

## Adnexal Torsion In Childhood: A Case Report

Sharma Riddhi Samar Roy<sup>1</sup>, Moudgil Ashish<sup>2</sup>, Singh Jappan Jot<sup>1</sup>, Kale Ravi<sup>3</sup>

Junior Resident, Department Of General Surgery, SMS&R, Sharda University  
Assistant Professor, Department Of General Surgery, SMS&R, Sharda University  
Professor, Department Of General Surgery SMS&R, Sharda University

### Abstract

*Introduction:* Adnexal torsion is the seventh most common gynaecologic emergency in teenagers, often resulting from benign functional ovarian cysts or benign teratomas.

*Unlike adnexal torsion in adults, adnexal torsion in paediatric and teenage girls often occurs without the presence of a tumor or cyst in the ovary, accounting for up to 46% of cases.*

*Case report:* A 10 -year-old healthy female presented with 1 week history of pain in left lower abdomen which was sudden in onset, severe intensity radiating to left inner thigh not relieved by medication with multiple episodes of vomiting. On MRI, right ovary (Volume 8 cc) and appears mildly bulky. Left ovary (Volume 49cc) with extensive thickening of stroma and multiple scattered follicles within and was diagnosed with left adnexal torsion for which patient underwent laparoscopy surgery with left oopheropexy.

*Conclusions:* Ovarian torsion should be suspected in female children experiencing sudden lower abdomen discomfort. Early diagnosis is crucial because the risk of ovarian and tube necrosis increases over time since the onset of abdominal pain.

**Keywords:** Adnexal Torsion, Oopheropexy

Date of Submission: 08-07-2024

Date of Acceptance: 18-07-2024

### I. Background

Adnexal torsion, involving the twisting of ovaries, fallopian tubes, or paratubal cysts, is a common gynecologic emergency, ranking sixth in prevalence. 5 in 100,000 females aged 1-20 suffer from adnexal torsion. In pediatric and teenage girls, this condition can occur without a tumor or cyst in the ovary, making up to 46% of cases<sup>[1,2]</sup>. Adolescents with adnexal torsion typically experience common ovarian irregularities such as functional cysts and teratomas. Factors like elongated ovarian ligaments, lax pelvic ligaments, or a small uterus can predispose individuals to this condition<sup>[3]</sup>. Abdominal discomfort is the main symptom, while imaging tests may show enlarged ovaries with reduced blood flow. Delaying diagnosis or treatment can lead to complications like haemorrhagic necrosis and peritonitis.

### II. Case Presentation

A 10 -year-old healthy female presented with 1 week history of pain in left lower abdomen which was sudden in onset, severe in intensity and radiating to left inner thigh not relieved by medication, with multiple episodes of vomiting. Similar history of episodic pain was present for past 1yr which was relieved either on medications or on its own. There was no h/o trauma. Patient has yet not attained menarche. There were no bowel and bladder complaints present. Examination revealed afebrile patient with no tenderness and no palpable lump.

All laboratory tests were within normal limits. The abdominal ultrasound showed bulky left ovary with multiple small follicles and mesenteric lymph nodes.

MRI Pelvis was done which showed uterus normal in dimension and showing normal myometrial signal. Right ovary measured 1.7x3.8x2.5 cm (Volume 8 cc) and appeared mildly bulky. Left ovary measured 6.1x3.5x2.5 cm (Volume 49 cc) with extensive thickening of stroma and multiple scattered follicles within). It was seen lying in the midline in the pelvic cavity abutting the right ovary. It was also causing mass effect and displacement of the uterus anterolaterally towards left. There was whirlpool sign present, adjacent to the left ovary suggesting twisted vascular pedicle of the ovary (Figure 1 & 2). Abdominal walls were normal in signal and morphology with T2/STIR hyperintense mild free fluid is seen in the pelvis. Minimal surrounding mesenteric fat stranding was also noted in the pelvic region. The findings of the MRI were suggestive of left adnexal torsion with mild ascites.

Patient underwent laparoscopic surgery which showed right ovary in normal position and size.

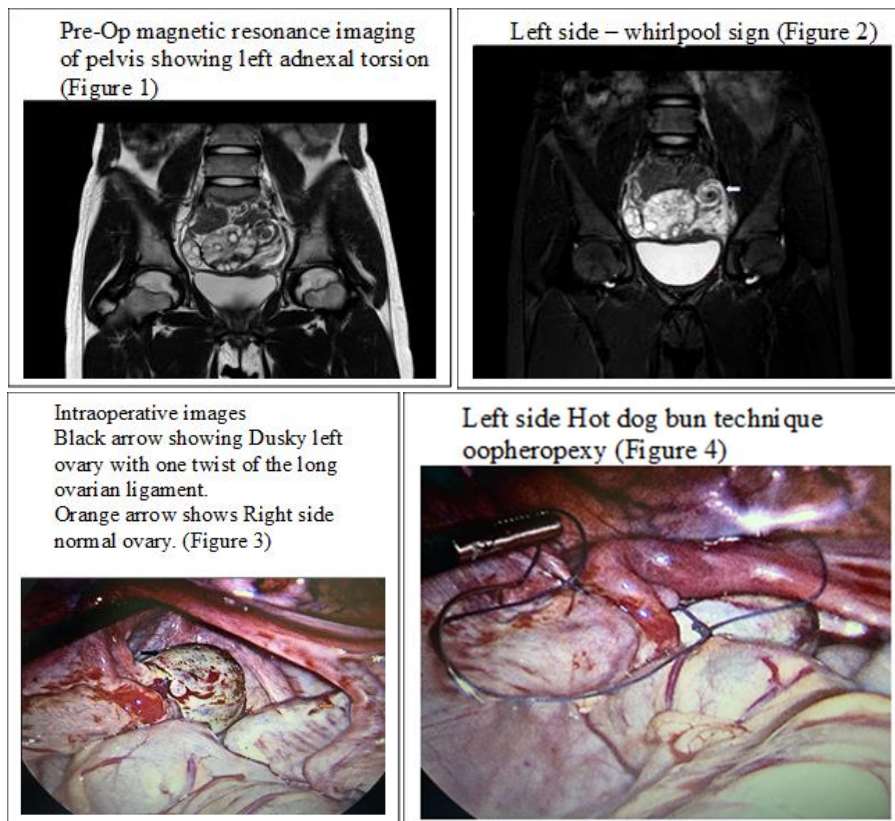
Left ovary was bulky, edematous and congested with 360° twist around unusually elongated infundibulopelvic ligament (Figure 3). Detorsion of ovary was done and no gangrenous changes were seen on

