



ADNEXAL TORSION - STILL A DIAGNOSTIC CHALLENGE

Obstetrics & Gynecology

Dr Geeta Katheit Rai*	Assistant Professor, Dept. of Obstetrics & Gynecology, SMS&R, SHARDA University, Greater Noida, U.P. *Corresponding Author
Dr. Shivangini Sahay	Post graduate, Dept. of Obstetrics & Gynecology, SMS&R, SHARDA University, Greater Noida, U.P.
Dr. Neerja Goel	Professor, Dept. of Obstetrics & Gynecology, SMS&R, SHARDA University, Greater Noida, U.P.
Dr Santa Gupta	Professor, Dept. of Obstetrics & Gynecology, SMS&R, SHARDA University, Greater Noida, U.P.

ABSTRACT

Adnexal torsion is a gynecological emergency. It is defined as the partial or complete rotation of the adnexa around its ovarian vascular axis that may cause an interruption in the ovarian blood flow.¹ With a reported prevalence of 2.7% in all cases of acute abdominal pain, adnexal torsion is the fifth most common gynecological emergency.² Early diagnosis is extremely important in all cases for the vitality of ovary but is more significant in young women since it may dictate future fertility. Diagnosis of ovarian torsion is extremely challenging. Patients can have variable and non-specific clinical symptoms making the differential diagnosis enigmatic. Hence clinical suspicion and timely intervention are very crucial. We report a case where there was failure to recognize ovarian torsion as a differential diagnosis during initial assessment.

KEYWORDS

CASE REPORT

A 19 year old unmarried girl presented to the emergency department with complaints of sudden onset of pain involving left side of the abdomen with radiation to the back. The pain was described as constant, severe and sharp, associated with vomiting. She had no complaint of fever or any associated gastrointestinal or genitourinary symptoms. She had similar episode of pain one and half years back for which she reported to the emergency department and was managed conservatively. No investigations were done. After six months she again had severe left flank pain with nausea and recurrent vomiting associated with incomplete bowel evacuation. Ultrasonography (USG) whole abdomen was done which showed 7.8cm x 5cm left ovarian cyst. Contrast enhanced computed tomography (CECT) whole abdomen showed well defined thin smooth wall cystic lesion of 84x55x65mm in left adnexa closely abutting left ovary most likely left para-ovarian cyst. Magnetic resonance imaging (MRI) pelvis was also done. It showed well-defined thin smooth walled oval shaped cystic lesion in pelvic cavity closely abutting left ovary and indenting posterior wall of urinary bladder and fundus of uterus most likely left para-ovarian cyst. Her blood reports were within normal limits. Patient was managed conservatively. Apart from this she had no other significant past medical or surgical history.

Presently, she was afebrile with a heart rate of 90 bpm and a blood pressure of 126/92 mm Hg. Her abdomen was soft but there was voluntary guarding particularly in the left side. There was no renal angle tenderness and bowel sounds were present. Her weight was 58 kg, height 157 cm, BMI was 23.5 kg/m². Her haemoglobin level was 11.9 g/dL, with a leukocyte count of 11,800/microliter and the CRP was normal. Urinalysis did not suggest any infection.

Pelvic USG revealed a large cyst of 8.1 cm x 6.6 cm on left adnexa with no internal septations or echoes. Left ovary was enlarged, (vol.=36cc) with central echogenicity and peripherally displaced follicles. On Colour Doppler left ovary had minimal peripheral vascularity. Right ovary was grossly normal in size and morphology. There was mild fluid in pouch of Douglas. Diagnosis of left ovarian torsion was made. The patient was admitted and immediate surgery was planned. Intraoperative findings revealed an 12cm x 10cm size left tubal cyst and an 8cm x 6cm dark oedematous twisted left ovary (Figure 1). Left ovary and left tubal cyst were twisted around each other with 3 turns, causing complete disruption of ovarian blood supply. There was no haemoperitoneum.

The ovary was untwisted and the tubal cyst removed intact. Right tube and ovary was found to be completely normal. On histopathology cyst

was confirmed to be benign serous cyst. The postoperative period was uneventful and she was discharged on third post operative day.

Follow up USG after 3 months showed left ovary to be grossly normal (Figure 2).



Figure 1 = Intraoperative large left tubal cyst and left enlarged haemorrhagic ovary.



Figure 2= USG film of grossly normal left ovary at 3 months follow up.

