THE UNIVERSITY OF JORDAN

Uterine Pathology

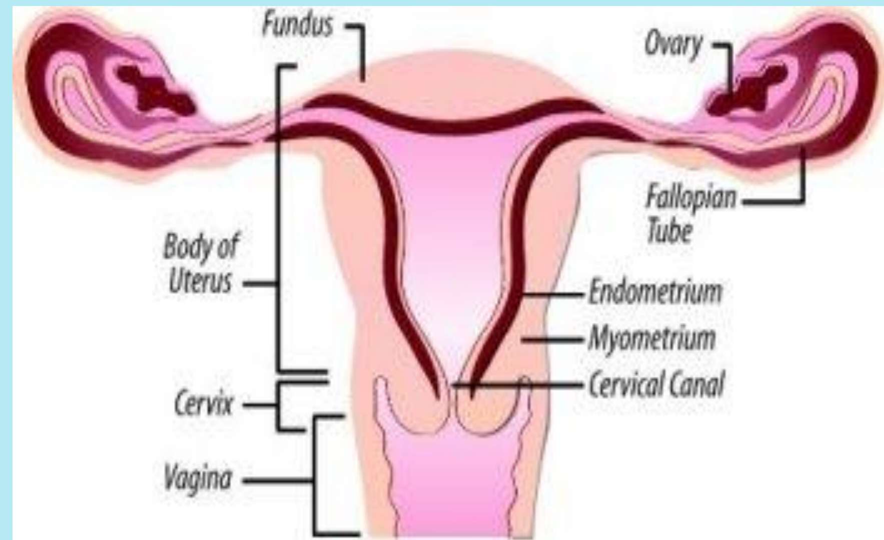
Nisreen Abu Shahin, MD
Associate professor of pathology
University of Jordan, School of Medicine

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).

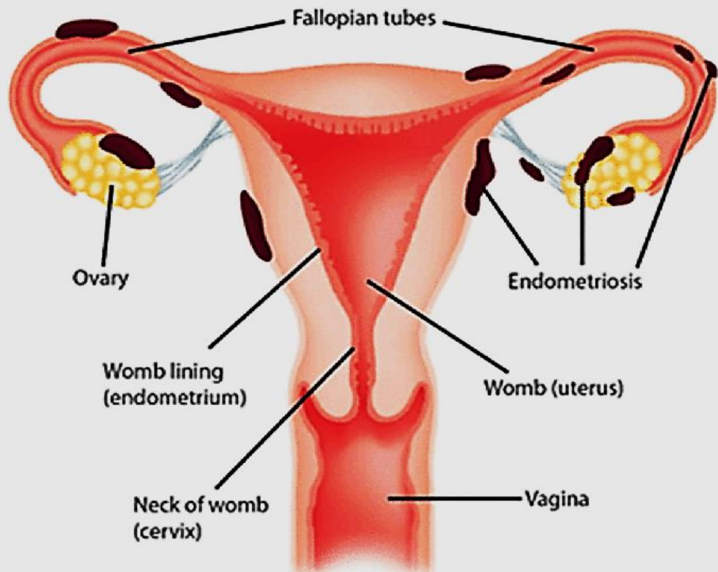
- acute or chronic
- fever, abdominal pain, menstrual abnormalities, infertility and ectopic pregnancy due to damage to the fallopian tubes.
- Rx: removal of cause, antibiotics, D&C.

