COLLEGE OF MEDICINE
DEPT. OF OBSTETRICS AND GYNECOLOGY

Benign Diseases of the Uterus

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Contents:

1. Congenital Anomalies
2. Uterine Polypi
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4. Uterine Fibroids
5. Endometriosis

I- Congenital Anomalies

- The Complete formation and differentiation of the müllerian ducts depend on completion of 3 phases of development as follows:
- Organogenesis: One or both müllerian ducts may not develop fully, resulting in uterine agenesis or hypoplasia (bilateral) or unicornuate uterus
- Fusion: [lateral fusion] the lower segments of the paired müllerian ducts fuse to form the uterus, cervix, and upper vagina. Failure of fusion results in anomalies such as bicornuate or didelphys uterus.

  [Vertical fusion] : fusion of the ascending sinovaginal bulb with the descending müllerian system forms a normal patent vagina, while incomplete vertical fusion results in an imperforate hymen or septum.
- Septal resorption: After fusion, a central septum is present, is resorbed to form a single uterine cavity and cervix. Failure of resorption is the cause of septate uterus

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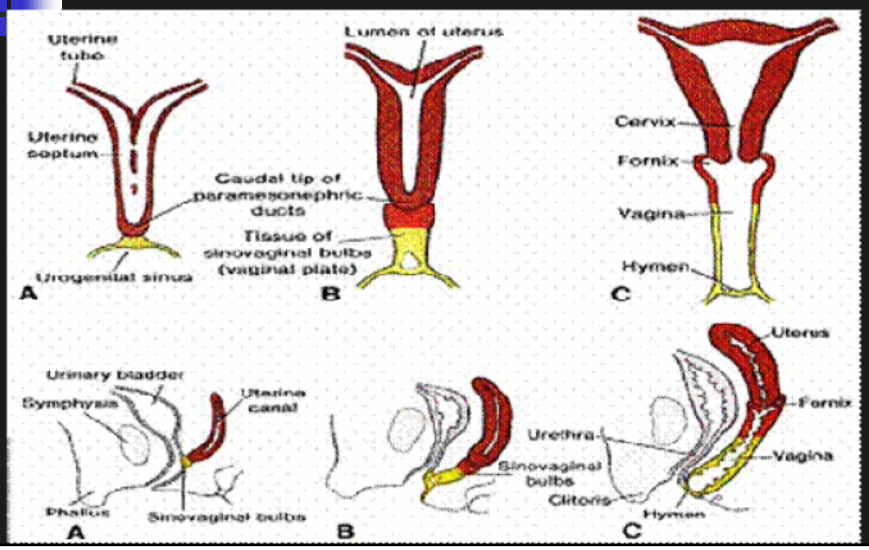
The 3 phases of Mullerian Development



Prevalence of Mullerian Anomalies

- Müllerian duct anomalies are estimated to occur in 0.5-3% of women.
- The true prevalence is unknown because the anomalies usually are discovered in patients presenting with infertility.
- Full-term pregnancies have occurred in patients with forms of bicornuate, septate, or didelphys uteri; therefore, true prevalence may be slightly higher than currently estimated.

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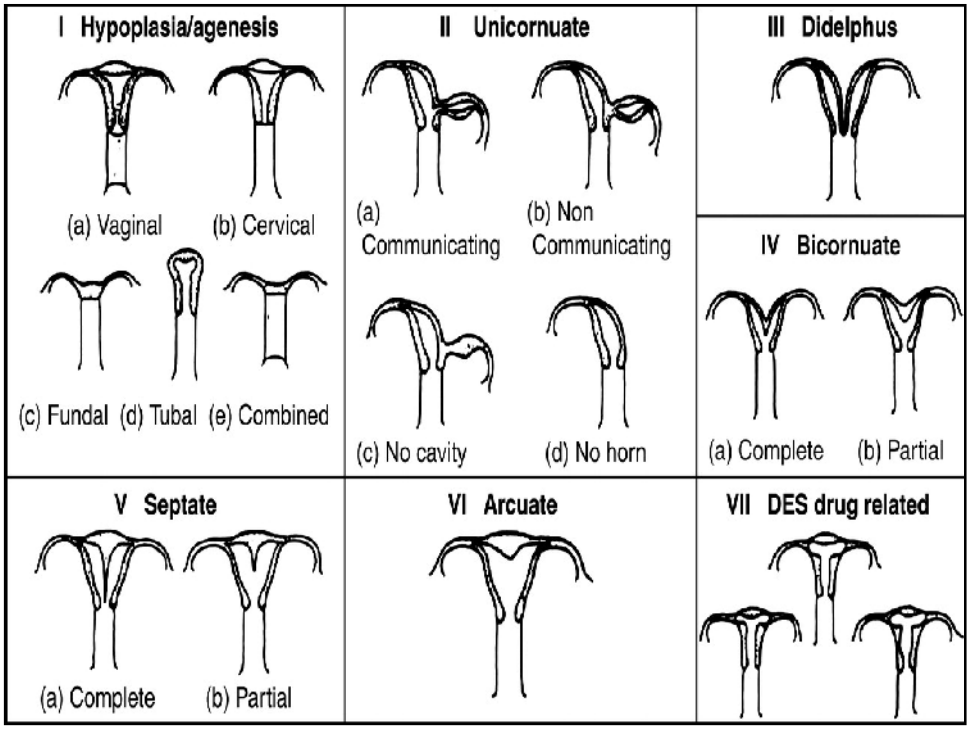

