

Adnexal torsion in a 7 - year - old girl; dilemma in diagnosis and treatment

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Abstract

Ovarian torsion is an infrequent diagnosis in the pediatric age group but can be catastrophic, especially if ovarian salvage is not possible. The clinical picture is non-specific, and children cannot always articulate their symptoms, which often make the diagnosis a challenge. Because of its nonspecific manifestations, ovarian torsion is often confused with other conditions, such as appendicitis and is diagnosed late. We report a case of a

7 years old girl presented with acute abdomen. Imaging showed a left adnexal mass with doubtful vascularity. Exploratory laparotomy followed and a left salpingo - oophorectomy was performed. Left sided ovarian torsion is a rare presentation of adnexal torsion in this age group.

Keywords: ovary; torsion; adnexal tumor

Ovarian torsion is an infrequent diagnosis in the pediatric age group but can be catastrophic, especially if ovarian salvage is not possible¹. The clinical picture is nonspecific, and children cannot always articulate their symptoms, which often make the diagnosis a challenge. Patients present with abdominal pain that has classically been described as intense and intermittent, and is believed to result from the vascular occlusion. The only other consistent finding is a pelvic mass. Early diagnosis and high clinical suspicion are keys to prompt identification and definitive surgical treatment of this diagnostic dilemma. The most common cause of adnexal torsion is a benign cystic ovarian tumor. When a cystic mass is present within the ovary acting as focal point about which the twisting may occur. It may however also occur in a normal ovary, particularly

in young girls. Because of its nonspecific manifestations, ovarian torsion has been confused with other conditions, such as appendicitis. Ultrasonography is often used as a primary method of evaluation in this type of cases and showing the presence of multiple follicles, 8 to 12 mm in size, in the cortical portion of the enlarged ovary. Doppler imaging may be used to evaluate blood flow to the organ and thus the viability of the ovary². We are reporting a case of left sided ovarian torsion in a seven - year old girl which is a very rare presentation of adnexal torsion in this age group.

Case report

A seven years old girl presented in the emergency department with abdominal pain associated with vomiting since last two days. Pain was continuous,

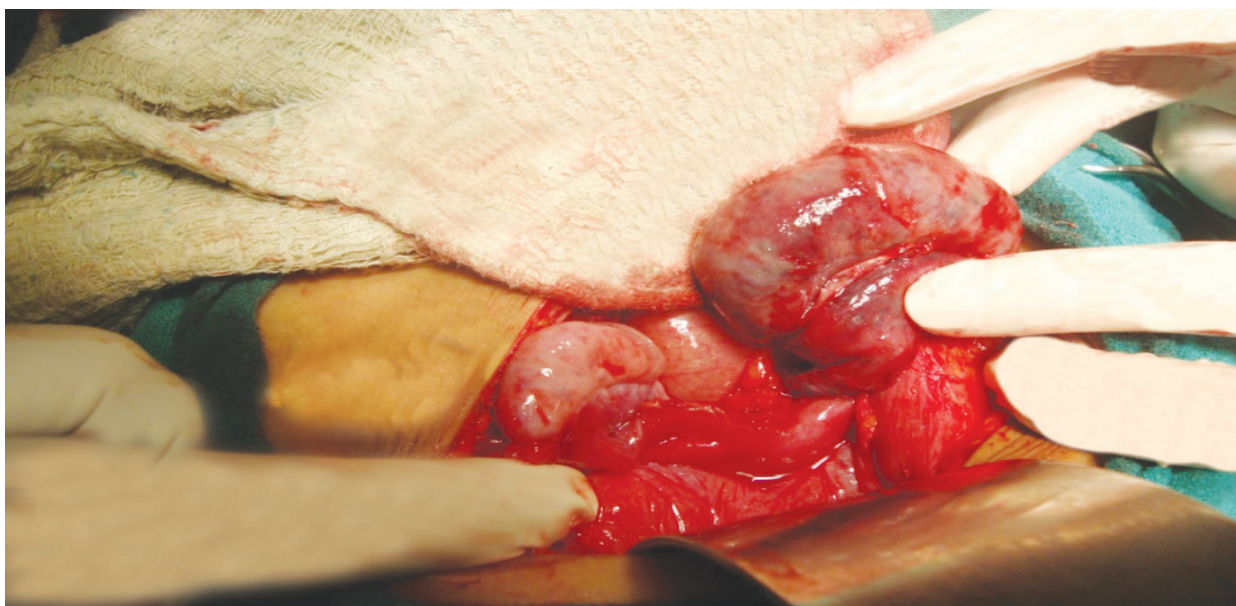


Figure 1. Torsion of the left ovary. The uterus, the right ovary and the right fallopian tube are normal