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

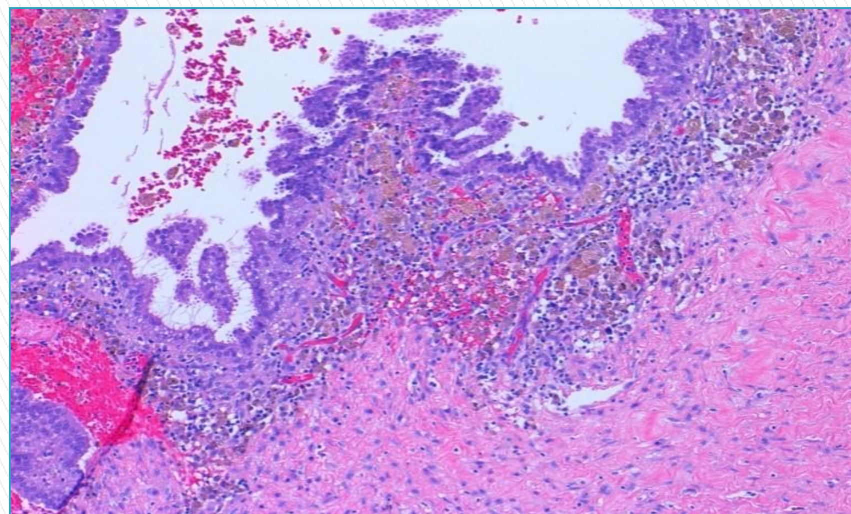
- endometrial glands and stroma **outside the uterus (not cancer !)**.
- 10% in reproductive yrs; ↑ infertility.
- dysmenorrhea, and pelvic pain, pelvic mass filled with blood (chocolate cyst).
- Multifocal in pelvis (ovaries, pouch of Douglas, uterine ligaments, tubes, and rectovaginal septum).
- Sometimes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



