MYOMAS and MYOMECTOMY
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LEARNING OBJECTIVES
1. Select the indications of Laparoscopic myomectomy
2. Learn how to avoid the bleeding of the uterine incision
3. Learn the principles of myomectomy suturing

A MYOMECTOMY IS AN INJURY FOR THE UTERUS, SO WE HAVE TO LIMIT THE TRAUMA USING AN EXCELLENT TECHNIQUE.

HYSTEROSCOPY:
NO MYOMETRIUM INCISION

LAPAROSCOPY,
ATRAUMATIC INCISION,
GOOD MYOMECTOMY SUTURING
Before any operation, it is necessary to precise:

1) the right diagnosis  
   (avoid the classical diagnostic laparoscopy) and  
2) the right access  
   (laparoscopy, hysteroscopy, laparotomy, vaginal access)

- Symptoms
- Clinical examination: uterine size/mobility
- Biology: anaemia ?
- Imaging: Echo-Doppler or RMI

**ECHO-DOPPLER or RMI**

Myomas:  
- number, size, type, situation,  
- vascularization from which arteries ?  
- aspect of necrobiosis

Adenomyosis associated ?
Suspicion of sarcoma ? Total incidence of sarcoma :

Among women operated for myomas sarcoma is noted on 0.23%.

**When performing conservative surgery ?**

- Young women < 45 years
- Desire of pregnancy
- Women who do not want a hysterectomy
- When myomectomy easier than a hysterectomy : unique pedunculated myoma (laparoscopy), submucous myoma (hysteroscopy)
Which conservative surgery?

- In young women or in women desiring a pregnancy, the myomectomy is the best whatever the number, the size.
- If no desire of pregnancy, the occlusions of all the uterine arteries by laparoscopy may be performed (round ligaments, uterine arteries, infundibulopelvic ligaments, +/- hysteroscopic resection of myomas).

Uterine embolization?

Which access?

- The best:
  - hysteroscopy for submucous myomas
  - laparoscopy for subserous and interstitial myomas
- The necessity if contraindication to endoscopy:
  - laparotomy
- Unfrequently:
  - vaginal access (for posterior myomas)

Follow the guidelines (for security):
the indications of Laparoscopic Myomectomy are:

1) Solitary myoma with size ≤ 8-10 cm
   ≤ 3/4 myomas when D1 + D2 + D3 ... ≤ 14 cm
2) But it depends of the uterine mobility, the morphology of the woman (pelvic size)

Adenomyosis and myomectomy

confirmation with US or MRI:
1. Associated adenomyosis of the myometrium around the myoma
2. Adenomyoma and not a myoma
= relative contra-indications to laparoscopy because no cleavage plane is very often observed

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Haemorrhage and myomectomy:

How to avoid the bleeding?

1) Preoperative use of GnRh but myomectomy may be technically more difficult: the cleavage plane is not easily identified making the enucleation of the myoma more hemorrhagic


myoma to soft, difficult to grip with a forceps

2) During operation
Evaluate the vessels of the myoma, appreciate which kind of uterine incision to do

Appreciate the rapidity of the hysterotomy and of the closure you will do (instruments, bipolar, monopolar, aspiration and washing, sutures ready)

Discuss pre hysterotomy uterine arteries occlusion

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Uterine artery occlusion

- Unilateral occlusion if the biggest myoma is lateral:
  - right myoma = right artery ...

- Bilateral occlusion if the myoma is vascularized by both arteries

Operative technique of laparoscopic myomectomy

1) Uterine canulation for exposure: posterior myoma = anteversion of the uterus

2) Hysterotomy should be made as close to the midline as possible. Vertical incision can eliminate the need to incise vascular areas, and avoid the injury of the interstitial portion of the fallopian tube. Incise until the capsula using monopolar needle

3) Identify the plane between the myoma and the myometrium by dissecting with the scissors and the monopolar needle

4) Hemostasis is achieved once the myoma is removed using bipolar coagulation
Operative technique of laparoscopic myomectomy

5) The myoma bed is closed in layers of interrupted absorbable suture material. Identify the plane between the myoma and the myometrium by dissecting with the scissors and the monopolar needle.

6) Hemostasis is achieved once the myoma is removed using bipolar coagulation. The absence of bleeding after the enucleation makes the suture of the hysterotomy easier. The edges of the incision are well seen. The target of the curved needle is more precise. The better conditions offers the possibility of performing two layers when it is needed.

The technique of closure of the uterus:

When the myoma is subserous and the bed of the incision is not deep, the closure is mandatory but only one layer is needed. May be performed:
- Separate single sutures of absorbable suture material: Vicryl (0, or 00) with always good reapproximation of the edges.
- Separate figure of eight when the bleeding is predominant.
- Running sutures are possible.

The technique of closure of the uterus after interstitial myomectomy:

- The technique must be excellent to avoid bleeding and to decrease the risk of dehiscence during the future pregnancy. The medicolegal implications of the procedure have to be known.
- When the patient is young, with infertility or desire of pregnancy, the technique must be efficient to perform the hemostasis and avoid the bleeding. The solidity of the uterus is not the priority.
The technique of closure of the uterus:

1) When the myoma is interstitial and the bed of the incision is deep, the closure is mandatory. Two layers are needed.
   - May be performed:
     - Separate single sutures of absorbable suture material: Vicryl (0 or 00) with always good reapproximation of the edges.
     - Running sutures are possible

2) Laparoscopic suturing in the vertical zone:
   - The C.H. Koh technique:
     - First layer continuous closure (2.0 PDS)
     - Second layer myometrial suturing using the same suture going back towards the first knot where it is tied
     - Subserous/seromuscular layer (4.0 PDS)

Uterine artery occlusion:

- Incision of the broad ligament
- Visualisation of the umbilical artery
- Dissection under visual control of the ureter
- Visualisation and dissection of the uterine artery close to the ureter and occlusion with a CLIP

The revascularization of the uterus and of the scar is observed in the following hours by the numerous arteries (cervicovaginal, vaginal, utero-ovarian, broad ligament) and their anastomosis...

After uterine artery occlusion, even bilateral, the healing of the hysterotomy is of good quality (postoperative US + Doppler, deliveries)...

In young women desiring pregnancy, unilateral uterine artery occlusion has no consequences, bilateral occlusion has also probably no consequences, but it must be evaluated in long series.