Diagnostic laparoscopy in Gynaecologic surgery

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Guidelines Definition

Clinical guidelines are systemically developed statements that assist clinicians and patients in making decisions about appropriate treatments for specific conditions.

They allow deviation from a prescribed pathway according to the individual circumstances and where reasons can be clearly demonstrated and documented.

Minor Amendments

If a minor change is required to the document, which does not require a full review please identify the change below and update the version number.

Type of change	Why change made	Page number	Date of change	Version 1 to 1.1	Name of responsible person
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1. Introduction:

Laparoscopic surgery is currently the most commonly performed procedure in Gynaecology. It can be used for both benign and malignant conditions

Laparoscopic surgery is characterized by short hospital stay, rapid postoperative recovery, less postoperative pain and lower risk of complications compared to laparotomy

Proper preoperative preparation and safe entry technique is required to minimize the risk of intraoperative complications in particular bowel. Bladder and vascular injuries.

2. PREOPERATIVE EVALUATION AND PREPARATION

- Medical comorbidities: Woman should be fit to tolerate the pneumoperitoneum associated with laparoscopic surgery.
- Previous surgeries will affect the choice of site of primary trocar entry of the primary
- Pregnancy test for all women in reproductive age group
- Antibiotic prophylaxis (if indicated)
- Assessment for the risk of Thromboembolism
- Bowel preparation is no longer standard practice prior to gynaecologic surgery.

3. PATIENT POSITIONING AND PREPARATION

- Supine or dorsal lithotomy position for laparoscopic surgery.
- Carefully position the patient to avoid neurologic injury, provide for ergonomic surgeon positioning, and allow adequate access to the vagina, if necessary.
- The patient's arms may be tucked carefully by her sides with appropriate padding and access to intravenous lines. If the arms are tucked, they are placed in military position (palms facing toward lateral thighs) with

padding protecting the posteromedial aspect of the elbows, wrists and hands.

- Alternatively, if the arms are abducted and placed on arm boards, careful attention should be paid to maintaining neutral shoulder positioning at a <90° angle to avoid brachial plexus injury
- If the dorsal lithotomy position is used, the patient's legs are placed in booted stirrups (eg, Allen-type stirrups). Stirrups may be fixed or allow for adjustment of the leg position during the procedure. It is important to maintain moderate flexion at the knee and hip with minimal abduction or external rotation at the hip
- It may also be helpful to utilize a bolster underneath the patient's buttocks to elevate the hips and enhance mobilization of intestines into the upper abdomen. The buttocks should be a few centimetres beyond the edge of the table to allow uterine manipulation.
- At the start of the procedure, the table should be in level position, with the height lowered to allow for relaxed arm positioning for all operators.
- Trendelenburg position is typically used to displace the intestines to allow visualization of the pelvic viscera.
- A bladder catheter is useful to decompress the bladder. Bladder distension increases the risk of bladder perforation and may obscure the operative field.

4. Uterine cannula and manipulators

- It is used to manipulate the uterus and thereby facilitate access to and inspection of pelvic structures.
- Most cannulas also permit injection of a dye solution to assess tubal patency.
- A uterine cannula should not be used for uterine manipulation when:
  - ✓ An intrauterine pregnancy is suspected
  - ✓ The uterus is absent
  - ✓ Anomalies exist that prevent exposure of or access to the cervix
  - ✓ The patient is prepubescent

5. PORT ENTRY SITES

Umbilical access

- Gynaecologic laparoscopic entry is commonly at or through the umbilicus
- Initial entry can also be performed through other sites on the abdominal wall or through the vagina or uterus. It is important to consider alternative access sites when umbilical entry is risky or difficult.
- The traditional technique for laparoscopic entry blindly pass a sharp Veress needle, typically at the umbilicus, insufflate, and then to pass a sharp trocar.
- Other techniques include direct entry methods, such as open access (Hasson) or the use of optical trocars or radially-expanding trocars

Trocar placement

- Port placement typically involves a primary port at the umbilicus with two accessory ports in the bilateral lower quadrants

- To avoid injury to nerves or blood vessels in the abdominal wall (notably the ilioinguinal and iliohypogastric nerves, superficial and inferior epigastric arteries), the lower quadrant ports are placed approximately 2 cm medial and at or superior to the anterior superior iliac spine, lateral to the border of the rectus
- A fourth port may be useful, particularly in cases involving extensive dissection or laparoscopic suturing, and can be placed suprapubically or in the lateral abdominal wall at the level of the umbilicus.
- In cases of enlarged uteri where the fundus approaches the level of the umbilicus, it may be necessary to place the ports higher on the abdominal wall to ensure proper distance for visualization and instrument operation.

