Uterine Pathology

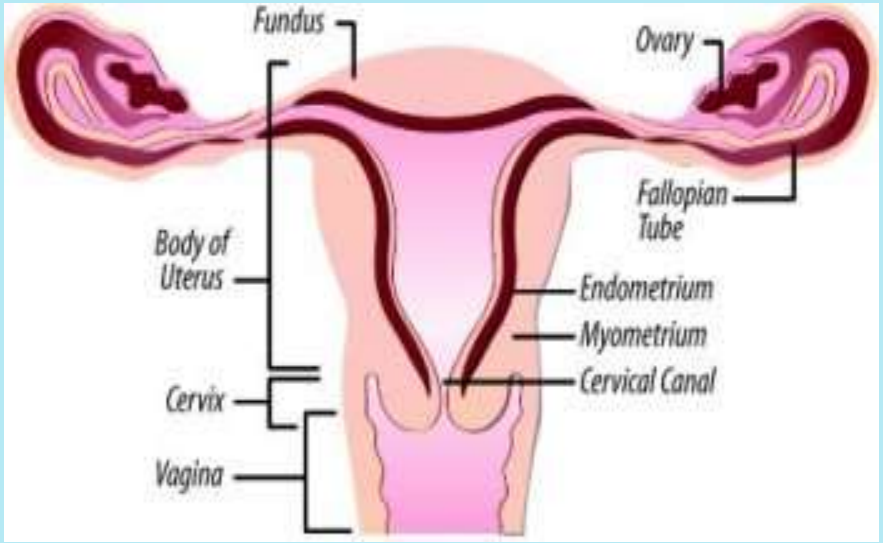
Nisreen Abu Shahin, MD
Professor of pathology
University of Jordan,
School of Medicine

Endometrium

- Endometritis
- Adenomyosis
- Endometriosis
- Endometrial Polyps
- Endometrial Hyperplasia
- **Endometrial Carcinoma**

Myometrium

- Leiomyoma
- **Leiomyosarcoma**



ENDOMETRITIS

- Inflammation of the endometrium.
- Causes:

1- infections - pelvic inflammatory disease (PID)

2-miscarriage or delivery

3- intrauterine device (IUCD).

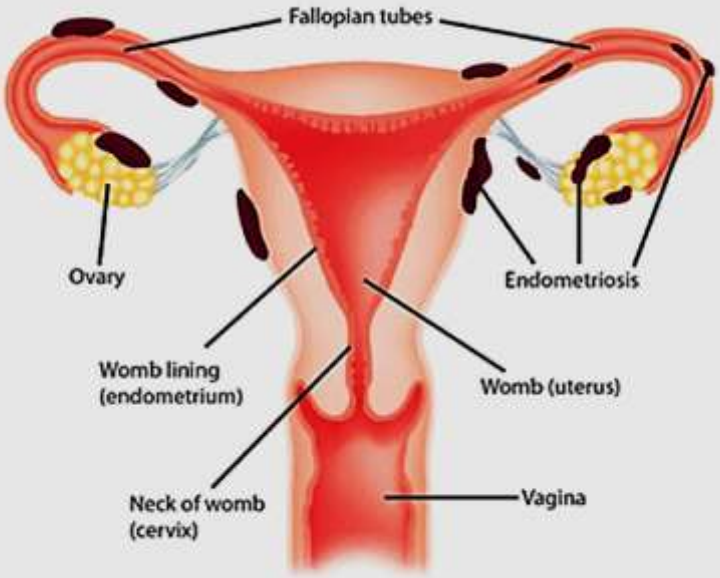
- acute or chronic
- fever, abdominal pain, menstrual abnormalities, infertility and ectopic pregnancy due to damage to the fallopian tubes.
- Rx: removal of cause, antibiotics, D&C.

ADENOMYOSIS

- endometrial stroma, glands, or both embedded in **myometrium**.
- Thick uterine wall, enlarged uterus.
- Derived from **stratum basalis → no** cyclical bleeding.
- menorrhagia, dysmenorrhea (due to enlarged uterus, uterine contractions are exaggerated)

