Clinical training

Gynecology – Beginner level

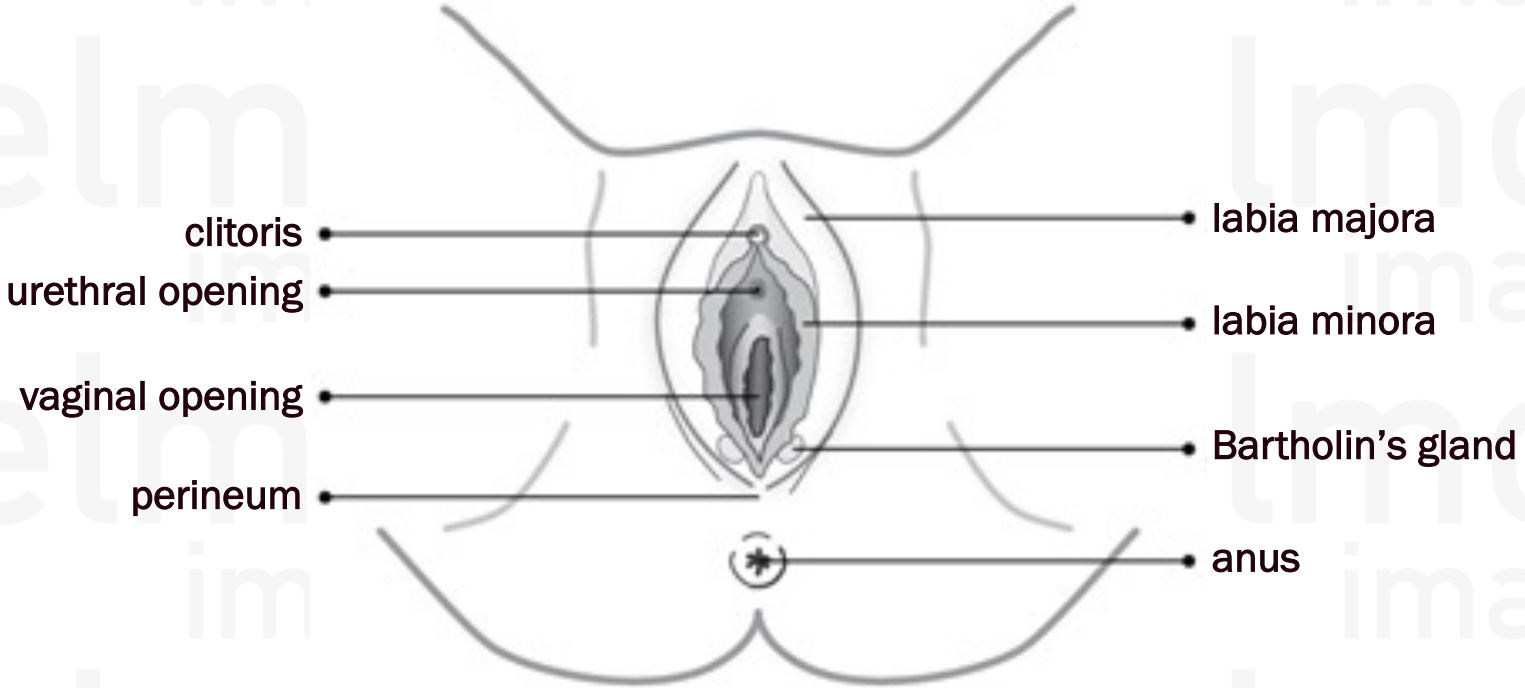
Contents

delmont imaging

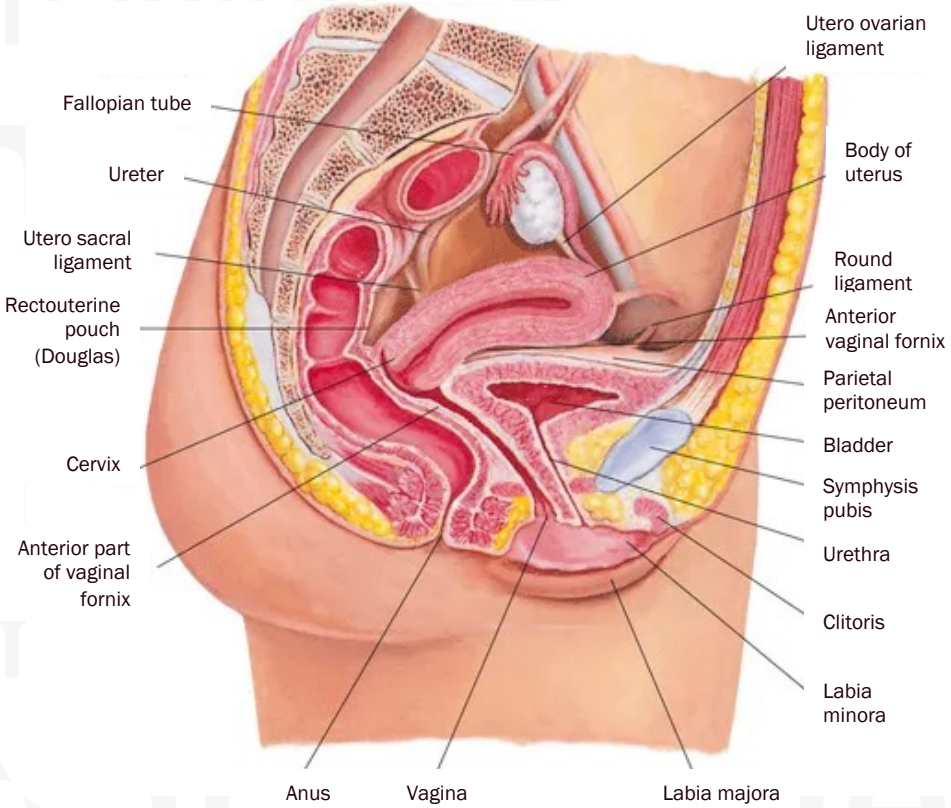
Female anatomy

ANATOMICAL SECTIONS

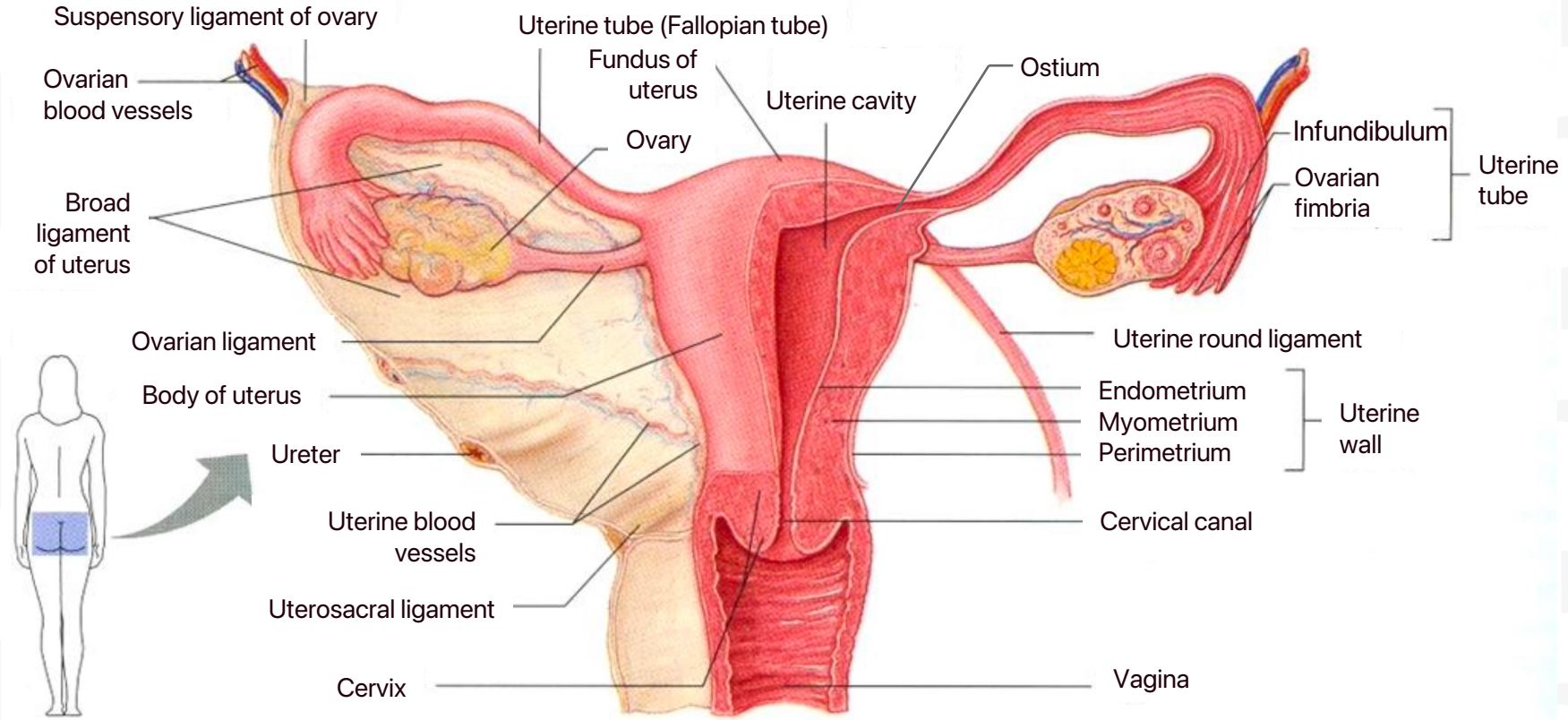
External view



Sagittal section



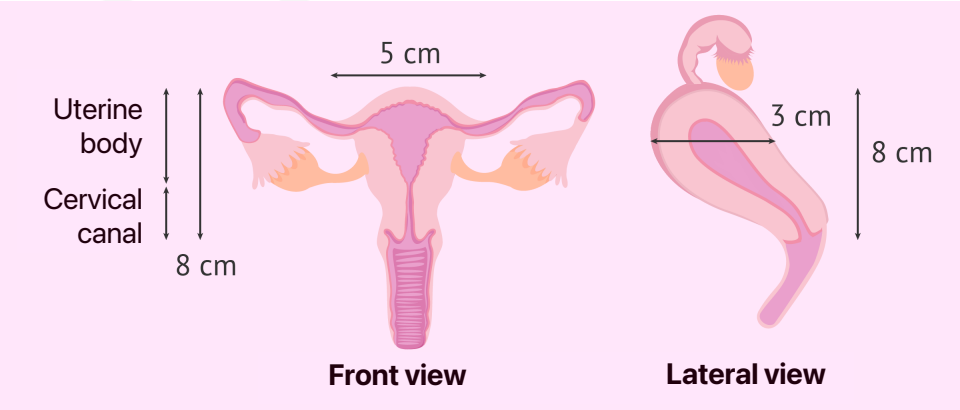
Front section



UTERUS

Size of uterus

- The average uterus weighs about 50g and measures on average 8cm. It consists of the cervix, the isthmus, and the body of the uterus, whose uterine cavity does not exceed **4mL**.
- To term, a gravid uterus (uterus containing a fetus), alone, weighs on average 1kg and has a capacity of 4-5 liters for a single fetal pregnancy.



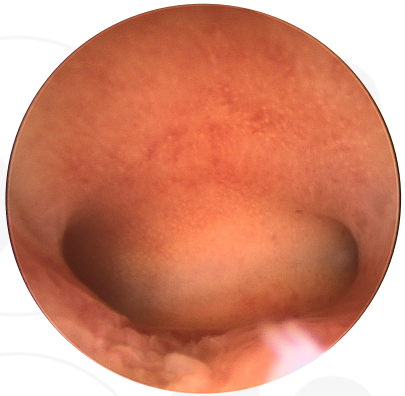
Endometrium and myometrium

ENDOMETRIUM	MYOMETRIUM
Uterine mucous	Uterine muscle
Composed of blood vessels and glands	Composed of conjunctive tissue and muscle
The functional layer thickens during the menstrual cycle in preparation for implantation. In the absence of fertilization, it peels off and is expelled during menstruation.	Does not evolve, contracts only during menstruation and during delivery to expel the baby.
From 3mm (basal layer) to 15mm before menstruation.	Average thickness of 9mm.

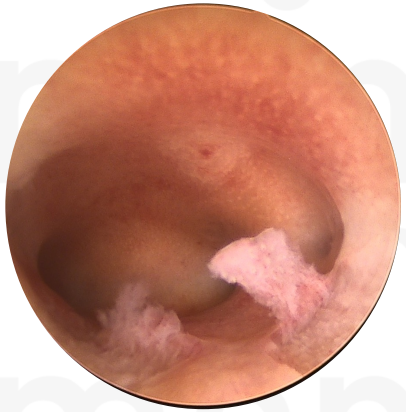
Hysteroscopic view

Right ostium

Left ostium

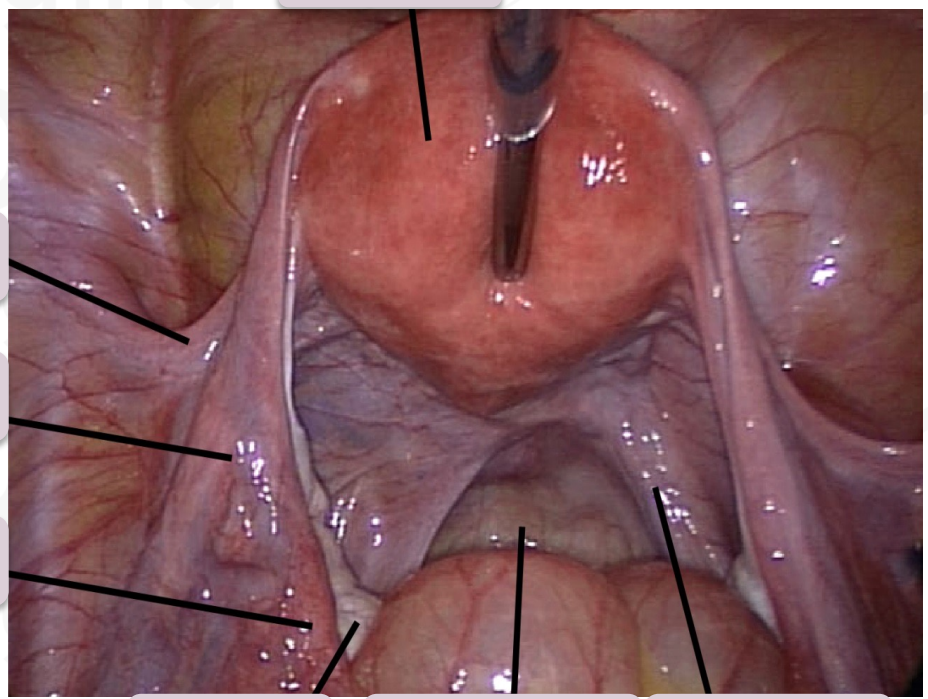


Fondus of uterus



Complete uterine cavity

Laparoscopic view



Position of the uterus

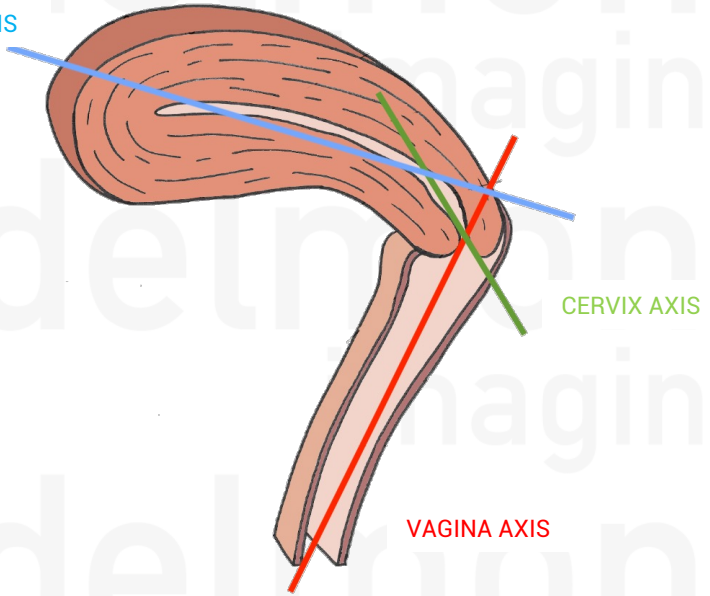
- The position of the uterus is defined by three angles.

