Endometriosis Emergencies

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Introduction

- Endometriosis is defined as the presence of functional endometrial tissue (stroma and glands) outside the uterine cavity that has a tendency towards invasion and infiltration.

- This disease affects 10–15% of women of reproductive age.

- Its main symptoms are pelvic pain and infertility.

- Its prevalence is higher in women 25–35 years of age.
Introduction

• Endometriosis mostly involves reproductive sites, as the most common locations are the ovaries, the ovarian fossa, the uterosacral ligaments and the posterior cul-de-sac.

• However, this disease may involve other abdominopelvic organs such as the digestive tract, the urinary tract and even the abdominal wall.
Introduction

- **Acute events** in endometriotic patients are rare but can represent life-threatening conditions that require emergent medical treatment, and more often, surgical management.

- The **sudden onset of abdominopelvic pain** in women affected by endometriosis should therefore never be underestimated or dismissed as dysmenorrhoea or chronic pelvic pain, since this symptom could represent a potentially lifethreatening emergency.
Introduction

complicated endometriosis is rarely considered in the differential diagnosis of acute abdominal pain
Adnexal torsion

- Adnexal torsion induced by an endometrioma has seldom been reported.

- Because of its rarity and its complexity in respect of fetal health during pregnancy, the diagnosis and treatment is challenging.

- Ovarian endometrioma is reported in 17–44% of women with endometriosis.

- During pregnancy, approximately 1–4% of women are diagnosed with an ovarian mass, of whom only 5–6% have an ovarian endometrioma.
Most common etiologies of torsion in different populations

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<th>Fetus/neonate</th>
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<td>Ovarian cysts</td>
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<th>Premenarchal girls</th>
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<td>Ovarian cysts and neoplasms</td>
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<td>Elongated utero-ovarian ligament</td>
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<th>Premenopausal women</th>
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<td>Ovarian cysts and neoplasms (includes ovarian hyperstimulation syndrome)</td>
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<td>Pregnancy</td>
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<th>Postmenopausal women</th>
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<td>Ovarian cysts and neoplasms</td>
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Management after detorsion in an adult* patient with a first episode¶ of ovarian torsion and normal contralateral ovary

Is the patient premenopausal?
  Yes
  Is the ovary viableΔ?
  Yes
  Is there concern for malignancy?
    No
    Salpingo-oophorectomy
    Yes
    Is there a benign mass or large cyst?
      Yes
      Possible cystectomy or cyst drainage◊
      No
      Detorsion alone (no further management required)
    No
  No

* Pediatric patients may be managed differently; refer to related UpToDate content for a detailed discussion.
¶ Patients experiencing a second episode of ovarian torsion or who have had an oophorectomy on the contralateral side may be managed differently (i.e., oophoropexy may be performed); refer to related UpToDate content for a detailed discussion.
Δ An ovary that is dark and enlarged, with or without hemorrhagic lesions, is most likely still viable. Ovarian necrosis is rare. The appearance on gross inspection of a necrotic ovary or tube includes a gelatinous or poorly defined structure that "falls apart" when manipulated. Detorsion is often performed in order to assess viability. Bivalving of the ovary is another technique that can be used to assess viability. Refer to related UpToDate content for a detailed discussion.
◊ Cystectomy or cyst drainage is often performed in addition to detorsion if a benign mass or cyst is present; refer to related UpToDate content for a detailed discussion.
Adnexal torsion

Premenopausal patients with a viable, nonmalignant ovary:

- **Detorsion:**
  The mainstay of treatment of ovarian torsion in premenopausal patients is swift operative detorsion to preserve ovarian function, when possible.
  Torsed ovaries can and should be salvaged whenever possible and resection reserved for those patients in whom malignancy is suspected.
  Detorsion consists of untwisting the torsed ovary and any other torsed structure. During laparoscopy, this can be accomplished with a blunt probe or an atraumatic grasper. If laparotomy is performed, the ovary can be untwisted manually.

- **Cystectomy:**
  is often performed in addition to detorsion if a benign mass is present. If cystectomy cannot be performed because of surrounding edema and concern that dissection may further compromise vascular perfusion, the cyst can be drained and cystectomy performed at a later date. This concept (a two-staged procedure) provides time for edema to decrease and reperfusion to occur, thereby facilitating dissection of the ovarian cyst wall from the normal ovarian cortex.
Adnexal torsion

Other patients: Salpingo-oophorectomy

- **Nonviable ovary** – A nonviable ovary that is clearly necrotic/gelatinous with loss of all normal anatomic structures requires removal.

- **Suspicion for malignancy**

- **Postmenopausal patients** – Ovarian torsion is rare in postmenopausal patients, but when it occurs, removal of the affected ovary and tube is reasonable to prevent recurrence. If an ovarian mass is present, removal of the adnexa is the standard in this patient population due to the risk of malignancy. Intraoperatively, the ovary should be detorsed to better visualize the mass and allow better delineation of the infundibulopelvic ligament and location of the ureter to avoid surgical complications.
Adnexal torsion

PREVENTION OF RECURRENCE

- Suppression of ovarian cysts
- Oophoropexy

We offer oophoropexy to patients who require, or have previously undergone, oophorectomy and thus have only one remaining ovary. Bilateral asynchronous ovarian torsion can occur, which could leave the patient agonal.

