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CASE REPORT- ADOLESCENT BORDERLINE OVARIAN TUMOUR WITH TORSION: A SURGICAL MANAGEMENT.

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ABSTRACT **Background:** Ovarian cancer is one of the common and the leading cause of death among women with gynecological malignancies. Ovarian tumor may sometimes present with torsion which is a gynecological emergency.Case presentation: We report a case of 16 years old girl who presented with acute pain in right sided lower abdomen with vomiting. Ultrasonography suggestive of bilateral complex ovarian cysts with right ovarian cyst torsion. The patient underwent right sided salpingo-oophorectomy and left sided multiple cystectomy with removal of excrescence. The confirmed diagnosis of serous borderline ovarian tumor with torsion was made retrospectively with pathology report. **Conclusions:** Ultrasonography, clinical presentation and pathological examination play important role in diagnosis and hence in treatment of ovarian tumors.

KEYWORDS : Adolescent, Ovarian torsion, Serous borderline ovarian tumors, Ultrasonography, Case report

INTRODUCTION

Borderline ovarian tumors comprise about 15%–20% of all epithelial ovarian malignancies1 with an incidence of 1.8–4.8 per 100,000 women per year[1].

Ovarian tumour in children and adolescent girls form an uncommon but important part of gynaecological malignancies. They account for 1% of all the childhood malignancies and 8% of all abdominal tumours in children. It is estimated that almost 10-30% of all the ovarian neoplasm occurring in girls up to 17 years of age are malignant.[2]

Patients with ovarian tumour may present with vague symptoms like bloating, Pelvic or abdominal pain, fatigue, back pain, menstrual irregularity and sometimes as ovarian torsion which is a gynecological emergency.[3]

Ovarian torsion refers to complete or partial rotation of the adnexal supporting organ with ischemia. It can affect females of all ages. Ovarian torsion occurs in around 2%–15% of patients with adnexal masses.[3]

The Management of ovarian torsion remains a dilemma for surgeons. Oophorectomies for torsion have been a routine practice due to concerns for an underlying malignancy as potential recurrence.3 However the decision of oophorectomy becomes challenging in adolescent age group as this will harm the hormonal axis and fertility of the patient for future.

CASE REPORT

A 16-year-old adolescent girl presented to the emergency department complaining of acute right sided lower abdominal pain which was sudden onset, continuous, dull aching pain in the right lower abdomen associated with history of 6-7 episodes of vomiting.

The patient had no history of abdominal trauma. Her menarche occurred at age 13 years and her menstrual cycles were regular, every 28 days with 7 days of flow. She had never taken hormonal contraceptives. She had no other gynecologic symptoms, such as intermenstrual bleeding or dysmenorrhea. She had no significant past medical, surgical, or drug history, nor any relevant family history. She was generally fit and well.

On examination, the patient's temperature was 37.7°C, her blood pressure was 100/72 mm Hg, and her pulse rate was 104 bpm. An abdominal examination revealed Soft, Suprapubic mass with irregular margin & lower border was not demarked. The approximate size was corresponding to 18 weeks gravid uterus size. Tenderness was noted right iliac fossa on deep palpation A complete blood count showed that the patient had a white blood cell count of 12.9×109/L, her hemoglobin level was 11.4 g/L, and her platelet count was 292×109/L.

Tumour markers were done

- AFP*- 0.30ng/ml,
- CEA*- 1.10ng/ml
- B-HCG*- 0.02 mIU/ml
- CA-125*=30.05U/ml.

Transabdominal ultrasound revealed - Bilateral complex adnexal cysts, mostly of ovarian origin

- A complex cyst with multiple internal septae and echoes seen in the right adnexa. Three irregular shaped solid nodules seen in the cyst Colour Doppler did not show vascularity in the solid nodules or septae, suggesting a strong possibility of right ovarian cyst torsion. (Figure 1) Size-12.0 x 6,2 x 11.5 cm, Volume - 456 cc.
- A complex cyst with internal echoes and septae were seen in the left adnexa. There were two irregular walled solid nodules seen in the cyst. The solid nodules showed vascularity [grade 2/4]. The cyst measures 3.4 x 3.4 x 4.5 cm Volume - 28.3 cc. (Figure 2)

Figure 1 – Right ovarian complex Cyst with torsion

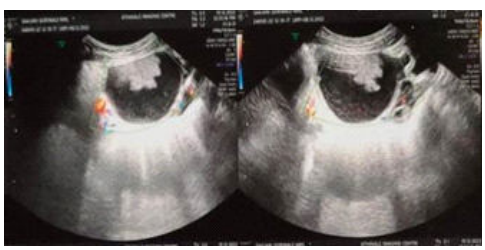
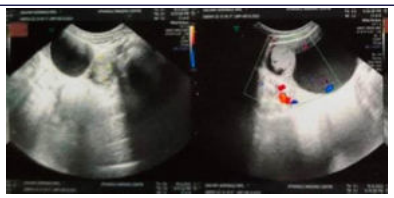


Figure 2 – Left ovarian complex Cyst



Intra operative findings-

- No peritoneal fluid, peritoneal wash collected and sent for cytology.
- Right sided congested fallopian tube with enlarged congested ovary with surface excrescence lesion on complex ovarian cyst with torsion over 360° visualized (about 12x12 x6 cm) (Figure 3)
- left sided multiple ovarian cyst with surface excrescence lesion over the left ovary (about 4x4x4 cm) (Figure 4)
- Left fallopian tube healthy
- Uterus is normal in size & shape
- Healthy ovarian tissue present above the cyst in left ovary.

