History…

- Hysteroscopy was born in early ’80 thanks to J. Hamou who developed an eclectic instrument by which it was possible to light uterine cavity, allowing to observe the morphology in its minimum details.
- Since than hysteroscopy has growth in its indications and clinic applications.
- Nowadays, the diagnostic hysteroscopy is addressed in-office setting, with a poor cases undergone anaesthesia, minimum surgical traumatization, and better patient compliance.

Technique…

- Hysteroscopy allows to observe uterine cavity by gas (CO2) or liquid distension, thanks to a cold light source, un video camera, and rigid or flexibles metallic optics.
- The detailed observation of endometrial cavity, give the possibility to execute orientated biopsies of suspected tissues for histopathologic examination.
- Operatives possibilities have been added in the last ten/twelve years.
WHY

• INDICATIONS THAT LEAD TO O.I.
  • 1) Abnormal uterine bleeding (~2/3 of cases) concerning also endometrial formations
  • 2) Infertility
  • 3) Follow up of oncological patients

Indications...

- Uterine bleeding represents certainly the most frequent symptom characterizing uterine cavity disfunction
- more than 50% of gynecological consultations are for metrorragies (among women during menopause)

Indications...

- Uterine bleeding shows different meanings according to women age
- Hysteroscopy is characterized by different indications according the age
The introduction at start of 90’ of news hysteroscopes was the way to reduce the diameter of the instrument and improve the number of hysteroscopists and number of hysteroscopies.

Thanks to these innovations it’s possible performing hysteroscopy with an instrument complete of operative channel and continous flow system with a total diameter of 5 mm or less.

In a few years the management and treatment of “simples” endocavitary problems are deeply changed:

• The surgeon is provided of a “almost” perfect instrument for diagnosis
• He is able to examinate the endometrial cavity and produce a directed sampling under vision in the area of mucosa he had pointed (suspected areas)
• Moreover it’s possible to see and treat intracavity benigns pathologies without, normally, anesthesia or oral drugs.

HYSTEROSCOPY EVOLUTION
- From 1982 to 2010 -

1. DIAGNOSTIC HYSTEROSCOPY
   - Gas
   - Anaesthesia
   - Hospitalization

2. DIAGNOSTIC-OPERATIVE HYSTEROSCOPY
   - Liquid distension media (electrolitic solution)
   - General anaesthesia
   - Post-operative hospitalization

3. OFFICE HYSTEROSCOPY
   - Liquid distension media (isotonic solution)
   - Outpatients setting feasibility
   - Reduced invasivity and best compliance
   - See and treat
**HOW MANY?**

- Unknown exactly
- Expert opinion (Gubbini, I) speaks about 80% of endoscopics procedures are hysteroscopies
- Could be four times easier perform a hysteroscopy than a laparoscopy

---

**HOW**

( get into the uterus)
INSTRUMENTS

- Many instruments are developed to get into the uterine cavity
- Let's see the most common utilised

Office hysteroscopy is normally performed by an operative continuous-flow microhysteroscopy with 5 mm full diameter with a "rod lens" system of 2.9 mm diameter.

Both hysteroscopes are characterized by oval section and are provided by two outer sheaths (flow devices), and an operative channel for 5 fr instruments.
TO ACHIEVE THE BEST RESULTS IN TERMS OF
SAFETY AND SUCCESS IT'S MANDATORY TO
HAVE A
PERFECT KNOWLEDGE
OF THE INSTRUMENTS UTILIZED
HYSTEROSCOPY: HYSTEROSCOPY:

Why?  
How…?  
Where…?  
and…..  
Who…?

Outpatient should be placed separately by operating theatre, in a comfortable setting with smooth colours, absence of noises avoiding confusion and presence of too much professional figures.

The possibility to improve the success of the hysteroscopic examination, in terms of results and compliance, should be the interaction with the patient, based on a clear, calm and peculiar explanation of the procedure, focusing on the several advantages offered by the “in-office” approach and the possible complications, usually minor and generally not harmful.
LIGHT SOURCE

IRRIGATION SYSTEM

OFFICE HYSTEROSCOPY:
Outpatient setting and patient placement
GOLD STANDARD of HYSTEROSCOPY TODAY

IN-OFFICE HYSTEROSCOPY

- Once the instruments are setted, the procedure starts normally in vaginoscopy
- Speculum or Pozzi devices are not necessary
- Find the posterior fornix is mandatory. It’s the start point leading to the cervix
- Once in the cervix, push carefully the optic through the length of the endocervix
- It’s important get every kind of information from the vagina and cervix mucosa
- Discussion with patient …