Morbidity of Mullerian Anomalies

- Patients with müllerian duct anomalies have a higher incidence of infertility, repeated first-trimester spontaneous abortions, fetal intrauterine growth retardation, fetal malposition, preterm labor, and retained placenta
- Certain types of the anomaly can increase morbidity, such as in patients with obstructed or partially obstructed müllerian systems who present with hematosalpinx, hematocolpos, retrograde menses, and endometriosis
- In addition, a fairly high association exists between müllerian duct anomalies and renal anomalies such as unilateral agenesis

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Diagnosis of Mullerian Anomalies

- History
- Clinical Examination
- Investigation:

1- HSG

2- 3 D U/S

2- Laparoscopy

4-Hysteroscopy

5- MRI

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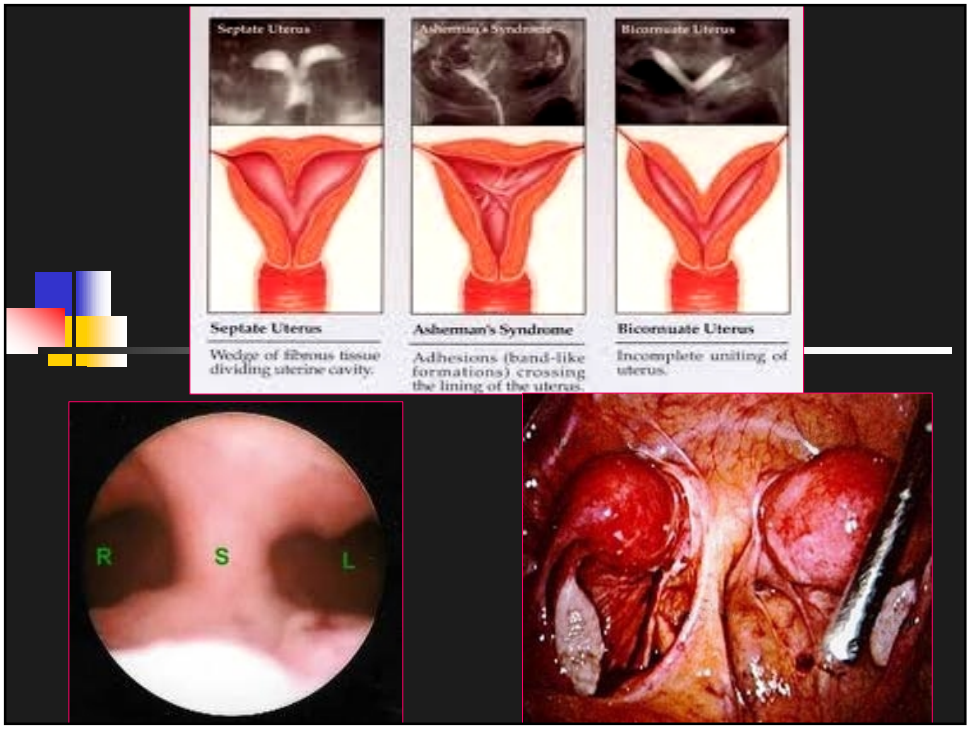
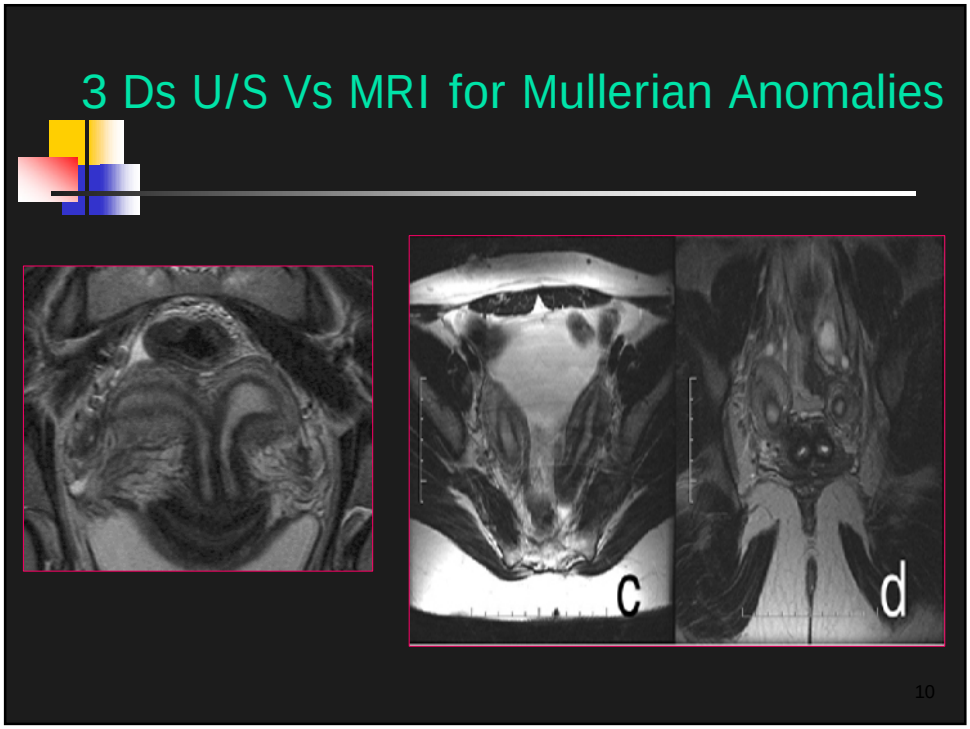