DISCUSSION

Adnexal torsion includes torsion of a normal or pathologic ovary, torsion of the fallopian tube, para-tubal cyst, or a combination of these conditions. 30% of all cases of adnexal torsion occur in females younger than 20 years³. Approximately 5 of 100,000 females aged 1–20 years are affected^{4,5}. The risk of torsion increases when pelvic masses exceed 5 cm⁶. The most common clinical symptom of torsion is sudden-onset abdominal pain that is intermittent, non-radiating, and associated with nausea and vomiting. Nausea and vomiting are reported in 62% and 67% of cases, respectively⁷.

Clinical signs of torsion include abdominal tenderness, which is reported in up to 88% of patients. Rebound and peritoneal signs are reported in only 12–27% of patients⁸. It may also include a palpable adnexal mass⁹.

The differential diagnosis of an adolescent presenting with abdominal pain is broad and the presentation of adnexal torsion is nonspecific¹⁰.

Trans abdominal USG is the imaging modality of choice in adolescents. It has a sensitivity of 92% and specificity of 96% in detecting adnexal torsion¹¹. Ultrasonography findings suggestive of ovarian torsion include unilateral ovarian enlargement, central

placement of ovary, ovarian edema characterized by the presence of a hyperechogenic ovary with peripherally displaced follicles and echogenic stroma, free fluid, and a coiled vascular pedicle (referred to as the “whirlpool sign”)¹⁰.

Torsion can be partial or complete, with several degrees of compromised circulation. As a result the ultrasonographic appearance of the ovaries can be affected by degree and duration of torsion.

The use of Doppler studies in detecting adnexal torsion is limited because of their low sensitivity and operator dependency. The presence of Doppler arterial flow does not rule out torsion; for instance, one study reported normal Doppler arterial flow in as many as 60% of surgically confirmed cases of adnexal torsion⁷. Preservation of Doppler arterial flow can be explained by intermittent torsion, collateral blood supply from the utero-ovarian vessels or infundibulopelvic vessels, or a torsed paratubal cyst.¹²

If Computed Tomography(CT) imaging is obtained, findings that may indicate adnexal torsion include asymmetric ovarian enlargement, uterine deviation toward the pathologic side, pelvic free fluid, and fat stranding adjacent to the ovary.¹³

Similarly, Magnetic Resonance Imaging(MRI) may show decreased ovarian enhancement post contrast, asymmetric enlargement of the ovary, uterine deviation toward the pathologic side, and presence of multiple small peripherally located follicles, typically best seen on T2-weighted images.¹⁴

Both Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) have been used to evaluate complex ovarian morphology; however, their use to diagnose adnexal torsion could be hampered by the variations in diagnostic criteria and the experience of the assessor.¹ Test accuracy for these modalities is not precisely known, thus increasing variations in practice and hindering effective policy-making.¹⁵

Adnexal torsion is a surgical diagnosis⁶

The goals of surgery are to detorse the adnexa and preserve the ovary regardless of its appearance and the timing of presentation.¹² More than one half of cases of pediatric and adolescent adnexal torsion occur in the setting of an adnexal mass. Cancer in this age group rarely presents as adnexal torsion.^{7,8} If a cyst is present at the time of adnexal torsion, it is likely benign. In many cases, the twisted adnexa can be detorsed, and if a cyst is identified, it is reasonable to proceed with a concomitant cystectomy. A minimally invasive surgical approach is recommended with detorsion and preservation of the adnexal structures regardless of the appearance of the ovary. Surgeons should not remove a torsed ovary unless oophorectomy is unavoidable, such as when a severely necrotic ovary falls apart.¹²

Establishing a well-defined care pathway for women presenting with acute abdominal/pelvic pain shared across multiple disciplines is key for efficient diagnosis and management of adnexal torsion.¹⁶ Currently, care for affected women is heterogeneous, often tailored by the attending clinician and their speciality of interest (emergency medicine, general surgery, urology, gynaecology) increasing the chance of delayed diagnosis and treatment.¹⁷

CONCLUSION

As a gynecological emergency, rapid diagnosis of adnexal torsion is crucial to optimize the outcomes of affected women.

Establishing an accurate diagnosis in women with suspected adnexal torsion remains a clinical challenge because of the non-specific presentation and the varied differential diagnosis. Thus high degree of clinical suspicion in the background of adnexal mass/enlarged ovary is needed, especially in adolescents presenting with acute abdomen, to prevent a catastrophe.

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