thorough examination. Left oopheropexy (hot dog in bun technique) was done using vicryl 2-0(Figure 4). A lateral mattress suture was passed from the utero-ovarian ligament followed by the avascular area below the fallopian tube and the round ligament and brought back in the opposite direction similarly beneath mesosalpinx and back to utero-ovarian ligament and tied loosely thus cushioning the fallopian tube in between the two ligaments. Patient withstood the procedure well. Post operative patient had uneventful recovery and was discharged on post operative day 2 with no complaint on subsequent follow ups.

### III. Discussion

Adnexal torsion in childhood is a rare gynecological emergency resulting from factors like ovarian cysts, tubal connection, ovarian hyperstimulation syndrome, polycystic ovary syndrome, pregnancy, endometriosis history, or pelvic infection<sup>[4]</sup>. Imbalanced length of the utero-ovarian ligament is the primary cause of torsion in children. Increased torsion in the right ovary, 3:2 ratio compared to left, results from enhanced mobility of cecum and distal ileum on right side, and larger area of sigmoid colon on left side. Pediatric abdominal discomfort poses a challenge for diagnosis as children struggle to articulate their symptoms. Medical evaluations involve physical examination, blood tests for inflammation or infection, and imaging. Diagnosis can be delayed due to non-specific symptoms in both children and adults with acute abdomen. <sup>[5]</sup> Adnexal torsion causes reduced blood flow in veins and arteries, with absence of the ovarian crescent sign on doppler ultrasound. In inconclusive cases, a CT or MRI scan is recommended to confirm the diagnosis. The "whirlpool sign" is a reliable indicator of ovarian torsion, showing the rotation of the ovarian vascular pedicle <sup>[6]</sup>. Early laparoscopic untwisting of the ovaries can relieve discomfort in teenagers and preserve fertility in women. Although infertility from adnexal torsion is rare, prompt diagnosis enables conservative surgery. Timely surgical intervention in our case led to conservative approach. Different oopheropexy **techniques** include securing the ovary to the posterior abdominal or pelvic wall, suturing the utero-ovarian ligaments, and the sandwich technique. In our case, the sandwich technique was employed to precisely approximate the ovarian ligament and the round ligament. This technique involved the use of 2 to 3 interrupted sutures, carefully passed through the avascular space beneath the tube. Importantly, this technique ensured that tubal motility and its relationship to the ovary were not compromised <sup>[7]</sup>.

**Early** diagnosis and treatment are **important** to preserve ovarian function and prevent complications **such as** necrosis or infertility.



#### **IV. Conclusion**

Although rare in childhood, adnexal torsion should be considered as a cause of nonspecific acute abdominal pain. Delayed surgery can result in serious complications like infarction of the ovary and fallopian tube. Ultrasound with Doppler can aid in the diagnosis, while laparoscopy is the preferred method for evaluation and treatment. Timely surgical intervention allows for conservative approach, such as ovarian-sparing surgery and oophorectomy, which has shown to be effective in achieving optimal outcomes, preserving fertility, and preventing recurrences.

#### **Conflicts of Interest**

The authors declare no conflicts of interest

#### **Disclosures and Funding**

None

#### **References**

- [1] Adeyemi-Fowode O, Mccracken Ka, Todd Nj. Adnexal Torsion. *J Pediatr Adolesc Gynecol* 2018 ; 31 : 333 – 8.
- [2] Oltmann Sc, Fischer A, Barber R, Huang R, Hicks B, Garcia N. Cannot Exclude Torsion—A 15-Year Review. *J Pediatr Surg* 2009 ; 44 : 1212 – 6 ; Discussion 1217.
- [3] Kives S, Gascon S, Dubuc E, Van Eyk N. No. 341-Diagnosis And Management Of Adnexal Torsion In Children, Adolescents, And Adults. *J Obstet Gynaecol Can* 2017 ; 39 : 82 – 90 .
- [4] Willms Ab, Schlund Jf, Meyer Wr. Endovaginal Doppler Ultrasound In Ovarian Torsion: A Case Series. *Ultrasound Obstet Gynecol*. 1995;5(2):129–132.
- [5] Neto Pn, Durante Ap, Issas Ra, Cavalcante D De A. (2005) Asynchronous Bilateral Ovarian torsion: Case Report. *Rev Bras Videocir*. 2005;3(2):66–69.
- [6] Hiller N, Appelbaum L, Simanovsky N, Et Al. Ct Features Of Adnexal Torsion. *Ajr Am J Roentgenol*. 2007;189:124–129.
- [7] Hosny Ta. Oophorectomy For Ovarian Torsion: A New Easier Technique. *Gynecol Surg*. 2017;14(1):7.