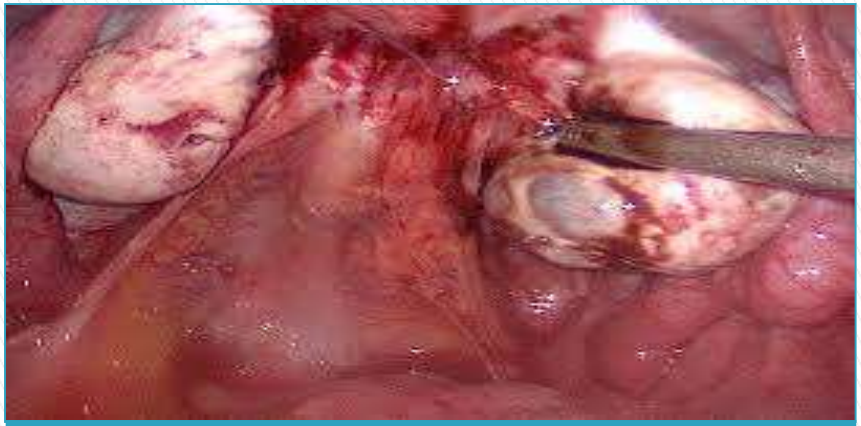
ENDOMETRIOSIS

- endometrial glands and stroma **outside the uterus (not cancer !)**.
- 10% in reproductive yrs; ↑ infertility.
- dysmenorrhea, and pelvic pain, pelvic mass filled with blood (chocolate cyst).
- Multifocal in pelvis (ovaries, pouch of Douglas, uterine ligaments, tubes, and rectovaginal septum).
- Sometimes distant sites (e.g. umbilicus, lymph nodes, lungs, ...)

