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Case Report on Left Ovarian Torsion: A Rare Complication in an Adolescent PCOS

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Introduction: Ovarian torsion is an acute emergency and women in any age group having cysts may have this complication. With increase in number of women having PCOS mainly adolescent girls are also at risk of this complication. Here we report a case of young PCOS girl who presented with acute abdomen who was found to have left ovarian torsion. The emergency was managed by emergency laparoscopic derotation and oophoropexy.

Main symptoms and clinical findings: A 14 year old girl with PCOS presented with severe pain over right lower abdomen and was associated with 2 episodes of non-bilious vomiting. On examination she was anxious with tachycardia of 104 bpm. Right iliac fossa was tender without any distension, guarding or rigidity.

Main diagnoses, therapeutic interventions, and outcomes: Her lab investigation revealed leukocytosis with hormonal profile consistent with PCOS. On USG there was bulky left ovary of 7.9 x 5.5 x 4 cms and volume of 87cc with lack of arterial blood flow. She was promptly taken up for emergency laparoscopy where left ovary was rotated 360 degree clockwise with gangrenous looking cyst wall which improved on detorsion. Left ovary was then fixed to lateral pelvic wall in anatomical position.

Conclusion: All adolescent girls with ovarian torsion but no apparent ovarian pathology should be

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tested for PCOS using ultrasound and biochemical tests. Also girls with known PCOS in this age group presenting with acute abdomen, ovarian torsion should be considered and promptly investigated.

Keywords: Ovarian torsion; PCOS; laparoscopy; detorsion.

1. INTRODUCTION

In females of all ages, with a prevalence of 2.7 percent, ovarian torsion is the fifth most common gynaecological surgical emergency and with delayed diagnosis and treatment, there is a chance of ovarian necrosis [1]. With a frequency ratio of 5:2, right ovarian torsion is more common than left, which is thought to be due to the sigmoid colon, which reduces the amount of space available for ovarian movement. Twisting the ovary damages the suspensory ligaments' vascular pedicles, obstructing venous and lymphatic drainage and reducing blood supply in the arteries [2]. The time it takes for ischemia to cause permanent damage is uncertain, and the bulk of adnexal torsion patients are diagnosed late. Most accepted pathogenesis of torsion is caused due to ovarian mass or cyst which act as lead point, causing rotation of infundibulo-pelvic ligament and utero ovarian ligament.

In the adolescent premenarcheal population 50% of cases that have undergone torsion have normal ovaries. Early polycystic ovary syndrome (PCOS), which is related with increased ovarian volume, is one potential cause of unexplained ovarian torsion in this population. The primary mode of assessment is pelvic ultrasound, and because of early haemorrhage and oedema, the most common finding is a large ovary (>4 cm) [3]. With an increasing prevalence of obesity in most industrialised and developing nations including India, there is evidence suggesting a genetic cause of obesity in the development of PCOS, insulin resistance and infertility [4]. There is also a positive association of elevated homocysteine serum levels in women with polycystic ovarian syndrome which is significant because of the negative impact of elevated homocysteine levels on the cardiovascular system and its elevated levels should prompt investigation for PCOS in women with reproductive age group.

2. CASE REPORT

2.1 Patient Information

A 14 year old girl with PCOS presented in casualty with acute abdomen right lower quadrant. She had dull aching pain since last 4 days which exacerbated since 6 to 8hours. It was accompanied with nausea and 2 episodes of non-bilious vomiting. Initially for her symptoms she went to nearby clinic where she was given analgesics which could only partially relieve symptoms. There was no history of fever, loose motions or urinary complaints.

2.2 Clinical Findings

On examination, she looked anxious. The pulse rate was 104 bpm with bp of 120/80 mm hg. There was no pallor or edema. She was overweight with BMI. Hirsutism was also present (chin hair). There was no acne. On abdominal examination, there was tenderness present in right iliac fossa with rebound tenderness. There was no guarding or rigidity. There was no free fluid. Bowel sounds were present. Clinically acute appendicitis, torsion/rupture of ovarian cyst and ruptured ectopic pregnancy were kept as differential diagnosis.

2.3 Timeline

She was diagnosed with polycystic ovarian syndrome (PCOS) on ultrasound advised by family physician 6 months back for irregular menstrual cycles for which she was advised to consult a gynecologist but did not take any opinion or treatment.

2.4 Diagnostic Assessment

Her Hb level was 9.1 gm% and her platelet count was 4.35 lakh /cumm. Her total WBC count was raised 20100cu/mm. Her hormonal profile revealed elevated LH and Testosterone levels at 14 miU/ml and 2.1 nmol/L respectively and FSH was 6.8 miU/ml which was in normal range and were consistent with PCOS diagnosis.

Ultrasonography scan of abdomen and pelvis revealed a bulky left ovary of 7.9 x 5.5 x 4 cms and ovarian volume of 87cc (pi/6*length*breath*thickness) with lack of arterial blood flow and minimal free fluid in pouch of Douglas (Fig. 1). Right ovary was normal (Fig. 2).

