

## Legal Implication of Ovarian Cysts in Prepuberal Girl

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### Background

Ovarian torsion is a condition that can occur in a normal ovary, but it is more likely to happen when the presence of a cyst or other tissues (tumor) in the ovary can displace it. The extra weight or mass on the ovary can cause it to start to twist and rotate around its supporting ligaments. Ovarian torsion can cause severe pain, more frequently on the right-hand side. However, in some cases, the clinical course is prolonged, as the torsion can be intermittent. Early diagnosis and surgery are essential to protect ovarian and tubal function and prevent severe morbidity ending with annessiectomy. The ovarian cyst is an insidious risk factor for ovarian torsion and can cause sudden lower abdominal pain and loss of ovarian function with possible legal implications and malpractice. A timely diagnosis of ovarian cyst is of paramount importance to prevent necrosis and preserve ovarian viability. To avoid such a dangerous complication, it is essential the preventive management of the cyst. A cyst becomes a problem when it does not go away or gets bigger. The treatment of ovarian cysts depends on several factors but the size of the cyst and its appearance need to be monitored.

We presented a case of ovarian torsion that led to a claim for compensation to a healthcare facility. Pediatricians and gynecologists must be aware of this risk because the failure to diagnose or make a plan for its treatment may be an act of medical malpractice. A personal injury attorney may pursue financial damages against the negligent parties if the misdiagnosis or mismanagement resulted in patient injury.

### Case Presentation

A prepuberal girl presented to a pediatric emergency department (ED) with right abdominal pain and episodes of nausea and vomiting. An abdominal sonography (US) revealed a 5-6 cm right anechoic mass. A gynecologist evaluation and a new US confirmed the presence of an ovarian cyst. She was brought to the pediatric ward, where she developed intermittent symptoms overnight but

without any other modifications in followed US examinations. The day after she was discharged because asymptomatic with the indication of a new US after one month.

The latter was performed showing no further modifications. A follow up within six months was prescribed. After five months without symptoms, she was brought back to the ED complaining of lower abdominal pain on the right side and vomiting. An abdominal X-ray was performed, showing bowels distention and coprostasis. A repeated US of the pelvis demonstrated a slightly cyst's increase. A purgative enema was given with the improvement of abdominal pain. After four hours under observation and a new US, the patient was discharged. After more than one month the patient reported persistent pain, nausea, vomiting and fever for three days. Back to the ED and given the reported history of acute onset abdominal pain, findings remain highly concerning for ovarian torsion. Gynecologist and surgeon were consulted and the patient underwent laparoscopy with right annessiectomy. She did not have any further complications in the postoperative period.

### Discussion

Ovarian torsion refers to the complete or partial rotation of the ovary on its ligamentous supports, often resulting in impedece of its blood and lymphatic supply. The restricted lymphatic outflow resulted in congestion and further swelling. The swelling inhibits venous return, which results in additional congestion. Finally, arterial supply is compromised. Torsion can be seen in the otherwise-normal ovary, but most cases involve an enlarged ovary (i.e. a cyst, mass, multiple ovarian follicles). The enlarged ovary then rotates on the axis of the ligaments. The most common symptom is acute onset of lower abdominal pain, followed by nausea and vomiting. The abdominal pain is usually off and on for days or weeks with a sudden onset.

Ovarian torsion is predominantly seen on the right side due to the possible effect of the sigmoid colon in the left iliac fossa, which

reduces the motility of tubal structure. The right-sided presentation of torsion may be misdiagnosed as acute appendicitis.

It has been estimated that 2.7-3% of acute abdominal pain in adolescence is caused by an ovarian torsion (4.9/100,000, and 17% below 12 years-old). Anorexia, nausea, vomiting, constipation, diarrhea and increased white blood cells can be present. A timely diagnosis is challenging and even a short delay can lead to oophorectomy [1-12].

The first choice of imaging is US, with the use of Doppler flow studies to end in the diagnosis of ovarian torsion. However, the use of color Doppler imaging has some controversies as the presence of vascular flow does not rule out torsion. This is because of the dual blood supply from the uterine and ovarian arteries. Ovarian cyst, consequently, is a risk factor for torsion and loss of ovarian function. The goal is to diagnose torsion in a timely fashion in an attempt to preserve ovarian function and viability, often with success [11]. To avoid irreversible complications, preventive management of an ovarian cyst is more appropriate.