Figure 2. Specimen of the left salpingo - oophorectomy

moderate to severe in intensity, without any special character, localized mainly in the hypogastric region and associated with pyrexia, and without any urinary or bowel complaints. The patient was initially seen by a general practitioner and was treated symptomatically. Since there was no improvement, she was referred to our institute where she was first seen by a surgeon and shifted to our department after an ultrasound showing an adnexal mass. On examination she was stable without any dehydration, afebrile, her pulse was 100/min, the blood pressure 110/70 mmHg, the abdomen was soft, and there was tenderness in the hypogastric region without any rigidity or muscle guarding. No rebound tenderness

was observed. On per rectal examination, irregular tender mass was tipped in the pouch of Douglas anteriorly. Hemoglobin level was 9.8 mg/dl, total leukocyte count= 14,400/ μ l, platelet count= 292,000/ μ l, random blood sugar=76 gr/dl, urea= 37 mg/dl, creatinine= 0.75 mg/dl, Na^+ = 134.4 mEq/l and K^+ = 3.9 mEq/l. The ultrasound examination revealed an echogenic mass/lesion of size 5×5cm in the pelvis posterior to bladder and anterior to rectum, with doubtful peripheral vascularity on Doppler imaging, with mild amount of free fluid in pelvis and right iliac fossa. Uterus and the right ovary had a normal appearance, whereas the left ovary was not visualised separately. Abdominal and pelvic computed tomography (CT) showed a hemorrhagic mass in the pelvis between bladder and rectum with nonvisualization of the left ovary. Tumor markers measures were: CA-125= 4.64 U/ml, alpha - fetoprotein= 1.20 ng/ml, beta - human chorionic gonadotropin= 4.67 U/l and lactate dehydrogenase= 1,332 U/l.

The patient underwent exploratory laparotomy and a left salpingo - oophorectomy was performed. On laparotomy, the left ovary was found enlarged, measuring around 5×5 cm, with torsion, rotated around the fallopian tube and the mesovarium. The uterus, the right ovary and the right fallopian tube

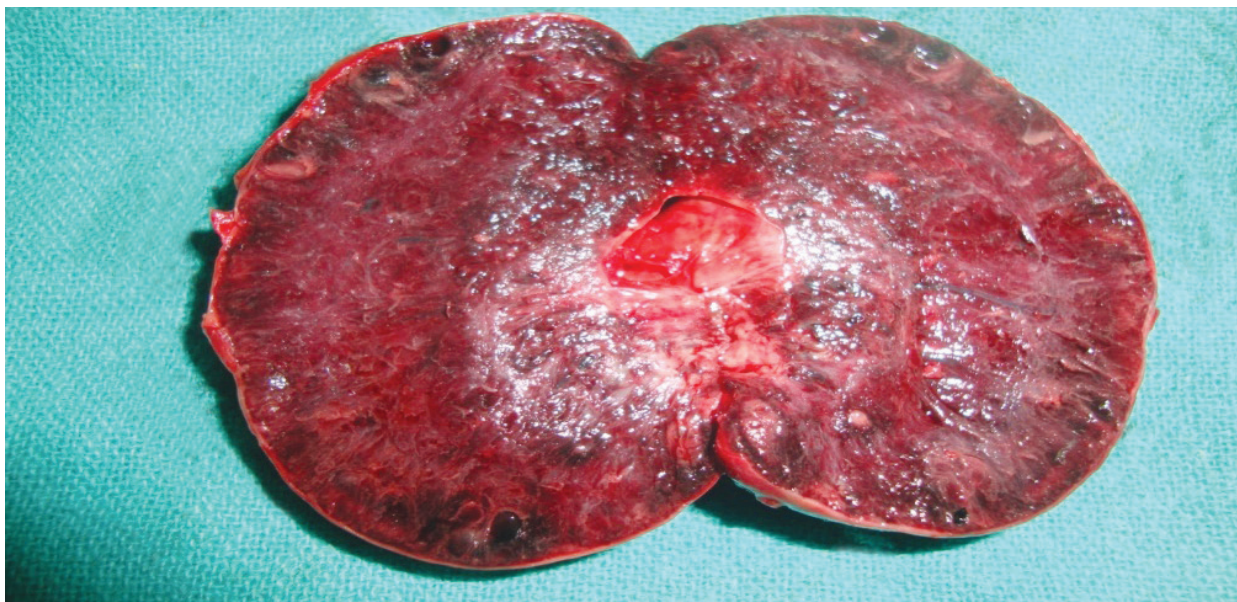


Figure 3. Cut section showing normal ovarian architecture with congestion

were normal for the patient's age (Figure 1,2). Cut section revealed a solid ovarian mass with hemorrhagic necrosis, and normal ovarian tissue with multiple follicles (Figure 3). Peritoneal washing showed no malignant cells. The histopathological examination showed normal ovarian tissue with hemorrhage. The post - operative period was uneventful and the patient was discharged on 7th day.

