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Case Reports

Recurrent isolated torsion of fallopian tube in premenarcheal 12-year-old girl

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ABSTRACT

Isolated torsion of the fallopian tube is an uncommon event. It is a difficult condition to evaluate clinically and surgery is often necessary to establish the diagnosis. In this case report, a 12 year old female isolated fallopian tube torsion (ITT) -a rare condition in the pediatric age group requiring laparoscopic surgery due to recurrance- is presented with acute pelvic pain, nausea, and vomiting. A diagnostic laparoscopy was performed which confirmed the diagnosis of isolated tubal torsion. Based on this experience as well as other similar reported cases, isolated torsion of the fallopian tube should beconsidered in the differential diagnosis of acute lower abdominal/pelvic pain in the female patient. Prompt surgical intervention may allow for preservation of the tube.

Keywords: Adolescent, fallopian tube, laparoscopy, torsion

INTRODUCTION

Isolated tubal torsion is a very rare cause of acute abdomen, and the majority of reported cases are in adult women of reproductive age (1). The incidence of isolated tubal torsion is thought to be 1 in 1.5 million women and considerably less common in the pediatric and adolescent population (2). Tubal torsion is a pathology whose cause has not been determined precisely. It is very rare in the pediatric age group and is difficult to evaluate clinically (2). The available literature regarding the pediatric age group consists almost entirely of case reports.

The clinical presentation is usually sudden onset of nonspecific abdominal pain accompanied by nausea and vomiting. There is ongoing debate in the literature regarding its treatment (3).

In this case report, an isolated fallopian tube torsion (ITT) -a rare condition in the pediatric age group requiring laparoscopic surgery due to recurrance- is presented and discussed in light of the current literature.

CASE REPORTS

A 12-year-old female patient was admitted to our emergency department with a one-month history of intermittent groin pain,which had acutely worsened over the past 24 hours. The patient's pain continued intermittently in the right lower quadrant. The patient, who had Covid-19 a month ago, has no additional disease. On her physical examination, there was no defense or rebound, but there was tenderness in the right adnexal area.

The patient's vital signs were stable, and hemogram, biochemical tests, tumor markers, acute phase reactant and urinalysis, and standing direct abdominal X-ray were normal. Transabdominal and pelvic doppler ultrasonografi revealed that the uterus was of normal size, and there was folded tubular tissue adjacent to the right ovary, reaching 2 cm at its widest point (Hydrosalpinx?). The patient underwent a pelvic magnetic resonance (MRI) examination due to suspicion of an adnexal

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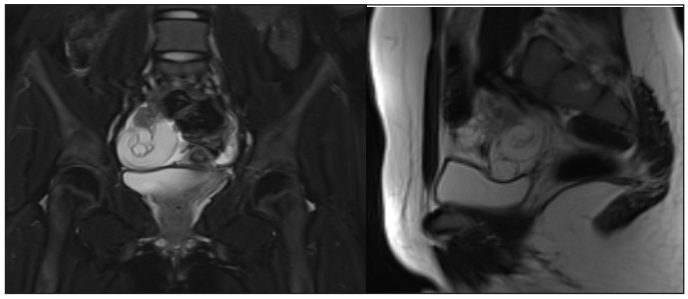

Figure 1: There is tortuous appearance and dilatation in the right fallopian tube on coronal and sagittal T2A images.

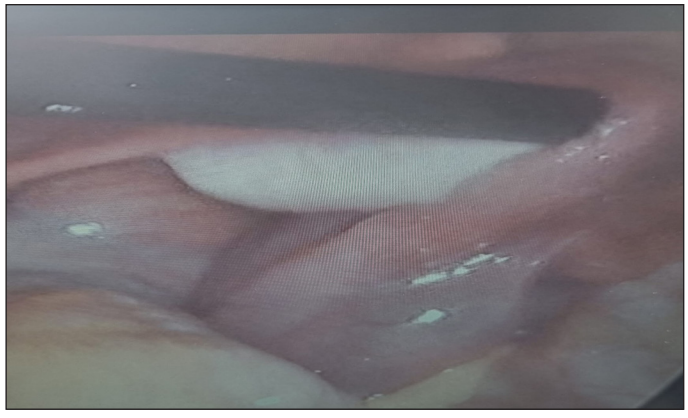

Figure 2: Return of blood flow to normal after detorsion

mass. MRI imaging demonstrated an intertwined configuration of tubular structures near the right ovary,which was considered suspicious for torsion or semitorsion (Figure 1).

