

Endocrinology Conference  
Nestor K. Delgado, MD  
November 4, 1999

## Hysteroscopy

### A. Types of Hysteroscopy

1. Fixed angle scopes
  - a. 0, 12, 30, 70
2. Rigid scopes
  - a. constructed in a range of widths
  - b. 3-5 mm hysteroscopes are being used in office settings. Minimal discomfort to the patient
  - c. > 5 mm scopes can accommodate specially designed operative instruments
  - d. 8-10 mm scopes have the advantage of maintaining optical integrity while introducing operative instruments
3. Contact Hysteroscopes
  - a. simple rigid instrument in which a single glass column serves the dual function of conducting light to the surface being examined and carrying the image back to the observer
  - b. main advantage of this instrument is that no distention medium is required
  - c. disadvantage is the inability to obtain a panoramic view
4. Flexible hysteroscopes
  - a. modeled after instruments used for GI endoscopy
  - b. tip deflection of 120-160 may be useful in an irregular shaped uterus
  - c. has the advantage of having an operative channel which can aid in taking biopsies

### B. Operative instrumentation

1. Instruments
  - a. rigid and flexible instruments such as scissors, biopsy forceps, and grasping instruments
  - b. Roller bar or ball can be used for endometrial ablation.
  - c. Loop electrode- can also be used for endometrial ablation. This can also be used to excise or resect uterine septum or leiomyomata
  - d. Knife electrodes- concentrate cutting or coagulation current into a high energy tip
  - e. Fiber optic lasers- Nd:YAG, KTP, Argon laser
    1. these lasers can pass through flexible fibers and fluid media

2. the argon and KTP lasers make them most amenable to absorption by darkly pigmented tissue. The lasers will penetrate tissue depths of 1-2 mm with minimal scatter and can be used for their cutting action
3. the Nd:YAG laser allows it to pass deeply onto tissue before it is absorbed. This makes this laser a poor cutter but an excellent coagulator

### C. Distention media

#### 1. Available medias

##### a. CO<sub>2</sub>

1. agent of choice for diagnostic procedures
2. rapidly absorbed and easily cleared by the body
3. affords a wider field of view and lower magnification than does a liquid medium
4. flow is limited to 40-60 cc/min at a pressure of 100 mm Hg
5. disadvantages
  - a. loss of clear field with bleeding
  - b. risk of embolism with exposed vessels

##### b. Electrolyte solutions- normal saline, lactated ringers

1. useful for diagnostic hysteroscopy
2. advantages
  - a. readily available
  - b. can be administered without complex equipment
3. disadvantages
  - a. when mixed with blood limits visualization
  - b. unable to use electro-surgery because electrolyte solutions are electrical conductors

##### c. Non-electrolyte solutions- 1.5% glycine, 3% sorbitol, manitol, and high molecular-weight dextran

1. useful for diagnostic and operative procedures
2. do not conduct electrical current and can be used safely with electro-surgery
3. bleeding is less likely to interfere with visualization
4. disadvantages
  - a. intravenous absorption can result in fluid overload
  - b. rate and dosage of medium administered must be monitored

### D. Indications

#### 1. Abnormal uterine bleeding

- a. diagnostic and therapeutic

- b. endometrial ablation- 30% become amenorrheic, 26% report spotting, 34% report decrease menstrual flow, 10% report either no change or increase in menstrual flow
- 2. Uterine leiomyomata
  - a. ca be used to treat submucosal fibroids by resection
- 3. Intrauterine adhesions
  - a. present usually after operative trauma or infection
  - b. hysteroscopy enables for accurate diagnosis and affords the opportunity for immediate treatment
  - c. filmy adhesions can be lysed under the pressure of the distention media. Dense adhesions can be cut or excised
  - d. advantages of treatment under direct visualization is that surgical trauma to surrounding areas of normal endometrium can be avoided
- 4. Proximal tube obstruction
- 5. Removal of IUD
- 6. Mullerian abnormalities
  - a. mullerian fusion defects are an important cause of second trimester pregnancy loss
  - b. in the past, mullerian abnormalities were treated with a Jones, Strassman, or Tompkins metroplasty via laparotomy
    - 1. patients treated this way are subject to the risk of prolonged anesthesia, excessive blood loss, post op infections, and intrauterine adhesions
    - 2. 80% of patients who undergo a transabdominal metroplasty are able to achieve a term pregnancy
  - c. hysteroscopic visualization of a uterine septum alone is not adequate for diagnosis. The apparent septum may be a bicornuate uterus. Performing laparoscopy at the time of hysteroscopy can provide direct confirmation of a mullerian defect
- E. Procedure
  - 1. Pre op consultation
    - a. the patient must be informed of the risk and benefits of the procedure, cost, what the procedure involves and alternative approaches
  - 2. Support staff
    - a. the importance of trained support staff can not be over emphasized
  - 3. Contraindications
    - a. pregnancy
    - b. genital infection

- c. cardiac disease
- 4. Anesthesia and analgesia
  - a. NSAIDs and light sedation may suffice for diagnostic hysteroscopy
  - b. Regional or general anesthesia should be used for major surgical procedures
- 5. Complications
  - 1. fluid overload
  - 2. infection
  - 3. perforation
  - 4. bleeding
  - 5. embolism