Septate Uterus
Asherman's Syndrome
Bicornuate Uterus
Septate Uterus
Wedge of fibrous tissue dividing uterine cavity.
Asherman's Syndrome
Adhesions (band-like formations) crossing the lining of the uterus.
Bicornuate Uterus
Incomplete uniting of uterus.
R
S
L


3 Ds U/S Vs MRI for Mullerian Anomalies
c
d
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Bicornuate VS Spetate

- The role of reconstructive surgery is difficult to assess esp in infertility
- Consideration should be confined to women with recurrent pregnancy loss

* cerclage

*Hysteroscopic resection of the septum

*? Metroplasty

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II- Endometrial Polypi

- Is the most common endometrial benign tumor at any age especially at premenopausal time
- Presentation:

- Irregular bleeding
- Menorrhagia
- Protrusion through the cervix

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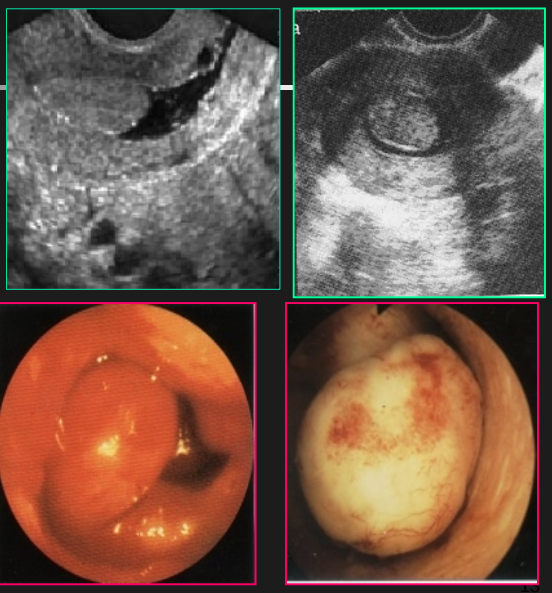
- Diagnosis:
- TVUS show very thick endometrium /Saline sonohysterogram
- Diagnostic hysteroscopy

Treatment

• D&C and using polyp forcepes

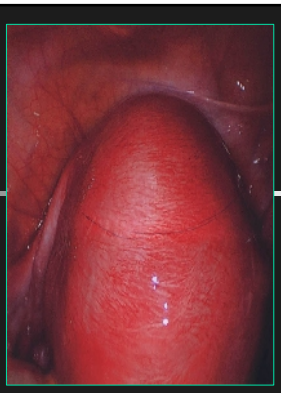
• Or hysteroscopic resection

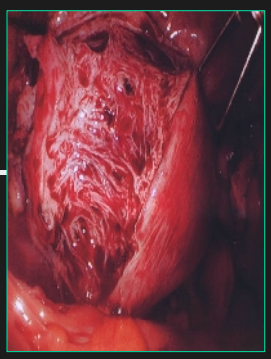


III- Adenomyosis

- Invasion of endometrial glands and stroma into myometrium
- Adenomyosis is thought to affect 1% of women and is typically diagnosed in the 4th and 5th decades of life
- The aetiology is unclear, and until recently a diagnosis was made only after invasive and Hysterectomy

Adenomyosis cont.





