

# Twisted Paraovarian Cyst - Case Report and Review of Literature

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**Abstract:** *Torsion of paraovarian cyst is an important cause of acute abdominal pain. Torsion of ovarian mass and isolated torsion of fallopian tube has been reported in literature. However, torsion of paraovarian cyst is rare. A 30 year old woman presented with complaints of intermittent lower abdominal pain. USG Pelvis revealed a well defined thin-walled cystic lesion measuring 87 x 85 x 48mm. MRI Pelvis findings were suggestive of acute haemorrhagic cyst in right adnexa. Patient was taken up for exploratory laparotomy. Per operative findings revealed haemorrhagic right para-ovarian cyst of size 7 x 8cm with 1 ½ turns of torsion. Right side fallopian tube was stretched over the para-ovarian cyst. Detorsion of para-ovarian cyst followed by excision of para-ovarian cyst with right salpingectomy done. The patient had an uneventful recovery. Torsion of paraovarian cyst with secondary torsion of fallopian tube is a rare phenomenon and should be considered as a cause of abdominal pain in females of reproductive age group.*

**Keywords:** Para-ovarian cyst, adnexal torsion, acute abdomen, adnexal mass

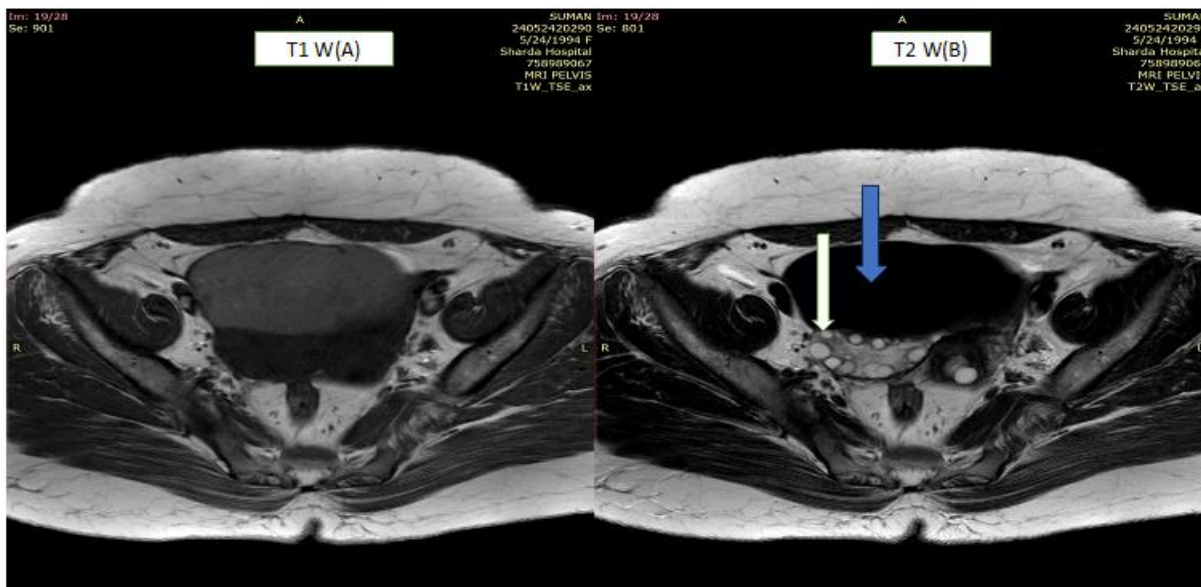
## 1. Introduction

Paraovarian cyst are found in broad ligament between ovary and fallopian tube. They represent approx. 10% amongst the adnexal mass. (1) They are more common in reproductive age group. (2). Isolated torsion of fallopian tube or paraovarian cyst is rare and making a diagnosis is often difficult as well as delayed. (3) The Clinical presentation of a twisted paraovarian cyst can resemble other causes of acute abdominal pain and it can pose a diagnostic challenge. The differential diagnosis includes acute appendicitis, pelvic inflammatory disease, torsion of ovarian cyst, ruptured ovarian cyst, hydrosalpinx, ectopic pregnancy and acute diverticulitis (4). We report a case of twisted paraovarian cyst which led to torsion and eventually removal of paraovarian cyst and right sided fallopian tube.