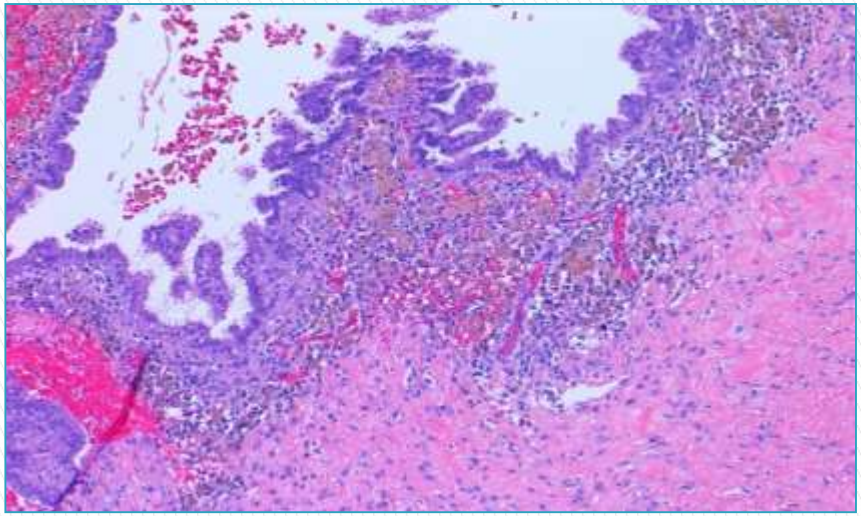


Common locations of endometriotic lesions

"Chocolate" cyst in an ovary



Intraoperative view of endometriosis

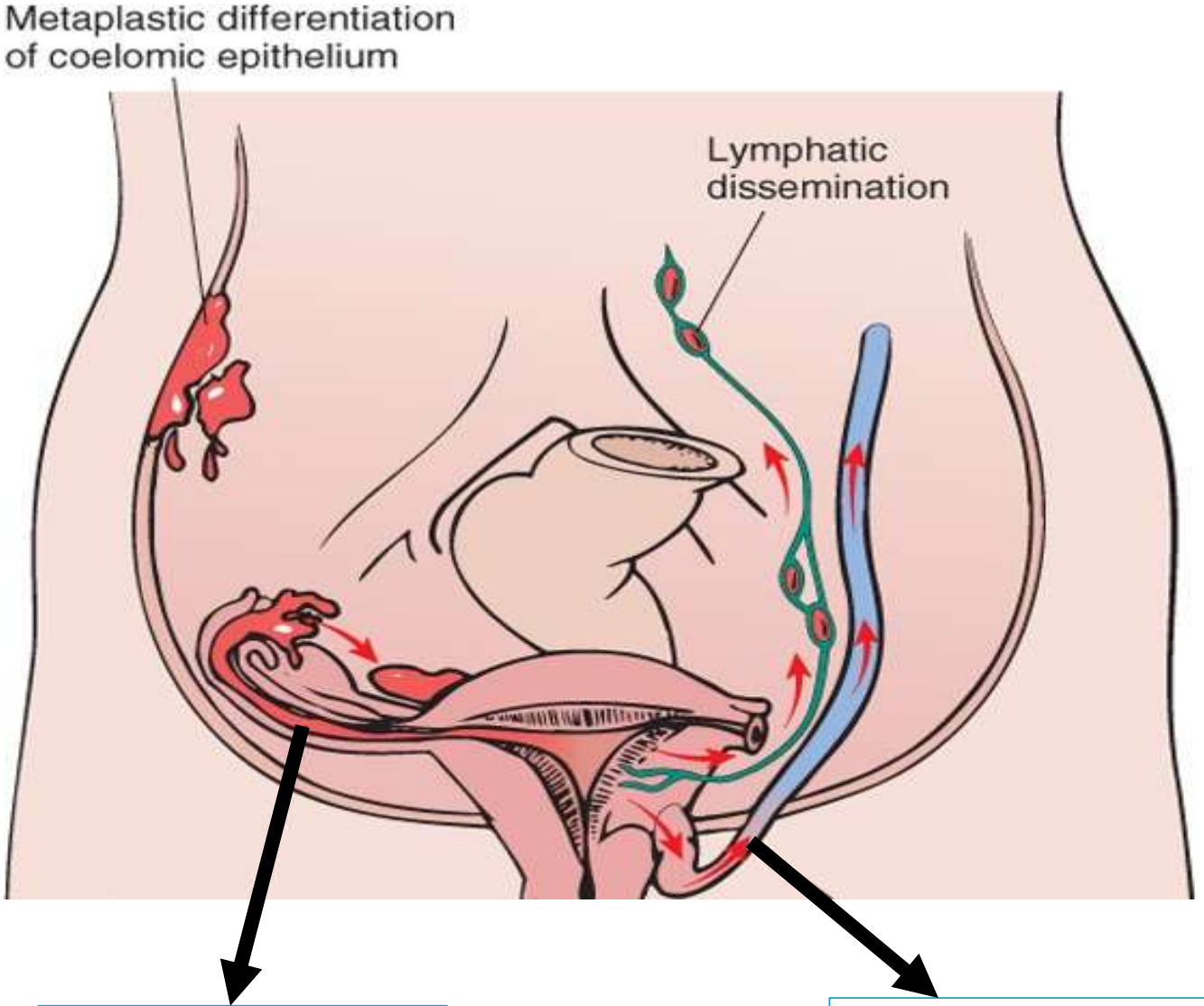


Microscopic view of endometriosis

ENDOMETRIOSIS- Pathogenesis

- 4 theories:
- ***Regurgitation theory.*** ***(***most accepted). Menstrual backflow through tubes and implantation..
- ***Metaplastic theory*** . Endometrial differentiation of coelomic epithelium.
- ***Vascular*** **or** ***lymphatic dissemination theory.*** explain extrapelvic or intranodal implants.
- ***Extrauterine stem/progenitor cell theory***, proposes that circulating stem/progenitor cells from bone marrow differentiate into endometrial tissue

Conceivably, all pathways are valid in individual instances.



ENDOMETRIOSIS

- contains **functionalis endometrium,** so undergoes **cyclic bleeding**.
- Consequences: fibrosis, sealing of tubal fimbriated ends, and distortion of the ovaries.
- Diagnosis; 2 of 3 features: endometrial glands, endometrial stroma, or hemosiderin pigment.