The cause of is unknown, it has been associated with any sort of uterine trauma that may break the barrier between the endometrium and myometrium, such as C.S , D& C , Pregnancy ,

Adenomyosis cont.

<u>Symptoms and Signs</u>

Menorrhagia,Dysmenorrhoea

<u>On exam :</u>

Symmetrical a asymmetrical enlarged tender uterus

<u>Diagnosis</u>

Ultrasound , MRI

<u>Treatment:</u>

-Hysterectomy is definitive

- NSAI/ progestins

III- LEIOMYOMATA (FIBROIDS)

Epidemiology

- Diagnosed in approximately 40-50% of reproductive age women >35 years
- More common, larger, and occur at earlier age in black women
- Most common indication for major surgery in females
- Minimal malignant potential (1:1000)
- Tend to regress after menopause

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Pathogenesis

• arise from smooth muscle (Estrogen stimulates monoclonal- proliferation starts from a single cell) and Progesterone inhibits apoptosisis most responsible for fibroid growth.

Degenerative changes(if tumour outgrows blood supply)

1. Hyaline degeneration (most common degenerative change)
2. Cystic degeneration (from breakdown of hyaline)
3. Red degeneration (hemorrhage into tumour, may occur with pregnancy)
4. Fatty degeneration
5. Calcification
6. Sarcomatous degeneration (extremely rare)

• parasitic myoma - tumour becomes attached to omentum or small bowel mesentery, develops new blood supply, and loses connection to uterus

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Clinical Features

• Majority asymptomatic (60%), often discovered on TVS

1- abnormal uterine bleeding (30%)

Dysmenorrhea, menorrhagia

2- Pressure/bulk symptoms (20-50%)

• pelvic pressure/heaviness
• increased abdominal girth
• urinary frequency and urgency
• acute urinary retention (rare but surgical emergency!)
• constipation, bloating (rare)

3- Acute pelvic pain if:

• fibroid degeneration
• fibroid torsion (subserosal pedunculated)

4- infertility (submucosal)

5-Pregnancy complications and difficult C-section

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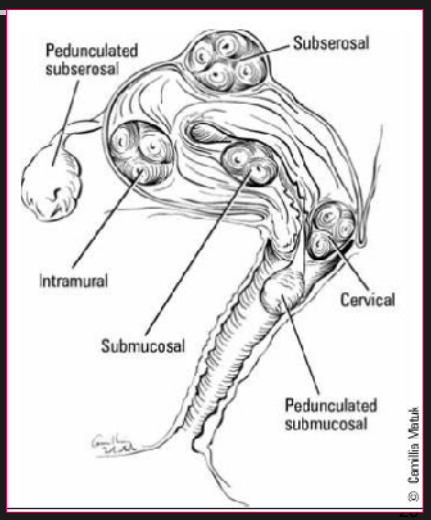
Types / Location:



Diagnosis

1. Pelvic / abdominal exam
2. Ultrasound / saline sonohysterography
3. Laparoscopy
4. MRI / CT scan
5. Rule out endometrial pathology

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Pelvic / abdominal exam

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LAPAROSCOPY

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MRI of Uterine Fibroid

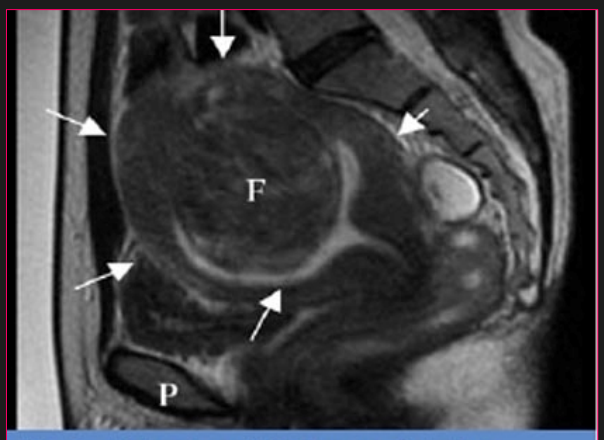

Fig. 5 Pretreatment MR image of uterine fibroid (F). Arrows – uterus. P – pubic bone

