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Case Report

Hydrosalpinx with adnexal torsion in an adult patient—A case report ☆,☆☆

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ABSTRACT

Adnexal torsion is a common gynecological emergency and a significant cause of acute pelvic pain in women. Hydrosalpinx-induced torsion of the adnexa is a rare situation and requires prompt and accurate management. Twenty-three years old nulliparous woman admitted in our structure for acute pelvic pain. The ultrasound revealed an enlarged right ovary with an adnexal cystic mass. We suspected the diagnosis of a right adnexal torsion due to cystic ovarian mass. Laparotomy revealed torsion of the right adnexa and a second large mass appearing to be a hydrosalpinx. Diagnosis of adnexal torsion is difficult and is based on a range of arguments obtained by anamnesis, clinical examination, ultrasonography and other investigations. Early diagnosis is important for preserving tubal and ovarian function, given the risk of ovarian necrosis in young women. Laparoscopy is the gold standard for diagnosing and treating adnexal torsion. The treatment can be conservative or radical, consisting of detorsion of the twisted adnexa, with or without adnexectomy.

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Introduction

Adnexal torsion usually involves both the ovary and fallopian tube, but can involve only one of them in some cases [1].

Hydrosalpinx is a rare predisposing factor of adnexal or isolated fallopian tube torsion. Infection causes damage

to the endosalpinx, resulting in a distal occlusion of the tube and accumulation of the exudate, responsible for its distention [2].

Early diagnosis of adnexal torsion helps to avoid complications. If not diagnosed in time, the adnexa or ovary may lose viability, with subsequent fertility problems in young patients [3].

Abbreviations: CT, computerized tomography; hCG, human chorionic gonadotropin; PID, pelvic inflammatory disease; CRP, C-reactive protein; MR, magnetic resonance.

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Fig. 1 – Image of ultrasound using a low-frequency probe: showing an enlarged right ovary, hypoechoic, heterogeneous, with an adnexal cystic mass.

Our report presents a rare situation with a hydrosalpinx induced adnexal torsion.

Case presentation

Twenty-three years old nulliparous woman, without history of illness or drug use, admitted to the Gynecology Emergency Department for sudden-onset, intense, acute pelvic pain, which had started 2 hours before the admission.

Firstly, anamnesis revealed that the patient had similar but much less severe episodes in the past year, without metrorrhagia. Examination showed a right lower abdominal tenderness. She had a right tender adnexal mass on pelvic examination, with no signs of uterine bleeding.

Biological tests showed a normal hemoglobin level at 13.4 g/dL, hyperleukocytosis at 15,000 elements/mm³ associated with a C reactive protein within the normal range. Human chorionic gonadotropin levels were less than 5 mIU/mL, ruling out tubal pregnancy.

On the second line of investigations, a transabdominal ultrasound examination was performed and revealed an enlarged right ovary, measuring 65 mm, hypoechoic, heterogeneous, with peripherally displaced small follicles and decreased Doppler flow. Adjacent to the ovary, there was an adnexal cystic mass, measuring 10 cm. The left ovary was normal in shape and size (Fig. 1).

The suspected diagnosis was of a right adnexal torsion and an immediate laparotomy revealed torsion of the right adnexa with twisting of 1 turn at the right infundibulopelvic ligament. The torsed right ovary became enlarged and bluish. A second large mass appearing to be a hydrosalpinx was found, it measured 12 × 08 cm and it extended from the ampulla to the infundibulum. The uterus and the left adnexa were normal in appearance (Figs. 2A and B).

Detorsion was performed, in addition to a neosalpingostomy to remove the hydrosalpinx with aspiration of the serosanguinous content, estimated at about 350 mL.

The postoperative course of recovery was uneventful, and the patient was asymptomatic. She was treated with amoxicillin and doxycycline with good response. She was then discharged with a follow-up at 3 months.

Discussion

Hydrosalpinx occurs following a complete distal occlusion due to tubal damage and adhesions caused by various conditions of the fimbriated end of the tube [4].

In adults, the most common cause of hydrosalpinx is pelvic inflammatory disease.