Common locations of endometriotic lesions

"Chocolate" cyst in an ovary

Intraoperative view of endometriosis

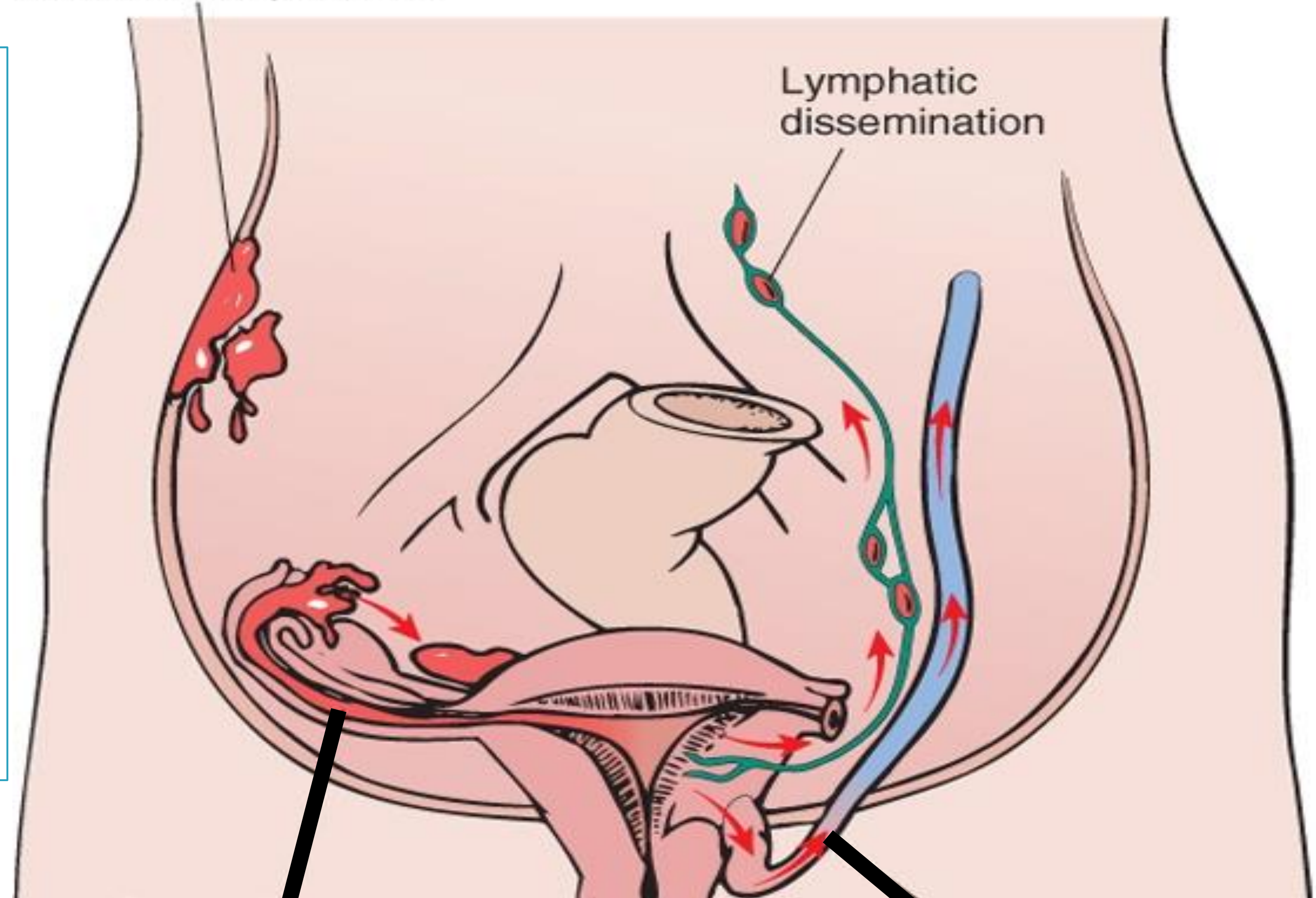


Microscopic view of endometriosis

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.



Regurgitation through fallopian tube

Extrapelvic dissemination through pelvic veins

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.

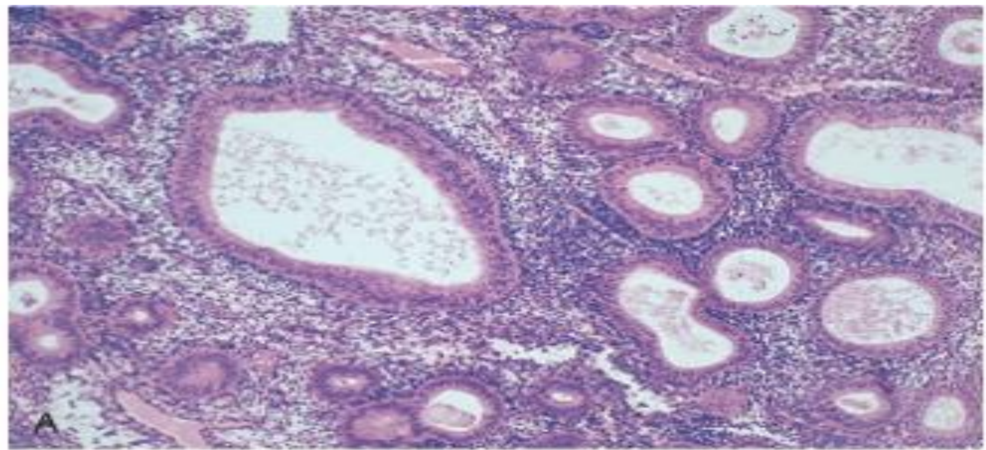
Endometrial Hyperplasia

- 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:

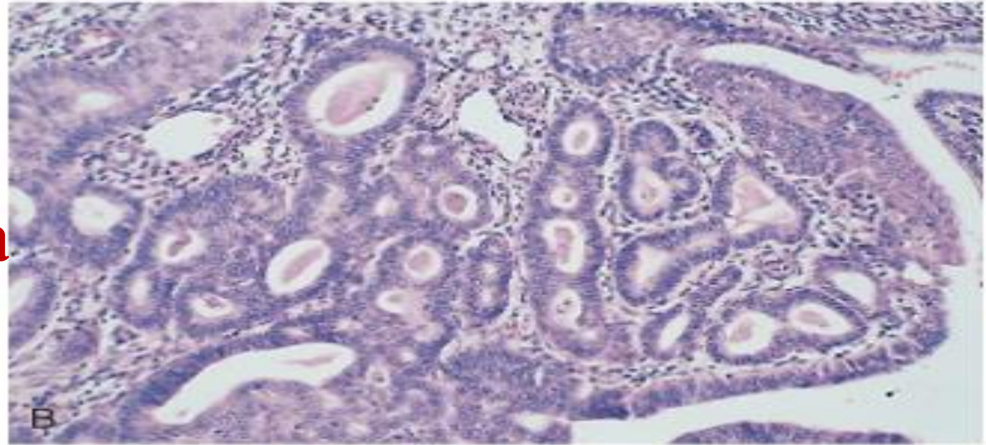
1- typical hyperplasia

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

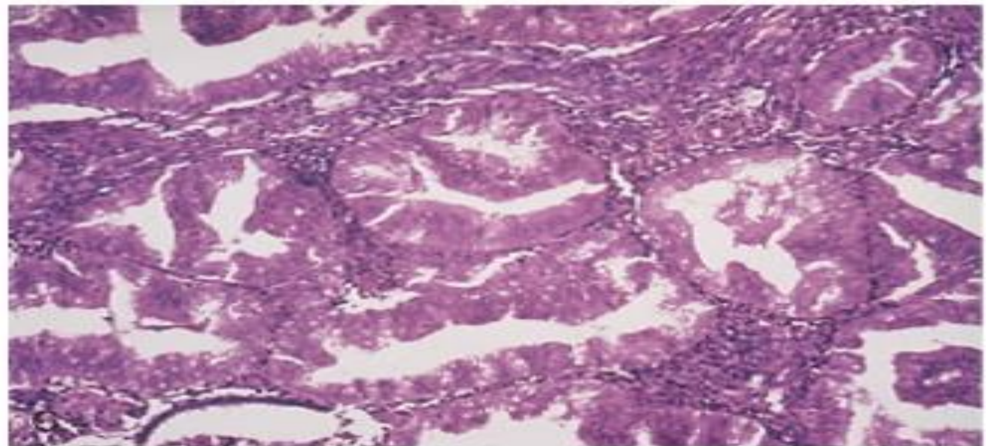
Simple hyperplasia



Complex Hyperplasia



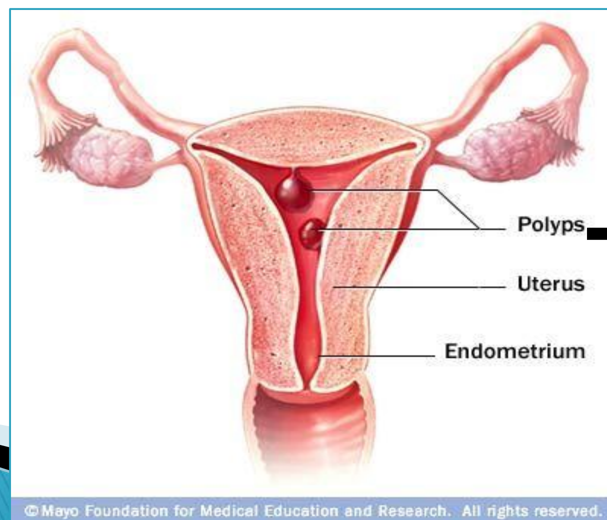
Atypical Hyperplasia

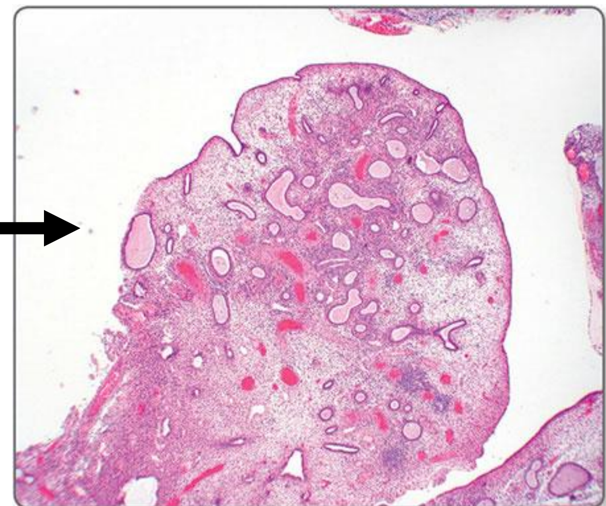


er. Kumar et al: Robbins Basic Pathology 8e - www.studentco

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:

1) perimenopausal women with estrogen excess
2) older women with endometrial atrophy.

- These scenarios are correlated with differences in histology:
- 1-type I cancers: prototype is called ***endometrioid***
- 2- type II cancers: prototype is ***serous carcinoma*** , respectively.