Uterine flexion : cervix – uterine body

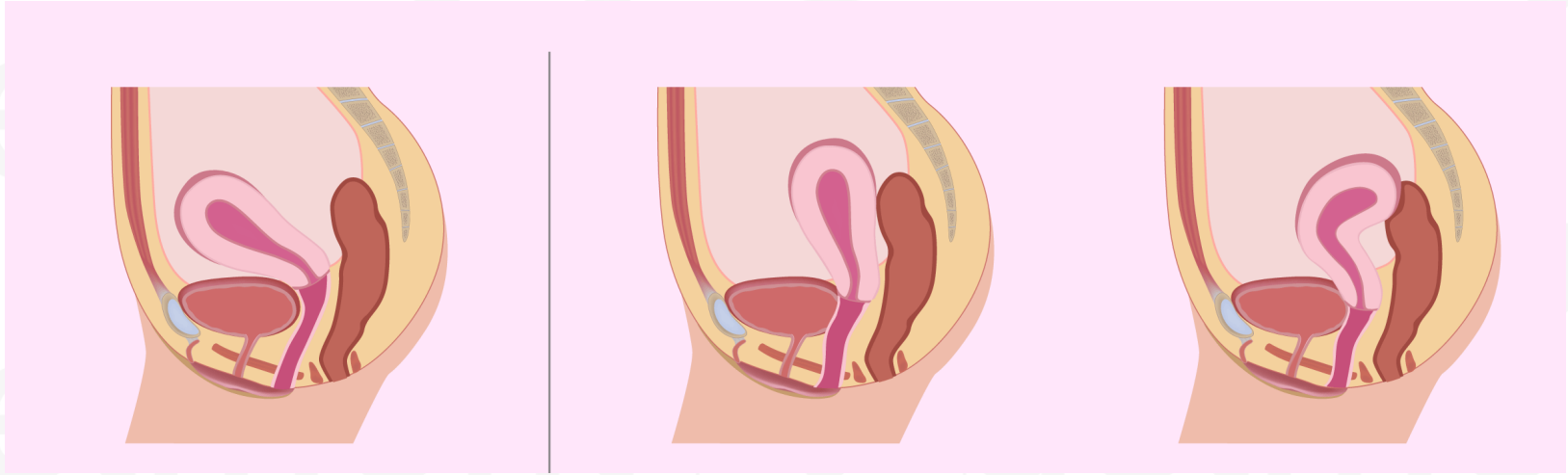
- Anteflexion
- Retroflexion
- Middle position (180°)

Uterine version : vagina – cervix

- Anteversion
- Retroversion



Examples of uterine positions



Anteverted anteflexed uterus (normal)

Retroverted anteflexed uterus

Retroverted retroflexed uterus

Uterine malformation (1/2)

2013 ESHRE classification (European Society of Human Reproduction and Embryology) defines 5 uterus classes.

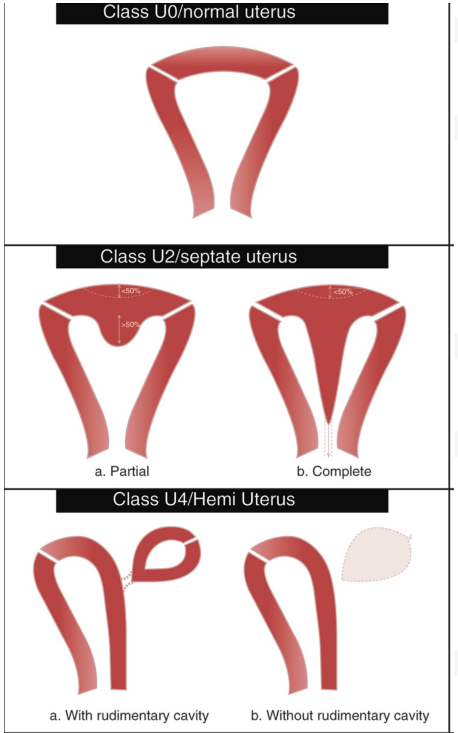
U0: Normal uterus

U2: Septate uterus

- Partial
- Complete

U4: Hemi uterus

- With rudimentary cavity
- Without rudimentary cavity

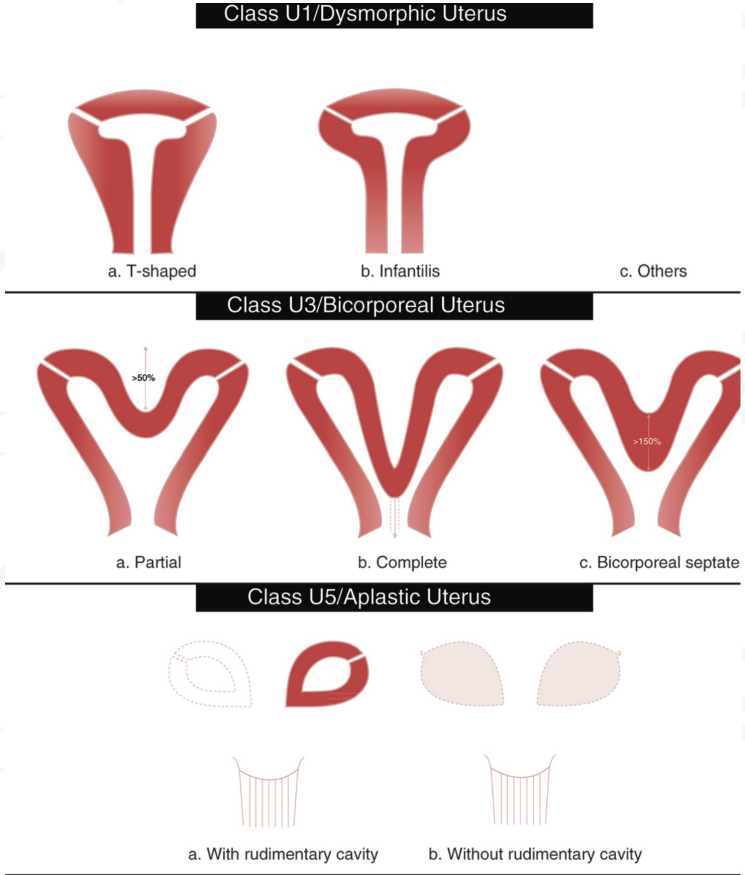


Uterine malformation (2/2)

U1: Dysmorphic uterus
- T-shaped
- Infantilis
- Others

U3: Bicorporeal uterus
- Partial
- Complete
- Bicorporeal septate

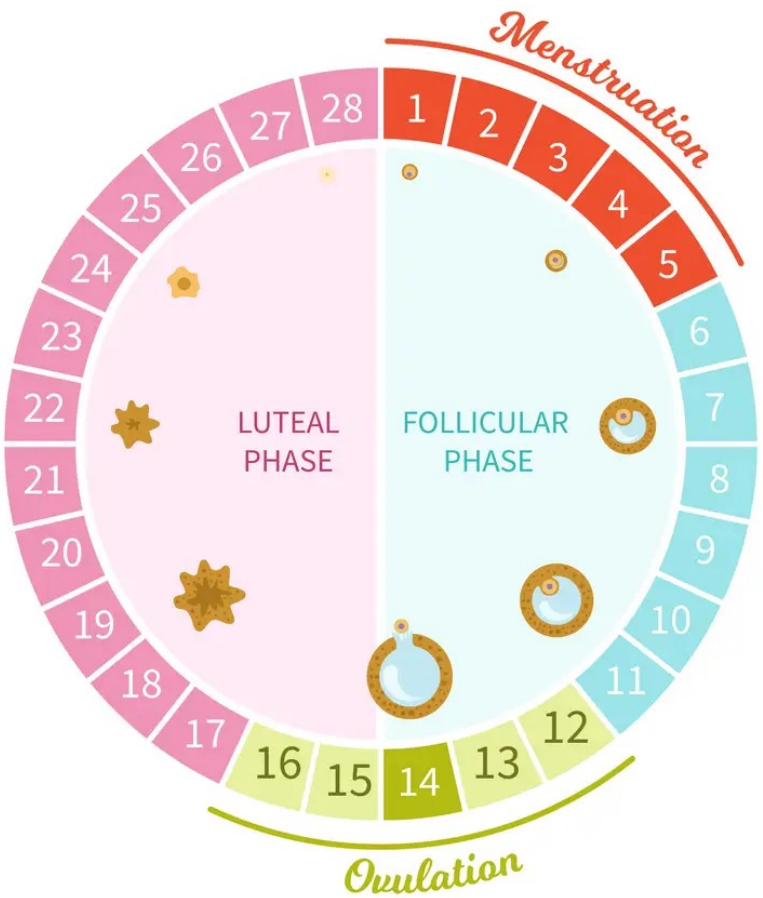
U5: Aplastic uterus
- With rudimentary cavity
- Without rudimentary cavity



MENSTRUAL CYCLE

Menstrual cycle

- It lasts an average of 28 days and begins on the 1st day of menstruation.
- This cycle is regulated by hormones.
- There are two phases: the follicular phase, which corresponds to the growth of an ovocyte until ovulation, and the luteal phase, which occurs after ovulation.

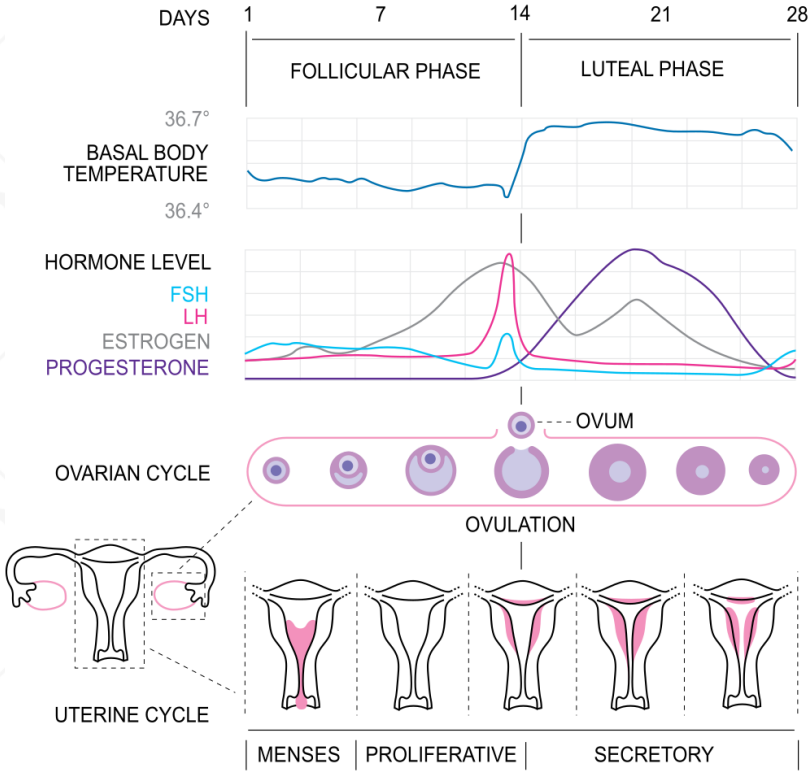


The different stages

Desquamation from D1 to D4,
Menstruation is due to a drop in the level of hormones sent by the ovaries, which triggers the detachment of the uterine lining. A residual zone remains, 0.5mm thick.

Proliferation from D5 to D14
Maturation of the follicle (cavity of the ovary in which an oocyte develops) and thickening of the endometrium.

Secretion from D14 to D28
After ovulation (release of the oocyte from the follicle), the endometrium prepares for a possible pregnancy. Otherwise, a new cycle begins.



REPRODUCTION

Fertilization

1. Introduction of **spermatozoa** into the vagina, which travels up the uterus and then to the fallopian tubes.
2. A single spermatozoon (male gamete) will succeed in piercing the outer membrane of the oocyte (female gamete). **Fertilization** takes place at this precise moment.
3. The chromosomes of the 2 gametes merge into a single cell: the **egg**. This one starts its descent in the tube which nourishes it for 3-4 days.
4. 5 days after fertilization, the egg arrives in the uterus and the mucous membrane prepares to receive it. The egg is now made of 2 types of cells: in the center, the embryonic button and around it, the trophoblast which will become the placenta. It is the BLASTOCYTE.

Fertilization

* : Ovulation

Day 0 : Fertilization

Day 1 : Stage 2 cells

Day 2 : Stage 4 cells

Day 3 : Stage 8 cells

Day 4 : Morula stage (meaning « small blackberry » in latin)

Day 5 and 6 : Free blastocyte stage (formation of the first divisions of the egg cell)

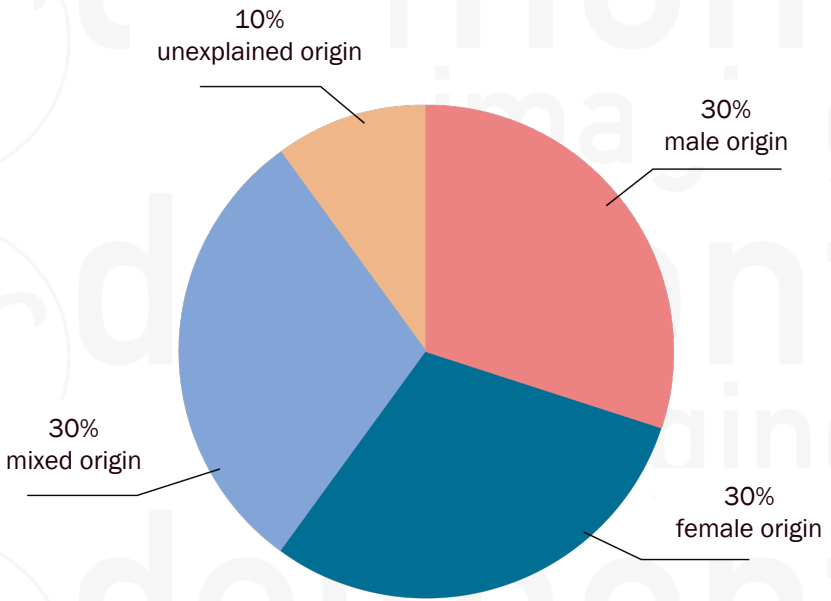
Day 7 : Implantation

Implantation

- When fertilization occurs, the menstrual cycle is interrupted.
- In the ovary, the **ovarian follicle** continues to secrete estrogen and especially **progesterone**. Known as the "pregnancy hormone", it helps prevent uterine contractions, but also enriches the endometrium.

Infertility

- Many women want to have a child but find it difficult to become pregnant. They then carry out an infertility assessment to diagnose the causes. Infertility is defined as the absence of pregnancy after one year of regular sexual intercourse.
- When the origin is female, the infertility can be explained by:
  - Ovulation disorder
  - Tubal obstruction
  - Endometriosis
  - Anatomical and functional abnormalities of the uterus
  - Other



LES CAUSES DE L'INFERTILITÉ - SOURCE : INSERM

delmont
imaging

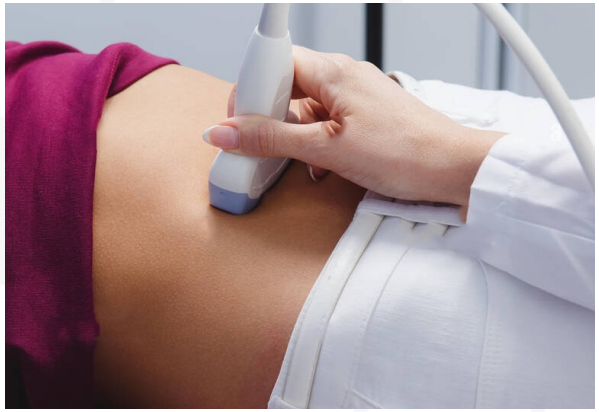
Diagnostic examinations

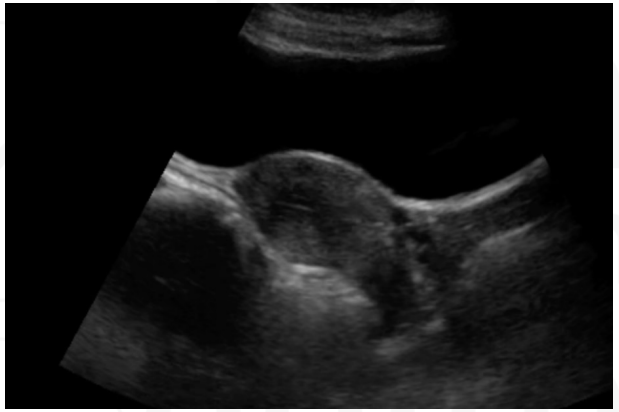
IMAGING

Ultrasound

- Imaging technique that uses high frequency **ultrasound waves**, produced and received by the device (probe) that is moved over the skin using a gel.
- The ultrasound received are converted into images by a computer.
- This technique is completely safe and can be repeated as needed without danger.

