

Standard Operating Procedure

Sclerotherapy for Ovarian Endometriomas

Written by:	Natalia Price, Jyoti Sharma
Approved by:	Gynaecology Governance
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Aim and scope of Standard Operating Procedure

1. Introduction

Laparoscopic sclerotherapy has been utilised in numerous units across the UK and Europe for the treatment of ovarian endometriomas. The technique is well-established within the endometriosis community and supported by multiple publications that demonstrate its safety and efficacy.

At Worcestershire Acute Hospitals NHS Trust (WAHT), the use of sclerotherapy to treat ovarian endometriomas in patients with fertility wishes and/or low ovarian reserve has been approved by the WAHT Management Board, following a rigorous and comprehensive review process. This treatment will be offered as an alternative to the current options of cyst drainage or cystectomy.

Ovarian endometriomas are a specific type of ovarian cyst lined with endometrial tissue and filled with fluid derived from menstrual debris. These cysts are found in approximately 17% to 44% of women with endometriosis. They contain inflammatory and oxidative substances that can cause cellular damage, significantly impair ovarian function, and reduce levels of anti-Müllerian hormone (AMH), a marker of ovarian reserve. A decline in AMH levels is associated with reduced fertility. As such, the primary aim in managing ovarian endometriomas—

especially in patients wishing to preserve fertility—is to maintain and optimise ovarian function.

Conventional surgical treatments include laparoscopic cystectomy, in which the cyst wall is removed, and drainage, where the cyst is aspirated. Cystectomy, although effective in reducing recurrence, often involves the removal of healthy ovarian tissue and can lead to a marked decrease in AMH levels. Drainage, while less invasive and often favoured for patients with low AMH and fertility aspirations, is associated with a high rate of recurrence.

Sclerotherapy offers a promising alternative by preserving ovarian reserve while reducing recurrence rates. The procedure involves aspirating the endometrioma and thoroughly washing the cavity to remove all cystic content. A 95% ethanol solution is then introduced into the cavity, left in place for 15 minutes, and subsequently removed. The ethanol disrupts the cyst's epithelial lining, leading to the eventual obliteration of the cyst without significantly affecting surrounding healthy ovarian tissue.

Clinical evidence suggests that sclerotherapy has a significantly lesser impact on AMH levels compared to traditional surgical methods. Cystectomy may reduce AMH levels by approximately 38% six months post-operatively. Ablative methods, which destroy the cyst lining using energy sources such as laser or electrocautery, cause reductions of 12% to 25%. In contrast, sclerotherapy is linked to only minimal decreases in AMH—generally around 10% making it - a favourable option for women aiming to preserve their fertility.

The procedure has a favourable safety profile. Reported complications are infrequent and include alcohol intoxication (3.8%), post-procedural pain (12.9%), and intracystic abscess formation (2%).

The introduction of sclerotherapy at WAHT broadens the spectrum of treatment options available for managing ovarian endometriomas and enhances our ability to provide individualised, evidence-based care. This initiative aligns with the General Medical Council's guidance on informed consent, promoting shared decision-making and patient autonomy.

Patient selection for sclerotherapy will be conducted by the WAHT Endometriosis Multidisciplinary Team (MDT), comprising gynaecologists (including fertility specialists), colorectal surgeons, and radiologists. Each case will be assessed individually to ensure suitability. Patients will be fully involved in the decision-making process through detailed counselling and informed consent, empowering them to make choices that reflect their personal values, health priorities, and reproductive goals.

2. Purpose

To provide a minimally invasive treatment for ovarian endometriomas that preserves ovarian reserve, reduces recurrence, and optimises fertility outcomes.

3. Scope

This SOP applies to the endometriosis team performing laparoscopic procedures for patients diagnosed with ovarian endometriomas. Only gynaecologists with advanced laparoscopic skills, who are registered as BSGE accredited endometriosis surgeons, at the WAHT Endometriosis Centre would perform sclerotherapy during laparoscopic surgery for endometriosis treatment. These highly skilled specialists are already experienced in laparoscopic gynaecological surgery, with extensive expertise in managing endometriosis, including conventional ovarian cystectomy and drainage of endometriomas.