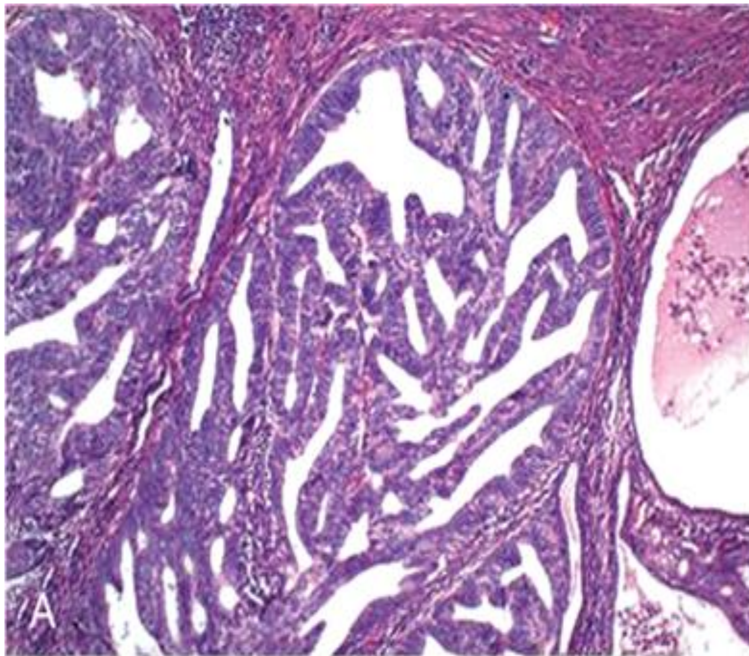
Endometrioid Carcinoma

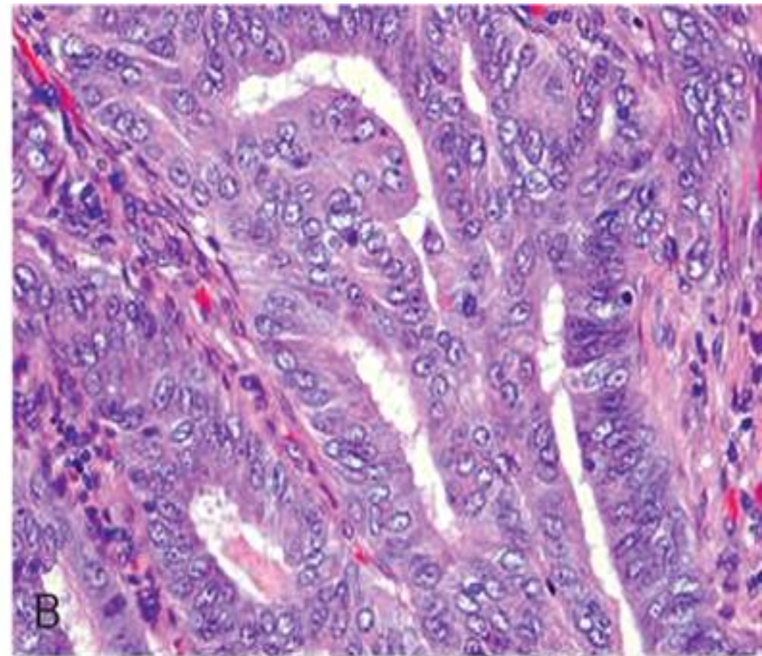
- similar to normal endometrium.
- risk factors: **Obesity; Diabetes; Hypertension**; **Infertility; Prolonged estrogen replacement therapy; Estrogen-secreting ovarian tumors**.
- ***precancerous*** *lesion is* ***atypical*** *endometrial hyperplasia*
- Mutations in DNA **mismatch repair genes** and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

Serous Carcinoma

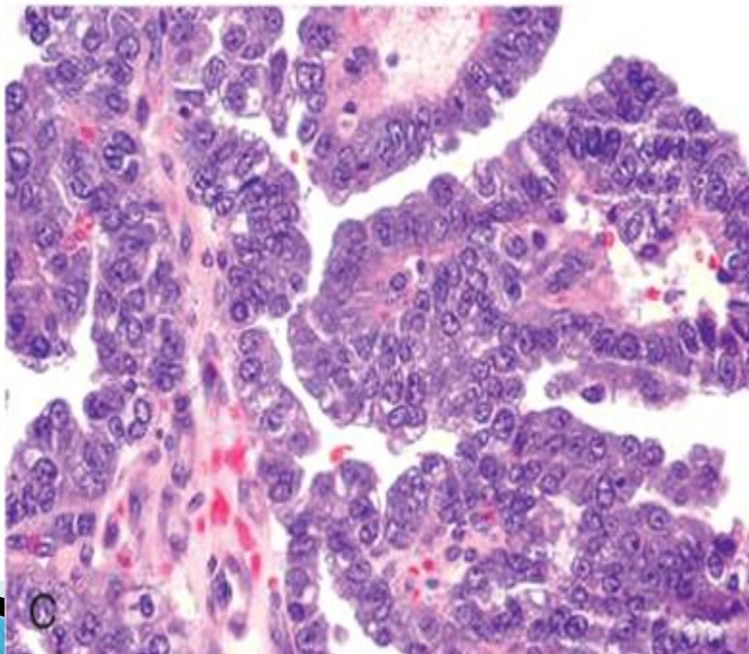
- **No relation with endometrial hyperplasia**
- **Not hormone-dependent**
- **Mutations in *p53* tumor suppressor gene**.
- Prognosis: depends on operative staging with peritoneal cytology. Generally worse than endometrioid ca.