6. Non-umbilical access

Indications:

When there is an increase in the risk for complications when an umbilical access site is used.

- Periumbilical adhesions (previous history of bowel obstruction or a history of prior intraabdominal surgery, malignancy, or infection)
- Periumbilical mesh
- Umbilical or ventral hernia
- Previous ventral hernia repair
- Large pelvic mass (Puncture of a mass should be avoided as it may lead to bleeding or to rupture of an ovarian malignancy, thereby worsening prognosis)
- Pregnancy.
- Obese OR extremely thin women

7. Sites to be considered as alternative entry points:

- Palmar point: The left 9th intercostal space or the left costal margin at Palmer's point (3 cm below the left costal margin in the left midclavicular line)
- Other sites are predominantly used only for insufflation in gynaecology, followed by trocar insertion at Palmer's point or the umbilicus. This site is contraindicated in patients with previous splenectomy. Care should be taken to empty the stomach prior to attempting insertion at this site.
- An alternate site has been proposed that is lower and more lateral in position compared with Palmer's point and may therefore be more easily used as the main operating port throughout the surgery.
- Following initial entry, it is often possible to use the umbilicus as a secondary port site in patients with suspected adhesive disease. Once the camera is in place, the peritoneal surface of the umbilicus may be found to be free of adhesions or, in many cases, adhesions can be removed. In such patients, an umbilical trocar and port can then be placed safely under direct vision if this is surgically useful.
- The open (Hasson) technique or entry at Palmer's point are recommended for the primary entry in women with morbid obesity. If the Veress needle approach is used, particular care must be taken to ensure that the incision is made right at the base of the umbilicus and the needle inserted vertically into the peritoneum.
- The Hasson technique or insertion at Palmer's point is recommended for the primary entry in women who are very thin

8. Secondary ports entry

- Secondary ports must be inserted under direct vision perpendicular to the skin, while maintaining the pneumoperitoneum at 20–25 mmHg.

- During insertion of secondary ports, the inferior epigastric vessels should be visualised laparoscopically to ensure the entry point is away from the vessels.
- During insertion of secondary ports, once the tip of the trocar has pierced the peritoneum it should be angled towards the anterior pelvis under careful visual control until the sharp tip has been removed.
- Secondary ports must be removed under direct vision to ensure that any haemorrhage can be observed and treated, if present.

9. COMPLICATIONS

Serious risks

These include:

The overall risk of serious complications from diagnostic laparoscopy is approximately 2 in 1000 women (uncommon).

- This includes damage to the bowel, bladder, ureters, uterus or major blood vessels which would require immediate repair by laparoscopy or laparotomy (open surgery is uncommon). However, up to 15% of bowel injuries might not be diagnosed at the time of laparoscopy.
- Failure to gain entry to the abdominal cavity and to complete the intended procedure.
- Hernia at site of entry (less than 1 in 100; uncommon).
- Thromboembolic complications (rare or very rare).
- Death; 3–8 in 100 000 women (very rare) undergoing laparoscopy may die as a result of complications.

Frequent risks

Frequent risks are usually mild and self-limiting. They may include:

- Bruising
- Shoulder-tip pain
- Wound gaping Infection.

10. Auditable standards

- Documentation of appropriate counselling.
- Clinical incident reporting of all adverse events or complications

11. References:

- Preventing entry related gynaecological laparoscopic surgery; Green top guideline no. 49 May 2008
- Diagnostic laparoscopy; consent advice No. 2, June 2017. Accessed via www.RCOG.org.uk/ consent advice
- Overview of Gynaecologic laparoscopic surgery and non-umbilical entry sites. www.UpToDate.com. Accessed 12/07/2021