Pelvic endoscopy

- **Laparoscopy**
  Laparoscope is an instrument for viewing the peritoneal cavity.

- **Benefits of laparoscopy**
  1. Decreased postoperative pain.
  2. Earlier return to normal activities following surgery.
  3. Fewer postoperative complications such as wound infection and hernia, compared with open techniques.
  4. Small scars.

- **Indications of laparoscopy**
  1. Tubal sterilization.
  2. Acute or chronic pelvic pain.
  3. Ectopic pregnancy.
  4. PID.
  5. Endometriosis.
  6. Adnexal torsion.
  7. Sub fertility.
  10. Unexplained pelvic mass.
  11. Staging for ovarian malignancy.
  12. Hysterectomy and myomectomy
  13. Urogynecological procedures

- **Contraindications for laparoscopy**
  1. Mechanical or paralytic bowel obstruction.
  2. Generalized peritonitis.
  3. Diaphragmatic hernia.
  5. Severe cardio respiratory disease.
  7. Inflammatory bowel disease.
  8. Large abdominal mass.
  10. Multiple abdominal incisions.
  11. Irreducible external hernia.
Complications of laparoscopic surgery

It is estimated that up to 50% of laparoscopic complications are entry-related, and most injury-related litigations are trocar-related.

A. Intra-operative
   1. Bowel injury.
   2. Vascular injury.
   4. Ureteric injury.
   5. Surgical emphysema.
   6. Anesthetic complication.

B. Post-operative
   1. Unrecognized visceral or vascular injury.
   2. VTE.
   3. Infection.
   4. Port site hernia.
   5. Entry-related complications of laparoscopy
   6. Laparoscopic injuries frequently occur during the blind insertion of Veress needles, trocars and cannulae through the abdominal wall.
   7. Co₂ gas embolism

Technique

The procedure is performed with the patient in a modified dorsal lithotomy position (with knee crutches) usually under general anesthesia. An intrauterine manipulator is inserted to help in visualization of pelvic organs. A pneumoperitonium is created by inserting a Veress needle into the peritoneum cavity through a subumbilical fold and insufflations with either CO₂ or nitrous oxide.

- Hysteroscopy

Equipment for hysteroscopy

1. Hysteroscope: both rigid & flexible.
2. Uterine distension:
   a. gas (CO₂).
   b. Low-viscosity fluids: normal saline, 5% dextrose, 1.5% glycine, 3% sorbitol, 5% manitol.
c. high viscosity fluid: e.g hyskon. Once absorbed, causes haemolysis.

3. **Mechanical instruments**: such as scissors, grasping and biopsy forceps and monopolar electrodes.

4. **Resectoscope**

5. **Laser hysteroscopy**

6. **Intrauterine morcellator**

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**Diagnostic hysteroscopy**

**Indications of diagnostic hysteroscopy**

1. Abnormal menstruation age >40 years.
2. Abnormal menstruation not responsive to medical treatment (age <40y)
3. Intermenstrual bleeding despite normal cervical smear.
4. Post-coital bleeding despite normal cervical smear.
5. Postmenopausal bleeding (persistent or endometrial thickness ≥4 mm.
6. Abnormal pelvic ultrasound findings (e.g endometrial polyps, sub mucousfibroids).
7. Subfertility.
10. Congenital uterine anomaly.
11. Lost IUCD.

**Contraindications of diagnostic hysteroscopy**

1. Pelvic infection.
2. Pregnancy.
4. Heavy uterine bleeding.

The hysteroscopic view is best in the immediate postmenstrual phase, but a diagnosis is usually possible at any time, even during menstruation.

**Technique**

The patient should be in lithotomy position with the hips well flexed and the buttocks slightly over the edge of the table to allow unimpeded access. The perineum and vaginas are usually washed with a warmed antiseptic solution. Gentle bimanual examination should be done to determine the size and position of the uterus.

**Complications of diagnostic hysteroscopy**
Diagnostic hysteroscopy is a safe procedure, and complications are uncommon.
1. Vasovagal reaction. When negotiating the cervix or distending the uterine cavity.
2. Uterine perforation rare.
3. Infection & excessive bleeding rare

**Operative hysteroscopy**

**Indications**
1. Adhesiolysis
2. Endometrial ablation/resection (has been superseded by the newer second-generation ablative techniques).
3. Metroplasty
4. Myomectomy (intracavity or sub mucous fibroids and < 3-5 cm in diameter).
5. Polypectomy
6. Proximal fallopian tube cannulation
7. Removal of IUCD
8. Target biopsy
9. Treatment of cervical and interstitial pregnancy
10. Treatment of missed abortion
11. Tubal sterilization

**Complications of operative hysteroscopy**

**A. early**
1. Uterine perforation;
2. Fluid overload with low –viscosity fluids particularly those which are electrolyte-free.
   Apart from cardiac, and pulmonary effects, major electrolyte imbalance lead to build –up of free fluid in the brain, hyponatremia, hypo- osmolality, cerebral oedema, and cellular necrosis. Clinically characterized by nausea, vomiting, seizures, coma and even death.
3. Hemorrhage
4. Gas embolism
5. Infection.
6. Cervical trauma
7. Electrosurgical burns.

**B-late complications**
1. Intrauterine adhesions
2. Uterine rupture in pregnancy (after metroplasty or myomectomy)
3. Hematometra after endometrial ablation
4. Post ablation sterilization syndrome (after endometrial ablation). Developed painful swelling of the fallopian tubes secondary to retrograde menstruation.
5. Pregnancy (after endometrial ablation).
6. Cancer (after endometrial ablation).

Cystoscopy
Cystoscopy involves passing a small-diameter telescope, either flexible or rigid, through the urethra into the bladder. A cystoscope with an operative channel can be used to biopsy any abnormality, perform bladder neck injection, retrieve stones and resect bladder tumours.

Indications
- Haematuria.
- Recurrent urinary tract infection.
- Sterile pyuria.
- Short history of irritative symptoms.
- Suspected bladder abnormality (e.g. diverticulum, stones, fistula).
- Assessment of bladder neck.

Complications
- Urinary tract infection.
- Rarely, bladder perforation.
Figure 21.25 Office Hysteroscopy Instruments. An assembled continuous flow operating hysteroscope with a 5.5-mm diameter external sheath is shown in A. A 5 French semirigid scissors occupies the working channel. An additional biopsy forceps is shown in B. Tubing transporting media to the system is shown in C going into a 3-mm external diameter flexible and steerable hysteroscope (D). A medical video camera is attached to the hysteroscope (F) and the light source is attached at (E). An open speculum (G) facilitates removal with instruments in place. A small dilator (H) or series of dilators will be necessary for a large number of patients. A tenaculum (I) attached to the cervix frequently facilitates both dilation and entry of the hysteroscope into the endometrial cavity.

Figure 21.5 Insufflation needle. When pressed against tissue such as fascia or peritoneum, the spring-loaded blunt obturator (inset) is pushed back into the hollow needle, revealing its sharpened end. When the needle enters the peritoneal cavity, the obturator springs back into position, protecting the intraabdominal contents from injury. The handle of the hollow needle allows the attachment of a syringe or tubing for insufflation of the distention gas.
Figure 21.9 Laparoscopes. Three 0-degree laparoscopes are shown. From top to bottom, 2-mm, 5-mm and 10-mm diameter.