Discussion

Ovarian torsion is a rare problem within the paediatric population and, unfortunately, it is not often considered initially when a patient presents with abdominal pain¹. Adnexal torsion occurs predominantly in women of reproductive age. Pregnant women have a greater risk; 12% - 18% of ovarian torsion occurs during pregnancy. Ovarian torsion accounts for approximately 2.7% of all cases of acute abdominal pain in children^{3,4}. Adnexal torsion is often difficult to diagnose given the presence of non-specific symptoms. The clinical presentation of adnexal torsion can mimic appendicitis, urinary tract infection, renal colic, gastroenteritis, or other conditions of acute abdominal and pelvic pain⁴.

Torsion of the adnexa occurs frequently (60%) on the right side, presumably because the sigmoid co-

lon leaves limited space for adnexal movement^{3,7}. Torsion is often associated with pre - existing ovarian pathology, yet large cysts are thought to be less likely to undergo torsion secondarily to their size and mass⁶. The diagnosis of ovarian torsion is supported by ultrasound, with an accuracy of approximately 87% for ovarian pathology⁸, whereas CT may also be useful^{9,10}.

Most authors have reported a low incidence of malignant adnexal tumor associated with adnexal torsion (<5%). In a study by Sommerville et al¹² over a 10 - year period, 11% of patients with an ovarian neoplasm had adnexal torsion, 95% of them had benign ovarian neoplasms, 3% had neoplasms of low malignant potential and 2% had malignant ovarian neoplasms. The most common explanation for the lack of torsion in the group with malignant disease is that malignancy causes inflammation and decreased mobility of the adnexa due to adhesion formation and locally invasive tumor growth. The "classic" sonographic appearance is that of a unilaterally enlarged ovary with multiple follicles of uniform size, approximately 8 - 12 mm in diameter in the cortical portion of the ovary. A recent study by Albayram and Hamper postulated that these are earlier signs of torsion and may be obscured by necrosis¹³. Doppler flow imaging is often quite useful in arriving

at the correct diagnosis. Typically no documented parenchymal perfusion will be seen in a completely torsed ovary. If either CT or magnetic resonance imaging are performed, they may demonstrate a non-enhancing pelvic mass with engorged blood vessels that are straightened and drape around the ovarian lesion. There is often a small amount of ascites.

Once adnexal torsion develops, immediate diagnosis and emergency surgery are necessary to preserve ovarian function. However, the most frequent symptom of adnexal disease is usually an acute abdomen in which the main complaint is only nonspecific lower abdominal pain⁶. Furthermore, if the patient is a young girl, the probability of consultation with a gynecologist from the beginning is low, and a significant delay in diagnosis and surgical treatment occurs more frequently than with adult patient. As a result, in most of such cases, adnexal necrosis progresses, and preservation of the adnexal tissue becomes difficult. To avoid such tragedy, accurate and immediate preoperative diagnosis is extremely important, especially in the case of a young girl. At present, a consensus has not been reached regarding whether there is a time limit after the onset of symptoms or what the intraoperative indications for adnexectomy should be^{3,7}. In our patient who was treated 3 to 4 days after symptoms had developed, the preservation of adnexal tissue was difficult and a salpingo - oophorectomy was performed.

Conclusion

Prompt diagnosis and emergent surgical intervention are keys to ovary salvage, especially considering the sensitive nature of ovarian loss in the prepubescent patient. A misdiagnosis can have dire consequences including ovarian loss. Many surgeons have recommended against detorsing the ovary and prefer oophorectomy for concerns of embolization^{10,11}, yet no strong evidence exists to support this claim¹. Ovarian torsion can occur at any age; therefore a high index of suspicion coupled with radiographic evidence and clinical presentation will facilitate prompt diagnosis and ovarian salvage with significantly reduced patient co - morbidity. ■

Conflict of interest

All authors declare no conflict of interest.

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