Diagnosis: Left ovarian torsion.

2.5 Therapeutic Intervention

Emergency laparoscopy suspecting left ovarian torsion was done. Intraoperatively, left ovary was having cyst measuring 8cm x 10 cm with gangrenous looking cyst wall (Fig. 3). It had undergone 360 degrees clockwise rotation along infundibulopelvic ligament.

Around 20 cc of haemorrhagic fluid was aspirated from the cyst. Detorsion of left ovary was done and the necrotic appearance of wall improved and further subsided. Left ovary was then brought to original anatomical position. The ovarian ligament which was long was shortened by oophoropexy was done by hot dog bun technique (Fig. 4).

The right ovary, right fallopian tube and uterus appeared normal. Management of PCOS was done by lifestyle modification and ovarian suppression.

Fig. 1. Left ovary with cyst

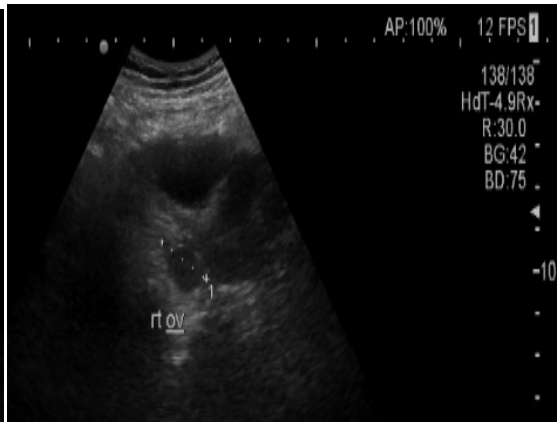

Fig. 2. Normal right ovary

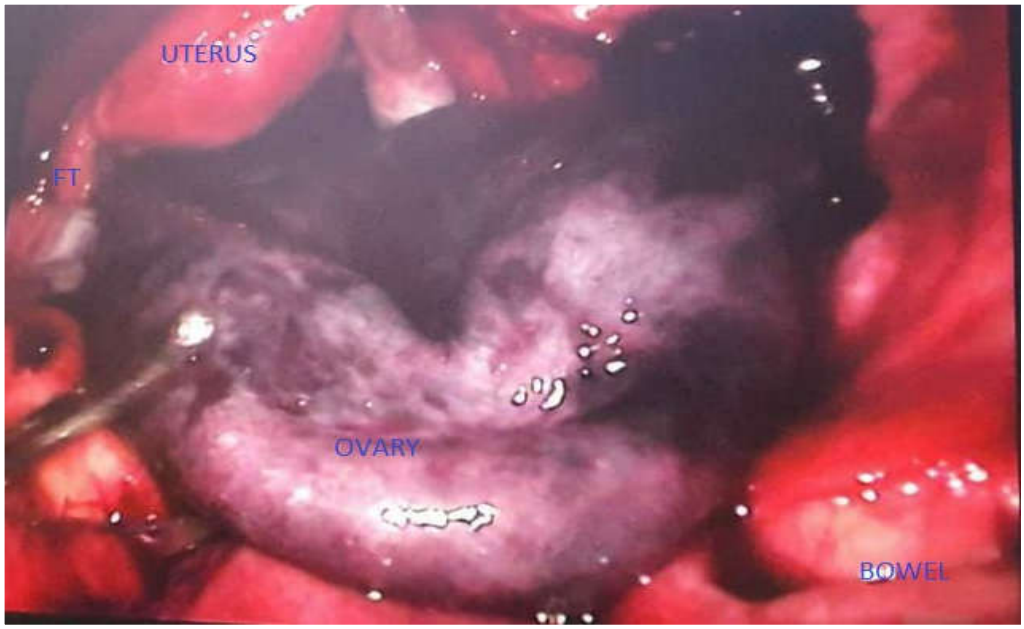

Fig. 3. Gangrenous looking cyst wall of left ovary

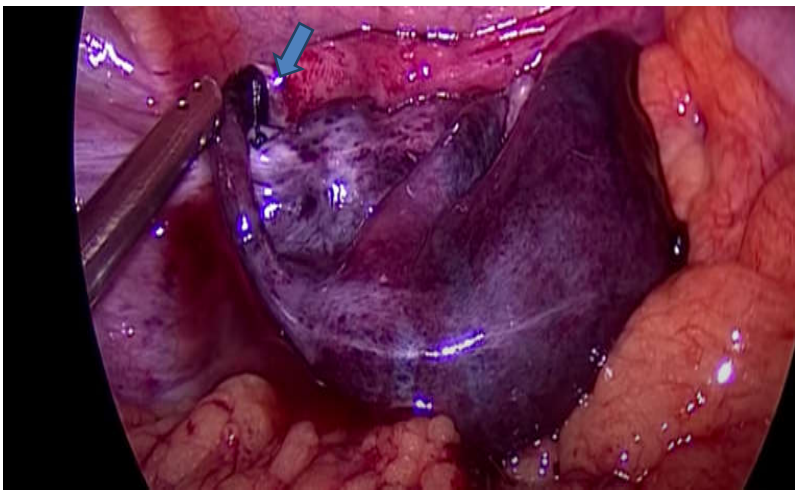

Fig. 4. Oophoropexy stitch (arrow)

