

TORSION OF PARA-OVARIAN CYST: A RARE CAUSE OF ACUTE ABDOMEN

Maria Hassan, Rabail Raza

Department of Radiology, Aga Khan University Hospital, Karachi, Pakistan.

PJR October - December 2017; 27(4): 401-403

ABSTRACT

Torsion of uterine adnexa is an important cause of acute abdominal pain. Adnexal torsion with a paraovarian cyst in adolescent or premenarchal girls is extremely rare and often challenging to diagnose before surgery since the clinical presentation is nonspecific and the differential for pelvic pain is broad.

We present a case of 19 year old female, who presented in emergency with acute abdomen. Ultrasound pelvis was suggestive of an ovarian cyst. At laparotomy a twisted right paraovarian cyst was found and cystectomy performed.

Introduction

Paraovarian cysts (POC) represent approximately 10% of adnexal masses.¹ They are more common in women aged 30-40 years. Most of the time they are small and asymptomatic, although are occasionally large, resulting in pelvic pain.² POCs usually arise in the broad ligament and are thin walled and unilocular. It may be difficult to reliably differentiate a POC from an ovarian cyst by imaging, therefore they are often removed surgically, especially if a solid component is present.

A diagnosis of paraovarian cyst is favored when the ovary is depicted as separate from the cyst; however, clear depiction of its separateness is often prevented by adnexal distortion. Large paraovarian cysts have been described in locations superior to the bladder, possibly having migrated there during their enlargement.³ Because paraovarian cysts are not hormonally responsive, their imaging appearance does not change over time.

In torsion of para ovarian cyst diagnosed early, detorsion of its pedicle with preservation of fallopian tube and removal of the cyst may be a viable option. Physicians need to maintain a high index of suspicion for this uncommon and often difficult to diagnose

cause of abdominal pain. Stability at follow-up examinations during different phases of the menstrual cycle, in particular, is suggestive of the diagnosis.

We present here a case of a paraovarian cyst which presented as an adnexal mass suggestive of a twisted ovarian cyst causing acute abdomen.

Case

A 19-year-old female presented with history of sudden severe lower quadrant pain. The pain was non-radiating, constant, 10/10 severity, and associated with nausea and vomiting. The patient had no previous history of similar episodes in the past and denied fever, chills, headache, dysuria, constipation, diarrhea, menorrhagia or dysmenorrhea. The patient had never been sexually active, abused, or experienced abdominal trauma. Her remaining medical and surgical history was unremarkable. Clinically the patient was haemodynamically stable and her haematology and biochemistry results were within normal limits. Transabdominal sonography visualized normal sized anteverted uterus with normal endometrium. A well

Correspondence : Dr. Rabail Raza
Department of Radiology,
Aga Khan University Hospital,
Karachi, Pakistan.
Email: rabail.raza@aku.edu

Submitted 4 June 2017, Accepted 14 June 2017

defined thin-walled anechoic cystic structure was identified in the midline posterior to uterus without any internal vascularity measuring 8.6 x 8.2 x 7.6 cm with volume of 283.3 ml representing paraovarian cyst with suspicion of torsion. The patient was tender on probing. Both ovaries were separately visualized. Left ovary measured 2.2 X 2.6 cm and Right ovary measured 2.8 X 1.7 cm. There was no evidence of free intraperitoneal fluid collection.

Analgesia provided no relief so patient underwent CT Scan the following day which showed a cystic lesion of 10 x 6.6 cm in the pelvis in retro uterine area, likely to be ovarian in nature.

Exploratory laparotomy was performed, demonstrating an enlarged, hemorrhagic, gangrenous left paraovarian cyst, twisted at its pedicle. Both ovaries and the fallopian tubes were normal. Left cystectomy was performed. The cyst was sent for histopathology. The report was consistent with the paraovarian cyst. The patient had an uneventful post-operative recovery and discharged to home on the 5th post-operative day. Patient was doing well at the follow up visit.

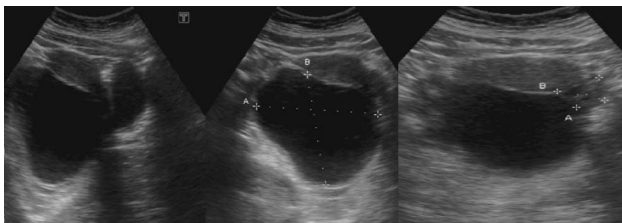


Figure: A well defined thin-walled anechoic structure is identified in the midline posterior to uterus without any internal vascularity representing paraovarian cyst.

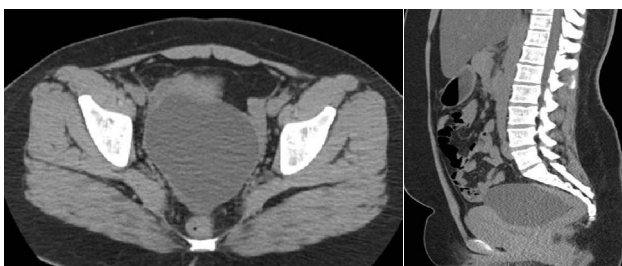


Figure: A cystic lesion in the pelvis in retrouterine area, likely to be ovarian in nature.