4. Patient Selection Criteria

Inclusion Criteria

Patients must meet all the following criteria:

- Women aged 18–50 years
- Ultrasound-confirmed ovarian endometriomas measuring 3–10 cm in diameter
- Desire to preserve fertility or improve IVF outcomes
- No evidence of malignancy on imaging
- Serum CA-125 level <200

Exclusion Criteria

Patients exhibiting any of the following shall be excluded:

- Suspicion of ovarian malignancy
- Active pelvic infection
- Known allergy to ethanol
- Pregnancy
- Recurrent endometrioma following sclerotherapy
- Planned egg or embryo donation IVF
- Ineligibility for ovarian stimulation
- Concomitant planned bowel resection surgery
- Alcohol or drug abuse

5. Preoperative Assessment

Pre-procedure evaluation shall include:

- MRI to confirm diagnosis and exclude likelihood of malignancy
- Serum CA-125 and Anti-Müllerian Hormone (AMH) levels
- Full blood count, coagulation profile, and renal function tests
- Multidisciplinary team (MDT) discussion in endometriosis meeting
- Informed consent detailing risks, benefits, and alternatives

6. Equipment and Materials

- Standard laparoscopic surgical set
- Sterile 95% ethanol solution
- Suction-irrigation system
- Foley catheter and bladder syringe
- Sterile saline solution
- Antibiotic prophylaxis

7. Procedure

a. Anaesthesia and Patient Positioning

- Administer general anaesthesia
- Position patient in lithotomy with appropriate padding

b. Laparoscopic Access

- Establish pneumoperitoneum and insert trocars under direct visualisation

c. Identification and Aspiration

- Locate the endometrioma(s)
- Make 5mm incision in the cyst wall (puncture with the trocar or monopolar cut)
- Aspirate cyst contents completely using suction
- Send aspirated fluid for cytological examination

d. Cyst Irrigation

- Irrigate cyst cavity with sterile saline until the fluid is clear

e. Ethanol Instillation

- Instil 95% ethanol into the cyst cavity, using a volume equivalent to 80% of the aspirated fluid
- Allow ethanol to dwell for 15 minutes

f. Ethanol Removal

- Aspirate ethanol completely from the cyst cavity

g. Final Inspection

- Inspect for haemostasis and ensure no leakage of ethanol into the peritoneal cavity

h. Further Surgery and Closure

- Perform additional surgery for excision of endometriosis if necessary
- Remove instruments and close port sites in accordance with standard protocol

8. Postoperative Care

- Monitor vital signs and observe for signs of complications
- Administer analgesia and antibiotics per protocol
- Discharge planning typically within 24 hours post-procedure

9. Follow-Up

- Ultrasound assessment at 6 months to monitor for recurrence (recurrence defined as endometrioma >20 mm in the same ovary)
- Repeat AMH levels at 6 months to assess ovarian reserve

10. Complications and Management

Potential Complications and Interventions

- **Ethanol Leakage:** Ensure complete aspiration of ethanol; if leakage occurs, irrigate the peritoneal cavity with saline
- **Infection:** Treat with appropriate antibiotics
- **Recurrence:** Consider ovarian cystectomy

11. Documentation

- Detailed operative note, including volume of ethanol used and dwell time
- ENZIAN staging
- Record of any intraoperative or postoperative complications
- Histopathology and cytology results

12. Audit

- Audit outcomes of the initial twelve-month period following procedural implementation
- Review findings and refine protocols as necessary

13. Considerations for Further Review

1. The inclusion or exclusion of AMH as a criterion has not been determined
2. The exclusion of cases involving concomitant bowel surgery has been debated in MDT discussions. While some advocate for exclusion in the initial stages, research suggests feasibility alongside bowel resection and anastomosis. This matter requires further deliberation.

Target Staff Categories

All Gynaecology staff/Nursing staff on elective surgery wards who look after gynaecology patients

Key amendments to this Standard Operating Procedure

Date	Amendment	Approved by:
13.6.25	New Document	Gynaecology Governance