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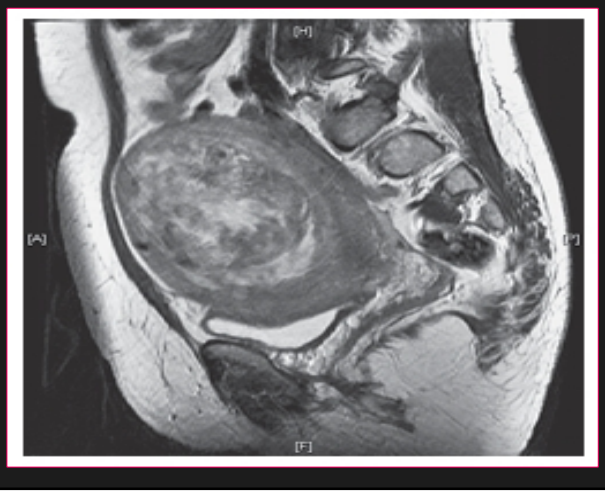
MRI of Uterine Fibroid



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Treatment of fibroids

- Only if symptomatic, rapidly enlarging, or menorrhagia (treat anemia if present)

I- Conservative approach (watch and wait) if

- symptoms absent or minimal
- fibroids <6-8 em or stable in size
- not submucosal (submucosal fibroids are more likely to be symptomatic)
- virtually all postmenopausal patients fall into this category (no increase in size or bleeding)

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Treatment of fibroids cont.

II-Medical approach

- Antiprostaglandins (ibuprofen)
- Tranexamic acid (Cyklokapron®)
- OCP/Depo-Provera®
- GnRH agonist - leuprolide (Lupron@), or
- Androgen derivative – danazol (Danocrine®). Short-term use only (6 months). Often used pre-myomectomy to facilitate surgery (reduces fibroid size)
- Selective progesterone receptor modulators -- currently in clinical trials. Prototype is RU486 which reduces fibroid volume by 50% after 3 months without side effects of GnRH agonists

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Treatment of fibroids cont.

III- Interventional radiology approach

- uterine artery embolization occludes both uterine arteries. Shrinks fibroids by 50% at 6 months.
- Improves menorrhagia in 70- 90% within 1-2 months (not an option in women considering childbearing))

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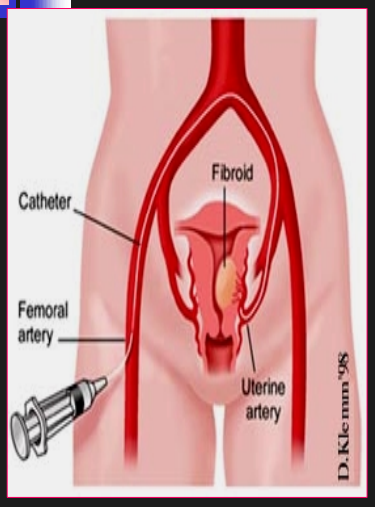
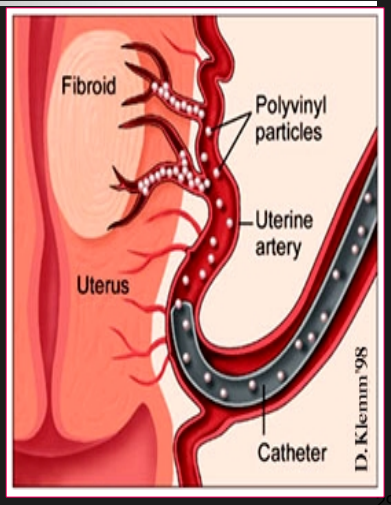
Uterine Artery Embolization





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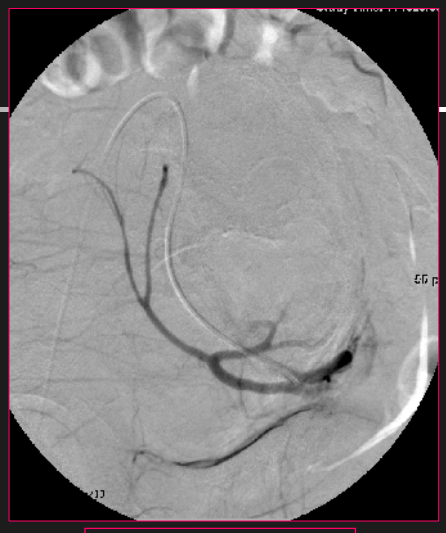
Pre