Pelvic or abdominal ultrasound

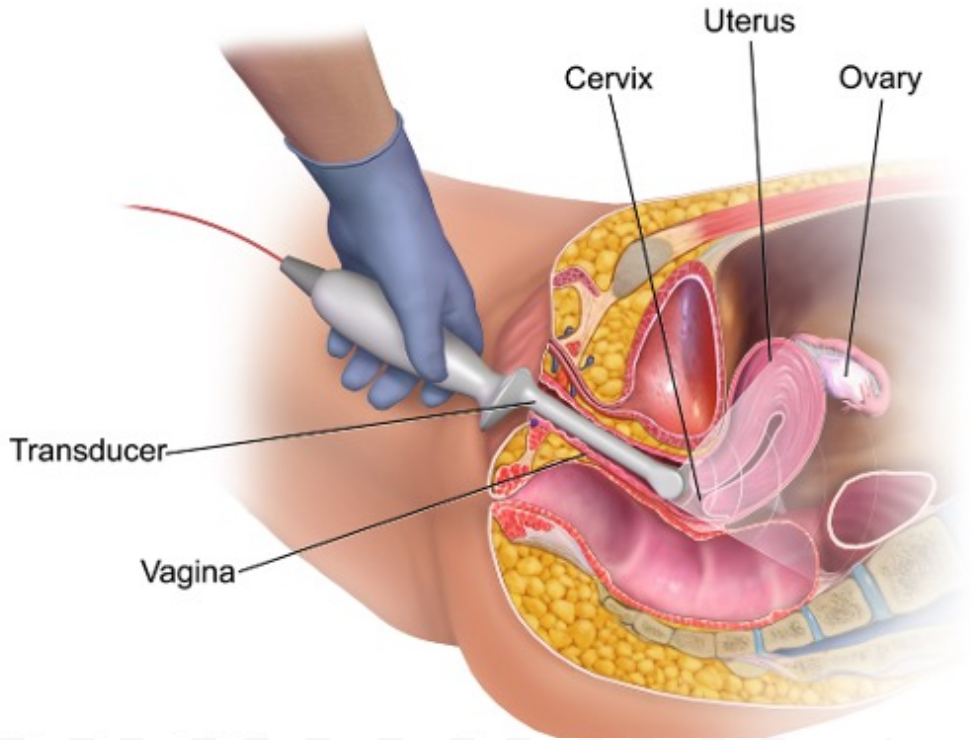


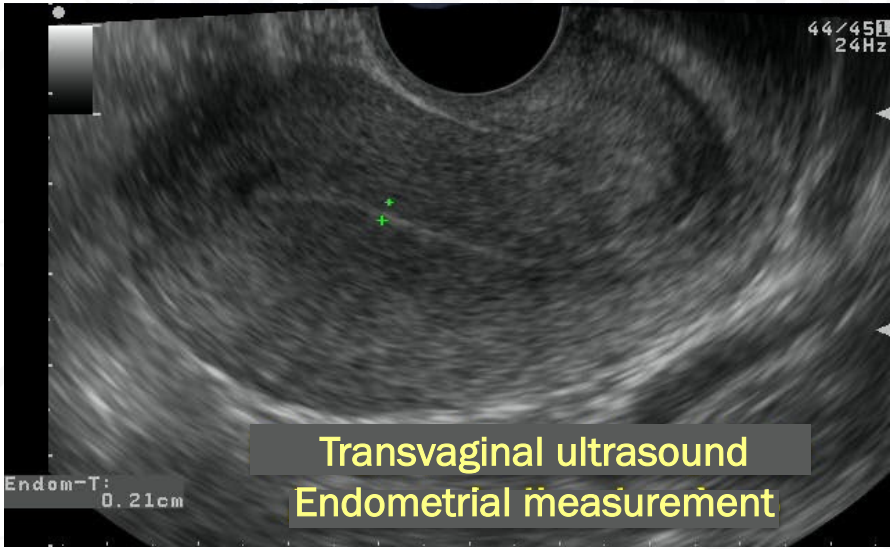


Transvaginal ultrasound

- Transvaginal ultrasound is performed with a probe inserted into the vagina in patients who have already had sexual intercourse.
- With this technique, the images obtained are generally more accurate.
- The goal is to have a clear view of the uterus and ovaries.

Transvaginal ultrasound

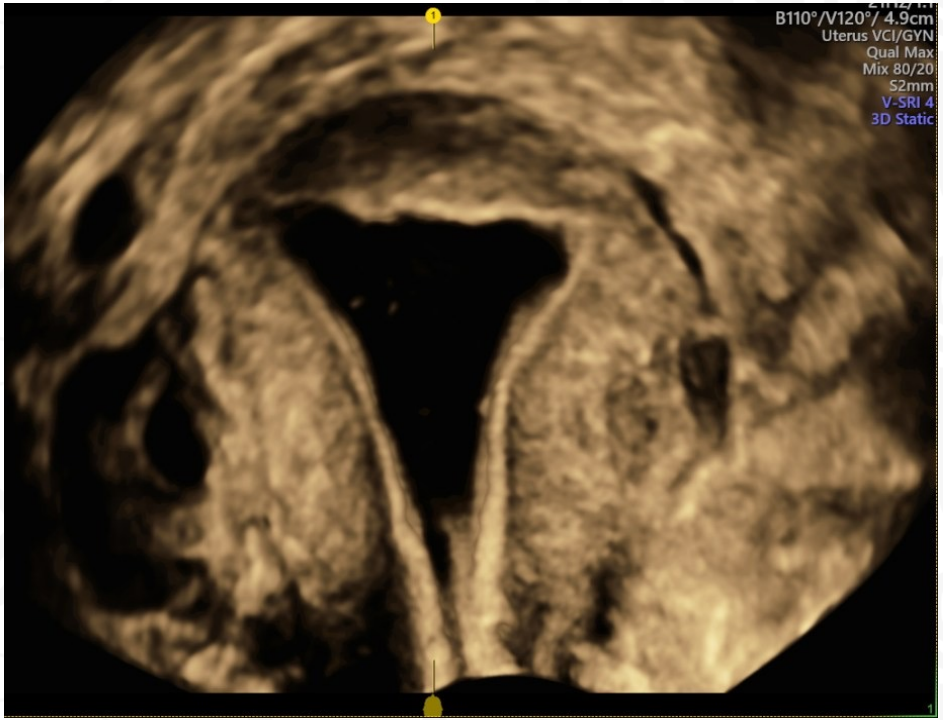




Hysterosonography

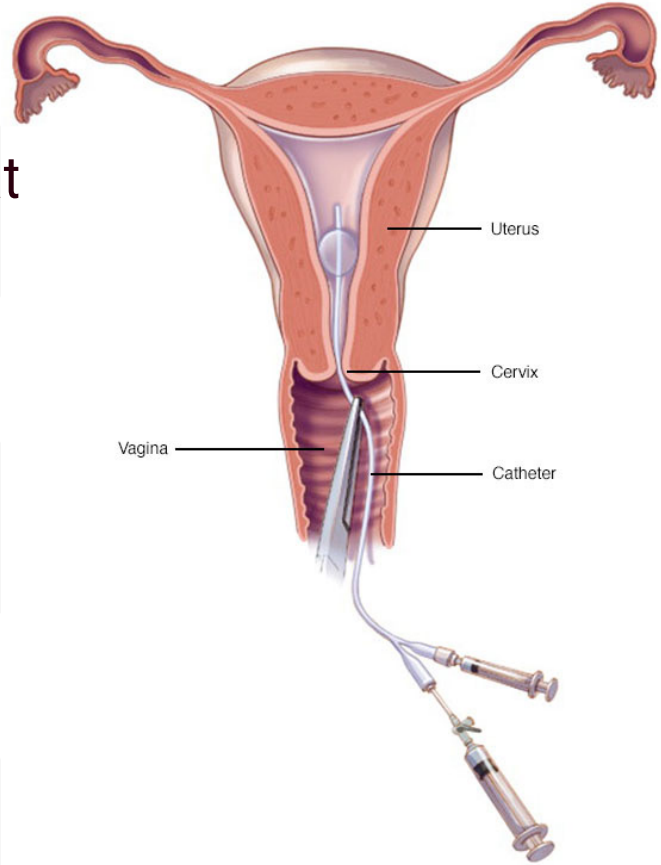
- This examination is also an ultrasound of the uterus.
- To make the image clearer, saline solution is instilled into the uterus to highlight the relief of the uterine mucosa by contrast.
- The radiologist or gynecologist inserts a soft plastic catheter into the uterine cavity after placing a speculum and cleaning the cervix. The catheter is connected to a syringe of saline.

Hysterosonography

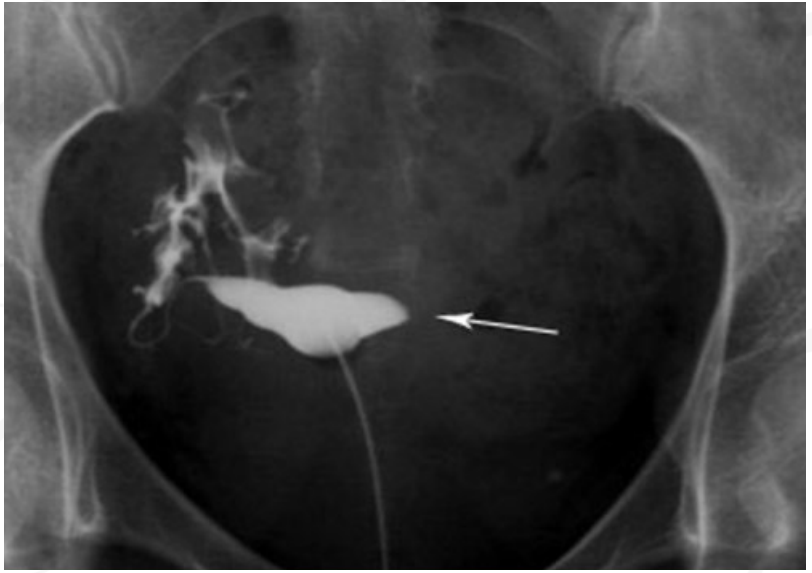


Hysterography/Hystero-salpingography

- This radiography (X-rays) is used to assess the **patency of the fallopian tubes** (verification that there are no obstacles preventing the oocyte from reaching the uterus).
- It also allows the visualization of the uterine cavity.
- An iodinated contrast medium (radiopaque) is instilled into the uterus and thus into the tubes via a cannula inserted into the cervix. The absence of passage of the product into the tubes indicates a **tubal obstruction**.



Hysterography/Hystero-salpingography

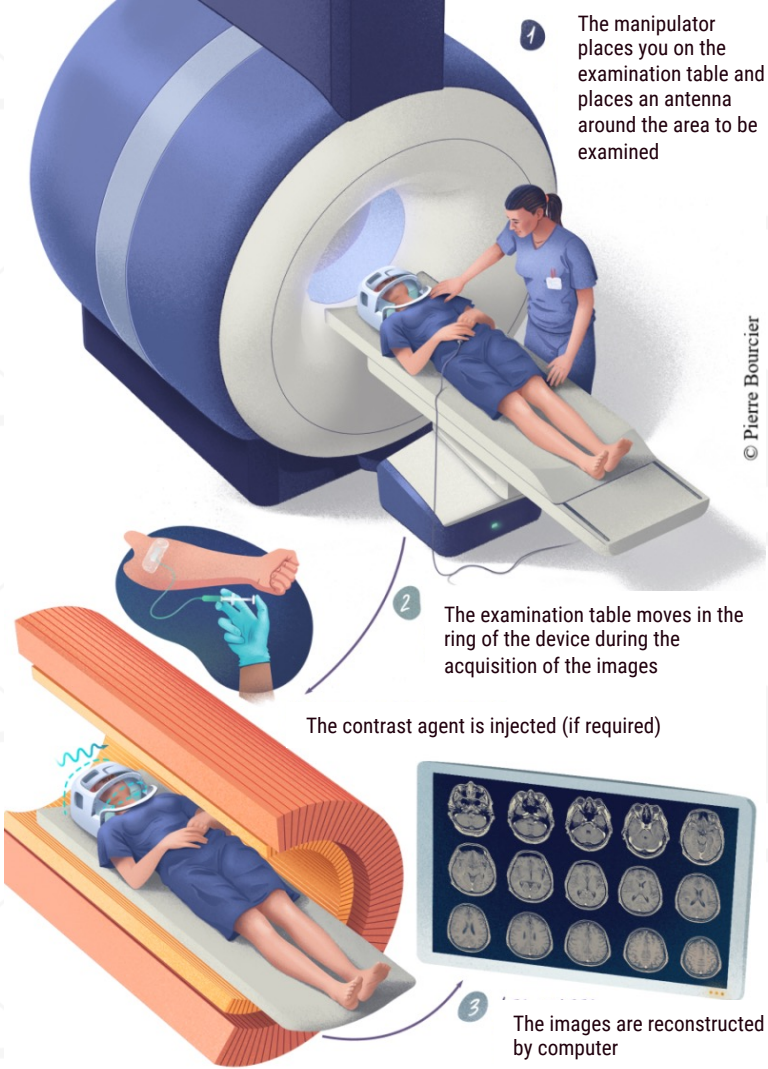


Left tube blocked

MRI

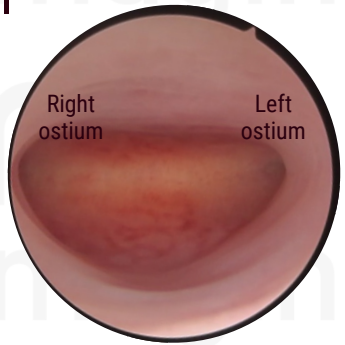
- Magnetic resonance imaging (MRI) does not use X-rays. The principle is based on the **magnetic properties of hydrogen.**
- The hydrogen atoms are excited simultaneously. When the stimulation stops, the atoms give back energy. Since not all tissues contain the same amount of hydrogen atoms, the level of energy released will differ depending on the tissue composition.
- It is possible to study organs and vessels without the use of contrast agent.

MRI

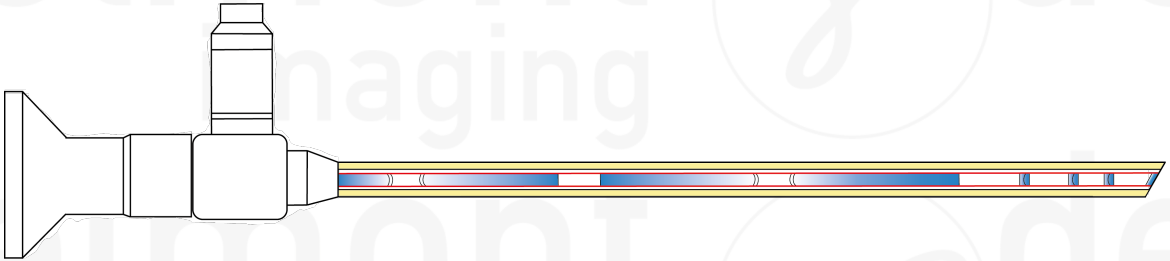

1
The manipulator places you on the examination table and places an antenna around the area to be examined
© Pierre Bourcier
2
The examination table moves in the ring of the device during the acquisition of the images
The contrast agent is injected (if required)
3
The images are reconstructed by computer

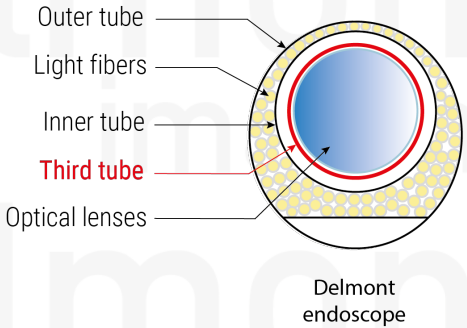
Diagnostic hysteroscopy

- Hysteroscopy allows to explore uterine cavity but also the endocervical canal (from the cervix to the uterine cavity) and the internal orifices of the tubes (ostia). This is the most direct and effective way to assess the condition of the uterine cavity.



- The hysteroscope is a tube composed of optical lenses (for vision) and light fibers. It is introduced into the vagina and then into the cervix.