The patient was given a preliminary diagnosis of ovarian torsion and tubal torsion, and a decision was made to perform diagnostic laparoscopy. After pneumoperitoneum was established, the uterus was observed to be normal. The left fallopian tube and ovary were normal in structure. The right ovary was larger than the left, but its blood supply was normal. The right fallopian tube was found to be torsed in an isolated manner, having twisted once around its own axis. It appeared edematous,with relatively preserved vascularity. The tube was detorsioned laparoscopically, and after the detorsion procedure, the color change in the tube returned to normal (Figure 2). The right fallopian tube was fixed to the pelvic side wall. There was reactive fluid in the pelvis. A sample was taken for cytology. The patient who had no complications in the early postoperative period, was discharged with a recommendation for outpatient follow-up on the postoperative day 3. During follow-up,no clinical issues were observed. Cytological evaluation revealed histiocytes,and a few degenerated mesothelial cells. Control ultrasonography showed no significant findings apart from postoperative changes.

Three months after the first operation, the patient presented to our emergency department again with complaints of groin pain and vomiting that started suddenly approximately 4 hours ago and gradually became more severe. There was a history of Covid-19 exposure two weeks ago. There were signs of influenza infection at that time. However, the Covid-19 test result was negative.

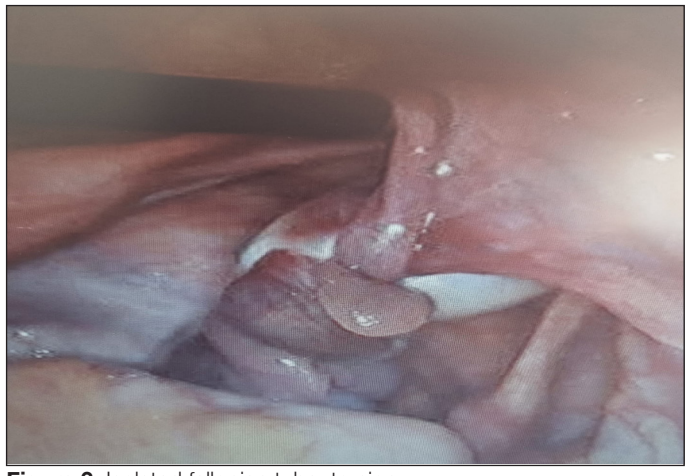

Figure 3: Isolated fallopian tube torsion

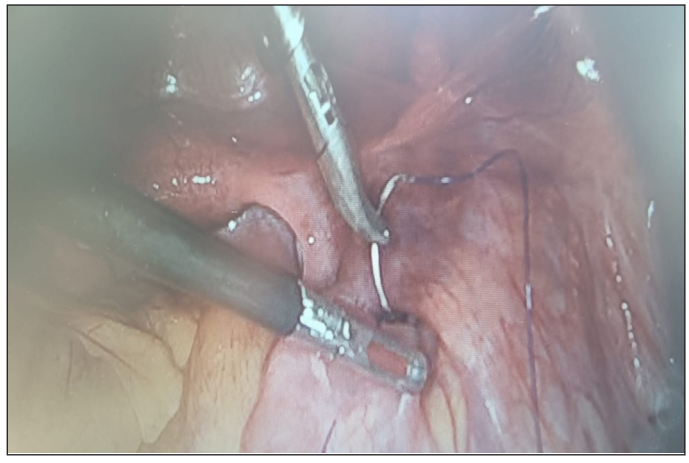

Figure 4: Fixation to the pelvic side wall

On her physical examination, there was significant tenderness, defense, and rebound in the right lower quadrant. Transabdominal and pelvic doppler USG revealed several thin-walled anechoic follicles in the right ovary, the largest of which was 17 mm in diameter. A tubular appearance measuring 29*12 mm was observed in the right adnexal area and was initially evaluated as residual hydrosalpinx. It was thought that the torsion might have recurred in the patient who had a previous surgery history and a decision for urgent exploration was made. The patient underwent laparoscopy with a preliminary diagnosis of acute abdomen. After pneumoperitoneum was established, the uterus was observed to be normal. The left fallopian tube and bilateral ovaries were normal. The right tube was torsioned around itself twice in an isolated manner, and appeared edematous and gangrenous (Figure 3). The tube was detorsioned laparoscopically, and after the detorsion procedure, the color change in the tube returned to normal. The right tube was fixed to the pelvic side wall at 3 points (Figure 4). There was reactive fluid in the pelvis. A sample was taken for cytology. The patient had no complications in the early postoperative period. On postoperative day 3, Pelvic Doppler ultrasonography revealed a detorsioned fallopian tube, Pelvic Doppler Ultrasonography evaluation demonstrated focal millimetric vascularization in the tubal wall.The patient was discharged after being advised to undergo outpatient clinic

follow-up. The patient had no problems in her follow-ups, and her cytology result was "Degenerated mesothelial cells." The patient is being followed up clinically without any problems in the 2nd year of her second surgery.