Learning Points

- Torsion of both ovary and fallopian tube most commonly found at surgery.
- Ovarian torsion occurs around suspensory ligament of ovary. (Twist ranges 180-720°)

- Sequential venous, lymphatic, and arterial obstruction.
- Earliest pathologic changes include edema and microscopic hemorrhage within ovary. Late findings include hemorrhagic infarction.
- Absent venous flow in enlarged echogenic ovary with prominent peripheral follicles is earliest reliable sign.
- Presence of normal blood flow does not exclude torsion.
- Always look for underlying mass.

Discussion

The differential diagnosis of fallopian tube torsion includes acute appendicitis, ectopic pregnancy, pelvic inflammatory disease, twisted ovarian cyst and degenerative leiomyoma.⁴ Paraovarian cyst torsion is rare; therefore diagnosis may be delayed.⁵ Torsion of the paraovarian cyst is three times more common in pregnant women probably due to the rapid growth spurt.⁶ POCs are usually small, although they may vary in size. Larger cysts are found in younger patients and are usually of mesothelial origin. Paraovarian cysts are usually single, but bilateral lesions have been reported.⁷ Physicians need to maintain a high index of suspicion for this uncommon and often difficult to diagnose cause of abdominal pain.

Various theories have been postulated to explain the cause of fallopian tube torsion. A survey of 201 cases of fallopian tube torsion by Regad⁸ found a normal appearance in only 24%. Causes of fallopian tube torsion include anatomic abnormalities including long mesosalpinx, tubal abnormalities, hydrosalpinx and hydatis of morgagni. Physiologic abnormalities include peristalsis or hyper mobility of the tube and tubal spasm from drugs. Haemodynamic abnormalities include venous congestion in the mesosalpinx, trauma.⁹ Previous surgery as tubal ligation, specially the use of Pomeroy technique, can predispose to fallopian tube torsion.¹⁰

Ultrasound demonstrates an elongated, convoluted cystic mass, tapering as it nears the uterine cornu and the ipsilateral ovary separate from the mass. Doppler may be helpful in detecting viability of adnexal structures by showing absence of flow in a tubular structure or high impedance blood flow within the twisted vascular pedicle.^{11,12} MRI is a useful problem-

solving tool in the evaluation of adnexal torsion in pregnant women.¹³ When available, it is preferred to CT because it lacks ionizing radiation. Ovarian enlargement with or without an underlying mass is a finding most frequently associated with torsion, but it is nonspecific. A twisted pedicle, although not often detected on imaging, is pathognomonic when seen. Subacute ovarian hemorrhage and abnormal enhancement are usually seen, and both features show characteristic patterns on CT and MRI.

In torsion of para ovarian cyst diagnosed early, detorsion of its pedicle with preservation of fallopian tube and removal of the cyst may be a viable option. Physicians need to maintain a high index of suspicion for this uncommon and often difficult to diagnose cause of abdominal pain.

References

1. Barloon TJ, Brown BP, Abu-Yusuf MM, Warnock NG. Paraovarian and paratubal cysts: preoperative diagnosis using transabdominal and transvaginal sonography. *J Clin Ultrasound* 1996; **24**: 117-22.
2. Grant EC. Benign conditions of the ovaries. In: Nyberg DA, Hill LM, Bohm-Velez M, Mendelson EB, editors. *Transvaginal ultrasound*. St Louis, MO: Mosby-Year Book, 1992: 199.
3. Athey PA, Cooper NB. Sonographic features of parovarian cysts. *AJR Am J Roentgenol* 1985; **144**: 83-6.
4. Elchalal U, Caspi B, Schachter M, Borenstein R. Isolated tubal torsion: clinical and ultrasonographic correlation. *J Ultrasound Med* 1993; **12**: 115-7.
5. Kim JS, Woo SK, Suh SJ, Morett LB. Sonographic diagnosis of paraovarian cysts: value of detecting a separate ipsilateral ovary. *Am J Roentgenol* 1995; **164**: 4-1441.
6. Puri M, Jain K, Negi K. Torsion of para-ovarian cyst: a cause of acute abdomen. *Indian J Med Sci* 2003; **57**: 2-361.
7. Grant EC. Benign conditions of the ovaries. In: Nyberg DA, Hill LM, Bohm-Velez M, Mendelson EB, editors. *Transvaginal ultrasound*. St Louis, MO: Mosby-Year Book; 1992. p.199.
8. Regad J. Etude anatomo-pathologique de la torsion des trompettes uterines. *Gynaecol Obstet* 1933; **27**: 519-3.
9. Shukula R. Isolated torsion of the hydrosalpinx: a rare presentation. *Br J Radiol* 2004; **77**: 784-6.
10. Bishop EA, Nelms WF. A simple method of tubal sterilization. *NY State J Med* 1930; **30**: 214.
11. Elchalal U, Caspi B, Schachter M, Borenstein R. Isolated tubal torsion: clinical and ultrasonographic correlation. *J Ultrasound Med* 1993; **12**: 115-7.
12. Chang HC, Bhatt S, Dogra VS. Pearls and pitfalls in diagnosis of ovarian torsion. *Radiographics Sep - Oct 2008*; **28(5)**: 68-1355.
13. Birchard KR, Brown MA, Hyslop WB, Firat Z, Semelka RC. MRI of acute abdominal and pelvic pain in pregnant patients. *AJR Am J Roentgenol* 2005; **184(2)**: 452-8.