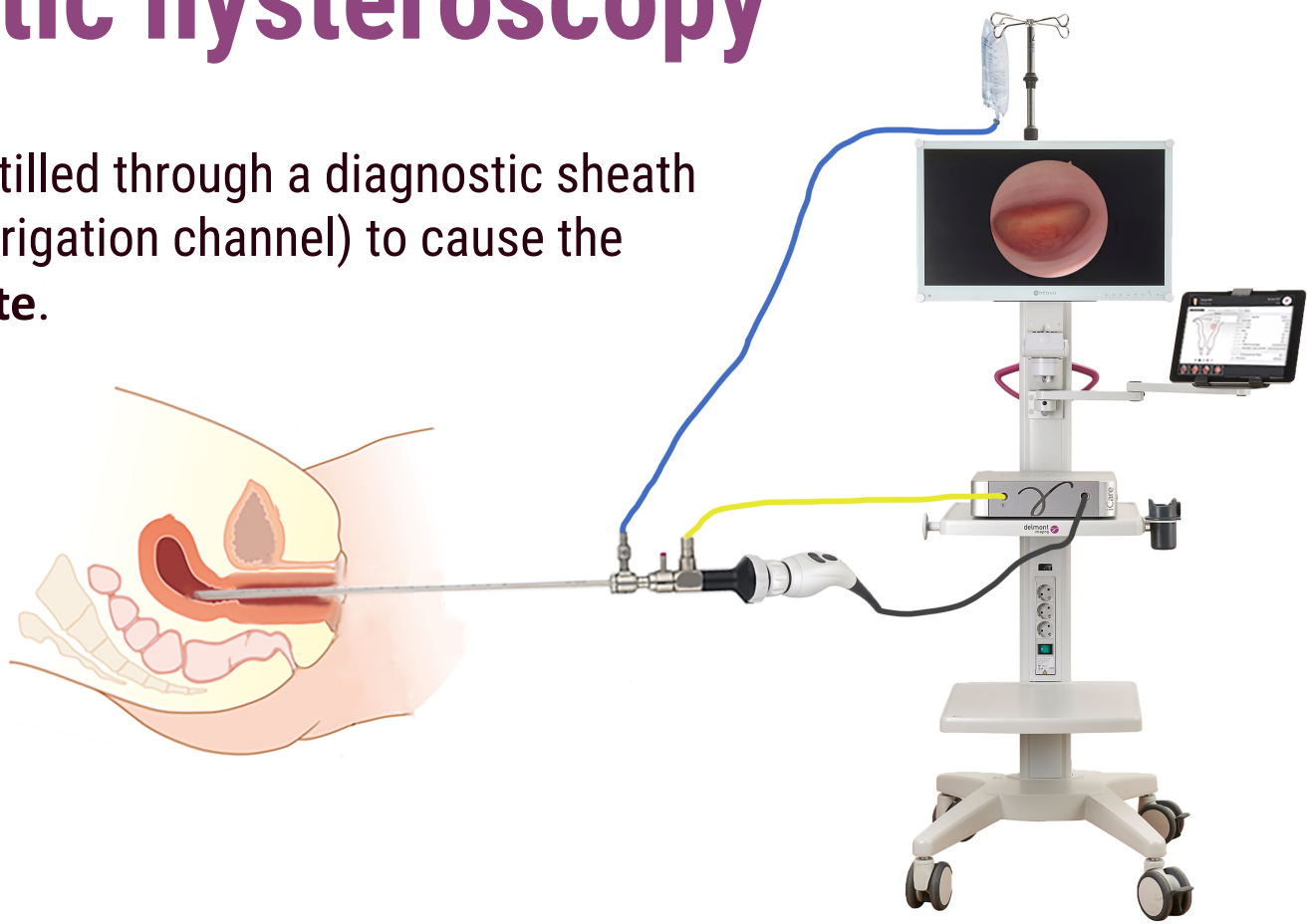




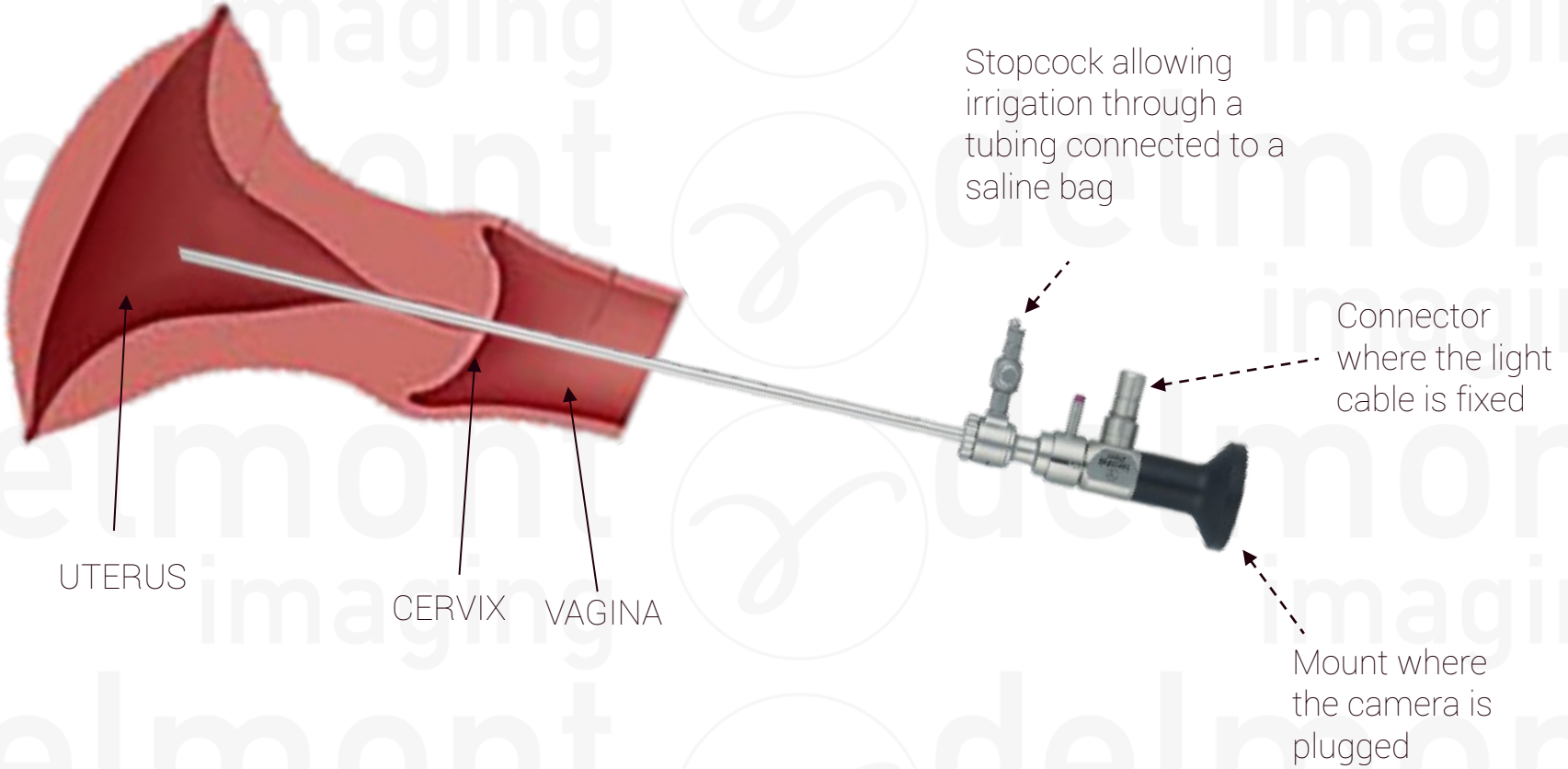
Diagnostic hysteroscopy

- Saline solution is instilled through a diagnostic sheath (a tube creating an irrigation channel) to cause the uterine cavity to **dilate**.

- A light source connected to the hysteroscope illuminate and allows to obtain a good visualization.



Diagnostic hysteroscopy

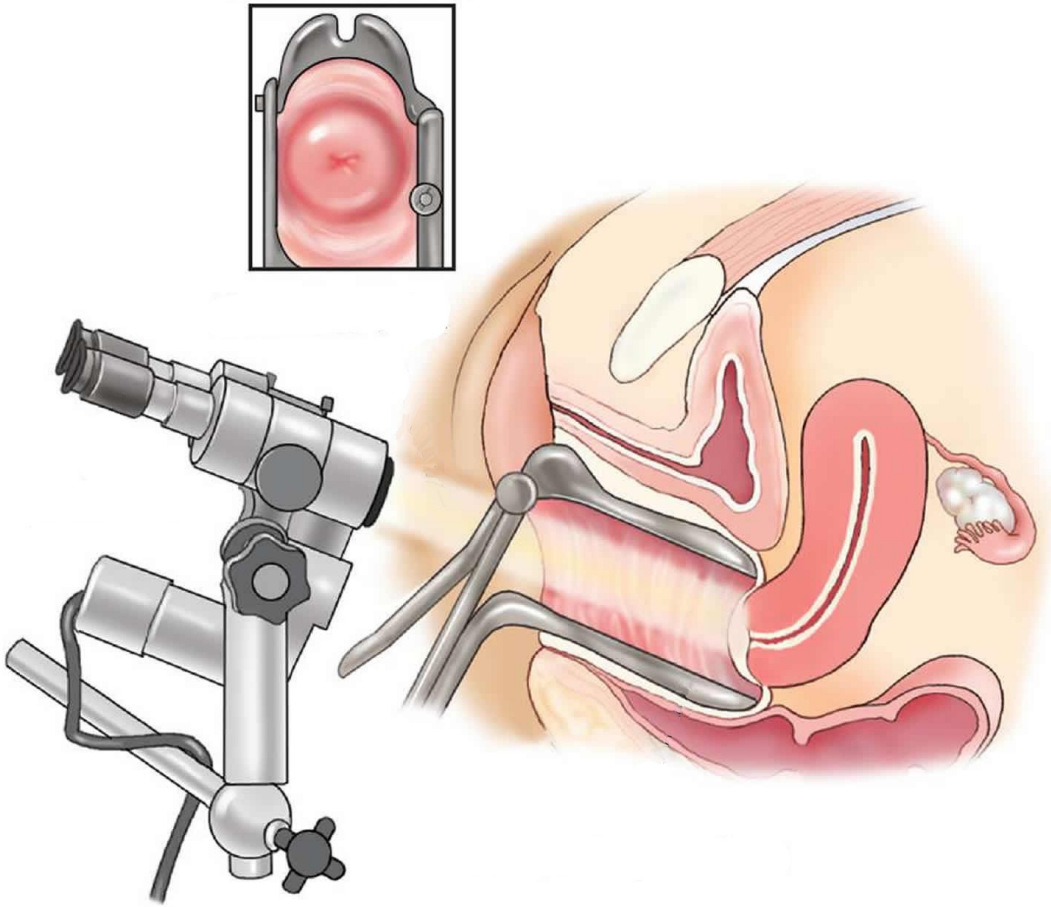


Colposcopy

- Examination of the cervix and vagina using a binocular magnifying device (colposcope) with a light source.
- Recommended when the doctor suspects the presence of abnormal lesions on the cervix, which are highlighted by the use of **dyes**.
- Examination without anesthesia and painless.

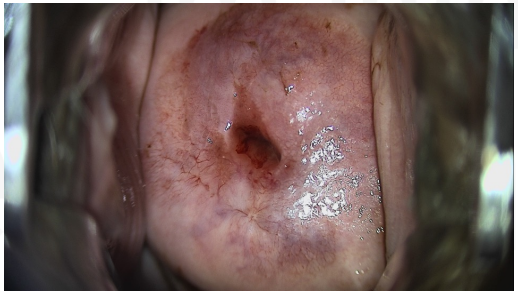
The principle

- The examination is performed in the gynecological position, after the introduction of a **speculum** that keeps the walls of the vagina apart.
- The colposcope is placed in front of the vagina.
- The doctor analyzes the **cervix** with the help of dyes (acetic acid and lugol).
- The colposcope can be connected to a video monitor.



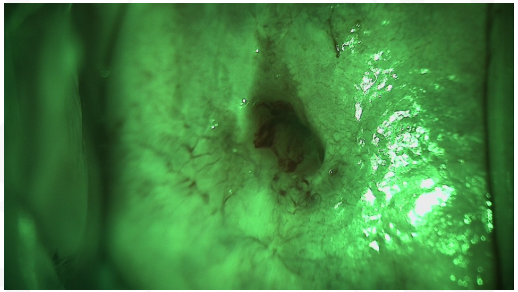
Dyes and filters used

- Dyes used:
  - **Acetic acid**: a very dilute concentration of vinegar that whitens tissues with a high protein load, and therefore abnormal cells (called "acidophilic").
  - **Lugol** : iodine base that darkens normal mucous membranes
- Green filter: eliminates red light and thus eases the visualization of blood vessels.



Without dye, no filter

Acetic acid



Green filter

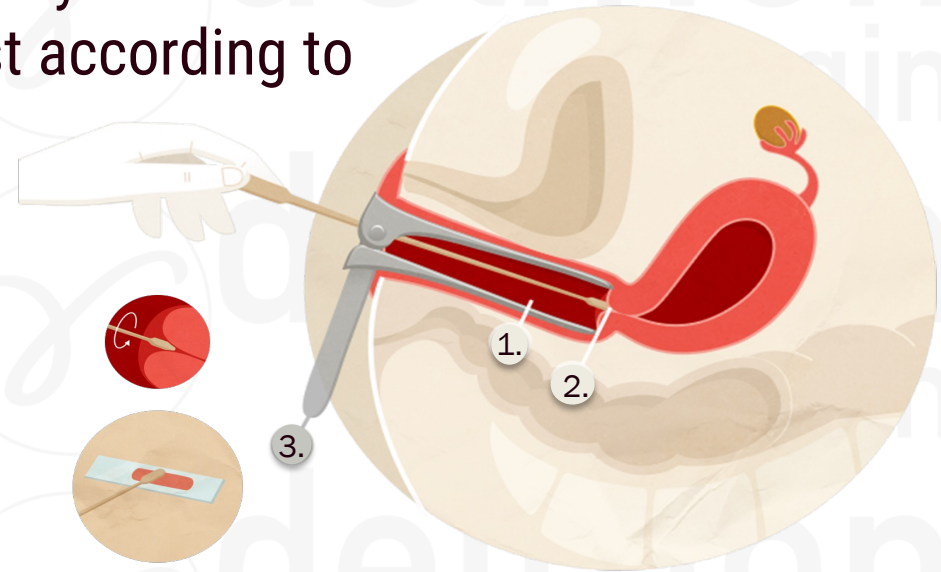
Lugol

BIOLOGY

Cervico-uterine smear

- An examination in which a **sample of cells** from the cervix is taken using a swab or small brush and a vaginal speculum.
- The sample is sent to a laboratory and will be analyzed using the relevant test according to the age of the patient.

1 - Vagina
2 - Cervix
3 - Speculum



HPV test

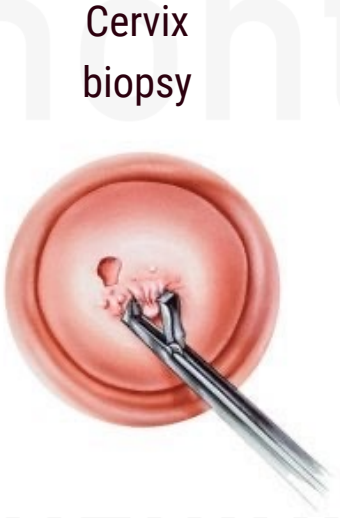
- This test is primarily for women between the ages of 30 and 65.
- The HPV test detects the presence of virus (detection of viral DNA) in the smear sample by **molecular research**.

PAP test (Papanicolaou)

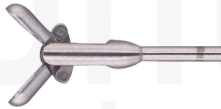
- This test is primarily for women between the ages of 25 and 30.
- It is the microscopic examination (cytology) of the sample to look for abnormal cells and precancerous cells that may develop into cancerous lesions.

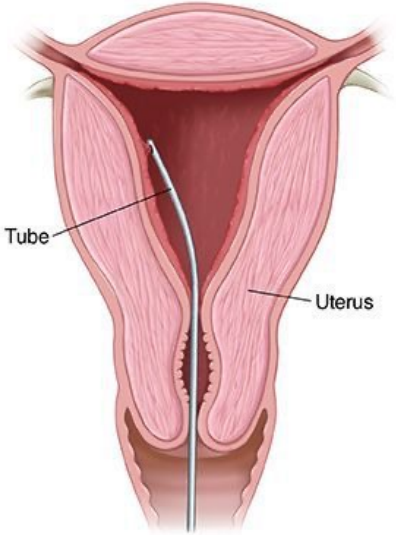
Biopsy

- A biopsy is the **surgical removal of a fragment of tissue** or organ. It is performed, depending on the case, by a surgeon in the operating room, in a dedicated room or in a consultation room, or by a specialist doctor in a medical office.
- The goal is to study the nature and structure of the sample through **microscopic examination or biochemical analysis**.

