

## CHAPTER 5

### Hysteroscopy Instruments

Dr. Vidhi Chaudhary

Professor Obstetrics & Gynaecology, LHMC

#### 5.1: HYSTEROMAT

- It consists of system with Tubing which is used to distend the uterus by filling the uterine cavity with a liquid (more common) or gas

#### Key features and uses

- Provides pressure-controlled dilation of the uterine cavity for diagnostic and operative procedures.

- **Irrigation and Suction:**

These devices are designed for both irrigation (introducing fluids) and suction (removing fluids) during endoscopic procedures.

- **Pressure Control:**

The pumps allow for precise pressure control of irrigation fluids, ensuring optimal conditions for the procedure. which is displayed on device. Intrauterine pressures should be kept around 100- 120mm Hg.



Figure 5.1: Hysteromat

## 5.2: DIAGNOSTIC HYSTEROSCOPE

A hysteroscope is a thin, telescope-like instrument used to examine the inside of the uterus during a procedure called hysteroscopy. Hysteroscope is inserted through the vagina and cervix, and it transmits images to a monitor, enabling the surgeon to visualize the uterine cavity to diagnose structural abnormalities like polyp, septa and fibroids. Telescope can be 0° or 30°

- Hysteroscopes typically range in outer diameter from 2.7 to 5.0 mm.

can be further categorized:

- **Standard rigid hysteroscopes:** Have a diameter greater than 5 mm.
- **Mini telescopes:** Range from 1.2 to 3 mm.
- **Diagnostic sheaths:** Typically range from 2.7 to 5.0 mm in outer diameter. A diagnostic sheath is required to deliver the distention media into the uterine cavity. The telescope fits into the sheath and is secured by means of a watertight seal that locks into place. The sheath is 4 to 5 mm in diameter, depending on the outer diameter of the telescope, with a 1 mm clearance between the inner wall and the telescope, through which the distention media is transmitted.
- **Flexible hysteroscopes:** Can be very thin, with some models as small as 1.2 mm in outer diameter.

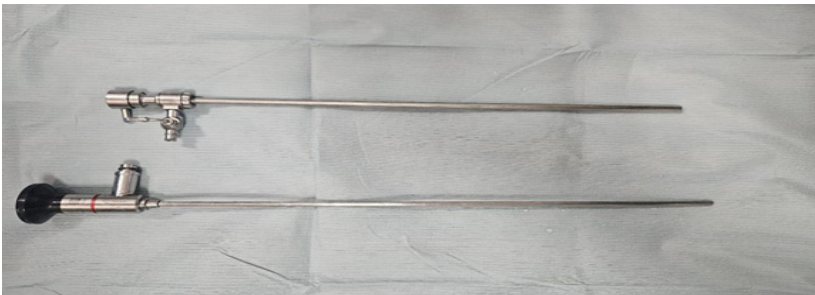


Fig 5.2 Rigid diagnostic hysteroscope.  
(A) Channel For Inserting Telescope  
(B) Telescope

### 5.3: OPERATIVE HYSTEROSCOPE

Operative sheaths have a larger diameter than diagnostic sheaths. They range from 7 to 10 mm and average 8 mm in diameter. The operative sheaths allow space for instillation of medium, for the telescope, and for the insertion of operating devices. The hysteroscope is equipped with a camera and light source, allowing the surgeon to view the uterine lining on a monitor (which is similar as laparoscopic camera and light source)

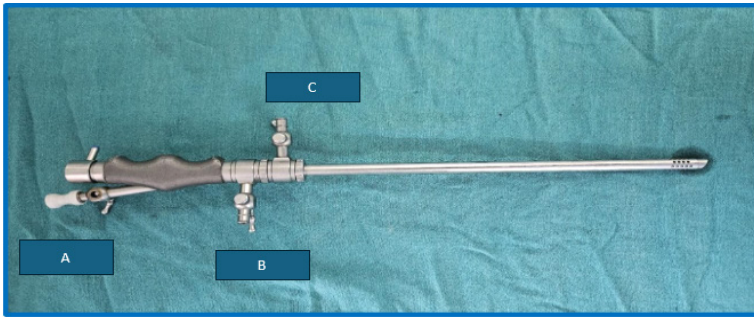


Fig 5.3: Operative Hysteroscope With  
A. Operating Channel  
B. Inflow  
C. Outflow

#### Standard hysteroscopy accessories include

- **Grasping forceps:** Used to hold tissue for manipulation or removal during surgery.
- **Biopsy forceps:** Designed to obtain tissue samples for examination under a microscope.
- **Scissors:** Used to cut tissue during operative hysteroscopy.
- **Monopolar electrodes:** Deliver energy to tissue through a single point, often used for coagulation.
- **Bipolar electrodes:** Utilize a closed circuit to deliver energy, minimizing the risk of burns to surrounding tissue.