The size of the cyst is crucial in decision making. The pelvic US remains the primary imaging modality to evaluate adnexal cysts. US allows the evaluation of morphological sign (dimension, volume, shape, thickness, wall's regularity and content) and may be useful in case of ovarian torsion [13]. Based upon the literature, simple unilocular cysts less than five centimeters are likely to be functional and can be followed by US conservatively until full regression [2-4, 7]. If the diameter is more than five centimeters there is an increased risk of torsion. Conversely, in case of totally anechoic cyst, the recommendations are to follow the patient for a period ranging from four weeks to six months. It has been suggested a re-evaluation two weeks after diagnosis, then every month to follow any modification. If there is any significant clinical or US variation, or persistence (or increasing) in volume beyond six months, excision/aspiration should be planned. In the suspicion of torsion, emergency surgery is mandatory [4, 13].

The management of large prepubertal ovarian cysts (more than five centimeters) is still controversial [5-8]. Cysts are classified as large when more than five centimeters or a volume of 13 milliliters. Current consensus suggests conservative management of small simple cysts. Simple, small and asymptomatic cysts showing no rapid growth can be monitored by serial US. In most cases, ovarian cysts disappear in a few months without the need for treatment. The volume, even though is an important risk factor, is not useful to predict reliably the clinical evolution. Whether surgical treatment is needed will depend also on any presence of severe symptoms (e.g. torsion, internal bleeding with hemodynamic instability), if there are any concerns that the cyst could be cancerous or could become cancerous (e.g. calcification, solid areas, etc), or if there is any increase in size [9].

In every case, before deciding on the best treatment, this risk must be shared with parents. To avoid medico-legal issues, it is essential to provide proper and written documentation about the pathology, possible evolution, complications (e.g. torsion, bleeding, etc.) and options for treatment. Parents must be informed of the warning symptoms in order to seek for medical assistance in a timely manner. To prevent future claims and litigations it must be clear

in the documentation the participation of each of the parties in the decision making and a conscious acceptance of the risk.

## Conclusion

Ovarian cysts in adolescents are common. Ovarian torsion is a rare but possible complication resulting from the cyst. It is a challenging working diagnosis for clinicians and delay may lead to the ovarian loss, and this can have a detrimental effect on the patient's life. Because missed or delayed diagnosis carries a risk of litigation and medico-legal challenges for physicians, it is essential a close follow-up and parents' information. Parents' participation in the decision-making process, a strategy to manage potential risks, accurate written documentation and informed consent along with registration of every relevant anomaly must be taken into account to prevent avoidable litigations.

## References

1. ER Kokoska, MS Keller, TR Weber (2000) Acute ovarian torsion in children. *The American Journal of Surgery* 180: 462-465.
2. C Pienkowski, C Baunin, M Gayraud, F Lemansson, P Vaysse, et al. (2004) Ovarian cysts in prepubertal girls. *Sultan C. Pediatric and adolescent gynecology. Evidence-Based Clinical Practice. Endocr Dev. Basel, Karger* 7: 66-76.
3. S Murray, S London (1995) Management of ovarian cyst in neonates, children and adolescent. *Adolesc Pediatr Gynecol* 8: 64-70.
4. B Caspi, R Goldchmit, Y Zalel, Z Appelman, V Insler (1996) Sonographically guided aspiration of ovarian cyst with simple appearance. *J Ultrasound med* 15: 297-300.
5. Warner BW, Kuhn JC, Barr LL (1992) Conservative management of large ovarian cyst in children: the value of serial pelvic ultrasonography. *Surgery* 112: 749-755.
6. Zolton JR, Maseelall PB (2013) Evaluation of ovarian cyst in adolescent. *Open J of Obstetrics and Gynecology* 3: 12-16.
7. B Kanizsai, J Orley, I Szigetvary, J Doszpod (1998) Ovarian Cyst in Children and adolescent: their occurrence, behaviour, and management. *J Pediatric and Adolescent Gynecology* 11: 85-88.
8. ML Brandt, MA Helmrath (2005) Ovarian cyst in infants and children. *Seminars in Pediatric Surgery* 14: 78-85.
9. MS Doman, SC Buolanger, JR Salameh (2006) Laparoscopic management of giant ovarian cyst. *JSLs* 10: 254-256.
10. H Appelbaum, C Abraham, Choi-Rosen, JM Ackerman (2013) Key clinical predictors in the early diagnosis of adnexal torsion in children. *J Pediatr Adolesc Gynecol* 26: 167-170.
11. XM Santos, DL Cass, JE Dietrich (2015) Outcome following detorsion of torsed adnexa in children. *J Pediatr Adolesc Gynecol* 28: 136-138.
12. Metella Dei, Vincenzina Bruni (2016) Guide to gynecology of childhood and adolescence. Ovarian torsion and adnexal torsion 2016: 390-392.
13. P Tessitore, R Guanà, A Mussa, L Lonati, M Sberveglieri, et al. (2012) When operate on ovarian cysts in children? *J Pediatr Endocrinol Metab* 25: 427-433.

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