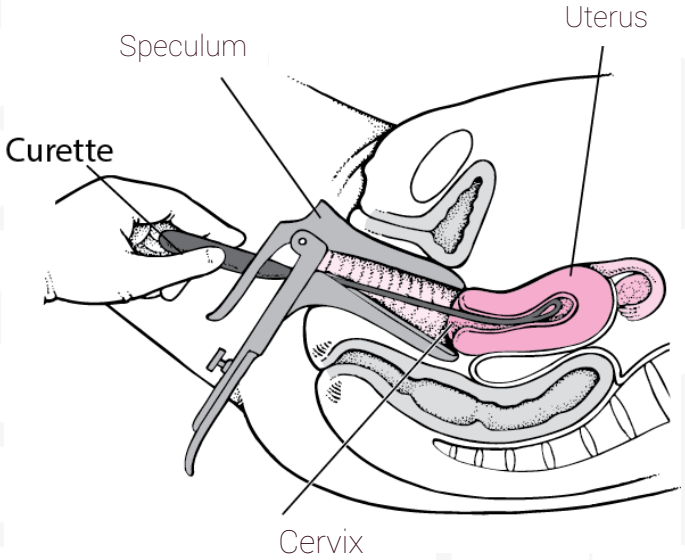


Uterine cavity biopsy





Endometrial biopsy by suction (Pipelle de Cornier)



Curettage biopsy (curette)

Directed biopsy by hysteroscopy (biopsy forceps)

Cervical biopsy

- A **cervical biopsy** is usually performed with a biopsy forceps.
- A piece of tissue is taken directly from the surface of the cervix during a colposcopy.
- An **endocervical curettage**, performed with a curette, is sometimes necessary to analyze the cells inside the cervix (cervical canal) to observe the extent of abnormal lesions.

Biopsy forceps

Curette

delmont imaging

Treatments

OPERATIVE HYSTEROSCOPY

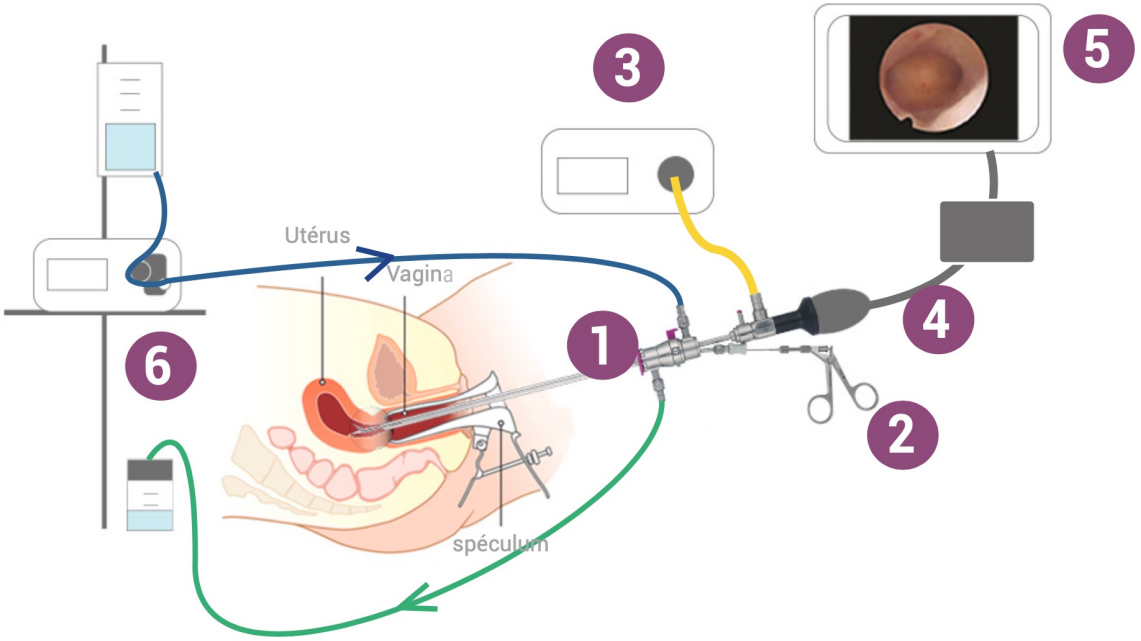
Definition

- Direct visualization of the interior of the uterine cavity and treatment of the pathology.
- Usually performed under general or loco-regional anesthesia (spinal anesthesia, epidural or paracervical block) in the operating room.
- Under certain conditions, the procedure can be performed in consultation under loco-regional anesthesia or without anesthesia (in-office principle).

The principle

- Placement of a speculum and fixation then traction of the cervix with Pozzi forceps. Progressive dilation of the cervix, if necessary, then introduction of a surgical instrument with an optic (called a hysteroscope).
- A liquid is injected into the uterus to allow dilation and better visualization and treatment.
- With the help of instruments (electrical instruments, laser, mechanical instruments), the uterine pathology is treated.

Equipment used

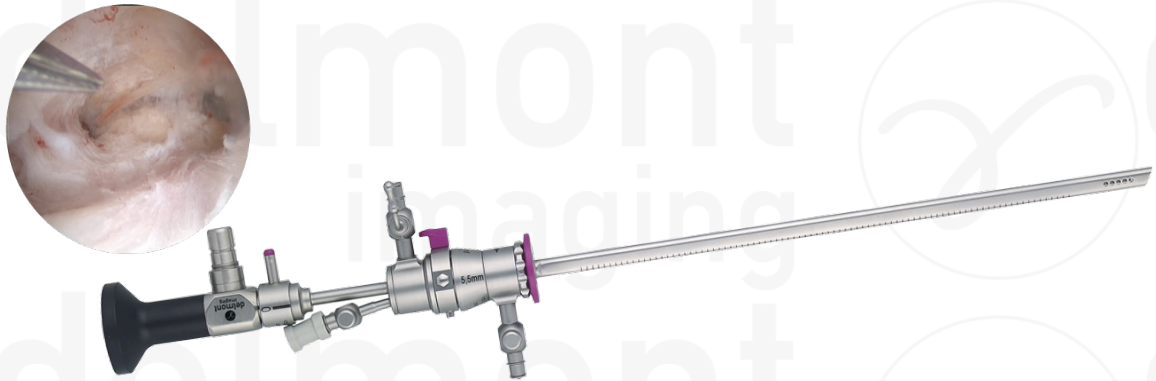


1. Hysteroscope and sheaths
2. Instrument
3. Cold light source
4. Camera and control unit
5. Monitor
6. Pump

Irrigation
Suction
Light cable

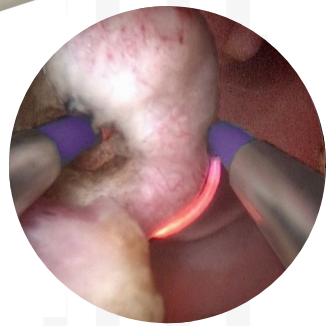
Operative hysteroscopy without energy

- Several types of products exist **without energy**:
  - Instruments (semi-flexible or rigid) inserted into an operative channel, such as scissors, grasping forceps, etc.
  - Morcellation: mechanical and automated fragmentation of tissue.
- Preservation of the endometrium → reduced risk of synechiae.
- No anesthesia for small procedures, otherwise local or general anesthesia.

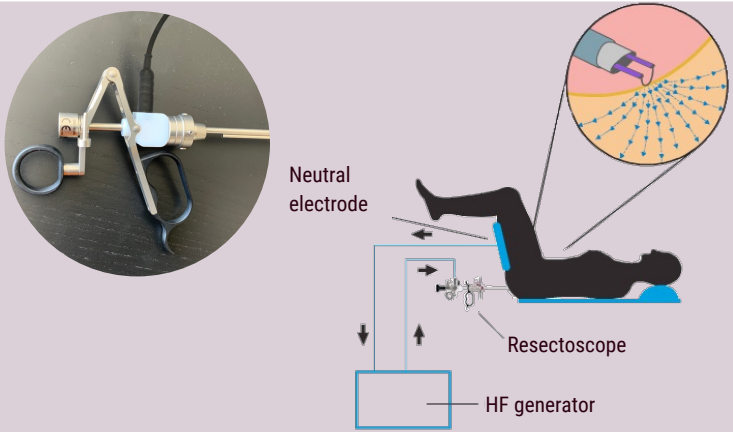
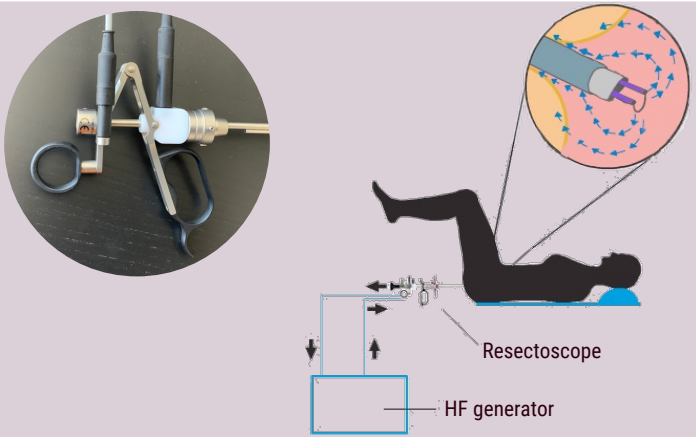


Operative hysteroscopy with energy

- Several types of products exist **with energy**:
  - Resectoscopes: handle allowing the movement of a cutting wire at the end of the instrument, also called resection electrode.
  - Electrodes: long independent instrument (semi-flexible or rigid) that is inserted directly into an operating channel.
- Total or locoregional anesthesia.



Difference between monopolar and bipolar energy

MONOPOLAR	BIPOLAR
The current flows from the active to the neutral electrode, passing through the patient	The current flows from one pole to the other of the electrode, without passing through the patient
Irrigation solution: glycocolle, essential for conducting the current but more toxic if absorbed by the patient	Irrigation solution: saline solution with low toxicity
	

Hysteroscopic treatments

Without energy

- IUD (intrauterine device) removal
- Uterine septum ablation
- Removal of trophoblastic retention
- Polypectomy (polyp)
- Myomectomy (fibroid)
- Synechia

With energy

- Uterine septum ablation
- Myomectomy (fibroid)
- Polypectomy (polyp)
- Removal of trophoblastic retention
- Endometrectomy
- Isthmocele ablation
- Synechia

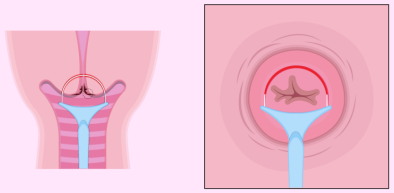
OPERATING PROCEDURES IN COLPOSCOPY

CO2 laser

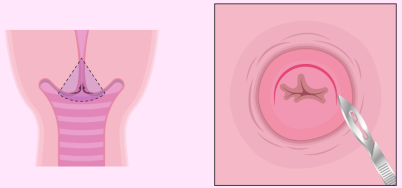
- A LASER is a device that emits infrared light (electromagnetic radiation) amplified by stimulated emission which "burns" the tissues it meets on its way.
- The CO2 LASER is transported in the air on a very narrow beam which allows precision in surface and depth.
- The lesions are visualized with the colposcope and then the LASER beam is directed onto the surfaces to be destroyed.

Conization

- This is the removal of a cone-shaped piece of the cervix, hence the name **conization**.
- The goal is twofold:
  - remove the part with lesions
  - analyze the removed fragment.
- It can be performed under local, locoregional or general anesthesia.
- The most common techniques are conization with **a diathermy loop** (or LEEP, electric scalpel) or with the **electric fine tip** (or SWETZ).
- Conization with a cold scalpel or laser are less commonly used today.



Conization
by thermal loop



Conization by
electric scalpel

LAPAROSCOPY

Definition

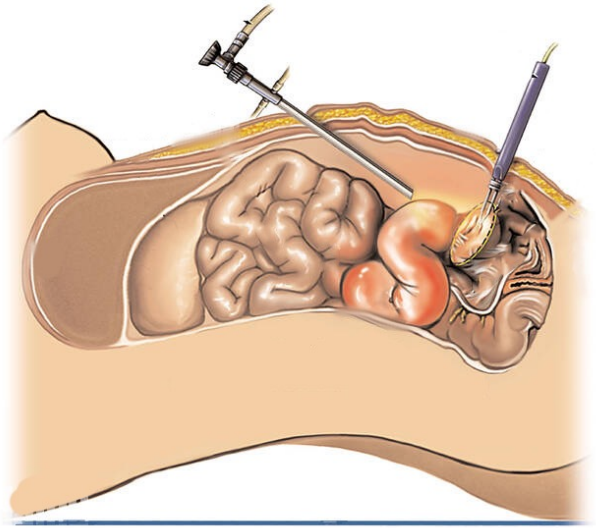
- Laparoscopy is a surgical technique that allows, through one or more small incisions (3 to 10mm) in the abdominal wall, to observe the interior of the abdomen or pelvis and to operate on the organs.
- This procedure is performed to diagnose or treat certain diseases, particularly gynecological (uterus, ovaries, fallopian tubes).

Differences

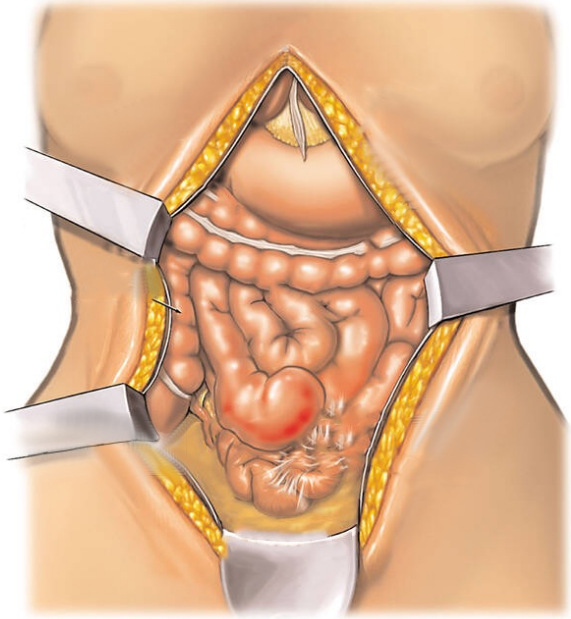
LAPAROSCOPY (or minimally invasive surgery)		OPEN SURGERY	
+	-	+	-
- Incisions of a few centimeters - Minimized surgical trauma - Quick recovery	- 2D or 3D vision - Insertion of the first trocar blind or Open laparoscopy (incise and dissect down to the peritoneum before inserting the insufflator trocar) - No palpation - Reduced mobility	- 3D vision - Possible palpation	- Large incision, large scar - More bleeding during the operation - Risk of infection - Important trauma and long recovery

Vocabulary

Laparoscopy



Open surgery

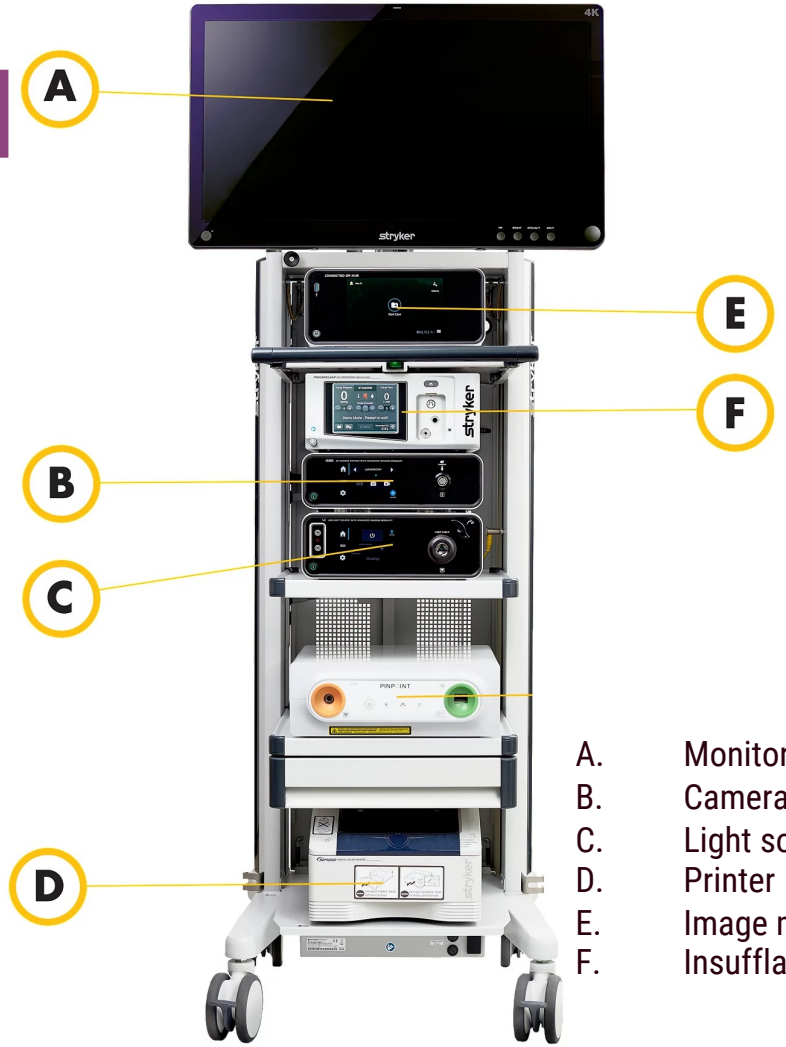


The principle

- **Minimally invasive** surgery in the operating room mainly under general anesthesia.
- Insufflation of carbon dioxide through an incision in the abdominal wall which is raised; creation of a working space called **pneumoperitoneum**.
- A camera connected to a screen is connected to a laparoscope which is introduced into the abdomen through a 5 or 10mm trocar (also called an optical trocar).
- Other incisions are made for the insertion of 2 or 3 trocars (3mm, 5mm or 10-12mm) allowing the insertion of surgical instruments and the removal of surgical parts.