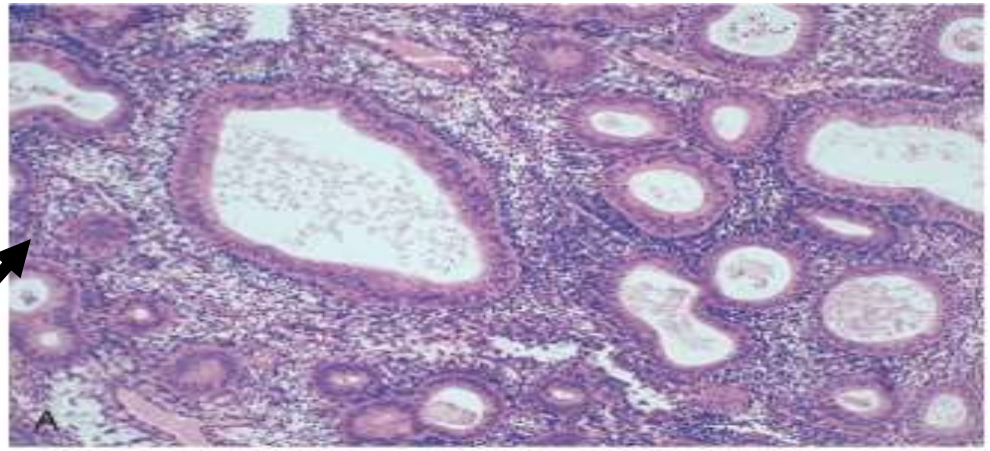
Endometrial Hyperplasia

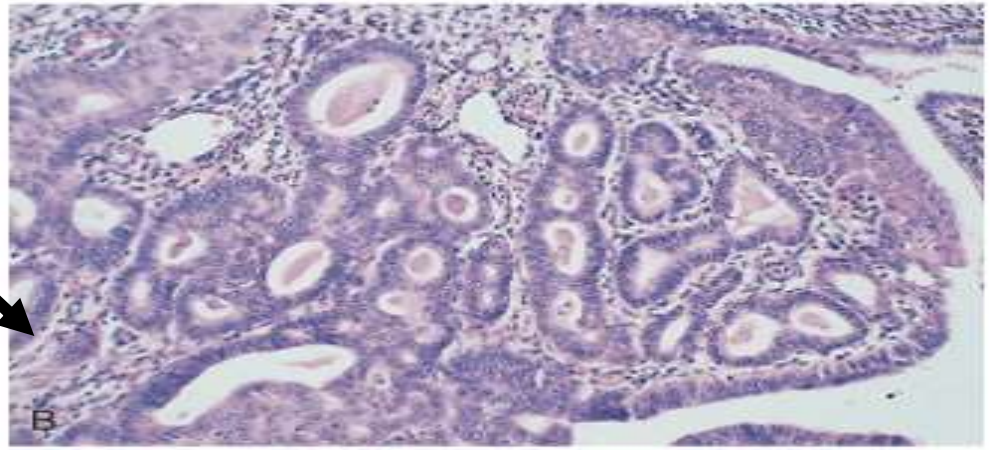
- prolonged or marked excess of **estrogen** relative to progestin →exaggerated proliferation → may progress to cancer
- risk factors: **Obesity; Diabetes; Hypertension**; **Infertility; Prolonged estrogen replacement therapy; Estrogen-secreting ovarian tumors**.
- severity is based on architectural crowding and cytologic atypia, ranging from:

1- Typical hyperplasia (without atypia)

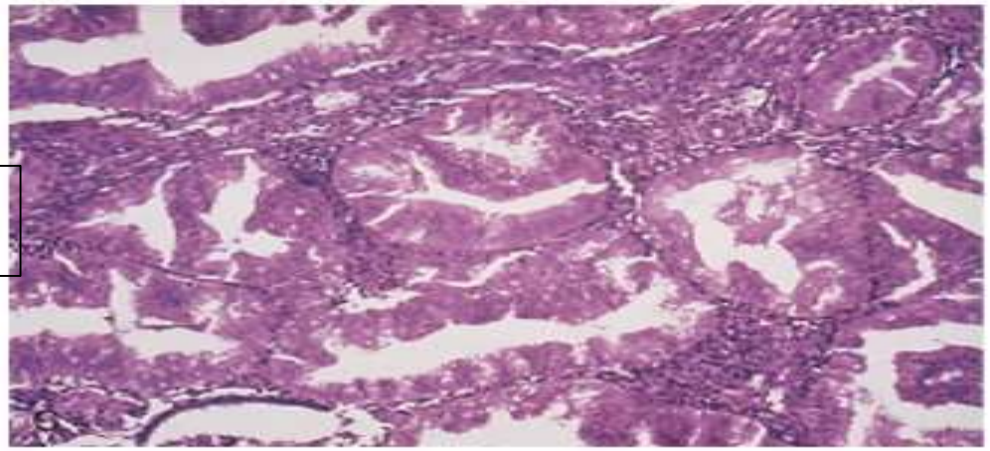
2- Atypical hyperplasia (20% risk of cancer).

Hyperplasia without atypia



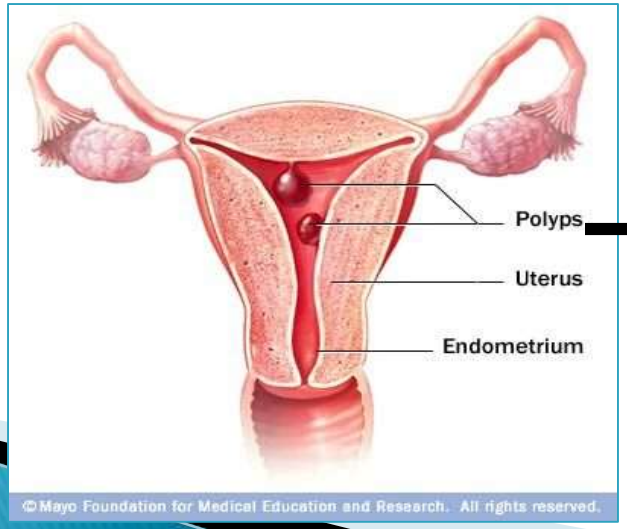


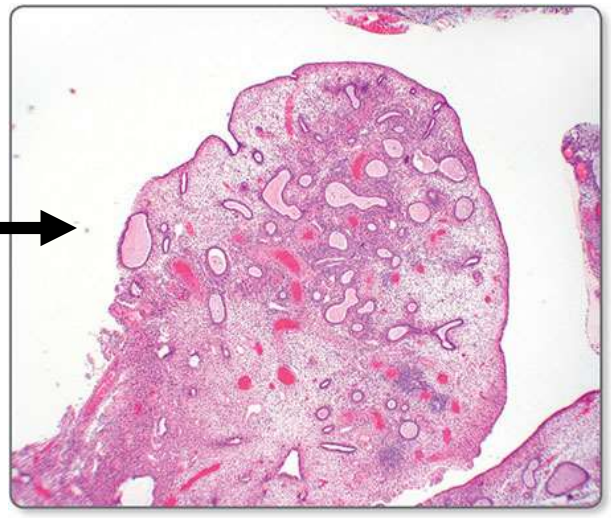
Atypical Hyperplasia



TUMORS OF THE ENDOMETRIUM

- **Benign Endometrial Polyps**
- sessile or pedunculated
- endometrial dilated glands, with small muscular arteries and fibrotic stroma.
- no risk of endometrial cancer.