Post

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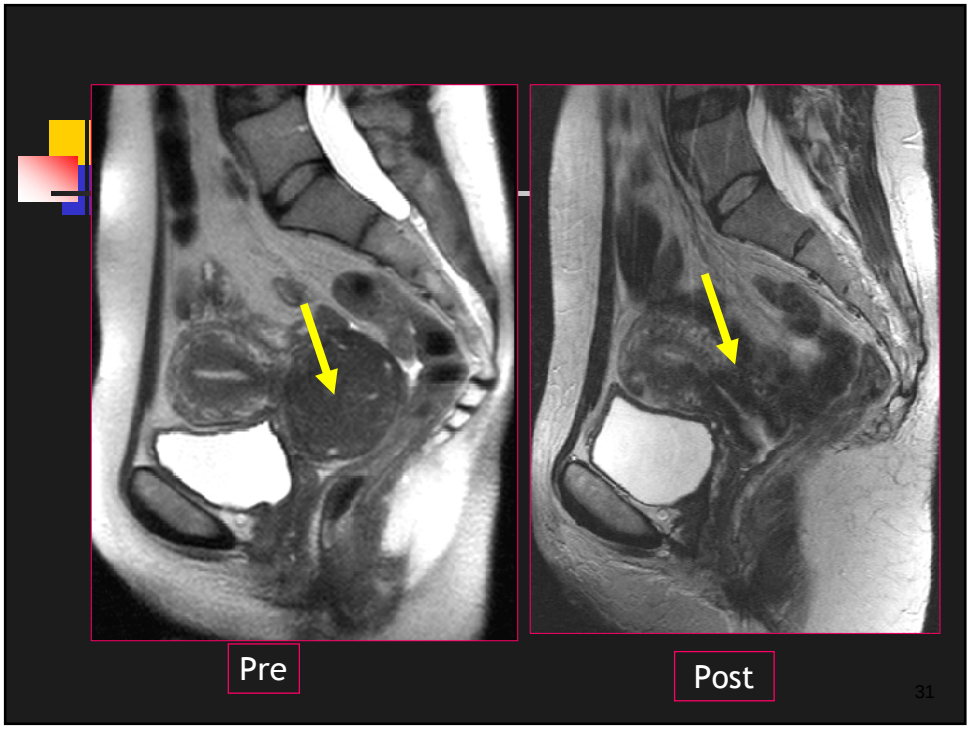
Pre
Post
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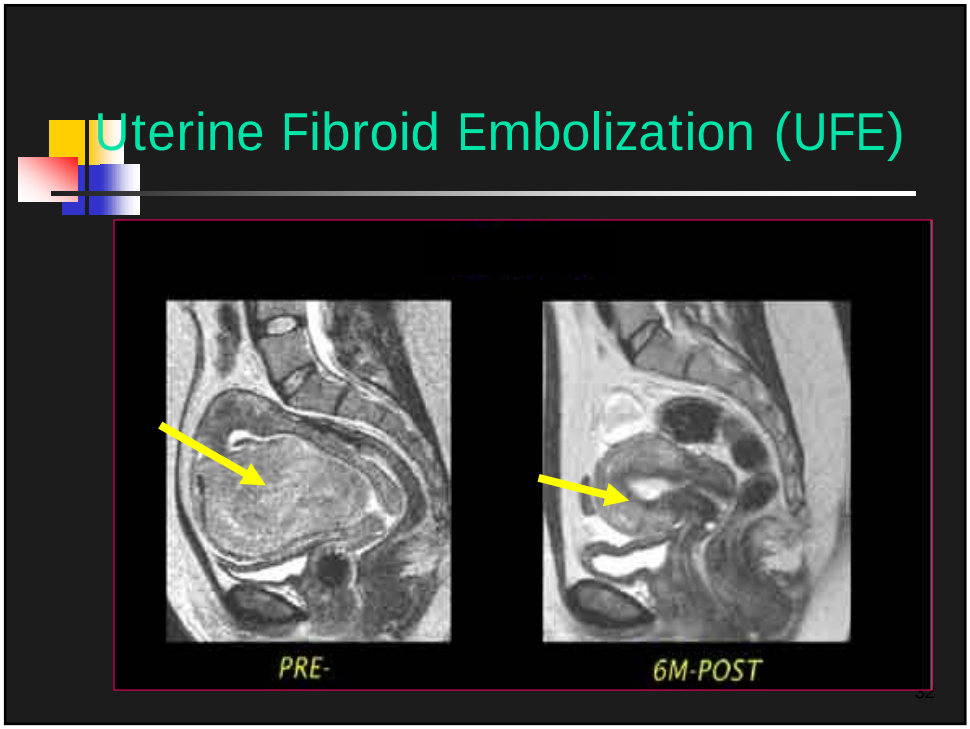
Uterine Fibroid Embolization (UFE)
PRE-
6M-POST

