Diagnostic Office Hysteroscopy

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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 then hysteroscopy has growth in its indications and clinic applications.

At the end of ‘90, the diagnostic hysteroscopy started to be addressed in a -office setting-, with a decreasing percentage of cases undergone anaesthesia, less 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, a video camera, and rigid or flexible metallic optics.

- The detailed observation of endometrial cavity, gives also the possibility to execute orientated biopsies of suspected tissues for hysto-pathologic examination.

- Others operative 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
Uterine bleeding represents certainly the most frequent symptom characterizing uterine cavity dysfunction.

more than 50% of gynecological consultations are for metrorragies (among women during menopause)
Indications of Office Hysteroscopy (1)

- 1) Evaluation of abnormal bleeding
- 2) Evaluation of infertility (before IVF)
- 3) Evaluation of abnormal trans vaginal sonography or saline infusion sonography (mullerian defects, endometrial thickness, adhesion’s suspect)
- 4) Localization of foreign body (migration of cerclage)
- 5) Postoperative evaluation (following miomectomy, curetage, cesarean, septum repair)
Indications of Office Hysteroscopy (2)

- 6) Classification of submucosal fibromas

- 7) Evaluation of endometrium after uterine fibroid embolisation

- 8) Evaluation of pregnant patient (IUD localization in early preg, retained product of conception, placenta accreta etc, ectopic interstitial or tubal pregnancy)

- 9) Endometrial cancer (staging, evaluation of cervical involvement, second look after non surgical treatment, control during tamoxifen therapy)
The introduction at mid of 90’s of news hysteroscopes was the way to reduce the diameter of the instrument and improve the number of hysteroscopists and number and quality of hysteroscopies.

Thanks to these innovations it was possible performing hysteroscopy with an instrument complete of operative channel and continuous 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 2015-

GENERATIONS

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 time easier perform a hysteroscopy than a laparoscopy
ESGE classification (esge.org)

According to ESGE indications first level
- The ESGE offers clears indication to future hysteroscopists concerning the attempt of a safe level of knowledge.

- 1- 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)

- 2 - Intermediate level
- 3 - Advanced level
INSTRUMENTS

• Many instruments are developed to get into the uterine cavity

• Let’s see
Hamou’s 1 and 2 scopes
Hysteroscopes...flexibles

24 cm working length
100° field of view
3.1 mm diam distal tip
1.2 mm diam working channel
…flexible

- 120° field of view
- 4.5mm diameter distal tip and 4.9mm insertion tube
- 2.2mm diameter working channel
- 29 cm working length
Rigid, with coaxial operative channel
Rigid, with coaxial operative channel
Hysteroscopes with 5/7 french operative channel
Office hysteroscopy is normally performed by an operative continue-flow microhysteroscopy with 5 mm full diameter with a “rod lens” system of 2.9 mm diameter.
A more thin new version has been developed with a total diameter of 4.2 mm.
Both hysteroscopes are characterized by oval section and are provided by two outer sheaths (flow devices), and an operative channel for 5 fr instruments.
**Optics:** Visual angle 30°

Hysteroscope Ø 5 mm: Optic Ø 2,9 mm
Ø 4.2 mm: Ø 2,0 mm
…But the “MOST IMPORTANT” of the whole hysteroscope is...cautchu gasket

Preventing the distension media spilling during the operative procedures
New connection design
- "Monobloc" system: All connections (tubes) are positioned in the lower part of the device
- Clear assignment of the in and outflow tubes
- Easy rotation of hysteroscope

New access to the operative channel
- Automatic valve mechanism
- Disposable tips
- No loss of fluids

New sheath locking system
- Locking mechanism of the external sheath
- Automatic valve on the working channel
- Monoblock suction / irrigation connection
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 explication of the procedure, focusing on the several advantages offered by the “in-office” approach and the possible complications, usually minor and generally not harmful.
IRRIGATION SYSTEM

30-40 mm hg inside the uterus
0.2 bar of aspiration pressure

150-350 ml/min of phys solution
GOLD STANDARD of HYSTEROSCOPY TODAY

IN-OFFICE HYSTEROSCOPY

• Once the instruments are setted, the procedure starts normally in vaginoscopy

• Speculum or Pozzi devices are nor 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

• 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
WHAT IT’S POSSIBLE TO OBSERVE AND TREAT

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

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It is enough to turn $90^\circ$ the optic on the endocamera to orient the principal longitudinal axis on the endocervix trasversal axis.
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 (analgesics, 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.

GOLD STANDARD in OFFICE HYSTEROSCOPY TODAY

In terms of comfort

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

Bettocchi S. et al Office hysteroscopic metroplasty: three "diagnostic criteria" to differentiate between septate and bicornuate uteri Minim Invasive Gynecol. 2007 May-Jun;14(3):324-8
OFFICE’S COSTS

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

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 (bradicardia, transpiration).
- The anestesists could be informed about the horaries of office hysteroscopies
Vasovagal complication

• 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%])

• Agostini A. et al J Am Assoc Gynecol Laparosc. 2004 May;11(2):245-7 Risk of vasovagal syndrome during outpatient hysteroscopy
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 (5.5%) women

- Sinha D. et al. The feasibility, success and patient satisfaction associated with outpatient hysteroscopic sterilisation  BJOG. 2007 Jun;114(6):676-83
Carbon dioxide

- **Cardiac arhythmia** 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
Contraindication to Office hysteroscopy

PID
ATCD of tubal obstruction or hydrosalpinx
Herpesvirus, trichomoniasis, Chlamidia trach
Vaginal bleeding (relative contraind)
Pregnancy known
Cervical cancer
Severe cervical stenosis

... and....

Endometrial cancer..

Yazbeck meta analysis (756 pts) shows not increased risk of dissemination in the peritoneum.
A few expert lead to use the gas prior to long term randomized outcome studies
Polipectomia endometriale isteroscopica in office: descrizione di un nuovo strumento e di una innovativa tecnica chirurgica
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The polipectomy with “Hystero-basket”
“OFFICE” HYSTEROSCOPY
Technology REP-b®
Reuptake of Endometrial Pathologies- basket

Gaetano Zizza M.D.  Univ.Catania Dip.Ginecologia – Policlinico
Endometrial polipectomy during office hysteroscopy: description of a new instrument and of an innovative surgical technique. This study was aimed at evaluating the safety, feasibility and tolerance of a new surgical technique for catch and uptake endometrial polyps following office hysteroscopic polipectomy. We enrolled, with a prospective selection, 30 women (mean age 50.5±11 years) suffering from endometrial polyps, treated by office hysteroscopy with vaginoscopic approach, according to Bettocchi either with cold blade cutting technique or by electrosurgical bipolar resection. Following the resection, polyps have been extracted from uterine cavity by a modified Dormia device in nitinol with teflon envelope, measuring 100 cm with 5 Fr. section, provided with a 3.2 cm basket with opening diameter of 2 cm, made of 4 or 5 coiled wires, introduced thought the operative channel of the hysteroscope. The uptake of the neoformations was successfully in all cases we studied, with a mean time of 31±22 seconds (range 12-90). Discomfort has been minimum and the technique has been widely accepted by all patients.
Hysteroscopy: a technique for all?

- The hysteroscopies were successfully performed in nearly 95% of cases by 362 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.

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Hysteroscopy: a technique for all?

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