Endometrial Carcinoma

- **the most common cancer in female genital tract.**
- 50s and 60s.
- Two clinical settings, These scenarios are correlated with differences in histology:

1) perimenopausal women with estrogen excess (Type I cancers: prototype is called ***endometrioid***)

2) older women with endometrial atrophy (Type II cancers: prototype is ***serous carcinoma***).

Endometrioid Carcinoma

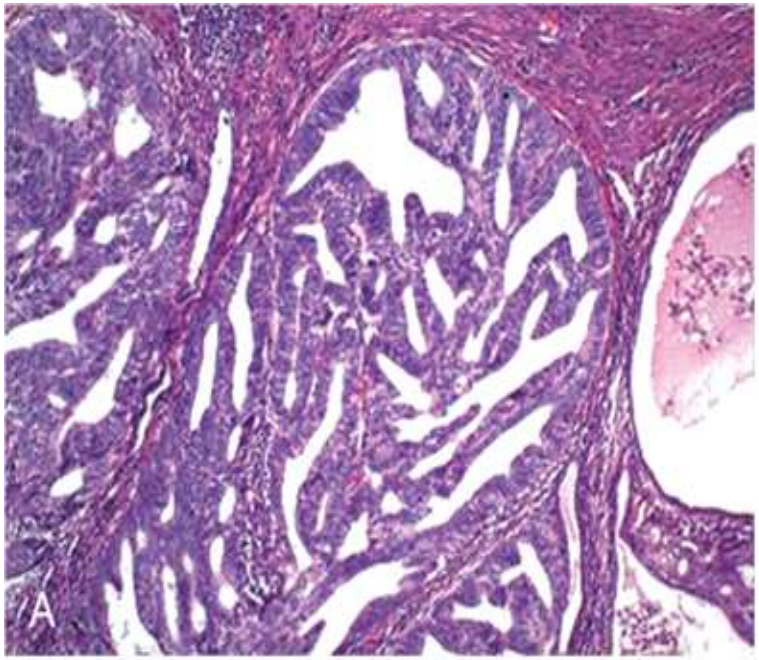
- risk factors: **Obesity; Diabetes; Hypertension**; **Infertility; Prolonged estrogen replacement therapy; Estrogen-secreting ovarian tumors**.
- ***precancer*** *lesion is "**atypical** endometrial hyperplasia"*
- Mutations in DNA **mismatch repair genes** and ***PTEN***
- ***Prognosis: depends on stage.***
- (5-year survival in stage I= 90%; drops to 40% in stages III and IV.)