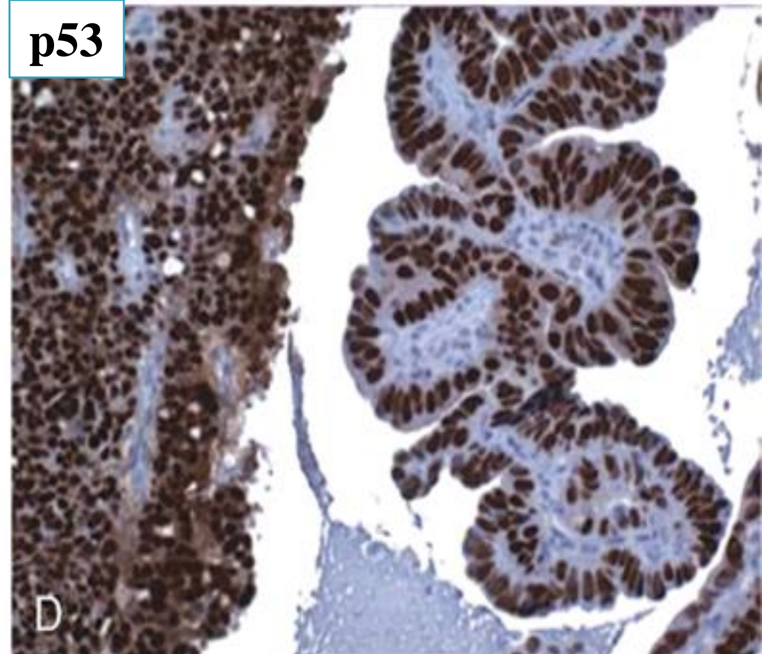
Endometrioid carcinoma





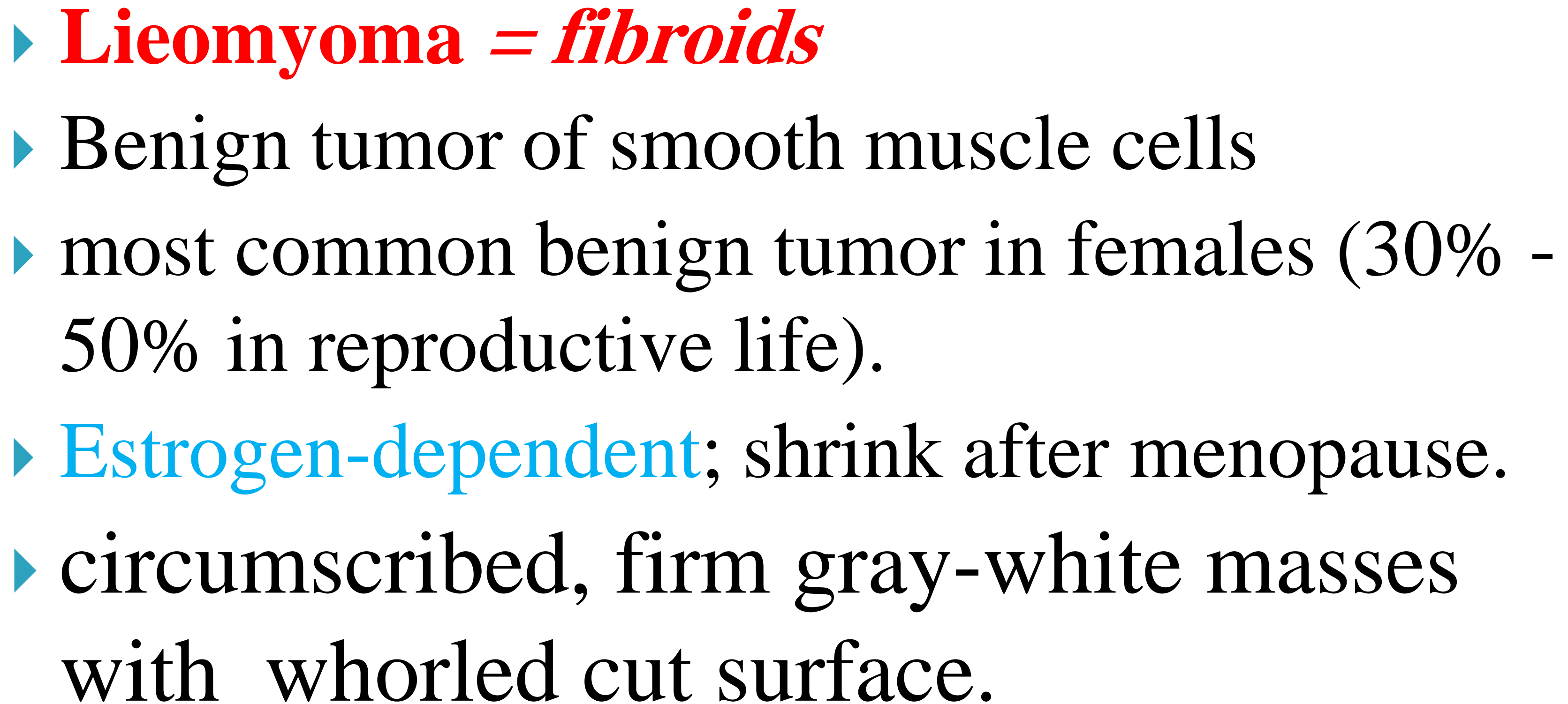
Serous carcinoma





