

Torsion with Gangrenous Ovary in Young: Remove or Leave?

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Ovarian torsion is described as a partial or complete rotation of vascular pedicle of the ovary, which impairs the venous outflow and arterial inflow [1]. Ovarian torsion is a rare condition but is a gynecological emergency [2]. Of all gynecological emergencies, ovarian torsion is seen in 2.7-7.4% of cases [3]. In surgically treated adnexal tumors the incidence is as high as 14.8% [4]. This condition is seen in all the age groups but more commonly in the adolescent age group, commonly in the post-ovulatory phase in many cases [5,6]. It is usually seen unilaterally in the pathologically involved ovary. The diseased ovary acts like a fulcrum around which fallopian tube revolves. The process of ovarian torsion can involve the ovary alone but more commonly both the ovary and the fallopian tubes are involved termed as adnexal torsion [7]. This rare gynecological emergency in children requires urgent surgical intervention to save ovary from necrosis.

Ovarian cysts and tumors are unusual in children if present they are commonly simple ovarian cysts or teratomas and usually benign in nature. Teratomas comprise almost half of all ovarian neoplasms and malignant immature teratomas constitute only 1 % of all these malignancies. Moreover, almost 12% of cases include bilateral ovaries and salpingo-oophorectomy for these lesions in children risk their long-term fertility [8].

The prime risk factor for the ovarian torsion is an ovarian mass more than 5 cm. This condition is more commonly associated with the benign pathology (97% of cases) and the right side ovary is more commonly involved than the left ovary, probably due to the longer right ovarian ligament and the presence of sigmoid colon on the left side [9]. Malignant lesions tend to have inflammation and fibrosis leading to adhesions to adjacent structures and thus fewer chances of torsion. The most common etiologies associated with the torsion are follicular cysts, parovarian cysts, benign cystic teratomas and mucinous or serous cystadenomas.

In children, Ovarian torsion is usually distinguished by sudden onset iliac or hypogastric pain. Pain is usually associated with nausea and vomiting. History of similar episodes in the past (sub torsion) is a very evocative sign of ovarian torsion [1]. On physical examination, tenderness and guarding is usually present in the iliac and the hypogastric region. There can be a palpable mass in the lower abdomen suggestive of torsion.

Ultrasound of the pelvis is a first step in making a diagnosis and an important noninvasive investigation. It reveals an enlarged ovary in cases of ovarian torsion but it is not a reliable investigation to confirm the diagnosis [10]; its sensitivity ranges from 51% to 75% [11,12]. Doppler studies are not very sensitive and flow can be within normal limits even with the torsion which delays the management [13]. Further evaluation with computed tomography or magnetic resonance imaging can be considered in the cases of unspecified ultrasound findings [1]. Ovarian torsion should be diagnosed and confirmed early so that the surgery can be done timely to avoid ovarian necrosis.

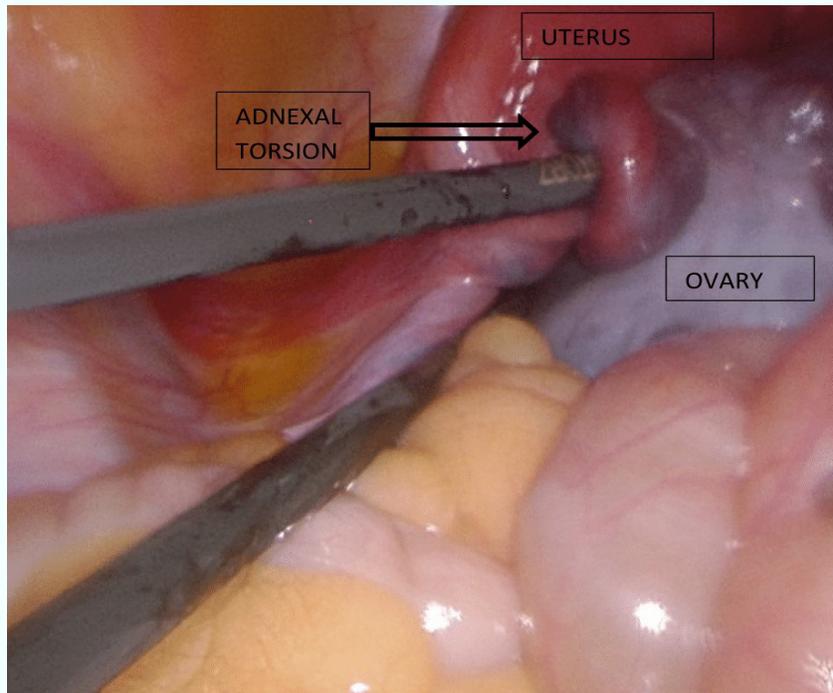


Figure: Laparoscopic view showing ovarian torsion in a young girl aged 12 years.

Treatment of ovarian torsion is debatable. Benign pathologies of ovary including any cysts or tumor along with torsion and necrotic appearance are often considered as an indication of oophorectomy in the past because of the fear of leaving an ischemic organ inside and possibility of recurrence but nowadays the trend is of the ovarian preservation [14-16]. Although many studies suggested that detorsion of the ischemic adnexa is safe and successful in most of the cases [17,18], many surgeons still believe that by the time the patient came to the hospital or reach any medical attention it is too late to rescue the twisted ovary [16,19] and recommends resection, jeopardizing their life-long fertility. If there is any difficulty during cystectomy in cases of an oedematous ovary, patient can be re-examined after 6-8 weeks after detorsion and second surgery can be performed [8].

One of the reasons for recommending resection is the risk of malignancy related to the torsed ovaries [14], fearfulness of the release of blood clots into the circulation after detorsion of thrombosed veins, and, particularly, the belief that a grossly hemorrhagic adnexa with necrotic appearance is irreversibly damaged.

There was one study conducted by Preeti, *et al.* in 2014, comparing the results in two groups of children with adnexal torsion, one subjected to oophorectomy (6 patients) and other were treated with the conservative approach (40 patients). Study results showed safety and complete functional recovery after detorting the ischemic adnexa, regardless of the gross appearance [14]. Similar results were shown in a large series including 214 cases of adnexal torsion with successful conservative management and nil serious complications [17]. Conservative management of adnexal torsion in childhood and adolescence is important for the normal pubertal development and life-long fertility [14].

In cases of mature teratomas of ovary and simple large ovarian cysts, tendency for malignant transformation or coexistence of malignant cells is very little hence conservative management seems to be more appropriate than the salpingo-oophorectomy [20]. Choice of treatment in most cases is related to the time lapsed from the clinical presentation to the surgery and the specialty of the surgeon. The necrotic and bluish-black appearance of the ovary probably forces the surgeons to excise it. Recuperation of the ovary has been reported for up to 72 hours after the torsion. It is now clearly explained from the many studies [21] that the bluish-black appearance of the ovary doesn't mean that there is an irreversible necrosis and these patients, later on, had normal follicular development showed by many studies [14].

In conclusion, ovarian torsion in children had varied presentation thus, the diagnosis is very difficult and often delayed. Ultrasound should be the investigation of choice in young girls with pelvic pain and immediate surgical evaluation is to be done if the investigation reveals a mass in the ovary to save the ovary from necrosis. Laparoscopic cystectomy in cases of adnexal torsion associated with the benign ovarian tumors along with the ovarian preservation is safe in children. Ovarian preservation is related to their long-term fertility.

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