

## Case Report

# Isolated torsion of fallopian tube in teenage girl: A case report

Ammara Ghaffar<sup>1,\*</sup>, Christina Ding<sup>1</sup>

<sup>1</sup>Obstetrics and Gynaecology Department, Epsom and St Helier University Hospital NHS Trust, England

### Abstract

Isolated fallopian tube torsion is rare and often difficult to diagnose. This case report describes a post pubertal, sexually non active teenage girl presenting with acute onset of pelvic pain. Physical examination revealed significant right adnexal tenderness. Transabdominal ultrasound identified a normal right ovary was bulky measuring 4x 5 cm with a separate 1.5x 4 cm cystic tubular structure adjacent to it. Laparoscopic finding of an isolated necrotic tubal torsion was identified. Isolated torsion of a fallopian tube should be considered in the differential diagnosis of lower abdominal pain in any female of reproductive age. Low threshold for laparoscopic assessment of the pelvis can provide early diagnosis as well as treatment. It should therefore be encouraged especially in women of reproductive-age group, as early diagnosis and management can help salvage the affected tube and ovary and preserve or maximize their future fertility.

### Key Words:

Fallopian tube, torsion, post-pubertal

### Introduction

Acute pelvic pain in a non-pregnant young female patient is a common clinical scenario with a broad clinical differential diagnosis. Although tubo ovarian torsion is not an uncommon gynecological differential diagnosis, however isolated Fallopian tube torsion is a very rare event. The prevalence from previous published literature is reported to be 1/1.500.000 women and it is a rare gynaecological cause of acute lower abdominal pain, especially in young teenage girls [1, 2]. It is rarely seen

#### Article History:

Received: 24/06/2016

Accepted: 07/08/2016

\*Correspondence: Ammara Ghaffar

Address: Obstetrics and Gynaecology Department, Epsom and St Helier University Hospital NHS Trust, England

E-mail: ammaraghaffar\_14@yahoo.co.uk

in pre pubertal and postmenopausal women [3,4,5,6]. We present a case of an isolated tubal torsion in a young girl who was not sexually active.

### Case Presentation

A 13-year-old post pubertal girl presented to the emergency department complaining of right sided pelvic pain for one day with no associated bowel or bladder symptoms. The pain was sudden onset constant in the right lower abdomen/ pelvic region, radiating to right lower limb. Her menarche started 10 months ago. Her periods were irregular and her last menstrual cycle was 4 week prior. The patient has not been sexually active and was not on any prescribed medications. On evaluation, the patient was afebrile and had a blood pressure of 140/108 mmHg with a pulse rate of 82/min. Physical examination confirmed significant right adnexal tenderness, without involuntary

guarding or rebound tenderness with normal bowel sounds present. Urinary dipstick was negative and serum tests for full blood count, urea, electrolytes, leucocyte count and C-reactive protein levels were also within normal range. Transabdominal ultrasound identified her right ovary was bulky measuring 4x 5 cm with no discrete cyst seen within. A separate 1.5 x 4 cm cystic tubular structure was noted adjacent to ovary; no significant free fluid was identified in the pouch of Douglas. Acute torsion of a right ovary and tube was suspected and an emergency laparoscopy was performed within hours of admission. Laparoscopy (Figures 1-3) confirmed a grossly enlarged necrotic right fallopian tube with 3 complete revolutions, measuring 12x 2 cm. No features suggestive of chronic inflammatory changes such as clubbing or adhesions were identified in the diseased tube. The proximal one third of the right tube was normal in appearance. Both the ovaries and the left tube were free and mobile with no obvious pathology. No active endometriosis or adhesions were present in the pelvis. A right salpingectomy was performed and post-op course was uneventful. She was discharged home the next morning. Histological examination showed congestion with interstitial hemorrhage within tubal tissue confirming tubal torsion.

**Figure 1.**



*Oedematous and dilated right Fallopian tube with ischemic changes*

## Discussion

Isolated fallopian tube torsion is a rare cause of acute abdominal/pelvic pain which primarily affects young and reproductive age women. Bland-Sutton in 1890 first described the condition. It has a prevalence of one in 1.5 million women [7, 8]. Risk factors associated with isolated tubal torsion include both intrinsic tubal factors, comprising pelvic inflammatory disease involving fallopian tube, hydro salpinx, tubal ligation, and tubal neoplasm; and extrinsic factors such as adhesions, adnexal venous congestion, adjacent adnexal masses, uterine masses and pregnancy [9, 10]. Hematosalpinx is another uncommon finding with which Fallopian tube torsion has also been associated [11]. and other rare cases including premenarchal girl with endometriosis [12]. In this case we have described that there was no underlying pre-existing risk factors such as pelvic infection or inflammation. Existing literature indicate the underlying mechanism of tubal torsion begins with mechanical blockage of adnexal vessels causing pelvic congestion leading to local oedema and adnexal enlargement causing torsion [9].

