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OBSTETRICS AND GYNAECOLOGY
CLINICAL PRACTICE GUIDELINE

Ovarian Cyst Accidents

Scope (Staff):	WNHS Obstetrics and Gynaecology Directorate staff
Scope (Area):	Obstetrics and Gynaecology Directorate clinical areas at KEMH and OPH

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Background

Ovarian cyst accidents refer to any of the three complications of ovarian cysts.[1]

1. Ovarian torsion
2. Ovarian cyst haemorrhage
3. Ovarian cyst rupture

Key points

- Other gynaecological complications can present similarly to an ovarian cyst event. On examination, consider conditions such as: ectopic pregnancy, pelvic inflammatory disease, tubo-ovarian abscess, or non-gynaecological issues e.g. appendicitis.[1, 2]
- Ovarian cyst accidents will most commonly involve benign ovarian cysts.
- Ovarian torsion diagnosis is based on high clinical suspicion.
- Ovarian torsion can occur in pregnancy and should also be managed as a gynaecological emergency.

Ovarian torsion

Ovarian torsion is partial or complete rotation of the ovarian vascular pedicle causing obstruction to venous outflow and later arterial inflow.[1] Adnexal torsion refers to the inclusion of fallopian tube (and/or associated cyst) torsion.

The incidence of ovarian torsion occurs mainly in women of childbearing age, it is rare and accounts for 3% of gynaecologic emergencies.[1, 3] Right sided ovarian torsion is more common, likely due to the physiological increased length of the right ovarian ligament.[1, 4] 10-20% of ovarian torsion can occur during pregnancy; with infertility treatment and ovarian hyperstimulation being a risk factors.[3] Recurrence can occur in polycystic ovaries.[3] Children and adolescents account for 15% of cases.[5] Pelvic pain occurs in 90%. Associated symptoms can be nonspecific, and diagnosis can therefore be challenging.

Diagnosis is based on a high index of suspicion, and urgent surgical management is important for preservation of ovarian function.

Risk factors [1, 4, 5]

- Ovarian mass or cyst > 5 cm
- Previous torsion
- Prior pelvic surgery
- Ovulation induction (fertility treatment)
- PCOS (greater risk for large cysts)
- Elongated infundibulopelvic ligaments (more common in premenarchal patients)
- Pregnancy, especially in first trimester (increased progesterone associated with loosened pelvic ligaments thus promoting ovarian flexibility)

Presentation [2-6]

- Pelvic pain is present in up to 90% (i.e. 10% painless)
- The classic presentation is acute, severe, unilateral, lower abdominal pain,[5] but this only occurs in 50%
- 50-70% have associated nausea and vomiting
- Fever (up to 20%)

Investigations [4, 5, 7, 8]

Imaging

- Ultrasound scan (USS) – Both transabdominal and transvaginal where possible
    - Often first line due to availability and absence of radiation
    - The presence of an enlarged, oedematous adnexal mass (present in up to 95%) in an abnormal position raises the suspicion of a torsed ovarian cyst
    - Other typical USS findings (sensitivity 90-100%): peripheralised follicles (“string of pearls” sign), ovarian whirlpool/ vortex sign (twisted vascular pedicle), follicular ring sign (hypoechoic rings around antral follicles)

    - Doppler sonography is useful in diagnosis, but normal blood flow does not exclude torsion
- Computed Tomography (CT) / Magnetic resonance imaging (MRI)
    - Second-line when ultrasound diagnosis uncertain, non-gynae cause suspected and/ or USS not as readily available
    - CT with intravenous (IV) contrast has shown high sensitivity and specificity for ovarian torsion, in which without certain features, sensitivity for excluding ovarian torsion approaches 100%.[5]
    - MRI utility is helpful in examining ovarian texture to distinguish between normal and torsed ovaries. It also has an improved safety profile and greater accuracy in pregnancy.

Bloods [4, 5, 9]

- BHcG: To exclude pregnancy but should not delay imaging.
    - White cell count (WCC) and C-Reactive Protein (CRP): May be mildly elevated reflecting the ongoing ischaemic state of the ovary. However, these are not specific, and a normal result should not provide reassurance in the context of a typical clinical presentation.
- Overall, no specific blood tests to accurately distinguish ovarian torsion from other causes.

Management of ovarian torsion [1, 3, 4, 10-13]

- Perform laparoscopy/ laparotomy if suspicion of ovarian torsion as soon as possible to aid in preservation of ovarian tissue, including in pregnant patients with suspected ovarian torsion.
- During surgery, attempted detorsion and ovarian conservation is recommended, especially in paediatric and adolescent populations as blood resupply in 91-100% of cases will be restored, even when the ovary initially appears necrosed. Further surgery at a later stage should be considered for cysts deemed to be complex.
- Postoperative follow up studies have shown ovarian recovery and preservation of ovarian function even in severely ischaemic ovaries.
- In post-menopausal patients, salpingo-oophorectomy may be performed, following de-torsion and observation for a suitable period of time to confirm loss of ovarian viability.
- Oophoropexy may have a role but lacks evidence to reliably prevent recurrence.