Advantages of UFE

- Minimally invasive, complications rare
- Treats all fibroids simultaneously
- low recurrence rate
- Short recovery period
- No blood loss
- Avoids general anesthesia
- Preserves uterus

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Limitations &Complications

1. ONLY for interstitial myoma
2. NOT for very huge myoma
3. NOT for women desire fertility
4. NOT if malignancy is suspected
5. Very rarely uterine necrosis
6. Very rarely ovarian failure

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Myomectomy

IV- Surgical approach

- Myomectomy (hysteroscopic, transabdominal or laparoscopic approach) preserves childbearing capabilities
- Hysterectomy (abdominal or vaginal, depending on fibroid size)
- Avoid operating on fibroids during pregnancy (due to +++ vascularity);

expectant management only

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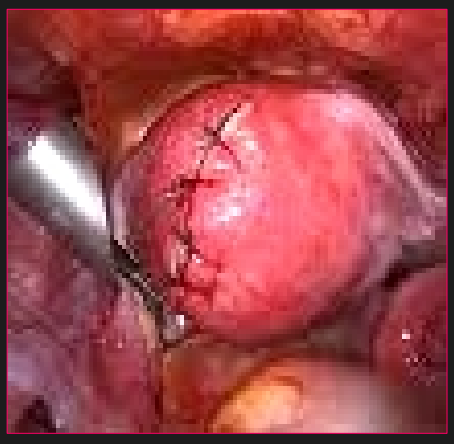
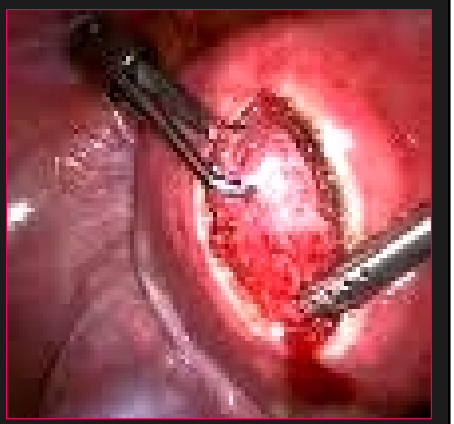
Myomectomy





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IV-Endometriosis

Etiology

- Not fully understood
- Proposed mechanisms (combination likely involved)

1. Retrograde menstruation theory of Sampson
• transtubal regurgitation during menstruation
• endometrial cells most often found in dependent sites of the pelvis
2. immunologic theory - altered immunity may limit clearance of transplanted endometrial cells from pelvic cavity (~ NK cell activity?)
3. Metaplasia of coelomic epithelium
• undefined endogenous biochemical factor may induce undifferentiated peritoneal cells to develop into endometrial tissue
4. Lymphatic flow from uterus to ovary may lead to ovarian endometriosis
5. Extrapelvic disease : due to vascular or lymphatic dissemination of cells

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Endometriosis cont.

Epidemiology

- Incidence: 15-30% of premenopausal women
- Mean age at presentation: 25-30 years
- Regresses after menopause

Risk Factors

- Family history (7-10 fold increased risk if affected 1st degree relative)
- Obstructive anomalies of the genital tract (earlier onset)
- Nulliparity
- Age >25 years

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Endometriosis cont.

Frequency

- Endometriosis occurs in 7-10% of women in the general population
- Endometriosis has a prevalence rate of 20-50% in infertile women
- And as high as 80% in women with chronic pelvic pain
- Evidence of endometriosis was found during laparoscopy in 20-50% of asymptomatic women

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Endometriosis cont.

Sites of Occurrence

- Ovaries - 60% patients have ovarian involvement
- Broad ligament
- Peritoneal surface of the cul-de-sac (uterosacral ligaments)
- Rectosigmoid colon
- Appendix

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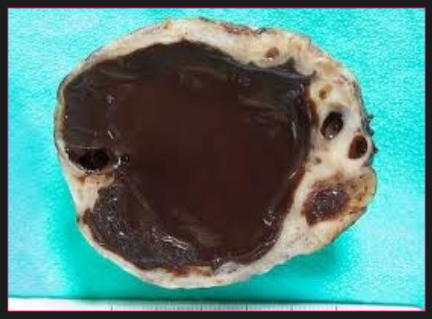
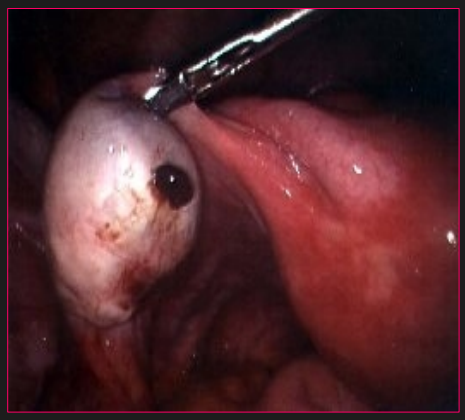
Ovarian Endometriosis (Endometrioma)