**Figure 2.**



*Right torted tube of three complete rotations and normal ovary is seen lateral to it*

The typical findings of tubal torsion at its late stages are shown in the figures taken during the laparoscopy in our case where salvage of the fallopian tube was no longer possible. The fallopian tubes and ovaries receive their vascular supply from both ovarian and uterine vessels, resulting in the

possibility of isolated tubal torsion without vascular compromise of the ovary. Right sided tubal torsion is more frequently reported, possibly because right lower quadrant pain is more often surgically explored secondary to the clinical concern for appendicitis. An alternative theory may be that mobility of the left tube is limited due to its proximity to the sigmoid mesentery [13]. In our case a right sided tubal torsion was identified which may support the theory above. Complications from tubal torsion include fallopian tube edema, ischemia and necrosis, leading to an increased risk for superimposed infection and peritonitis [7]. Occasionally local inflammation or edema and thrombosis secondary to ischemia can also result in irreversible damage to the ipsilateral ovary [14]. Relatively earlier intervention with laparoscopic right salpingectomy might have prevented such further deteriorations in our case. Our patient presented with the typical symptoms of sudden onset of non-specific pain in the right pelvic region. Such pain can vary between constant and dull to intermittent and sharp, radiating to the groin or lower limb, with or without pre-existing risk factors. Other associated symptoms and signs may include nausea and vomiting, peritoneal signs, and a vague adnexal mass [7]. Clinically, there is a wide range of differential diagnosis including pathology of gynecological origin i.e. ovarian torsion, ovulation pain (Mittelschmerz) or ovarian cyst accident, ectopic pregnancy, pelvic inflammatory disease, bowel related i.e. appendicitis, intestinal obstruction or perforation, or originating from renal tract like urolithiasis and urinary tract infection (cystitis) often leading to delay in intervention [7]. Currently, there are no pathognomonic symptoms, clinical findings, imaging or laboratory characteristics for this condition, and the diagnosis can rarely be made before surgical intervention [15]. Ultrasonography and computed tomography (CT) can demonstrate changes strongly suggesting tubal torsion, however confirming diagnosis, as well as provision of adequate treatment, both require surgical exploration [16]. Reported sonographic findings typically identifies uterus and ovaries with normal appearance and vascular flow, a separate dilated tubular structure with thickened, echogenic walls; and internal debris is seen suggestive of hydro/haematosalpinx [2, 14]. High impedance or reversal or absence of vascular flow in the tube has also

been reported although in practice, the diagnostic significance of Doppler analysis of the tubal wall is limited [3]. Luckily in our case, the presence of tubular cystic structure without obvious ovarian pathology did raise the clinical suspicion hence patient was surgically explored urgently. Early laparoscopy is the reference standard tool in the diagnosis and treatment [17]. Recognition of this condition and prompt intervention increase the likelihood of tubal-sparing surgery and preservation of fertility [16]. In the absence of an ovarian cyst, hydrosalpinx or any other predisposing pelvic/adnexal pathology visible on imaging laparoscopy remains the gold standard for the diagnosis and treatment as the early diagnosis may allow salvage of the tube which is crucial to preserve future fertility in young patient. Treatment options include surgical detorsion and salpingectomy depending on the stage of laparoscopic intervention and the salvageability of the tube. Laparoscopic tubal detorsion is preferred than salpingectomy in patients of reproductive age in the absence of ischemic damage and a suspicion of malignancy. The conservative management of torsion with untwisting (detorsion) of the fallopian tube and ovary was proven safe and effective in multiple case series in the late 1980s and early 1990s [18-22]. However recurrent tubal torsion has been known to occur in rare cases. Laparoscopic salpingectomy is the treatment of choice if the tube is gangrenous or deemed not salvageable or if there is a suspected adnexal malignancy. In this reported case salpingectomy was required due to marked ischemic changes in the tube. This case underlines the challenges in clinical assessment and diagnosis of isolated tubal torsion. In addition it highlights the importance of early diagnosis in an attempt to preserve fertility. Clinician should maintain a high index of suspicion for isolated fallopian tube torsion in the differential of lower abdominal pain in a reproductive-age woman regardless of risk factors.