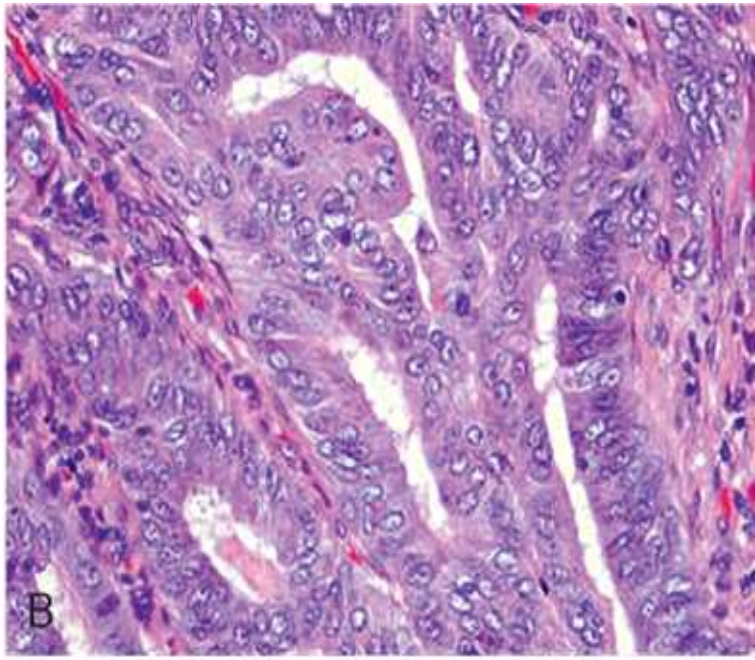
Serous Carcinoma

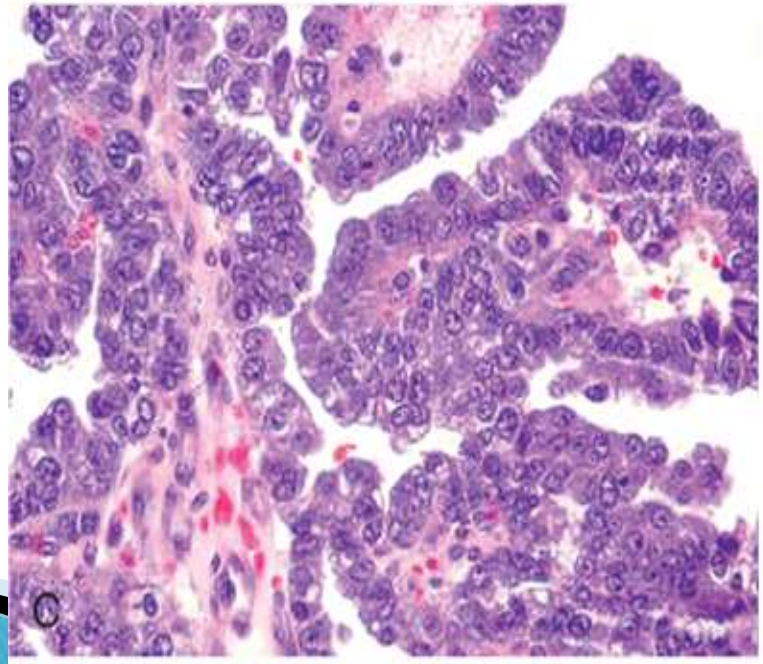
- **No relation with endometrial hyperplasia**
- **Not hormone-dependent**
- **Mutations in *p53* tumor suppressor gene**.
- Prognosis: depends on operative staging with peritoneal cytology. Generally worse than endometrioid ca.