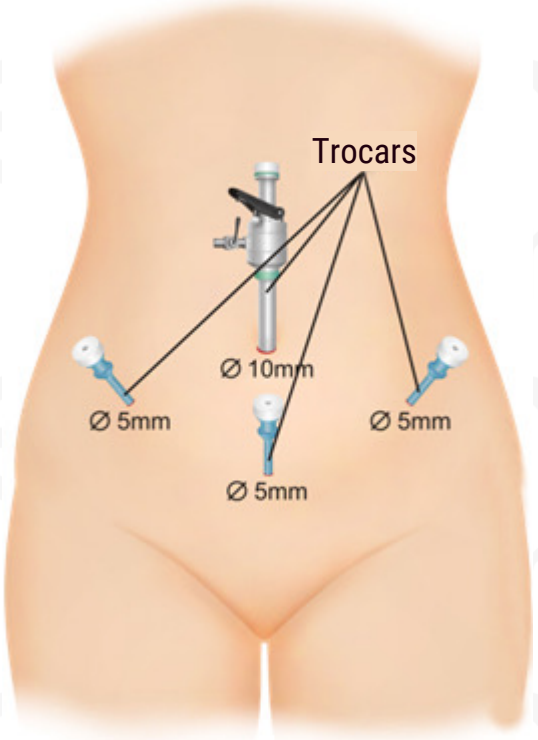
Equipment used

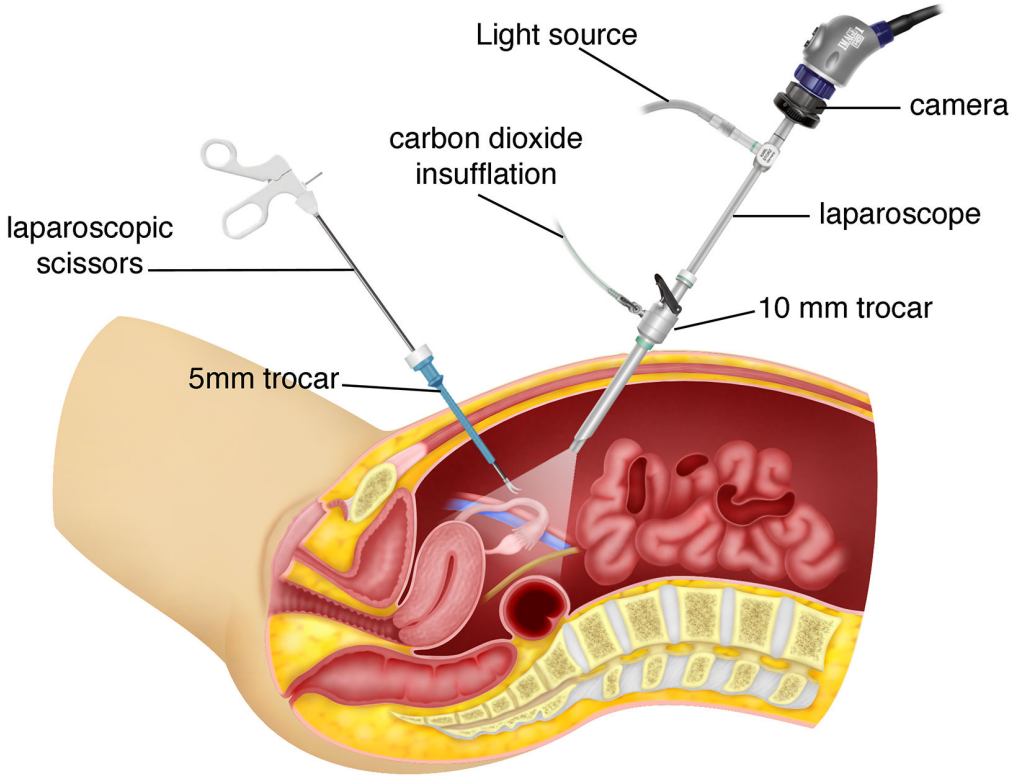
- 1 optical trocar 5 or 10mm and 2 to 3 operating trocars of 3, 5 or 10-12mm
- Surgical instruments (scissors, forceps, electrodes..)
- Laparoscope (endoscope)
- Irrigation/suction system to clean the working area
- Imaging column (see opposite)
- Insufflator with insufflation tubing for CO2 injection and creation of the working area
- Smoke extractor
- …



A. Monitor
B. Camera
C. Light source
D. Printer
E. Image management
F. Insufflator

Illustration





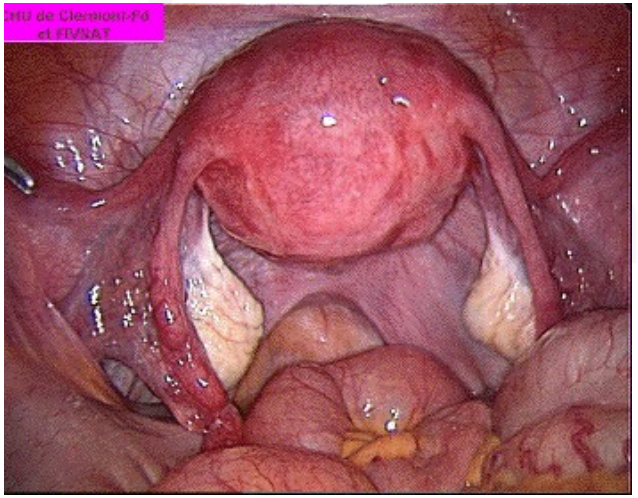
Uterine manipulation

- A uterine manipulator may also be needed during a hysterectomy or other laparoscopic procedures.
- The intra-uterine insert associated with the Pozzi forceps on the cervix will allow the movement of the uterus in order to make the surgical site visible.

Laparoscopic gynecological treatments

- Cystectomy (cyst)
- Infertility surgery with tubal repermeabilization
- Myomectomy (fibroid)
- Tubal ligation
- Hysterectomy (removal of the uterus)
- Salpingectomy
- Salpingo-oophorectomy or adnexectomy (removal of tubes and ovaries)
- Trachelectomy (removal of the cervix) in case of very localized cancer
- Removal of endometriotic lesions (endometriosis)
- Cure of prolapse
- Treatment of cancer of the cervix or uterine body

Laparoscopic view



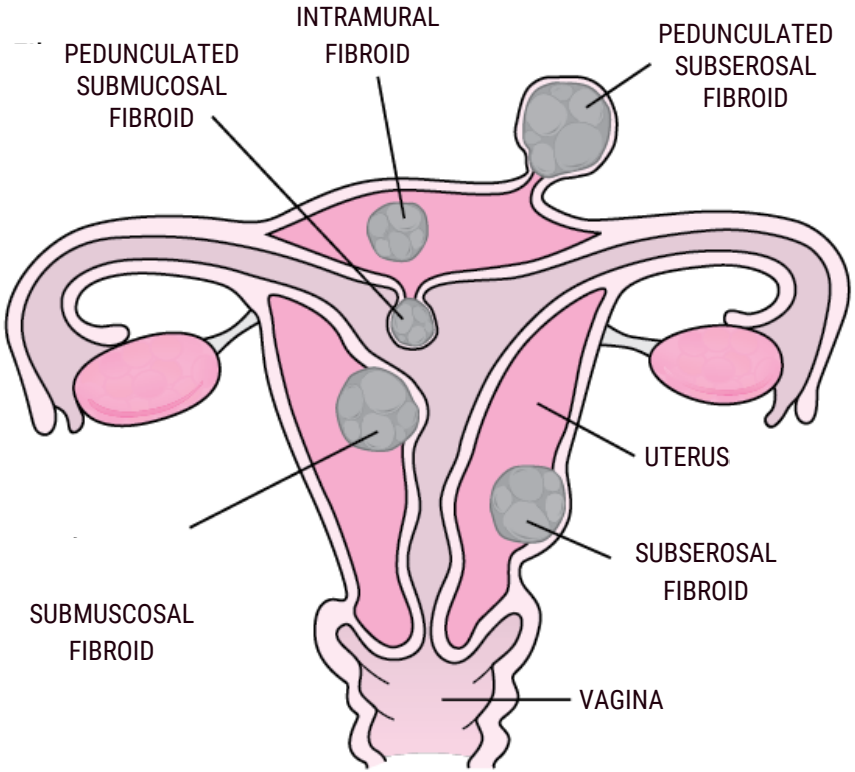
delmont
imaging

Different uterine pathologies

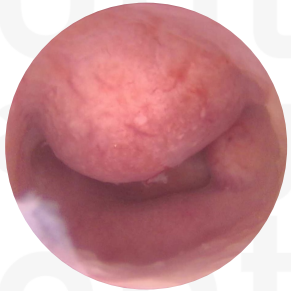
UTERINE FIBROID

Definition

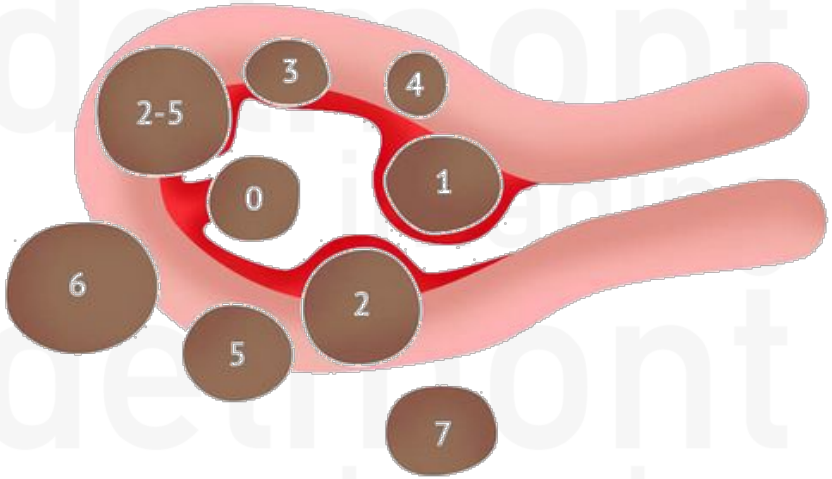
- A **uterine fibroid** is a benign tumor made up of muscle and fibrous tissue in the uterus.
- Fibroids are also called leiomyomas or myomas.
- They can be located in different places in the uterus.



Submucosal fibroid



FIGO classification



Submucosal	0	Pedunculated intracavitary
	1	< 50% intramural
	2	≥ 50% intramural
Intramural or interstitial	3	Contacts endometrium ; 100% intramural
	4	Intramural
Subserosal	5	Subserosal ≥ 50% intramural
	6	Subserosal < 50% intramural
	7	Subserosal pedunculated
Others	8	Other (specify e.g., cervical, parasitic)
Hybrid	2-5	Submucosal and subserosal, each with less than half the diameter in the endometrial and peritoneal cavities, respectively.

Symptoms

Fibroids can cause:

- pain
- abnormal vaginal bleeding (metrorrhagia)
- heavy and/or very long periods (menorrhagia)
- constipation
- infertility and/or repeated miscarriage
- more frequent urination or urges to urinate.

Diagnosis

Ultrasound image

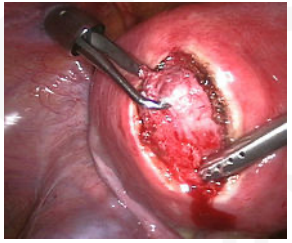
More generally, imaging tests will be performed:

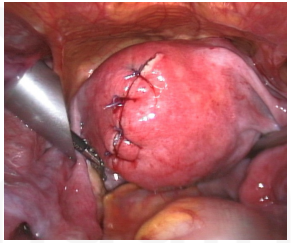
- Endovaginal ultrasound
- Hysterosonography
- MRI

If bleeding occurs outside of the menstrual period, to rule out uterine cancer, the following may be performed:

- Cervico-uterine smear
- Endometrial biopsy

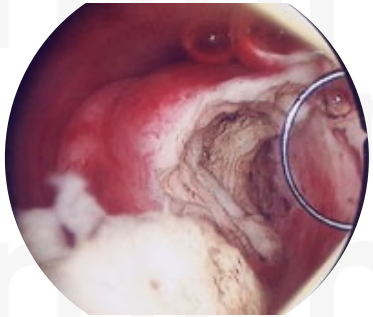
Treatment





Laparoscopic myomectomy

- Medication to reduce symptoms.
- Myomectomy (removal of the fibroid) by open surgery, laparoscopy, hysteroscopy or robot-assisted.
- Hysterectomy (removal of the uterus) by open surgery, laparoscopy, vaginal hysterectomy, V-Notes (Vaginal Natural Orifices Tansluminal Endoscopic Surgery) or robot.



Hysteroscopic resection

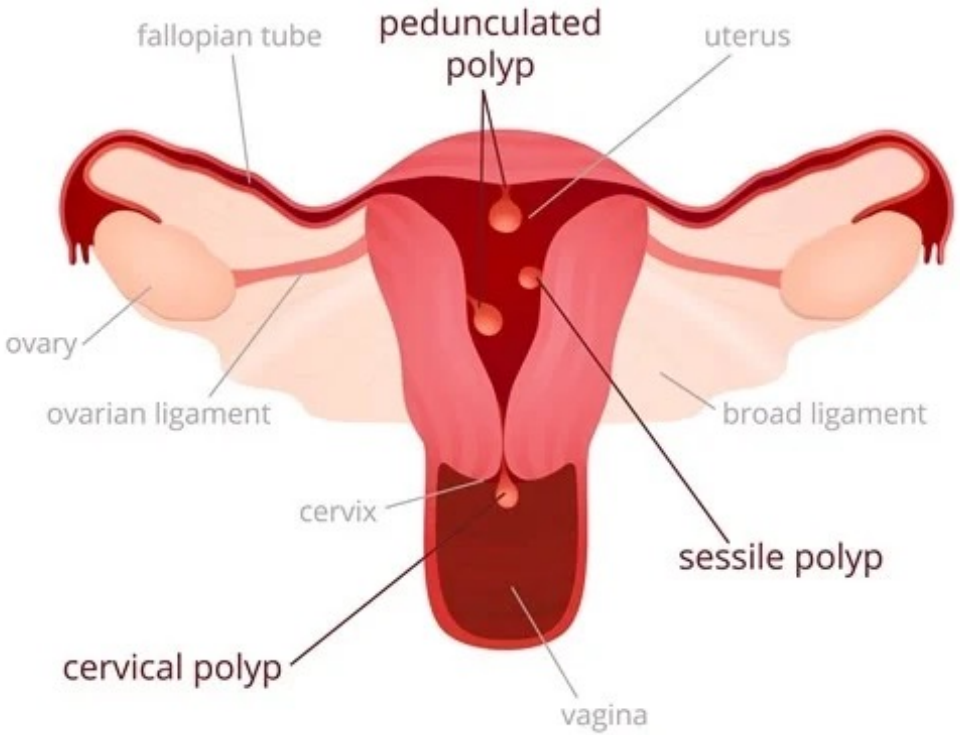
→ The choice of treatment depends on several factors such as the location, size or nature of the pathology but also the age of the patient, her history, her situation and especially her desire to maintain the possibility of procreation.

UTERINE POLYP

Definition

- A **polyp** is a mostly benign tumor that develops in the endometrium and more rarely in the endocervix.
- Polyps can be isolated or multiple.
- They can measure a few centimeters or occupy the entire uterine cavity (6cm).