GOLD STANDARD of HYSTEROSCOPY TODAY

IN-OFFICE HYSTEROSCOPY

- The hand should be hang on a 6 hours position (according to uterus anteversion)
- Passing through the internal uterine orifice could be painful and evoke vagal reflexes
- Waiting a little, to distend the structure, could avoid that
- Turn the hysteroscope of 90° (not the camera)
- Use micro-instruments if necessary
- Once inside the uterus the inspection have steps well codified:
  - distensibility of cavity
  - endometrium aspect and distribution
  - orifices of internal fallopian tubes

GOLD STANDARD of HYSTEROSCOPY TODAY

IN-OFFICE HYSTEROSCOPY

All anomalies could be noted and, if possible, treated, using 5 ch operative channel

“see and threat”
GOLD STANDARD IN-OFFICE HYSTEROSCOPY

- An endometrial biopsy should be performed (if possible always in menopause)
- Under direct vision if indicated (minimal tissue quantity required)
  - or …
  - Pipelle
  - Novak etc.

WHAT IT’S POSSIBLE TO OBSERVE AND TREAT (1)

- Endometrial biopsy
- Adhesions (Asherman syndrome)
- Lost IUD (ablation)

It is enough to turn 90° the optic on the endocamera to orient the principal longitudinal axis on the endocervix transversal axis.
WHAT IT’S POSSIBLE TO OBSERVE AND TREAT (2)

- IUD, ablation
- Instillation of medicaments
- Tubal sterilisation

GOLD STANDARD in OFFICE HYSTEROscopy TODAY

In terms of results

- Explain clearly the procedure
- Setting of the patient
- Period (according to menses)
- Screening?
- Patient preparation (misoprostol)
- Respect the procedure
- Time consumed

Flexible or rigid endoscopes for outpatient hysteroscopy?

- Flexibles devices not studied for operatives hysteroscopy and expensive

- Rigid hysteroscopes provide superior optical qualities and permit a more rapid performance with higher success rates

Success rate of office diagnostic hysteroscopy

- Less pain (max 4/10), better visualization (score 0 to 3) and higher success rates were observed with mini-hysteroscopy
- Importance of patient parity and surgeon experience
- Mini-hysteroscopy should always be used, especially for inexperienced surgeons and when difficult access to the uterine cavity is anticipated


GOLD STANDARD in OFFICE HYSTEROSCOPY TODAY

In terms of comfort

- Respect the procedure
- Preoperatives (setting of patient)
- Drugs
- Local anesthesia?
- Gas or H2O pressure
- Discharge of distension media
- Time consuming

Pain evaluation

- Time
- Age
- Chronic pelvic pain
- Previous cesarean sect.
- Anxiety

Pain evaluation

• 0 to 5 (lot of pain) or 1 to 10 points visual analogic charts

• Choice about antalgic prevention

• Procedure succesfully and comfortably achieved

Pain management

• Nonsteroidal anti-inflammatory drugs

• Intracervical or paracervical block

• Topical analgesia

  … success rate over 90%

  … use of analgesia may enhance the success rate


Hysteroscopy and menopause

• … various authors have recently proposed the use of hysteroscopy as a first-line procedure in the approach to the menopausal patient

• This could be defined as a change in strategy that has yielded very interesting results in terms of a better understanding of the appearance of the uterine cavity and the clinical value of small intra-cavitary pathologies, particularly in asymptomatic women

• The time taken is comparable to that required for transvaginal ultrasonography

Office polypectomy

- One-stop outpatient hysteroscopic polypectomy is effective in about 80% of patients
- Pelvic pain (7.5%) and polype size (8%) leading causes of failure
- Vasovagal reaction in 1.7% patients undergoing office endometrial polypectomy

Garuti G et al 2005

Office metroplasty

...in 93.1% of the cases (over 260 patients), office hysteroscopic metroplasty was successfully performed during the same diagnostic procedure (no anesthesia)

Presence of vascularized tissue, sensitive innervation, and the appearance of the tissue at the incision with 5 fr scissors screen a septate from a bicornuate uterus


OFFICE’S COSTS

- ...the mean charges, excluding professional fees, for the hospital were $1799 versus $62 for office hysteroscopy

AGE DISTRIBUTION (314 patients) 03/04
Range: 23-87 years - Mean: 53 ± 12

INDICATIONS (314 patients)

INDICATIONS (314 patients)

No previous diagnosis
Endometrial thickening
Mimotic and fibrosis
Endometrial and CC Polyps
Tamoxifen
What hysteroscopic procedure?