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Peritoneal Endometriosis

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Clinical Features

- My be asymptomatic
- Cyclic symptoms due to swelling and bleeding of ectopic endometrium,
- secondary dysmenorrhea
- deep dyspareunia
- sacral backache with menses
- pain may become constant but remains worse perimenstrually
- Premenstrual and postrnenstrual spotting
- Infertility
- 30-40% of patients with endometriosis will be infertile
- 15-30% of those who are infertile will have endometriosis
- Bowel and bladder symptoms
- Frequency, dysuna, hematuria
- Diarrhea, constipation, hematochezia, dyschezia
- Tender nodularity of uterine ligaments and cul-de-sac
- Fixed retroversion of uterus
- Firm, fixed adnexal mass (endometrioma)

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Endometriosis cont.

Investigations: definitive diagnosis requires

- direct visualization of lesions typical at laparoscopy
- biopsy and histologic exam of specimens
- LAPAROSCOPY
- dark blue or brownish-black implants on the uterosacral ligaments, cul-de-sac, or anywhere in the pelvis
- endometrioma: chocolate cysts in the ovaries
- "powder-bum" lesions on the peritoneal surface
- early white lesions and blebs
- •CA-125
- may be used as marker of response to medical therapy

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Grading of Endometriosis
(American Society of Reproductive Medicine)

- It Takes into account:

1- Location: peritoneal,ovarian and DP

2-Size:<1 cm,1-3 cm and > 3cm

3-Infilteration:Superficial and Deep

4-Adhesion:filmy or dense- extent :

(< 1/3,2/3 or >2/3 of pelvis)

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Laparoscopic Staging:

Stage I: Minimal (1-5 points)

Stage II: Mild (6-15 points)

Stage III: Moderate (16-40 points)

Stage IV: Severe (> 40 points)

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Endometriosis cont.

Treatment

- depends on the severity of symptoms, extent of disease, desire for future fertility, and threat to GI/GU systems

Medical

1- NSAIDs (e.g, naproxen sodium)

2-pseudopregnancy

- cyclic/continuous estrogen-progestin (OCP)
- medroxyprogesterone (Depo-Provera®)

3- pseudomenopause [2nd line: only short-term «6 months) due to osteoporotic potential with prolonged use]

- • danazol (Danocrine®) side effects:weight gain,fluid retention, acne, hirsutism,voice change
- • GnRH agonist (suppresses pituitary GnRH leuprolide (Lupron®) =)

- side effects: hot flashes, vaginal dryness, reduced libido
- can use up to 12 months with add-back progestin or estrogen

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Endometriosis cont.

Surgical

- Laparoscopy using laser, electrocautery ablation/resection of implants, lysis of adhesions, ovarian cystectomy of endometriomas
- ± laparotomy for cytoreduction of pelvic endometriosis
- ± follow-up with medical treatment for pain control NOT fertility
- Radical surgery

This involves total hysterectomy with bilateral oophorectomy and cytoreduction of visible endometriosis

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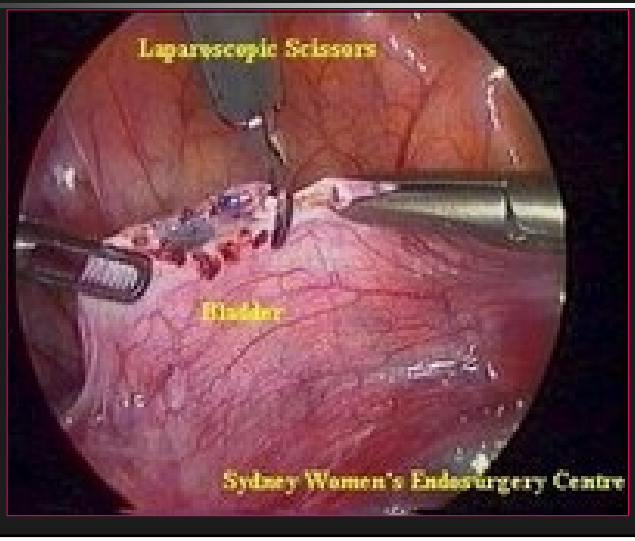
Laparoscopic Scissors
Bladder
Sydney Women's Endosurgery Centre

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