Pedunculated: attached by a thin stalk
Sessile: attached by a large base
Cervical: on the cervix



Symptoms

Polyps can cause:

- bleeding outside of the period (metrorrhagia)
- heavy/long periods (menorrhagia)
- heavy genital discharge (leucorrhoea)
- pelvic pain
- infertility

Diagnosis

An ultrasound, and a diagnostic hysteroscopy to be sure, will allow to visualize the inside of the uterine cavity to see the polyp(s), their type, their position, etc.

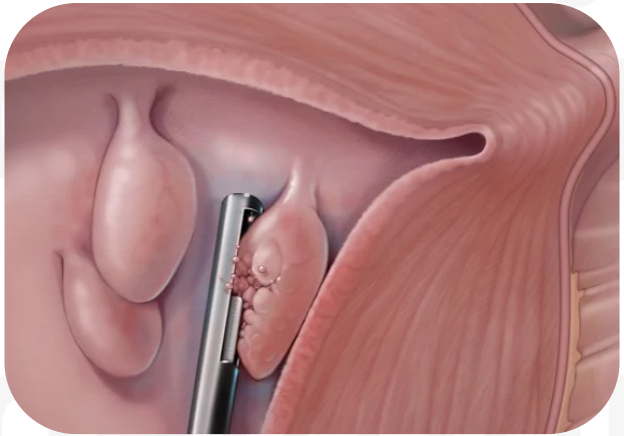
- Intracavitary polyp (in the uterine cavity)
- Endocervical polyp (in the cervix)
- Cervical polyp (inserted into the endometrium or cervical canal and exiting at the external os of the cervix)

Treatment

- Hormonal treatment (progestins) for micropolyps.
- Polypectomy by operative hysteroscopy in the consulting room, on an outpatient basis (paracervical block or without anesthesia) or in the operating room.
- Laboratory analysis of the polyp to confirm its benignity.
- Endometrial ablation (removal of the entire uterine lining) by hysteroscopy for postmenopausal women or women who no longer wish to have children and who have numerous polyps.

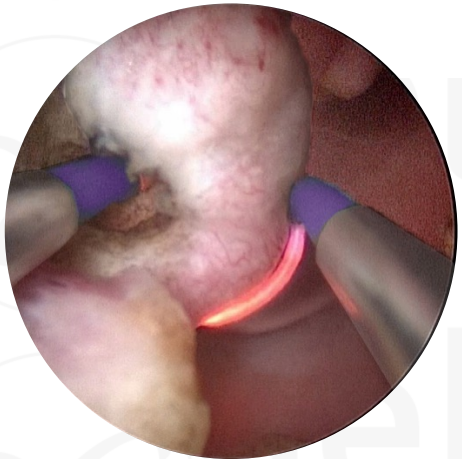
Polypectomy by operative hysteroscopy

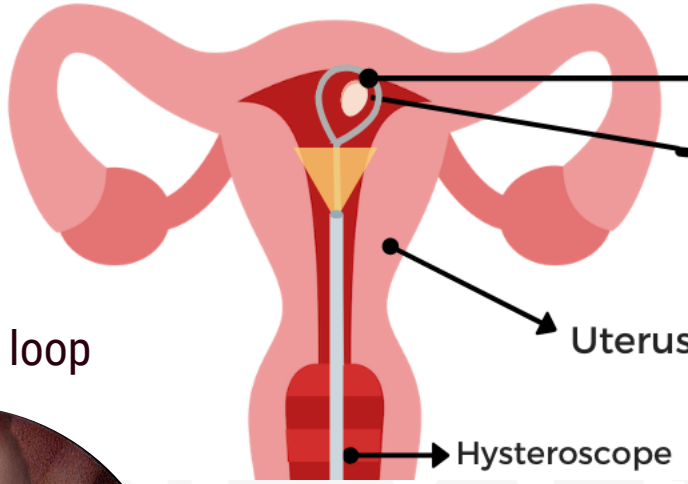
Uterine morcellator



Cold instruments

Resection loop





Lasso

How to differentiate fibroid and polyp?

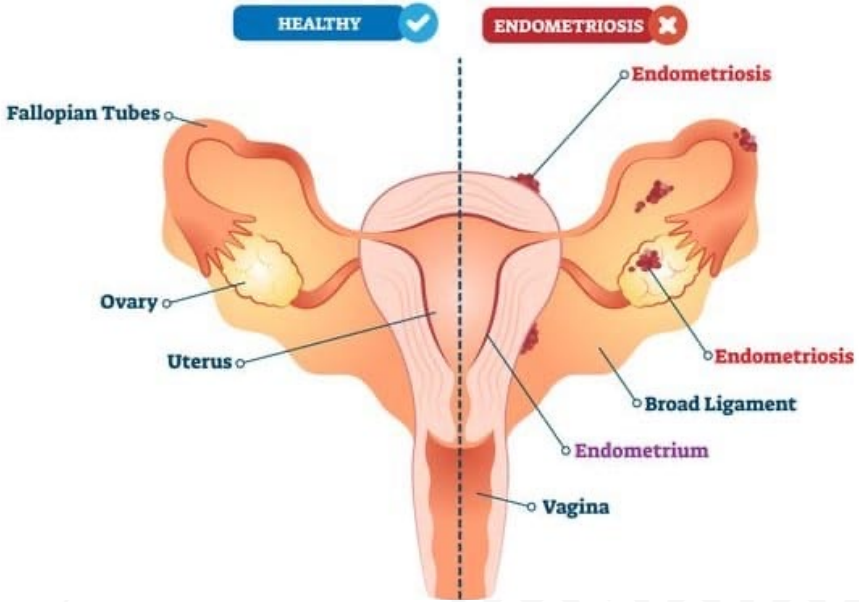
- The common point: it is a benign tumor.

FIBROID	POLYP
Possible deformation of the uterus	Impossible deformation of the uterus
Generally larger size	Maximum size of 6cm
Composed of myometrial muscle tissue	Composed of endometrial tissue
Impossible total resorption	Possible resorption

ENDOMETRIOSIS

Definition

- Endometriosis is the abnormal presence of endometrial cells outside the uterine cavity.
- This location prevents the normal elimination of the tissue at each menstruation.
- Endometriosis generally affects one or more organs close to the uterus: the fallopian tubes, the ovaries, the peritoneum (tissue covering the abdominal cavity), the intestine and the diaphragm.



Symptoms

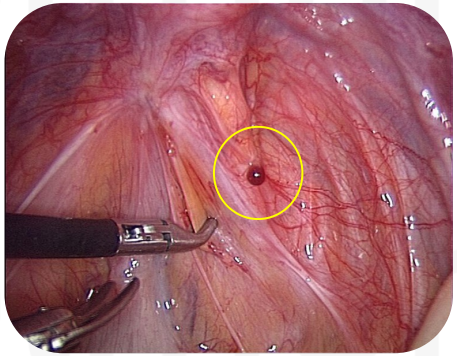
The disorders and pain associated with endometriosis are:

- painful periods and bleeding (dysmenorrhea)
- digestive problems (diarrhea or constipation)
- urinary problems (frequent urination, burning, blood in the urine)
- chronic fatigue
- pelvic and back pain
- pain during sexual intercourse (dyspareunia)
- infertility

Diagnosis

- A clinical examination (gynecological) with questioning of the patient to guide the diagnosis.
- A pelvic ultrasound or MRI that may include a vaginal touch, in order to determine the nature or anatomy of the lesions and their effects.
- Today, due to a lack of training of doctors, the diagnosis of endometriosis takes an average of **7 years**!

Treatment



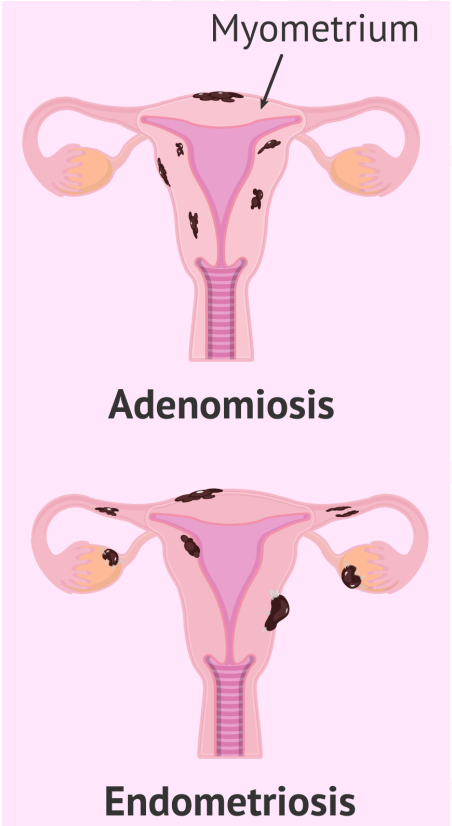
Today, there are no definitive treatments for endometriosis. Medical recommendations are often updated because it is a recently recognized disease.

We therefore act on the symptoms:

- Hormonal contraception (contraceptive pill, implant, hormonal IUD): suppress or reduce dysmenorrhea.
- Treatment with progestins or injections (artificial menopause) to put the ovaries to rest.
- Surgery (most often by laparoscopy) if medical treatment is insufficient or if the patient wishes to become pregnant: removal of endometriotic lesions.
- Medically assisted procreation (MAP) in case of desire for pregnancy for more than one year.

Clinical case: adenomyosis

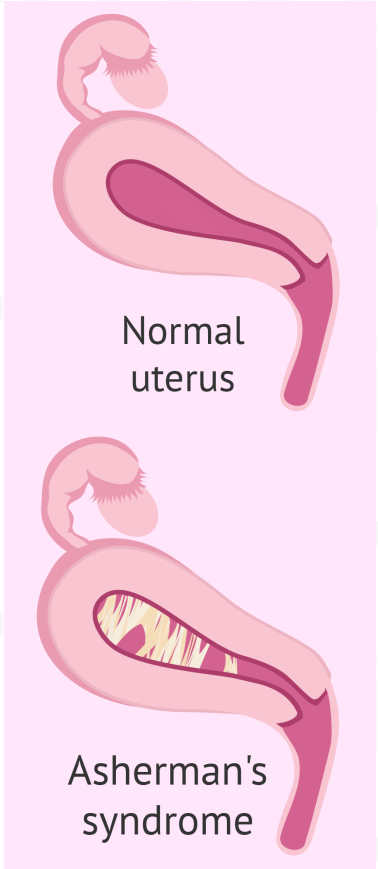
- Adenomyosis: "internal endometriosis" of the uterus. Anomaly of the junction zone between the endometrium and the myometrium.
- There is no proven link between adenomyosis and endometriosis.
- Medical or surgical treatment: conservative (targeted destruction) or radical (hysterectomy) depending on the patient's situation.



SYNECHIA

Definition

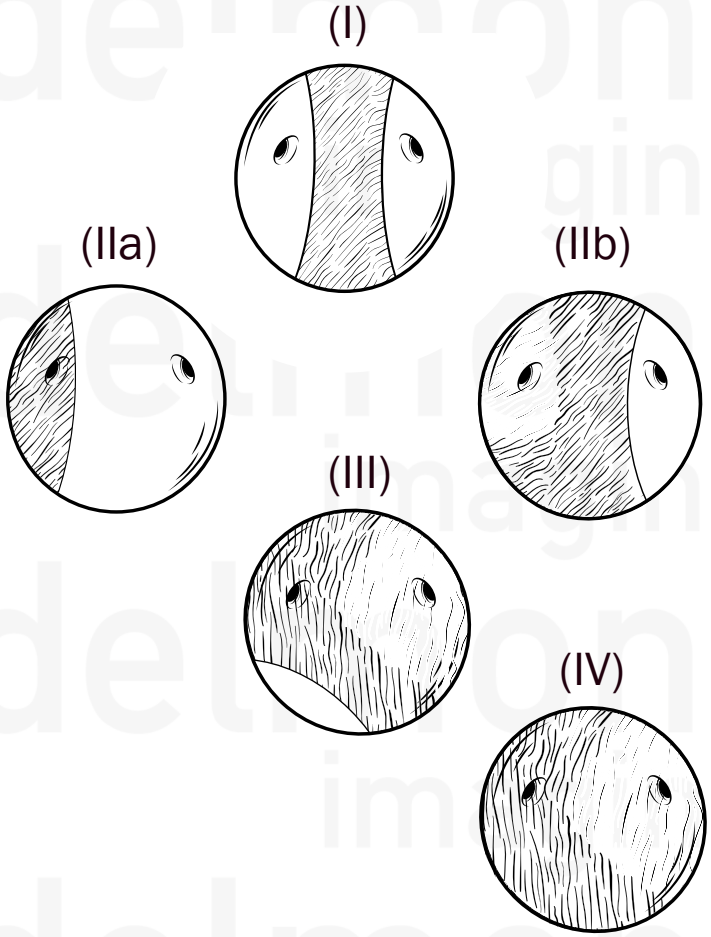
- Uterine synechiae or Asherman's syndrome correspond to intrauterine adhesions.
- They can be single or multiple; they can be located at the cervix (intra-cervical synechia), at the isthmus (isthmic synechia), at the uterine body (corporal synechia) or at the uterine horns.
- They can be partial or total, occupying respectively a part or the whole of the uterine cavity.



Classification

Synechia can be classified according to their importance into 5 grades:

- Grade I : Thin adhesions with both ostia visible
- Grade IIa : Unique dense adhesion blocking one tubal orifice
- Grade IIb : Multiple dense adhesions
- Grade III : Dense and extensive adhesions with partial obliteration of the cavity
- Grade IV : Extensive endometrial scarring and fibrosis



Symptoms

Most synechiae are asymptomatic. They may be discovered during a diagnostic hysteroscopy or other imaging.

If there are symptoms, it could be:

- infertility
- recurrent early miscarriage
- oligomenorrhea or amenorrhea (reduced or no menstrual periods)
- placental pathologies

A synechia is formed in reaction to a trauma of the uterine mucosa. In the absence of treatment, this loose simple mucosal adhesion becomes fibrous, resistant, more or less thick, then muscular.

Diagnosis

- Pelvic ultrasound performed as a first-line procedure.
- Hysterosalpingography for tubal patency testing as part of a fertility assessment.
- Diagnostic hysteroscopy during a fertility assessment to establish a diagnosis by direct visualization and thus define its position, its extent and the quality of the remaining endometrium.

Treatment

- Treatment occurs if it interferes with the reproductive process or if it is symptomatic.

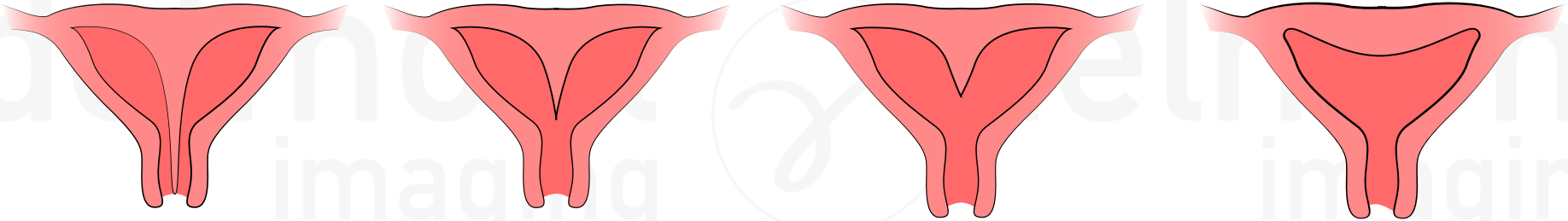
→ Synechia cure by operative hysteroscopy, using an instrument with or without electric current according to the operator's preference.

- For grade III and IV synechiae, the cure must be carried out under ultrasound control in order to guide the surgeon and to avoid uterine perforation. Several operating time are sometimes necessary.

UTERINE SEPTUM

Definition

- A uterine septum is a uterine malformation (*cf.* Uterine malformation, *U2*) dividing the cavity in two by its middle.
- Composed of fibrous tissue and/or muscular, the septum can be:



Symptoms and diagnosis

Uterine malformations are mostly asymptomatic. They will be discovered after an imaging examination for:

- infertility
- recurrent miscarriage

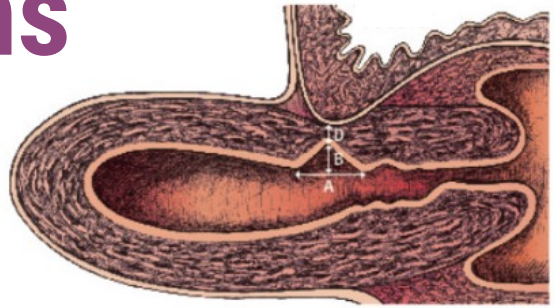
3D pelvic ultrasound is the reference examination to establish this diagnosis.

Treatment

- The treatment consists of making an incision through the middle along the uterine septum. The cut tissue retracts and does not remain inside the cavity.
- It is treated by operative hysteroscopy with cold instrument (scissors) or resection with a straight or knife electrode.
- The choice depends on the operator's preference and experience.