- Hysteroscopy
- Hyst+biopsy
- Hyst+polypectomy
- Hyst+biopsy+polypectomy
- Resettoscopy

**What hysteroscopic procedure?**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hysteroscopy</td>
<td>50%</td>
</tr>
<tr>
<td>Hyst+biopsy</td>
<td>60%</td>
</tr>
<tr>
<td>Hyst+polypectomy</td>
<td>70%</td>
</tr>
<tr>
<td>Hyst+biopsy+polypectomy</td>
<td>80%</td>
</tr>
<tr>
<td>Resettoscopy</td>
<td>90%</td>
</tr>
</tbody>
</table>

DIAGNOSTIC CONCORDANCE

- ATROFIC ENDOMETRIUM
- HYPERPLASIA
- POLYPE
- FIBROSIS
- NORMAL
- CANCER

**DIAGNOSTIC CONCORDANCE**

- Histology
- Sonography

Success rate in office (314 pt)

- 88% (278 patients) (5 mm hysteroscope)
- 28% (88 pt) operative hysteroscopy
- 1.85% (6 pt) experimented vasovagal effect
- 0.9% (3 pt) cervicitis, endometritis
COMPLICATIONS

- Complications may occur in diagnostic
- The complication rate in diagnostic hysteroscopy is low and was estimated by Lindemann (1989) to be 0.012%
- Complication rate for both office hysteroscopy and “hospital” hysteroscopy was respectively 1.9% and 4.2% (Hidlebaugh 98)

Complications may result from (Taylor & Gordon, 1994):

1. Anesthesia *
2. Positioning the patient
3. The distension media
4. The surgery:
   - Uterine perforation*
   - Haemorrhage
   - Vasovagal effect
5. Delayed complications:
   - Infection
   - Adhesion formation
6. Failure of resolution of the presenting symptoms
Vasovagal complication

- During office procedure the pain is the main predictive syndrome
- In case of doubt control the hearth frequency rate (bradycardia, transpiration).
- The anestesists could be informed about the horaries of office hysteroscopies

- Two thousand seventy-nine (279) women undergoing outpatient hysteroscopy without analgesia
- Rate of vasovagal syndrome was higher with use of a rigid hysteroscope (12/647 [1.85%]) vs. a flexible hysteroscope (3/1432 [0.21%])


Vasovagal complication

- 112 consecutive women undergoing outpatient hysteroscopic sterilisation without sedation or general anaesthesia
- Successful bilateral tubal placement of the Essure microinserts was achieved in 103/112 patients
- Transient vasovagal reactions occurred in 5/112 (5%) women

Damage to soft tissues

- It is the responsibility of the surgeon to ensure that there is no injury from moving parts of the table to the patient’s soft tissues or hands.
- No part of the patient is in contact with metal parts of the table because these can act as return plates for electrical energy and burns can occur at the point of contact.

Carbon dioxide

- Cardiac arrhythmia may occur with diagnostic hysteroscopy.
- The complication should be extremely rare if the correct insufflator is used.
- The hysteroflator delivers CO2 at a rate of not more than 100ml per minute whereas the laparoflator can deliver 1-6-10 litres in the same time.

Carbon dioxide

- A laparoflator should NEVER be used for hysteroscopy.
- It is rare for CO2 to produce any side effects if gas embolism of less than 400ml occurs.
LATE ONSET COMPLICATIONS

Infection

- Acute pelvic inflammatory disease is rare following hysteroscopy
- This may be prevented by prophylactic antibiotics
- The diagnosis is made by the presentation of the classic symptoms and signs
- Treatment should be by appropriate antibiotics following culture of vaginal swabs and blood

Hysteroscopy: a technique for all?

- The hysteroscopies were successfully performed in nearly 95% of cases by 382 operators (mean 13.8 hysteroscopies per operator) with different levels of expertise.
- A high level of expertise is not a prerequisite to performing hysteroscopy on an outpatient basis.
- Recent advances in technique and instrumentation facilitate this approach and might encourage greater adoption by the wider gynecology community.


Hysteroscopy: a technique for all?

- The ESGE offers a clearer indication to future hysteroscopists concerning the attempt of a safe level of knowledge.
  - For basic level attempt
- 1) A minimum of 50 of the following procedures
  - Simple hysteroscopy
  - Target biopsy, IUD removal, or minimal adhesions (no use of laser or electricity)
Hysteroscopy: a technique for all?

• Only one hysteroscopy per week is required to attempt a basic European level.