination, she was febrile with a temperature of 38.9, tachycardiac with a pulse rate of 130, and she had a blood pressure of 140/90. Her abdomen was mildly distended, and she had localised guarding in the left lower quadrant maximally, plus some suprapubic and right lower quadrant tenderness. Blood tests revealed an elevated white cell count of 16, and elevated CRP of 167. A pregnancy test was negative. Pelvic ultrasound showed a large right ovarian cyst (Fig. 1). There was no obvious blood flow to the right ovarian cyst or parenchyma, and so torsion could not be ruled out (Fig. 2). There was also a small amount of free fluid surrounding the cyst. The appendix could not be identified, and so acute appendicitis could also not be ruled out.

Due to these findings, and the clinical presentation of the patient, empiric antibiotic therapy was commenced, and the patient was...
transferred to the operating theatre for a diagnostic laparoscopy. It revealed a large fluid-filled haemorrhagic structure arising from the left fallopian tube, associated torsion, with 900 degrees of rotation, of the left fallopian tube, and hydrosalpinx. There was also an acutely inflamed appendix; it was unclear initially if this was reactive or concomitant. The ipsilateral ovary had no associated involvement. Equally, the contralateral ovary and fallopian tube, plus the rest of the pelvis appeared normal.

The gynaecology team were called to attend. The hydrosalpinx was drained, and the left fallopian tube was detorted and left in situ. An appendectomy was also performed. Histopathological findings from the appendix revealed acute serositis with no mural acute inflammation. This was suggestive of an extra-appendiceal source of the serositis. The lateral ovary and fallopian tube, plus the rest of the pelvis appeared normal.

The patient recovered well from the surgery without any complications, and was discharged home two days later. She reported that she was happy with her care and the outcomes of the surgery, in particular the timely nature of the procedure, which had allowed her fallopian tube to be retained.

3. Discussion

Isolated fallopian tubal torsion is a rare cause of acute abdominal pain. It was first described by Bland-Sutton in 1890, and is the process whereby the tube is rotated around its longitudinal axis. [1] While the exact incidence is unknown, it is estimated to be around 1 in 500,000 women. [1] Isolated torsion describes the finding where there is no ipsilateral ovarian involvement. In many cases the pathophysiology of the tubal torsion is not determined with certainty. A number of intrinsic and extrinsic factors have been documented as predisposing factors. [4] These include previous diagnosis of hydrosalpinx, haematosalpinx, excessive tubal length, tubal neoplasms, ovarian or paraovarian cysts, pelvic adhesions, and pelvic inflammatory disease. [4] Most reports suggest that fallopian tube torsion is predominantly seen in women of reproductive age; however, it has also been reported in pregnancy and in other age groups. [5-7] Isolated tubal torsion and concomitant appendicitis, as seen in the present case, are exceedingly rare. Tubal torsion should be suspected in cases of acute abdominal pain, and prompt intervention is necessary. [8]

The clinical presentation of isolated fallopian tube torsion is nonspecific, and this presents a challenge for the clinician to recognise and differentiate it from several other aetiologies. [9] Preoperatively, there are no obvious pathognomonic clinical signs or symptoms, and so diagnosis is difficult. Rates of preoperative diagnosis differ between case studies, and correct diagnosis is made anywhere from 22% to 38% of the time. [10-12] Reported cases describe a variety of different presentations, including acute severe lower abdominal and pelvic pain, often radiating to the thigh or groin, and associated nausea and vomiting. [13] The clinical examination usually finds abdominal tenderness, with or without peritoneal signs. Adnexa tenderness is often present on pelvic examination. Laboratory findings are usually nonspecific, and they can include elevated CRP and leukocytosis. [14] There are no reliable imaging modalities, and so the diagnosis of tubal torsion can seldom be made prior to laparoscopy. A normal ovary on pelvic ultrasound, with an adjacent cystic appearance, can be helpful for making a preoperative diagnosis of tubal torsion. [13] MRI is a good alternative but is less widely available. Sakuragi et al. [15] have reported that there are several findings on MRI that can be used to support the diagnosis of isolated fallopian tube torsion, such as plicae tubariae of the twisted fallopian tube, whirlpool sign, and ovary on the affected side. [15] These can be used to classify isolated tubal pathology, and thus assist in making a correct and prompt diagnosis.

Isolated fallopian tubal torsion is uncommon; however, it is vital to consider it in a woman who presents with acute lower abdominal pain, because a delay in intervention may lead to salpingectomy. Exploratory laparoscopy is used as a diagnostic and therapeutic option in the majority of cases. In our case, a definitive diagnosis was not established prior to laparoscopy, and, interestingly, there was concern for right-sided ovarian torsion on imaging, despite torsion of the left tube being the cause for presentation. When tube torsion and acute appendicitis occur concomitantly, it may not always be evident which is the primary event. In our case, following the histopathological report, it appeared that there was an extra appendiceal cause for the serositis. However, the inflammatory response set off by an acute appendicitis does have the potential to affect the haemodynamics of the tube and ovarian blood supply.

Ideally, as was performed in our case, conservative surgery should be attempted, aiming for detorsion of the fallopian tube, with the goal of preserving the patient's fertility. This option unfortunately is not always possible, and a salpingectomy is required to resolve the clinical symptoms.

4. Conclusion

In conclusion, isolated fallopian tube torsion is an extremely rare diagnosis and has a nonspecific clinical presentation; it should be considered in all women who present with acute lower abdominal pain. Tubal pathology coincidental with acute appendicitis is exceedingly rare and is always an indication for surgery. Laparoscopy is the ‘gold standard’ for diagnostic and therapeutic intervention. Timely intervention
and detorsion of the fallopian tube can be helpful in preserving the tube, and future fertility, as was achieved in our case, along with an appendectomy. However, if diagnosis is delayed and irreversible damage to the tube has already occurred, salpingectomy is required.

**Contributors**

Laurence Jacuzzi was involved in patient care, obtained consent for publication from the patient and contributed towards drafting and revising the case report.

Gabrielle Lodge was involved in patient care and contributed towards drafting and revising the case report.

Both authors approved the final version of the submitted paper.

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**Patient consent**

The patient involved in this case gave written, informed consent for it to be published.

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**Conflict of interest statement**

The authors declare that they have no conflict of interest regarding the publication of this case report.

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