Hydrosalpinx is one of the predisposing factors of adnexal torsion. Any increase in weight of the adnexa can be a cause of adnexal torsion. Paratubal cysts, responsible of weighing down the tube alone, can cause isolated torsion of the tube or of the whole adnexal structure [5].

Acute ischemia is the direct consequence of the adnexal torsion. Complications include tubal necrosis and gangrenous transformation [6]. Rarely, it may lead to potentially fatal complications due to the release of cytokines which can cause pelvic thrombophlebitis or peritonitis [7].

The typical clinical presentation of adnexal torsion usually associates acute pelvic pain with nausea and vomiting. Patients are generally admitted for sudden onset, intense pain [7]. It is generally localized on the pelvic, iliac or hypogastric area. Nausea and vomiting are frequently reported. A fever >38° may appear after 48 hours of evolution [8].

Biologically, findings are nonspecific to adnexal torsion. Leukocytosis can be found in the complete blood count. The sedimentation rate or C reactive protein can be elevated [9]. Human chorionic gonadotropin levels should imperatively be measured to rule out a tubal pregnancy.

Differential diagnosis can involve ectopic pregnancy, endometriosis, pelvic inflammatory disease, ruptured ovarian cyst, degenerative leiomyoma, acute appendicitis, and other gastrointestinal and urinary conditions [10].

The ultrasound image of a hydrosalpinx shows an elongated or folded, tubular, C-shaped, or S-shaped fluid-filled structure, distinct from the uterus and the ovary. Longitudinal folds that are present in a normal fallopian tube become thickened in the presence of a hydrosalpinx, and may produce a characteristic “cogwheel” appearance in cross-section images. Incomplete septa may give a “beads on a string” sign [11]. The waist sign is a strong predictor of hydrosalpinx, and refers to the indentations found on the opposite sides of the fallopian tube wall [12]. These signs usually help to distinguish a hydrosalpinx from a septated ovarian cystic mass, which is usually round. However, longitudinal folds may be absent, and a significantly scarred hydrosalpinx may present as a multilocular cystic mass, leading to a mistaken diagnosis of an ovarian cystic mass.

Doppler analysis can show a decreased or absent flow in the vessels of a torsed ovary [13]. It is not the gold standard for diagnosis, but it may be useful. A normal flow does not neces-