ISTHMOCELE

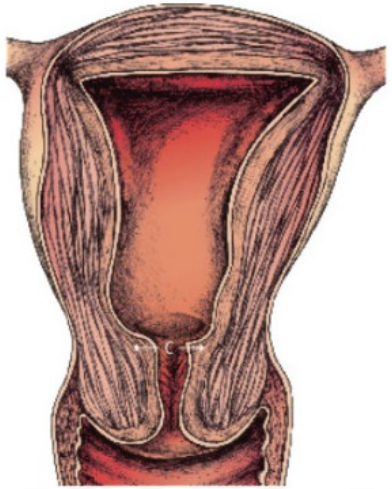
Definition and symptoms



The isthmocele is a dehiscence along the uterine scar of caesarean section.

Most of the time, they are asymptomatic. However, there may be:

- An accumulation of blood in the scar pouch that can cause abnormal bleeding (metrorrhagia)
- pelvic pain
- secondary infertility
- ectopic pregnancy in the scar



Diagnosis

Isthmocele is diagnosed by imaging examinations:

- Pelvic echosonography essential for diagnosis and to choose the right therapeutic conduct
- MRI
- Hysterosalpingography
- Diagnostic hysteroscopy to visualize the scar and the pouch

Treatment

The isthmocele is treated only if it is symptomatic or if it interferes with fertility:

- If there is no need to reinforce the scar, treatment by **operative hysteroscopy**: resection of the edges then bringing them together by creating a synechia by electrocoagulation of the pouch.
- Otherwise, treatment by **laparoscopy or vaginal path (V-Notes)**. Resection of the fibrous zone and suture.

TROPHOBLASTIC RETENTION

Definition

Trophoblastic retention is the presence of abnormal tissue in the uterus from either:

- A remnant of the placenta after childbirth
- Incomplete spontaneous miscarriage
- Incomplete suction for an abortion
- Incomplete evacuation after a medically terminated pregnancy

The tissue has not completely been evacuated and adheres to the inner wall of the uterus.

Symptoms et diagnosis

Trophoblastic retention causes:

- abnormal bleeding (metrorrhagia)
- pelvic pain

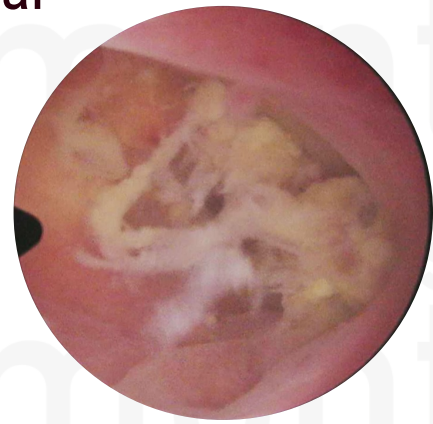
It is diagnosed by:

- a pelvic ultrasound in first intention.
- a diagnostic hysteroscopy to describe its size, type, vascularization and the conditions for its treatment.

Treatment

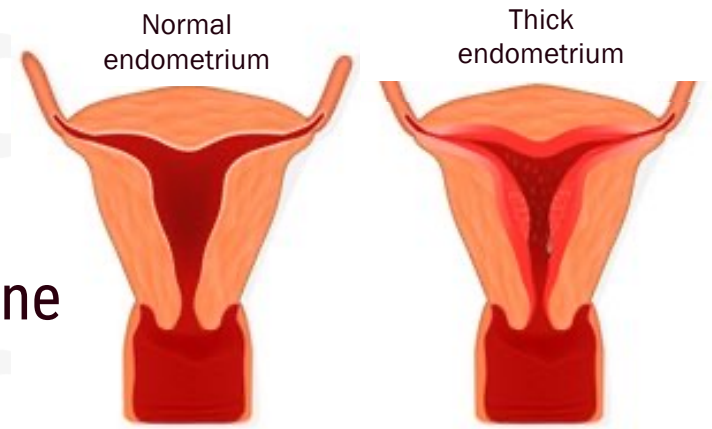
- Retention is removed by morcellation or with a grasping forceps by operative hysteroscopy.
- It can be removed by resection in the case where the tissue is too adherent to the mucosa.
- The use of cold instruments is preferable to monopolar

or bipolar currents because it reduces the risk of postoperative synechia.



UTERINE MUCOSA HYPERTROPHY

Definition



- This is an abnormal thickening of the uterine lining.
- It is often caused by an imbalance of hormones (estrogen and progesterone) but can also be precancerous. The multiplication of cells, if cancerous, can create a carcinoma and eventually develop into endometrial cancer.
- It can take two forms: polypoid (undulating appearance of the endometrial surface) or simple (smooth appearance).

Symptoms

Mucosal hypertrophy can cause:

- Abnormal bleeding (metrorrhagia)
- Long/abundant periods (menorrhagia)
- Pelvic pain
- Vaginal discharge (leucorrhoea)
- Infertility

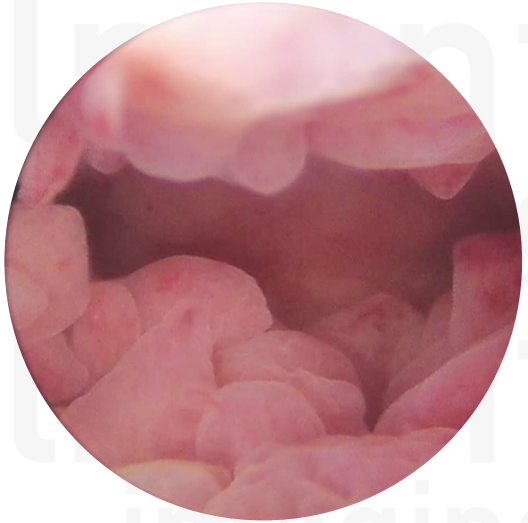
Diagnosis

Hypertrophy is detected by:

- Visualization by **hysterosonography** in first intention and then by hysteroscopy for confirmation.
- **Histopathological analysis** of the endometrium to define the type of hyperplasia.
- **Directed biopsy** by diagnostic hysteroscopy (can also be performed "blind" using the Cornier pipelle but not recommended).

Treatment

- Hormonal: a progestin-based treatment may be sufficient to correct the hyperplasia.
- Surgical (for women who no longer wish to procreate):
  - Endometrial ablation by operative hysteroscopy (endometrium resection using energy)
  - Endometrial ablation by vaporization (emission of radio frequency waves)
  - Thermoablation by balloon
  - Hysterectomy if cancer risk and postmenopausal women



Difference between hypertrophy and hyperplasia?

A hyperplasia is a hypertrophy, but a hypertrophy is not necessarily a hyperplasia.

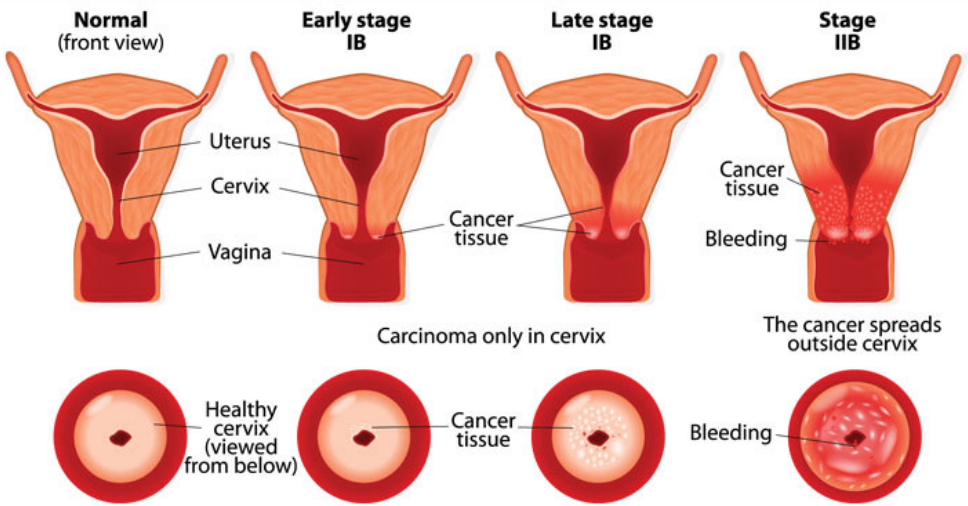
HYPERTROPHY	HYPERPLASIA
Abnormal increase in volume of an organ with or without anatomical alteration	Abnormal development of a tissue, an organ, by multiplication of its cells
Volume increase of the endometrial mucosa (macro term).	Increase in the number of endometrial glands, by increasing the number of glandular cells.
Generalized volume increase.	Local or general increase.

CERVICAL CANCER

Definition

Cervical cancer is a malignant tumor that develops from the cervix mucosa. The main risk factor is the prolonged presence of human papillomavirus (HPV) in the cervix.

HPV is the most common STI (sexually transmitted infection) in the world and is very persistent (10 to 15 years). It usually heals spontaneously, but in 10% of cases, the virus persists in the mucous membrane and can cause precancerous lesions, which can develop into cancer.



Symptoms

Cervical cancer may be asymptomatic in the early stages of the disease. Symptoms appear once the tumor has grown into nearby tissues and organs.

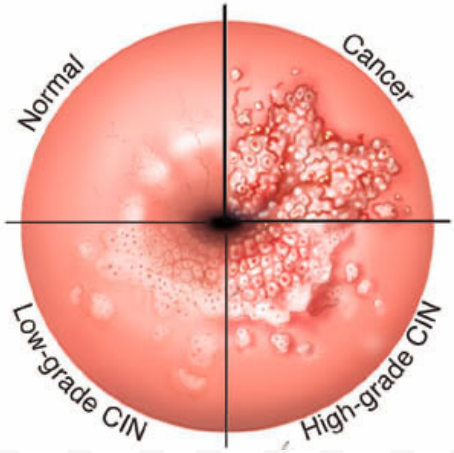
Symptoms of cervical cancer include:

- urinary disorders
- constipation
- pelvic and back pain
- swelling of the legs, often in one leg only
- abnormal bleeding (metrorrhagia)
- heavy vaginal discharge (leukorrhea)
- foul-smelling vaginal discharge
- long/abundant periods (menorrhagia)
- painful intercourse (dyspareunia)

Diagnosis

- The diagnostic process begins with an abnormal HPV or Pap test result.
- A colposcopy to examine the vulva, vagina and cervix is then performed. A biopsy may be done if the doctor sees an abnormal area on the cervix.
- There are several types of biopsy:
  - Colposcopic biopsy (with biopsy forceps)
  - Endocervical curettage (with curette)

Treatment



- The appropriate treatment will depend on the stage of the cervical cancer, the patient's age, her desire to become pregnant, etc.
- If the extent of the disease is small:
  - conization and surveillance
  - surgery: hysterectomy or trachelectomy (removal of the cervix) with lymph node dissection.
- If the disease is extensive: surgery, radiosurgery, radiotherapy, chemoradiotherapy, chemotherapy...

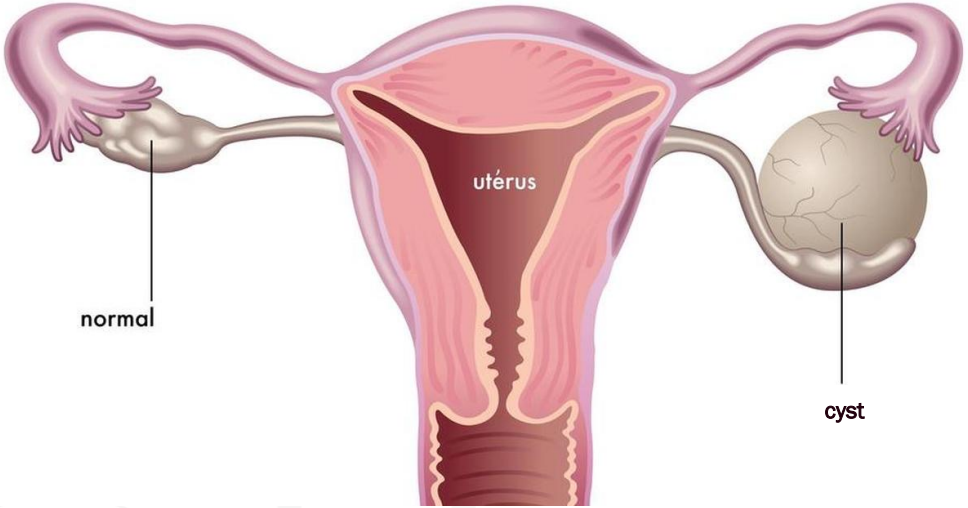
OVARIAN CYST

Definition

An ovarian cyst is a fluid-containing swelling on one or both ovaries. It is most often benign, but its presence is abnormal.

Ovarian cysts are **functional** in 90% of cases: due to hormonal imbalance, they usually regress spontaneously.

If it is **organic**, it develops from ovarian tissue and does not disappear spontaneously. They are generally benign but are removed to avoid any complications.



Distinctive characteristics

FUNCTIONAL OVARIAN CYSTS	ORGANIC OVARIAN CYSTS
Follicular: unusual development of a follicle.	**Serous**: contain fluid with a thin wall.
Luteal: increase in the volume of the corpus luteum.	**Mucoid or mucinous**: several cavities separated by partitions, contain a dense liquid with a thicker wall.
	Dermoid: may contain fat and calcified parts.
	Endometrioid: thick walls with blood vessels, filled with fluid and blood.

Symptoms

Ovarian cysts often cause no symptoms when they are small. Otherwise, it can sometimes cause:

- nausea, vomiting
- pain during sex (dyspareunia)
- feeling of bloating or abdominal fullness
- feeling of heaviness in the pelvis
- abdominal and pelvic pain
- irregular menstrual discharge (metrorrhagia)
- urinary disorders
- constipation
- infertility

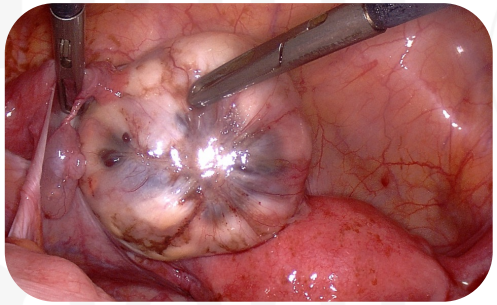
Diagnosis

- The examination to diagnose an ovarian cyst is **ultrasound**.
- It is performed abdominally and, most often, endovaginally.
- The exam determines the nature of the cyst. If it is organic, a blood test may be necessary (blood determination of tumor markers).

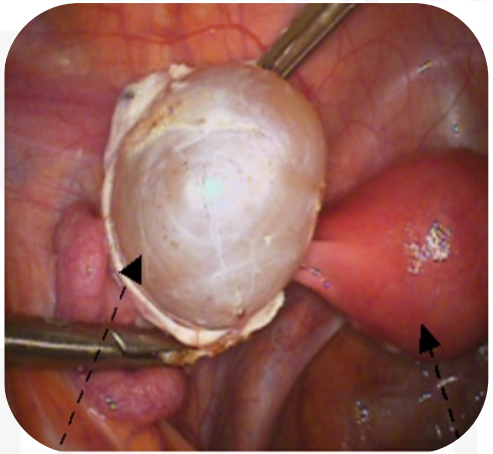
Treatment

- Cystectomy: opening of the ovary and dissection of the cyst by laparoscopy. Conservation of the ovary for pregnancy.
- Salpingo-oophorectomy or adnexectomy: removal of the mass and, for safety, of the ovaries and fallopian tubes (on one or both sides) only if the patient is menopausal.

Endometriotic cyst



Left ovarian cyst



PELVIC INFECTION

Definition

- Every part of the female genitalia can be affected by an infection.
- The most common ones are:
  - Endometritis: infection of the endometrium
  - Cervicitis: infection of the cervix
  - Salpingitis: infection of the fallopian tubes
- An infection can occur after childbirth, abortion, IUD insertion or removal, or an STI.

Symptoms

Infections can present more or less pronounced symptoms depending on their progress:

- Lower abdominal or pelvic pain
- Abnormal/smelly vaginal discharge
- Fever
- Pain during intercourse (dyspareunia)
- Irregular menstrual bleeding (metrorrhagia)

Diagnosis and treatment

- When symptoms are unnoticed, the infection is discovered during a routine examination.
- For more information, additional tests may be done: blood tests, screening, ultrasound, biopsy, visualization of pelvic organs by laparoscopy.
- A pelvic infection is treated with antibiotics. The earlier it is diagnosed, the better the treatment. Ultrasound puncture or laparoscopy is sometimes necessary to evacuate the tubo-ovarian abscess.

Thank you for your attention !