**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.
8. Congenital pelvic abnormality.
9. Abnormal pelvic ultrasound.
10. Unexplained pelvic mass.
11. Staging for ovarian malignancy.
12. Hysterectomy and myomectomy
13. Urogynelogical procedures

* **Contraindications for laparoscopy**

1. Mechanical or paralytic bowel obstruction.
2. Generalized peritonitis.
3. Diaphragmatic hernia.
4. Major Intraperitoneal hemorrhage (shock).
5. Severe cardio respiratory disease.
6. Massive obesity.
7. Inflammatory bowel disease.
8. Large abdominal mass.
9. Advanced pregnancy.
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.
3. Bladder 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 anasthesia. an intrauterine manipulator is inserted to help in visualization of pelvic organs. A pneumoperitonium is created by inserting a Veress needle in to the peritoneum cavity through a subumbilical fold and insufflations with either CO2 or nitrous oxide.

* **Counseling of woman prior to laparoscopic surgery**

Women must be informed of the risks and potential complications associated with laparoscopy.

This must include discussion of the risks of the entry technique used; especially injury to the bowel, urinary tract and major blood vessels, and later complications associated with the entry ports: specifically hernia formation.

* ***Hysteroscopy***
* **Equipment for hysteroscopy**

**1. Hysteroscope: both rigid &flexible.**

**2. Uterine distension:**

* 1. gas (CO2).
  2. Low-viscosity fluids: normal saline, 5% dextrose, 1.5%glycine, 3% sorbitol, 5%manitol.
  3. 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**

* ***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. Subfertiliy.
8. Recurrent miscarriage.
9. Sherman’s syndrome.
10. Congenital uterine anomaly.
11. Lost IUCD.

**Contraindications of diagnostic hysteroscopy**

1. Pelvic infection.
2. Pregnancy.
3. Cervical cancer.
4. Heavy uterine bleeding.

The hysteroscoipic 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. Agentle bimanual examination should be done to determine the size and position of the uterus.

**Techniques available**

**1. Conventional technique**

Insert a speculum into the vagina to visualize the cervix (a single –hinged Collin speculum is preferable to a Cuscoe as it can be removed once the hysteroscope has been inserted).hold the anterior lip with a tenaculum, sound the cervix and the uterine cavity, and then insert the hysteroscope with or without prior cervical dilatation depending on the caliber of the cervical canal.

With option of giving a local anaesthesia if required.

It is better to guide the hysteroscope into the uterine cavity under direct vision rather than blindly. once in the uterine cavity , systematically inspect the fundus, tubal areas and the four walls of the uterus .then the hysteroscope is withdrawn and this is the best time to inspect the endocervical canal. A biopsy can then be taken, if indicated, using a small curette or a device such as a Pipelle.

**2. No touch (vaginoscopic) hysteroscopy**

Is ideal for outpatient/office diagnostic hysteroscopy a in most women it can done without the need to insert a vaginal speculum, apply a tenaculum, sound the uterus or use local anesthesia.

The procedure is quicker and less uncomfortable.

The tip of the hysteroscopy is introduced into the vaginal introitus, the low-viscosity distension medium is turned on, and the hysteroscopy is guided under direct vision to the external cervical os, along the cervical canal and thence the uterine cavity.

**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).