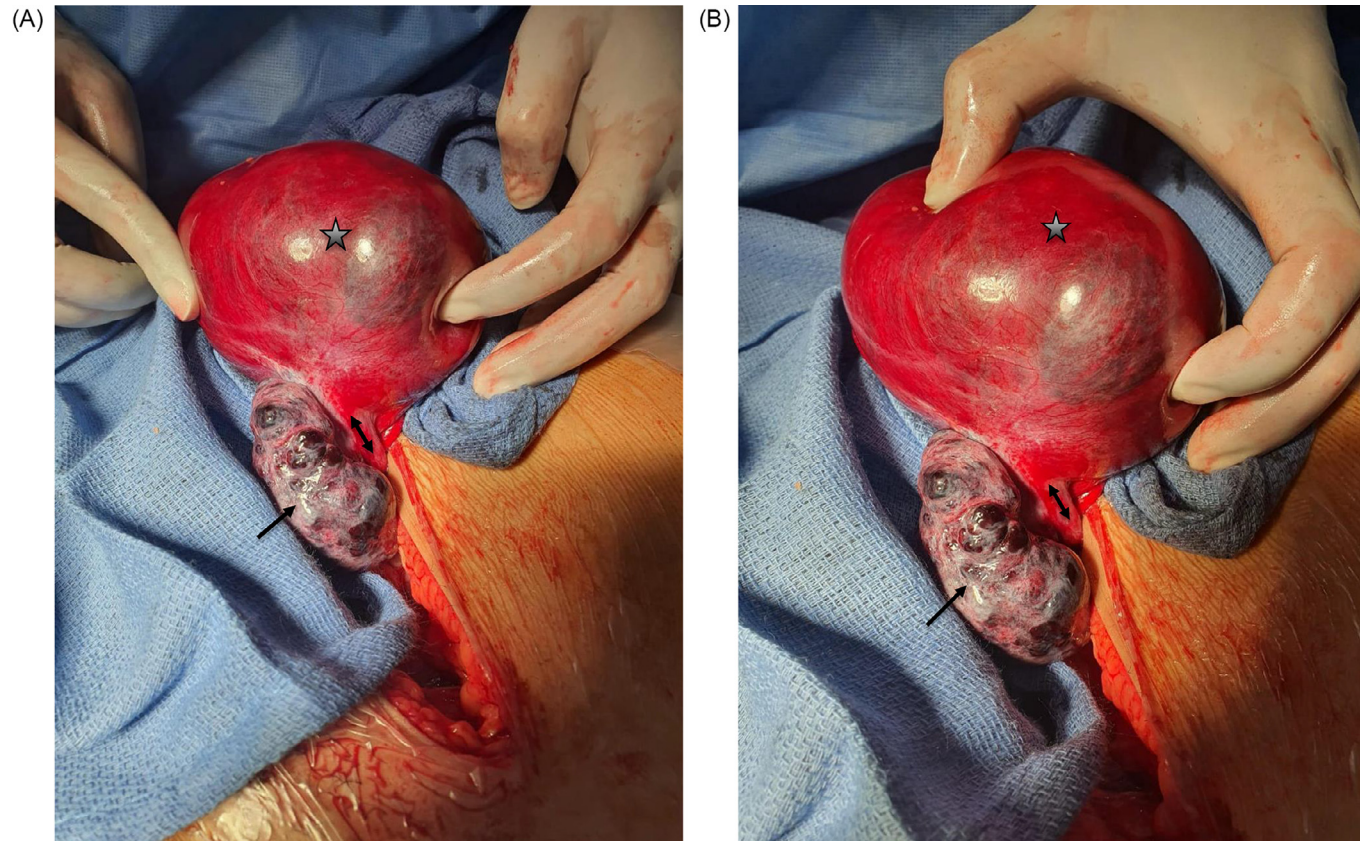


Fig. 2 – (A) and (B) Laparotomy findings: Torsed right fallopian tube (double arrow) with a voluminous hydrosalpinx (asterisk) – Enlarged and bluish right ovary (arrow).

sarily rule out torsion because of the dual vascular supply to the adnexa [14].

A CT scan may be helpful, particularly in cases of severe and prolonged abdominal pain [11].

Hydrosalpinx is typically diagnosed at ultrasonography, but it may be difficult to recognize on sonographic images when it is atypical. Thus, multiplanar MR imaging is the modality of choice for the characterization and localization of adnexal masses. It can confirm the tubular nature of the adnexal mass and individualize an ovary that is separate from the mass [15].

Direct visualization is needed for a definitive diagnosis of adnexal torsion, whether by laparoscopy or laparotomy.

The majority of patients with adnexal torsion are relatively young. Preservation of their adnexa is therefore of primary importance. The systematic use of diagnostic laparoscopy allows direct evaluation of the pelvic structures, and can therefore rule out the diagnosis of adnexal torsion and avoid unnecessary laparotomy [16]. Laparoscopic surgery serves also as an excellent therapeutic method unless contraindicated. The benefit is faster recovery and fewer adhesions, as compared to laparotomy [17].

Adnexal torsion can be managed with either detorsion or adnexectomy of the twisted adnexa. Generally, early intervention allows salvaging of reproductive structures [18].

Conclusion

Hydrosalpinx-induced adnexal torsion is a rare gynecological emergency. Clinical presentation is nonspecific and is often difficult to distinguish from other acute abdominal conditions.

Early diagnosis is important for preventing necrosis of the twisted adnexa. Multiplanar MR imaging may be used to help differentiate hydrosalpinx from other adnexal cystic lesions. Prompt consideration of this diagnosis and surgical intervention are of crucial importance and may prevent irreversible vascular changes.

Authors' contributions

ZE is the corresponding author, she participated in the organization and writing of the article and studying the cases with YC. Professor NE, MH, BA and YL supervised working and validated the figures. YB and FM contributed in clinical examination, surgical treatment and follow up of the patient. Professor and chief of department of radiology MB and MM read and allowed the article for publication.

Availability of data and materials

The data sets are generated on the data system of the CHU Hassan II of Fez, including the biological data and the interventional report.

Patient consent

Written informed consent for the publication of this case report was obtained from the patient.

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