Endometrioid carcinoma

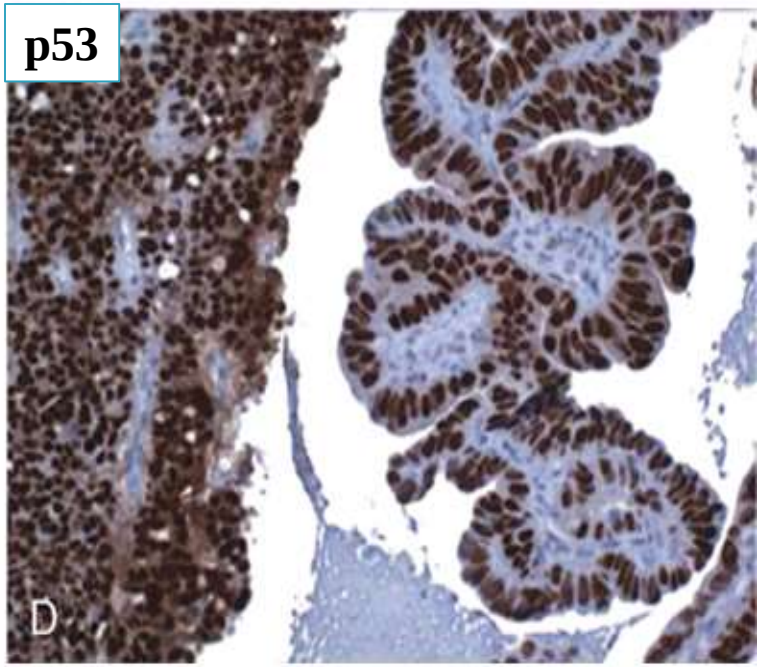
Serous carcinoma







p53

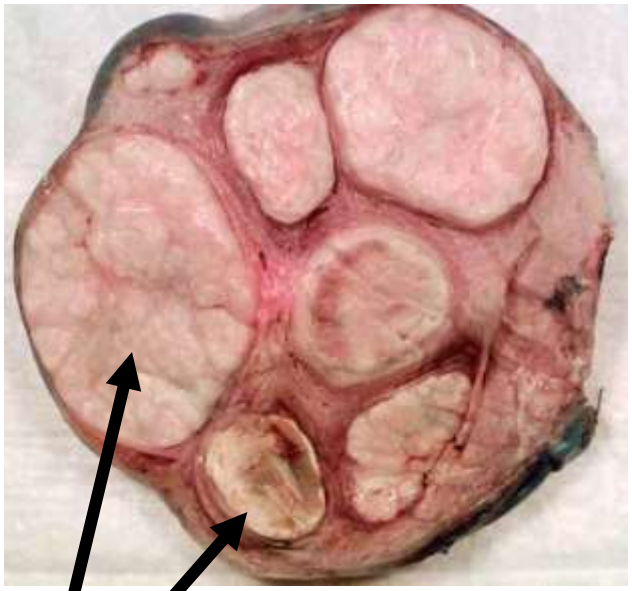


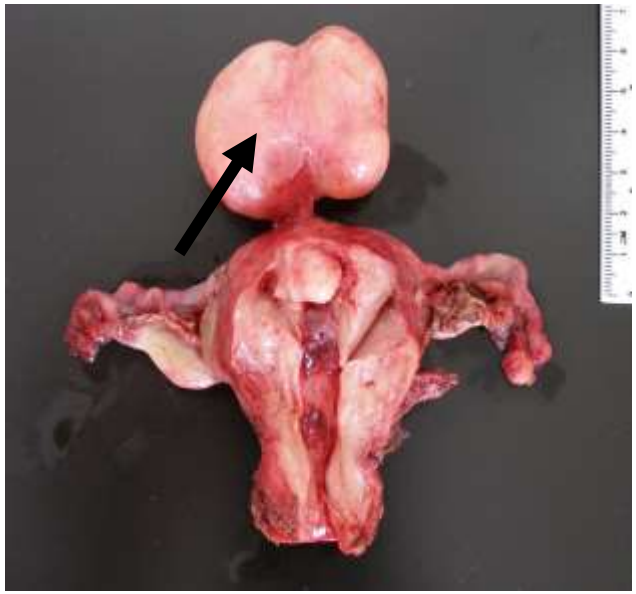
Tumors of the myometrium

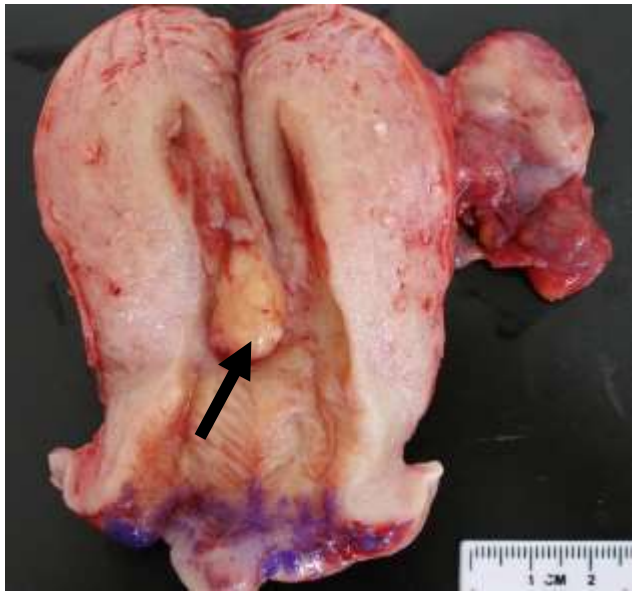
- **Lieomyoma** ***= fibroids***
- Benign tumor of smooth muscle cells
- most common benign tumor in females (30% - 50% in reproductive life).
- Estrogen-dependent; shrink after menopause.
- circumscribed, firm masses with whorled cut surface.