- **Monopolar and bipolar balls, needles, and loops:** Different shapes designed to target specific tissues depending on the procedure

### Operative Accessories

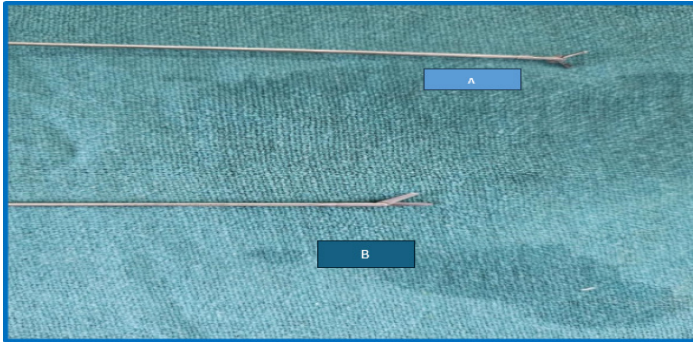


Fig 5.4 Graspers & Scissors

A. Grasper

B. Scissors

### 5.4: RESECTOSCOPE

A resectoscope is a specialized surgical instrument used for minimally invasive procedures to remove tissue from within the body, particularly in the urethra, prostate, or uterus. It features a thin, tube-like structure with a light source, lens for visualization, and a cutting/coagulating loop or electrode. The loop is used to cut tissue, while the electrical current also helps to control bleeding.

#### Key Components and Function:

- **Telescope:** Provides visualization of the surgical site.
- **Inner Sheath:** Encases the telescope and other working parts, allowing for continuous flow of irrigation fluid to clear the surgical field and remove tissue fragments.
- **Working Element:** Contains the cutting/coagulating loop or electrode that is used to resect tissue.
- **Cutting/Coagulation:** The electrical loop or electrode can cut tissue and also coagulate blood vessels to minimize bleeding

- **Outer sheath for Irrigation and Suction:** The sheath allows for the continuous flow of irrigation fluid to clear the surgical area and remove resected tissue.

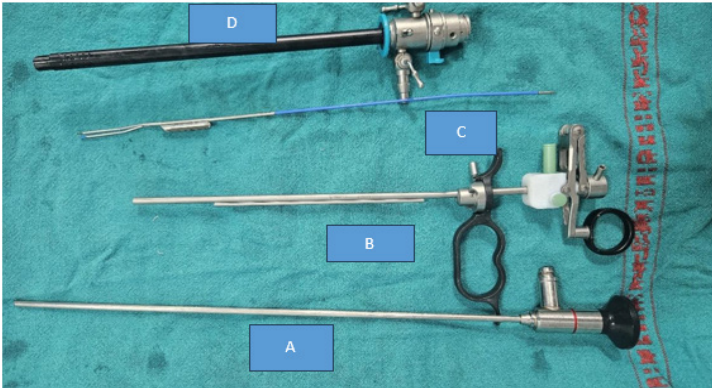
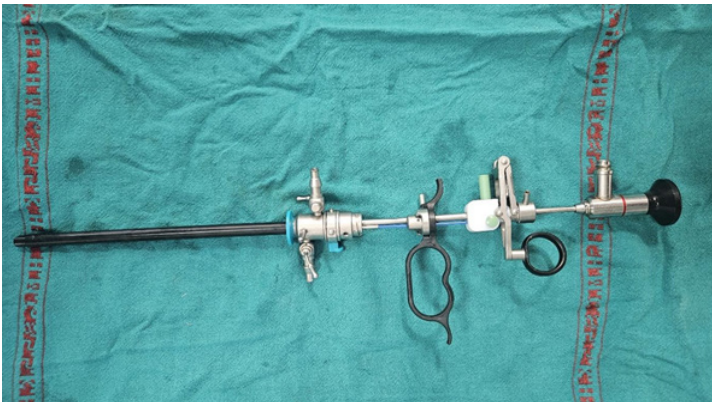


Fig 5.5: (A) Telescope  
(B) Inner Sheath with groove for working element  
(C) Working Element for cutting/coagulation (loop electrode)  
(D) Outer sheath



Complete assembly: Resectoscope with electrodes (drawn inside outer sheath)