The oophoropexy can either be performed at the time of removal of the dead ovary or any time thereafter.

The procedure can be performed laparoscopically, and we typically shorten the utero-ovarian ligament; or, if the ovary is greatly enlarged without a discrete mass (at the time of the torsion event), then it can be sutured to the uterosacral ligament.
Ruptured endometrioma

- It is a rare event, with an estimated (incidence of less than 3% among women of childbearing age who are known to have endometriomas).

- This situation occurs more commonly during pregnancy, due to hormonal stimulation of endometrial stromal elements, albeit with larger (≥ 6.0 cm) lesions.

- Ovarian cyst rupture is commonly diagnosed by the presence of free fluid, a normal-sized ovary, and a clinical history of sudden-onset pain that begins to resolve within approximately 24 hours. Sonography assists in the diagnosis of cyst rupture.

- The rupture of endometriomas can significantly increase serum CA-125 levels, mimicking ovarian epithelial neoplasms.
Ruptured endometrioma

- Surgical interventions for endometrioma rupture were previously restricted to patients who did not respond to conservative treatment with painkillers.

- The importance of the preoperative diagnosis is to support treatment strategies.

- Although some milder cases can be managed conservatively, there is a tendency toward greater use of early surgical exploration because of long-term undesirable effects of cyst fluid in the peritoneal cavity, such as adhesions, pelvic pain, and infertility.

- In addition, the presumptive diagnosis of ruptured endometrioma, rather than ovarian neoplasms, facilitates the decision to perform laparoscopic exploration and allows the surgeon to perform the procedure with greater confidence.
Spontaneous haemoperitoneum (SH): It is a very rare emergency that is often life-threatening.

In the literature, most data refer to spontaneous haemoperitoneum during pregnancy, with 20 described cases of endometriosis-related SH.

The most frequent causes of SH due to endometriosis are the rupture of uterine vessels or ovarian endometriomas.
**Tubo-ovarian abscess (TOA)**

PID and TOA occur more frequently and are more severe in women with endometriosis than in those without endometriosis.

A TOA associated with ovarian endometriosis (OE-TOA) is a potentially life-threatening condition.

**Risk factor:**
young age, multiple sexual partners, sexually transmitted infections, chlamydia and gonorrhea infections, uterine instrumentation, interruption of the cervical barrier, HSG, hysteroscopy, and (IVF) also related to other morbidities, such as infertility, chronic pelvic pain, and ectopic pregnancy.

Only a few studies have reported that IVF or oocyte retrieval plays an important role in the development of OE-TOA.
(1) OE, which is itself is an immunodeficiency disease, leading to impairment in the ability of the immune system to wade off infections, at which point TOA easily emerges.

(2) The OE capsule wall is thin and delicate, making it easy for bacteria to penetrate.

(3) At the same time, OE blood content is an ideal culture medium that facilitates bacterial growth.

(4) The “bacterial contamination hypothesis” states that the incidence and occurrence of intrauterine microbial colonization and endometritis are significantly higher among women with endometriosis, especially after gonadotrophin-releasing hormone agonist treatment. Study showed the association between advanced-stage endometriosis and TOA.

Advanced-stage endometriosis may inCREASE the risk of TOA through the following mechanisms.
Tubo-ovarian abscesses

The risk factors significantly associated with OE-TOA were lower genital tract infections and spontaneous rupture of ovarian endometriotic cysts.

To suppress the formation of OE-TOA and improve prognosis, suspected patients should be provided with prompt treatment, including prophylactic antibiotics (against Escherichia coli) as well as appropriate surgical interventions.
Tubo-ovarian abscesses

- Tubo-ovarian abscesses represent a severe form of pelvic inflammatory disease and carry high morbidity.

- Diagnosis is made by combining the clinical picture (fever, pelvic pain and pelvic adnexal mass) with raised inflammatory markers and radiological findings demonstrating an abscess.

- Initial management with intravenous antibiotics may not be successful.

- Surgical intervention may be indicated but the optimal timing is not clear and image-guided drainage can be a possible alternative to surgery.

- Surgery may be conservative or involve pelvic clearance and will depend on the clinical situation.
Bowel endometriosis occurs in 5–12% of women affected by endometriosis and more frequently involves the large bowel, in particular the sigmoid colon and rectum, which comprise up to 72% of cases, followed by the ileum, appendix and caecum.

Intestinal endometriosis can present with a wide spectrum of symptoms, but the most common are lower abdominal pain (77% of cases), constipation, diarrhoea (25–40%), palpable mass, rectal bleeding, melena, meteorism, abdominal distension, and rectal bleeding.
Intestinal emergencies

Obstruction

Bowel perforation

Acute appendicitis

Intussusception
Conclusion

Acute events in endometriotic patients are rare but can represent life-threatening conditions that require emergent medical treatment, and more often, surgical management. The sudden onset of abdominopelvic pain in women affected by endometriosis should therefore never be underestimated or dismissed as dysmenorrhoea or chronic pelvic pain, since this symptom could represent a potentially lifethreatening emergency.