## 2. Case Report

A 30-year-old woman presented in OPD with complaints of intermittent lower abdominal pain and spotting per vaginum for 2 days. She described the pain as sharp non radiating type in right iliac fossa. Her last menstrual period was 10 days back and cycles were normal and regular with average bleeding and no associated pain. The patient's obstetric history included one live birth which had been delivered by lower segment cesarian section two years back and one abortion which occurred spontaneously 1 year back. On examination, her general condition was found to be stable. She was afebrile,

her pulse rate was 90/minute and regular and her blood pressure was 120/70mmHg. Mild pallor was present. On per abdominal examination, there was tenderness in right iliac fossa. On per speculum examination, cervix and vagina were found to be healthy and there was slight bleeding per vaginum. Her per vaginal examination revealed uterus of normal size which was firm, non tender and mobile. A tender cystic mass measuring approximately 8cm x 7cm was felt separate from uterus in right adnexa. The left adnexa was non tender and free. USG Pelvis revealed a well defined thin walled cystic lesion measuring 87 x 85 x 48mm suggestive of large cystic lesion with internal echoes in pelvis. MRI Pelvis suggested a large altered signal intensity lesion of size approx 5.3 x 9.5 x 7cm in the right adnexa, likely arising from the right ovary. Left ovary was normal. A large well defined T1 isointense and T2 hypointense lesion was present in the right adnexal region. There was no evidence of T2 shading in the lesion which ruled out endometrioma and was suggestive of acute haemorrhagic cyst [Figure 1 (A) and (B)]. Patient was taken up for exploratory laparotomy. 1 unit packed RBC was transfused intra-operatively. Per operative finding revealed uterus and right ovary of normal size. There was right haemorrhagic paraovarian cyst of size 7 x 8cm with 1 ½ turns torsion (Figure 2). Right side fallopian tube was stretched over the paraovarian cyst. Left ovary and left fallopian tube were normal. Detorsion of right paraovarian cyst was done and it was excised along with stretched right fallopian tube (Figure 3). The postoperative period was uneventful. Histopathology revealed a haemorrhagic paraovarian cyst.



**Figure 1:** T1 W(A) and T2 W(B) demonstrates the acute haemorrhagic lesions (blue arrow). Note: The large right ovary showing PCOD changes posterior to the lesion (White arrow)



**Figure 2:** Per operative photograph showing right sided paraovarian cyst (White Arrow), both ovaries (yellow arrow, uterus (blue arrow)



**Figure 3:** Specimen of Paraovarian Cyst

### 3. Discussion

Paraovarian cysts (POCs) are fluid filled sacs that develop near the ovary, in the broad ligament, and can originate from the paramesonephric, mesonephric, or mesothelial tissue. (5) They commonly arise from epoophoron and paraoophoron. Epoophoron is remnant of mesonephric duct found next to ovary and tube. (6) Paraoophoron consists of few rudimentary tubules lying in the broad ligament between epoophoron and uterus. Paraovarian cyst is sited near the attachment of mesovarium and as it grows, separates the ovary from fallopian tube stretching the tube and fimbriae over its upper pole. Cysts that originate from paramesonephric remnants are lined by secretory, ciliated columnar or cuboidal epithelium. Mesonephric cysts on other hand are lined by cuboidal or flattened epithelium. (7) The occurrence of paraovarian cysts has been reported in all age groups from neonates to post-menopausal though the incidence is higher in reproductive age group (13,14) It is due to increased hormonal activity, leading to more reported cases in these groups. (8) These cysts are typically asymptomatic, however, in rare cases, they can become twisted, resulting in severe pain and other complications. (9)

Adnexal cyst are called large when their size is more than 5 centimetres and giant when they are larger than 20 centimetres. (15) In our study, there was a large paraovarian cyst of size size 7 x 8 centimetre. The distension of the cyst increases the mobility of adnexal mass and may lead to torsion of the cyst itself or predispose to torsion of adnexal structures such as fallopian tube. (12) Paraovarian cyst usually remain asymptomatic and are mostly detected either on imaging or during surgery. Patients may present with gradual or persistent or intermittent abdominal pain, which can range from mild to severe due to cyst torsion, cyst rupture or haemorrhage (16). Since POCs have no pedicle of their own, their torsion usually involves ovary, fallopian tube or infundibular ligament (13). In our case, paraovarian cyst torsion was associated with fallopian tube torsion. Torsion has been commonly reported on the right side, likely due to sigmoid colon limiting the cyst mobility on left (17). In

present case also, twisted paraovarian cyst was present on right side. Paraovarian cyst is associated with increased incidence of ectopic pregnancy and infertility as they can cause tubal narrowing and disturbed tubal motility(13). On examination, patients with twisted POCs often exhibit generalized tenderness, and peritoneal signs may be observed in advanced cases.(10)

More than half of the paraovarian cysts are misdiagnosed as ovarian cyst, tubal cysts, peritoneal inclusion cyst and mesenteric cyst. The correct diagnosis can be made by ultrasound features such as the split sign (separation of cyst from ovary on applying probe pressure)(16). MRI and CECT can also be used as modalities to better delineate the origin and nature of adnexal mass (15). Once diagnosed, treatment of a twisted paraovarian cyst often involves surgical intervention, such as a laparoscopy or laparotomy, to remove the cyst and prevent further complications.(11)

#### 4. Conclusion

A twisted paraovarian cyst is rare but there is need to maintain a high index of suspicion. It has no definitive diagnostic signs on imaging so delay in management can lead to irreversible damage to fallopian tube affecting the future fertility. Early diagnosis and appropriate treatment are necessary to prevent complications and reduce morbidity.

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