Exploratory laparotomy midline vertical incision with Right salpingo-oophorectomy & Left sided ovarian cystectomy with removal of surface excrescence with preservation left ovary. (Figure 5) & (Figure 6)

Figure 3 – Findings of right ovarian torsion found with surface excrescence

Figure 4 - Left ovary findings of multiple ovarian cysts with surface excrescence

Figure 5:- Left sided cystectomy (2cysts) with removal of excrescence.

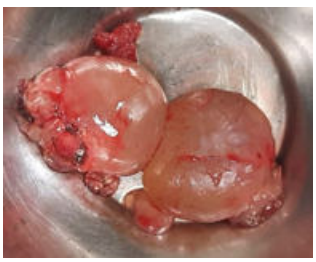


Figure 6:- Left ovarian tissue repaired.

Post operative course in ward was uneventful. On postoperative follow-up final HPR confirmed right ovarian tissue- borderline ovarian tumour, Right fallopian tube free of tumour, left ovarian cystectomy specimen showed serous borderline ovarian tumour.

Immunohistochemistry – Tumour cells positive for CK7*, WT1*, P53* wild type staining, Negative for CK20*, CDX2*.

Specimens of peritoneal fluid Cytology report - Few suspicious epithelial cells were seen with papillary fronds on the haemorrhagic background along with activated macrophages.

Post operative CECT* -

- Post salpingo-oophorectomy status noted.
- Mild pelvic free fluid, No other suspicious abnormality.

DISCUSSION

Ovarian cancer is the second most common gynecologic malignancy and the leading cause of death among women with gynecological cancer. Borderline ovarian tumors comprise about 15%–20% of all epithelial ovarian malignancies1. Borderline ovarian tumors represent a heterogeneous group of noninvasive tumors of uncertain malignant potential with characteristic histology.[1]

Borderline Ovarian tumors are frequently characterized as having low malignant potential, exhibit papillary projections and an enhanced cell proliferation rate without exhibiting stromal invasion. They occur in younger women, are present at an early stage, and have a favorable prognosis, but symptomatic recurrence and death may be found as long as 20 years after therapy in some patients.[1,4]

Almost 30% of patients with BOTs are asymptomatic; approximately 50%–60% of patients complain about nonspecific symptoms (abdominal pain or abdominal distension) and 10% complain of bleeding abnormalities.5, 6 Very rarely it may present in the emergency department as torsion.

The findings of ovarian mass associated with tenderness and tachycardia often suggest ovarian torsion.[7]

Our patient presented with a palpable mass corresponded to a 18-week-size gravid uterus with signs of tenderness, nausea and vomiting raising suspicion of ovarian torsion which was confirmed on ultrasonography.

However the risk of malignancy cannot be ignored even in an emergency situation. As per Oltmann et al reported an overall malignancy rate of 1.8% in twisted ovaries in pediatric population and found that there was a greater likelihood of malignancy in ovaries that measured ≥8 cm.[8]

Other investigations, such as with serum tumor markers, can identify different types of ovarian pathology in a child with an ovarian tumor .9 Furthermore, a huge cyst in a very young child should heighten suspicion before surgery about the possibility of malignancy. Elevated beta-human chorionic gonadotropin (beta-HCG*), alpha-feto-protein (AFP*) and cancer antigen-125 (CA-125*) levels are significantly associated with ovarian malignancy9. However waiting for tumor markers may not be possible in emergency situation.

Our case report highlights following points. First, an immediate gynaecological evaluation is necessary in patient presenting with abdominal pain (particularly in the iliac fossa region), nausea, and vomiting. Second, the best methods for identifying a pelvic mass are a comprehensive abdominal examination and imaging, preferably ultrasound performed by an expert person. Finally, the suspicious of ovarian torsion, a gynaecological emergency, should be raised if there is a painful ovarian or adnexal tumour or cyst.

Most patients suspected of having ovarian torsion will undergo emergency surgery like oophorectomy. However, the gross appearance of a necrotic ovary does not correlate with the future ability of the ovary to form follicles. Therefore, appearance should not dictate ovarian resection 10. Successful conservative surgery for ovarian torsion, including detorsion of the affected ovary with enucleation done simultaneously or following detorsion, has been reported.[12]

The prognosis is good in young patients with ovarian torsion. The

systemic review showed that gross appearance intraoperatively did not correlate with long-term viability or ovarian function. There are reported cases of spontaneous pregnancy after ovary detorsion and of retrieval of oocytes from previously twisted ovaries.13 However patient should be indigently followed up for histopathological diagnosis even after conservative ovarian surgery.

CONCLUSIONS

Adolescent ovarian tumors can present as acute emergency with underlying ovarian torsion in progression. The clinical examination supported by the diagnostic aids like ultrasonography compliments the management. The possibility of borderline ovarian tumors should always be kept in mind and surgical management should be done to preserve fertility and hormonal status in the young age group.

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