#### **Acknowledgement**

None

#### **Declaration of Interest**

None

## References

1. Hansen OH. Isolated torsion of the Fallopian tube. *Acta Obstet Gynecol Scand.* 1970;49:3–6
2. Rajaram S, Bhaskaran S, Mehta S. Isolated fallopian tube torsion in adolescents. *Case Rep Obstet Gynecol.* 2013; 2013:341507.
3. Comerci G, Colombo FM, Stefanetti M, Grazia G; Isolated fallopian tube torsion: a rare but important event for women of reproductive age; *Fertil Steril.* 2008; 90(4):1198.e23-5.
4. Van der Zanden M, Nap A, Van Kints M. Isolated torsion of the fallopian tube: a case report and review of the literature. *Eur J Pediatr.* 2011; 170(10):1329-32.
5. Ward MJ, Frazier TG. Torsion of the normal uterine adnexa in childhood: case report. *Pediatrics* 1978;61:573-4.
6. Evans JP. Torsion of the normal uterine adnexa in premenarchal girls. *J Pediatr Surg* 1978;13:195-6.
7. Ferrera PC, Kass LE, Verdile VP. Torsion of the fallopian tube. *Am J Emerg Med* 1995; 13:312-314
8. Raziell A, Mordechai E, Friedler S, Schachter M, Pansky M, Ron-El R. Isolated recurrent torsion of the Fallopian tube: case report. *Hum Reprod* 1999; 14:3000-3001
9. Bernardus RE, Van der Slikke JW, Roex AJ, Dijkhuizen GH, Stolk JG. Torsion of the fallopian tube: some considerations on its etiology. *Obstet Gynecol* 1984; 64:675-678
10. Provost MW. Torsion of the normal fallopian tube. *Obstet Gynecol* 1972; 39:80-82
11. Furu T, Imai A, Yokoyama Y, Tamaya T. Hematosalpinx and torsion of the fallopian tube in a virgin girl. *Gynecol Obstet Invest* 1993;35:123-5.
12. Peng T, Parmley TH, Genadry R. Endometriosis and perimenarchal tubal torsion. A case report. *J Reprod Med* 1989;34:934-6.
13. Bondioni MP, McHugh K, Grazioli L. Isolated fallopian tube torsion in an adolescent: CT features. *Pediatr Radiol* 2002; 32:612-613
14. Ghossain MA, Buy JN, Bazot M, et al. CT in adnexal torsion with emphasis on tubal findings: correlation with US. *J Comput Assist Tomogr* 1994; 18:619-625
15. Wong SW1, Suen SH, Lao T, Chung KH. Isolated fallopian tube torsion: a series of six cases. *Acta Obstet Gynecol Scand.* 2010 Oct;89 (10): 1354-6.
16. Gross M, Blumstein SL, Chow LC. Isolated fallopian tube torsion: a rare twist on a common theme. *Am Journal Roentgenol.* 2005; 185(6):1590-2.
17. Krissi H, Shalev J, Bar-Hava I, Langer R, Herman A, and Kaplan B. Fallopian Tube Torsion: Laparoscopic Evaluation and Treatment of a Rare Gynecological Entity *J Am Board Fam Med.* 2001;14(4)
18. Vancaillie T, Schmidt E. Recovery of ovarian function after laparoscopic treatment of acute adnexal torsion, a case report. *J Reprod Med* 1987;32:561–2.
19. Mage G, Canis M, Manhes H, Pouly JL, Bruhat MA. Laparoscopic management of adnexal torsion. A review of 35 cases. *J Reprod Med* 1989;34:520–4.
20. Bider D, Mashiach S, Dulitzky M, Kokia E, Lipitz S, Ben-Rafael Z. Clinical, surgical, and pathologic findings of adnexal torsion in pregnant and nonpregnant women. *Surg Gynecol Obstet* 1991;173:363–6.
21. Shalev E, Peleg D. Laparoscopic treatment of adnexal torsion. *Surg Gynecol Obstet* 1993;176:448–50.
22. Oelsner G, Bider D, Goldenberg M. Long-term follow-up of the twisted ischemic adnexa managed by detorsion. *Fertil Steril* 1993;60:976–9.