2.6 Follow-up and Outcomes

Postoperative period was uneventful. Patient was discharged on 3rd post op day.
Adverse and unanticipated events: nil

3. DISCUSSION

Ovarian torsion presents with various clinical symptoms and signs so it should be suspected in all the cases presenting with acute pain abdomen in reproductive age group women. Polycystic ovaries have been linked to torsion in as many as 7% of patients [5].

The vascular pedicle is torn, resulting in impaired lymphatic outflow and then decreased venous outflow from the ovary. Ovarian engorgement and oedema ensue, resulting in increased ovarian pressure. The arterial blood flow is impaired without intervention, which ultimately leads to ovarian infarction [6].

In cases of ovarian torsion, the most common underlying pathology is ovarian cysts [7]. Ovarian enlargement is one of the most unique observations of excessive ovarian stroma in the adolescent population. According to the international consensus definition, a polycystic ovary has a volume of >10 cm3 and a maximal area of >5.5 cm2. Ultrasound is the gold standard imaging option for Adnexal Torsion since it can accurately and rapidly evaluate ovarian anatomy and perfusion in a noninvasive manner. An ultrasound scan's diagnostic importance in the diagnosis of ovarian torsion, on the other hand, is debatable. Heterogeneous ovarian stroma, "string of pearls" sign, and free fluid in the culdesac are all nonspecific ultrasound findings. The most reliable ultrasound feature in ovarian torsion is ovarian enlargement of >4 cm, with cysts measuring 8–12 cm posing the greatest danger [8].

In women having PCOS since the volume of ovary is increased the risk of rotation and torsion of ovary around its pedicle is increased. The presence of the sigmoid colon may explain why the risk is higher on the right side than on the left. The ovary's massive edoema is thought to be caused by intermittent ovarian torsion, which obstructs venous and lymphatic drainage [9].

Our case is unique and one of those rare cases where the torsion was on the left side and clinical features where more on the right side. As this could be because the left sided enlarged ,congested and infarcted ovary was lying on the right side of the pouch of dougles covered by the policeman of abdomen(omentum).Hence the clinical features may be misguiding as far as the location of pathology is concerned and clinically may simulate other surgical emergencies like appendicitis [10].

If torsion is suspected clinically, laparoscopy should be done without delay at an earlier stage, when the ovary is still salvageable. In our case, ultrasound was done at a stage wherein no blood flow was observed, and this was immediately followed by immediate laparoscopy. Fortunately, the ovaries were viable and could be saved. Differential diagnosis in unmarried females including haemorrhagic cyst, renal colic,

urinary tract infection, endometriosis, gastrointestinal infection, appendicitis, and diverticulitis [11].

Conventionally due to concerns that untwisting the adnexa could cause pulmonary embolism from a thrombosed vein, adnexectomy was once the preferred treatment for ovarian torsion in cases of ovarian dyscoloration/necrosis. In a review, Rody et al. recommended restrictive treatment of OT regardless of the ovary's macroscopic appearance. In our case we managed the patient with removal of omental adhesions followed by de-rotation of ovary as conservative modality to preserve the ovarian function in view of future reproductive career.

Oophoropexy was performed to prevent further recurrence. The postoperative period went smoothly and patient was discharged on 2nd day. Further management was done in the form of multidisciplinary approach to treat PCOS. Lifestyle modification, weight loss and cyclical hormonal therapy was started [12].

In the case of difficult cystectomy due to an ischemic edematous ovary, some authors recommend a reexamination 6–8 weeks after the acute episode and, if necessary, secondary surgery later if possible. Few of the related rare cases and studies were reviewed [13-17].

4. CONCLUSION

Ovarian torsion is an acute surgical emergency and women of all age groups during reproductive years having PCOS are also at risk .Hence they should be made aware of such symptoms and PCOS needs to be managed aggressively by medical management and lifestyle modifications.

Laproscopy is the gold standard for diagnosis and treatment. Prompt laproscopic detorsion of the ovary is the procedure of choice recommended for the treatment of ovarian torsion.

We conclude that adolescent girls with ovarian torsion but no apparent ovarian pathology should be tested for PCOS using ultrasound and biochemical tests and also girls with known PCOS in this age group presenting with acute abdomen, ovarian torsion should be considered and managed promptly by minimal acees approach.derotation itself is sufficient to relive the emergency to avoid recurrence ovarin hich stitch can be taken.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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