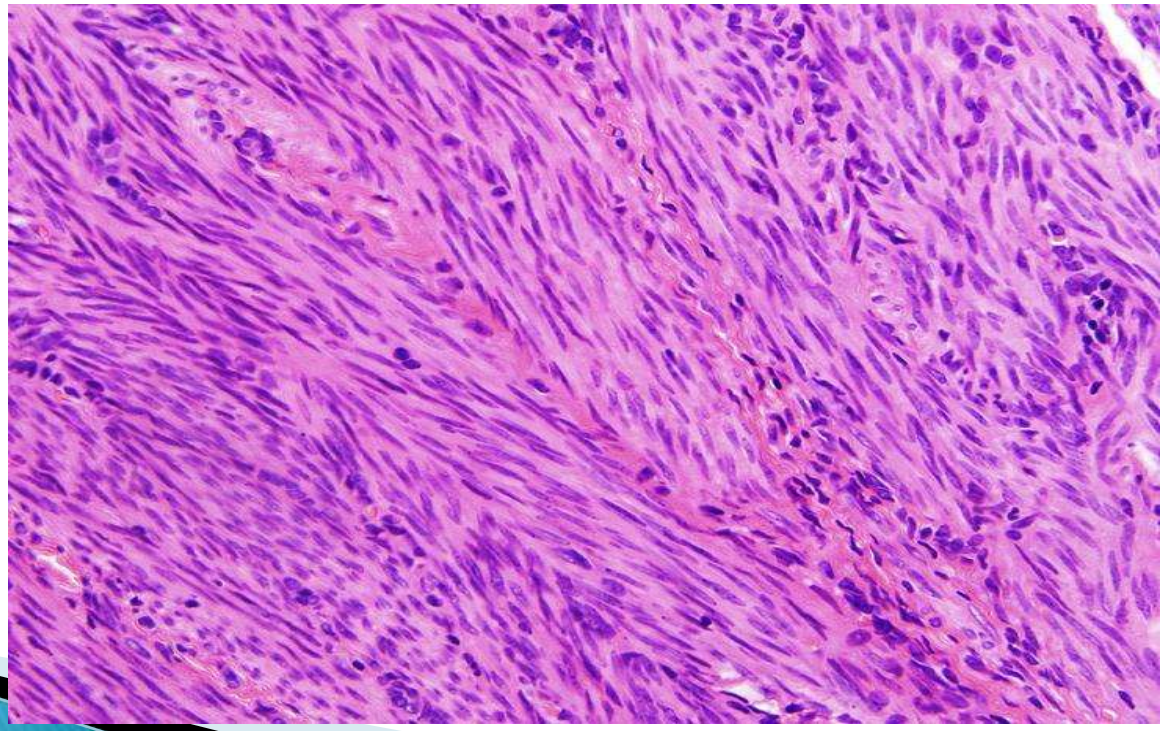
Leiomyomas

- Location: (intramural), (submucosal), or (subserosal).
- may develop hemorrhage, cystic change or calcification.
- Clinically: asymptomatic or symptomatic; (menorrhagia; a dragging sensation, anemia, etc...)
- leiomyomas almost **never** transform into sarcomas



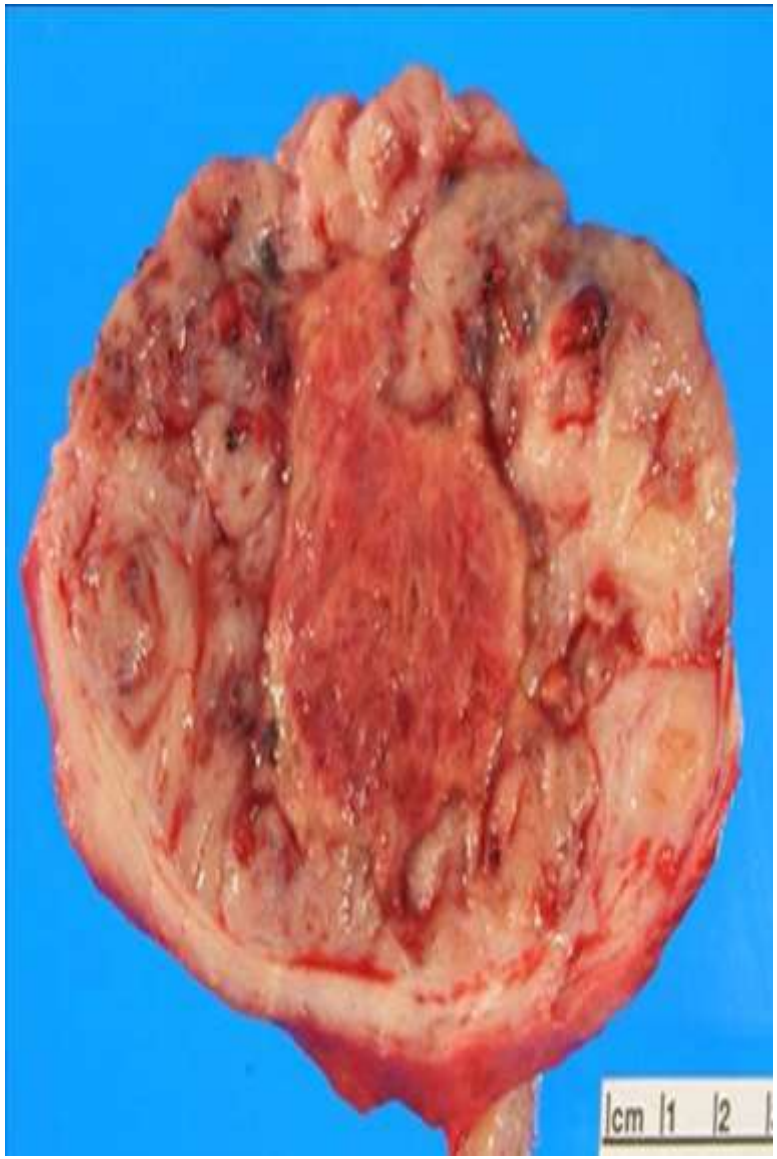






Lieomyosarcoma

- Malignant counterpart of leiomyoma.
- not from preexisting leiomyomas.
- hemorrhagic, necrotic, infiltrative borders.
- diagnosis: coagulative necrosis, cytologic atypia, and mitotic activity.
- Recurrence common, and metastasis
- 5-year survival rate 40%.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