Recurrent ovarian torsion in the paediatric and adolescent female: A case report and review of literature

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Background

Paediatric and adolescent ovarian torsion occurs in 5 in 100,000 cases.[1] Our aim is to present a case of recurrent adolescent ovarian torsion and its management, and describe the state of evidence on the topic.

Case Description

A 17-year-old non-sexually active female presented with left lower quadrant abdominal pain. Outpatient imaging showed a heterogenous mixed solid left adnexal lesion measuring 53x70x56mm and spiralling appearance of the adjacent vessels suggestive of ovarian torsion. An emergency laparoscopic ovarian detorsion was performed. The patient re-presented three months later with a second episode of left ovarian torsion. She had a second laparoscopic detorsion without cystectomy or oophoropexy as per her wishes. Operation findings included a congenitally long infundibulopelvic ligament.

After counselling regarding her fertility and long-term risk of recurrence, the patient consented to an elective laparoscopic oophoropexy. It was found that the left utero-ovarian ligament had deteriorated and was no longer present, leaving behind folds of peritoneum and a ligament remnant attached to the uterus. A laparoscopic oophoropexy was performed with a permanent suture, attaching the mesenteric aspect of the left ovary to the left utero-ovarian ligament remnant. The patient recovered well and was followed up 6 months after surgery with no symptoms or complications.

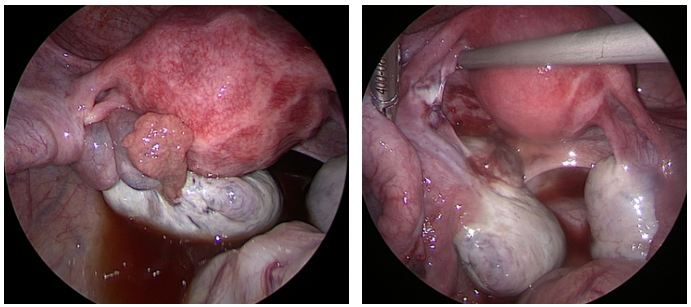

Figure 1. Intra-operative imaging of left ovarian torsion (left)
Figure 2. Congenitally long left infundibulopelvic ligament (right)

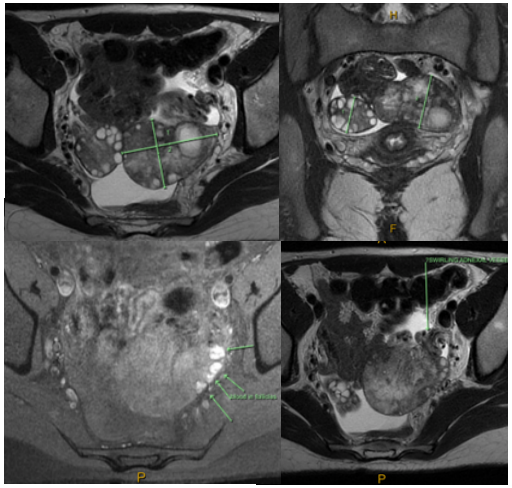

Figure 3. Imaging findings suggestive of torsion - enlarged left ovary, peripheral follicles with evidence of haemorrhage, swirling vessels "whirlpool sign"

Discussion

Paediatric and adolescent ovarian torsion often presents with sudden onset abdominal pain associated with nausea and vomiting.[1] There are unique risk factors specific to this demographic including congenitally long utero-ovarian ligaments, excessive laxity of pelvic ligaments, or relatively small uterus that allows for more space for adnexa to twist on its axis.[2, 3] It can be difficult to diagnose and up to 46% of cases present with a normal ovary without masses or cysts.[4] Ultrasound is the preferred imaging modality for investigation of ovarian torsion. Suggestive features include presence of tubal or ovarian mass, enlarged ovary, small follicles present peripherally in the ovary and a coiled vascular pedicle ("whirlpool sign"). Doppler artery flow can be normal in cases of intermittent torsion or collateral blood supply, and thus arterial flow does not rule out torsion.[1]

Early surgical management via a laparoscopic approach is recommended.[1] There is no effective intraoperative approach to determine ovarian viability, and the appearance does not correlate with viability or long term function. A retrospective study of 31 ovaries visually judged as necrotic at time of surgery had only five confirmed as necrosis on histopathology. Twenty had haemorrhage or congestion and six were normal.[5] Ovarian salvage therefore is the preferred management of adolescent ovarian torsion, with most ovaries maintaining viability after detorsion.[6] Where a cyst or mass is identified without severe degree of oedema or bleeding risk, cystectomy is a reasonable management option. If a cystectomy is not performed, a progress ultrasound should be organised within 3 months to reassess the cyst.[1]

Oophoropexy is a procedure by which the ovary is fixed to the pelvic side wall, posterior abdominal wall or posterior uterus to limit its range of movement. There is insufficient high level evidence to support routine oophoropexy in reducing risk of recurrent torsion.[7] The two strongest indications for oophoropexy are repeat torsion, or absent contralateral ovary.[8]

Conclusion

Paediatric and ovarian torsion can be difficult to diagnose with often a normal appearance of ovary found on pelvic ultrasound. This demographic has unique risk factors that clinicians need to be aware of, in order to provide effective and timely care. Surgical management aimed at preserving the ovaries has shown to have good outcomes, with most ovaries maintaining viability. Although oophoropexy is not recommended routinely, in cases of recurrent torsion or where the contralateral ovary is absent, it can be considered.

References

1. Adnexal Torsion in Adolescents: ACOG Committee Opinion No, 783. Obstet Gynecol. 2019 Aug;134(2):56-63.(o) Fuchs N, Smorgick N, Tovbin Y, Ben Ami I, Maymon R, Halperin R, et al. Oophoropexy to prevent adnexal torsion: how, when, and for whom?. J Minim Invasive Gynecol. 2010;17:205–8.
2. Kives S, Gascon S, Dubuc É, Van Eyk N. Diagnosis and management of adnexal torsion in children, adolescents, and adults. Journal of Obstetrics and Gynaecology Canada. 2017;39(2):82-90.
3. Adeyemi-Fowode O, McCracken K.A., Todd N.J. Adnexal torsion. Journal of pediatric and adolescent gynecology. 2018;31(4):333-338.
4. Sasaki K.J., Miller C.E. Adnexal torsion: review of the literature. Journal of minimally invasive gynecology. 2014;21(2):196-202.
5. Novoa M, Friedman J, Mayrink M. Ovarian torsion: can we save the ovary? Arch Gynecol Obstet. 2021 Jul;304(1):191-195.
6. Dasgupta R, Renaud E, Goldin AB, Baird R, Cameron DB, Arnold MA, Diefenbach KA, Gosain A, Grabowski J, Guner YS, Jancelewicz T, Kawaguchi A, Lal DR, Oyetunji TA, Ricca RL, Shelton J, Somme S, Williams RF, Downard CD. Ovarian torsion in pediatric and adolescent patients: A systematic review. J Pediatr Surg. 2018 Jul;53(7):1387-1391.
7. Spinelli C, Piscioneri J, Strambi S. Adnexal torsion in adolescents: update and review of the literature. Current Opinion in Obstetrics and Gynecology. 2015;27(5):320-325.
8. Fuchs N, Smorgick N, Tovbin Y, Ben Ami I, Maymon R, Halperin R, et al. Oophoropexy to prevent adnexal torsion: how, when, and for whom?. J Minim Invasive Gynecol. 2010;17:205–8.