DISCUSSION

The exact cause of isolated fallopian tubal torsion is unknown. It has been reported that it may be caused by certain pathologies, especially in adult patients. These pathologies include hydrosalpinx, previous intra-abdominal surgeries, adhesions due to tuberculosis or primary peritonitis, ectopic pregnancy, endometriosis, and some acquired or congenital anatomical anomalies related to the tubes and adnexa (3). However, no factor that may cause it before the reproductive period has been reported (3,4).

The incidence of isolated tubal torsion is reported to be approximately 1/1.5. The majority of reported cases are in adult women of reproductive age (4). Because the clinical findings of isolated fallopian tubal torsion are nonspecific, it is often difficult to distinguish it from other causes of acute abdomen. The first clinical symptom is sudden onset of severe abdominal pain in the lower quadrant of the abdomen. The pain typically intensifies within a few hours and continues intermittently. Although it may radiate to the flank and the pelvic region, it is usually localized to the side of the torsion. Pain may often be accompanied by nausea and vomiting (5). In such cases, ovarian torsion and distal ureteral stone should also be considered in the differential diagnosis.

Likewise, there are no characteristic laboratory and imaging findings. However, the absence of fever and normal C-reactive protein levels in these patients should be kept in mind, especially when differentiating them from infective causes of acute abdomen (5,6).

Pelvic doppler ultrasonography may be helpful in preoperative diagnosis, but torsion should not be excluded based on pelvic doppler USG. Computed Tomography or Magnetic Resonance imaging may be helpful in diagnosis in complicated cases or incomplete or chronic torsion cases (6).

As Isolated tubal torsion is predominantly involves on the right side (in nearly two-thirds of cases), it should be considered in the differential diagnosis of acute abdomen in female pediatric patients,especially when acute appendicitis is suspected (7). Because if the diagnosis and treatment of fallopian tubal torsion is delayed, organ loss and infertility may occur (8).

Although our patient's complaints were quite vague at her first presentation, she had sudden onset and severe progressive abdominal pain at her second presentation. Tenderness, guarding, and rebound were also evident on her physical examination. Since pelvic doppler usg did not yield definitive results when our patient first presented, MRI was performed to distinguish it from adnexal masses. On the second visit, the patient had a history of tubal torsion, so in order not to waste time, a pelvic USG was performed and an emergency laparoscopy decision was made. Laparoscopy revealed recurrence of tubal torsion. The dissolution of the fixation sutures (vicryl) was considered as the cause of the torsion. Therefore, in the second operation, fixations were made with prolene after detorsion.

The treatment of isolated fallopian tube torsion requires early surgical intervention to preserve the fallopian tube and future fertility (9). Laparoscopic detorsion of the tube is often the first choice for treatment in adolescent patients. In cases such as semi-torsion or early blood flow after detorsion, the fallopian tube can be preserved. If blood flow cannot be achieved in the fallopian tube, salpingectomy is performed (10). In our patient, detorsion and fixation was preferred in both operations because early tubal blood flow was achieved after detorsion.

CONCLUSION

In female pediatric patients, isolated tubal torsion is a rare and diagnostically challenging condition of uncertain etiology,often presenting with nonspecific clinical and laboratory findings. Delayed diagnosis and treatment may lead to tubal necrosis and potential infertility. It should be considered in patients presenting with acute abdominal symptoms, and early laparoscopic detorsion should be performed for treatment. To prevent recurrence, the fallopian tube should be fixed to the pelvic sidewall with nonabsorbable sutures.

Contribution of the authors

Study conception and design: FTG ; data collection: FTG, SY; analysis and interpretation of results: FTG, SY, ZAY,HNK; draft manuscript preparation: FTG, Zİ. All authors reviewed the results and approved the final version of the article.

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Conflict of interest

The authors declare that there is no conflict of interest.

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