Rupture and haemorrhage

Rupture and haemorrhage of ovarian cysts are common occurrences in women of reproductive age. They are normal physiological events during a typical ovarian cycle and often involving the physiological cysts such as follicular or CL cysts. Most episodes are not severe and spontaneously resolve. Pain from haemorrhage is likely due to ovarian capsular stretching, while pain from rupture is secondary to peritoneal irritation from blood/ fluid.

Of note, other cysts can be involved, including serous or mucinous cystadenoma, endometrioma, dermoid, and malignant neoplasms. Pain can vary depending on cyst contents and patient sensitivity.[1]

Rupture is more common in the right ovary, thought to be due to the left ovary being protected from trauma by the sigmoid colon.[14, 15] Significant intraabdominal bleeding can occur in with women with a history of coagulopathy or those on anticoagulants.[14-16]

Historically, the treatment for functional ovarian cysts has included the oral contraceptive pill, but this has not been proven to be beneficial in most cases as functional ovarian cysts are likely to resolve within several months.[17] While persistent cysts often require surgical intervention, repeated laparoscopic ovarian cystectomies for functional cysts has been shown to reduce fertility without any added benefit to the woman.

Presentation [1, 2, 6, 14, 15]

- Pelvic / abdominal pain – sudden onset of sharp pain then constant ache. Pain is at its worst at the time of onset, typically unilateral unless moderate free fluid. Onset may occur during physical activity including exercise and sexual intercourse.
- Most patients are systematically well.
- Hypovolaemic shock (late sign) – pale, tachycardia, tachypnoea, altered consciousness.

Clinical examination findings

- Lower abdominal/ pelvic tenderness
- Cervical excitation
- Shock

Investigations [14-16, 18]

Imaging

- Ultrasound when gynae cause if suspected.
    - The presence of hemoperitoneum indicates blood in the pelvis or

abdomen and can be variable amounts. Blood can appear homogenously hyperechoic or heterogenous, with echogenic foci representing blood clots.

  - CL is seen as a fluid-filled cyst with a thick wall and crenulated margins. Haemorrhage within is seen as echogenic foci or thin septations. Normal CL is < 3 cm, and larger sizes are associated with increased risks for rupture.
  - CL and ectopic pregnancy can look similar with the “ring of fire” appearance of increase surrounding vascularity on doppler. Correlation with BHcG is important to differentiate both causes. However, both can co-exist.
- CT when non-gynae cause suspected and/ or USS not as readily available.
  - Acute haemoperitoneum is seen as high attenuation free fluid.
  - Cysts can be seen with high attenuation fluid (blood) within
  - Sentinel clot sign (haematoma adjacent to adnexa) is often a marker for site of bleed, with direct sign of rupture being focal discontinuity in cyst wall.
  - Active contrast extravasation in portal venous phase CT indicates active bleeding requiring urgent intervention.
- MRI
  - Not as readily available and expensive
  - Only for haemodynamically stable patients with uncertain diagnosis

Bloods

- BHcG: to differentiate from a ruptured ectopic but positive result does not exclude a ruptured ovarian cyst.
- Full Blood Count (FBC), Coagulation profile, Group and Hold (G&H) (depending on presentation)

Management [1, 14, 15]

- Urgent surgical intervention in haemodynamically unstable patients
- Surveillance is reasonable in stable patients with repeat imaging in 6-8 weeks to assess resolution. This includes stable patients with recurrent episodes secondary to congenital bleeding disorder or on anticoagulants.
- Role of interventional radiology is unclear and should be discussed on a case-by-case basis.

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Related WNHS policies, guidelines and procedures

WNHS Obstetrics and Gynaecology:

- Abdominal pain: Non-specific in pregnancy
- Emergency Centre
- Ovarian Hyperstimulation Syndrome

Useful resources and related forms

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Version history

Version number	Date	Summary
1	Aug 2025	First version **History**: Prior to Aug 2025, the chapter on Ovarian Cyst Accidents was previously within the 'Gynaecology (Non-oncological)' guideline (from Sept 2017 to Aug 2025). Before Sept 2017, it was an individual

		guideline originally titled as ‘C6.1.3.2 Ovarian Cyst Accidents’. Contact OGD Guideline Coordinator for previous versions. **Changes**: Content updated, including background, risk factors and more content added regarding investigations, including imaging. For ovarian cyst haemorrhage and rupture section- includes urgent surgical intervention in haemodynamically unstable patients. **RCA recommendation** to better diagnose, manage and treat ovarian torsion, ensuring optimal patient outcomes and standardised care practices through evidence-based decision making.

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