© Elsevier. Kumar et al: Robbins Basic Pathology 8e - www.studentconsult.com

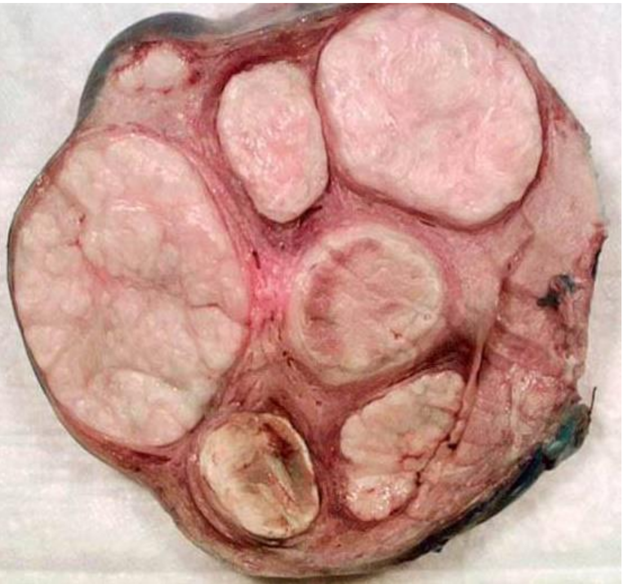
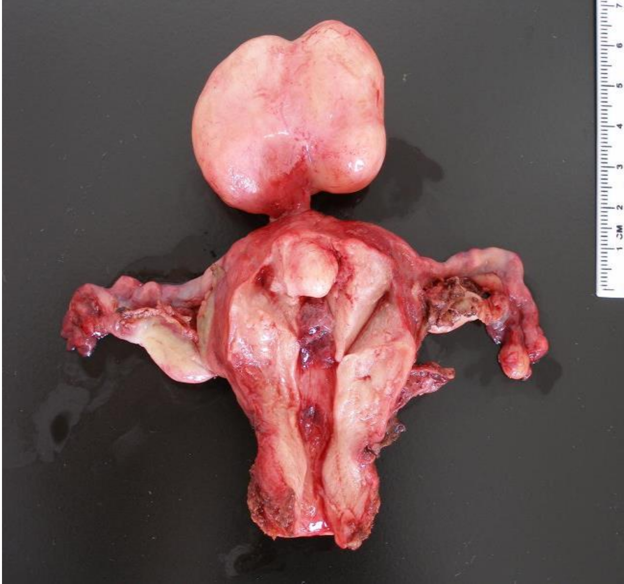
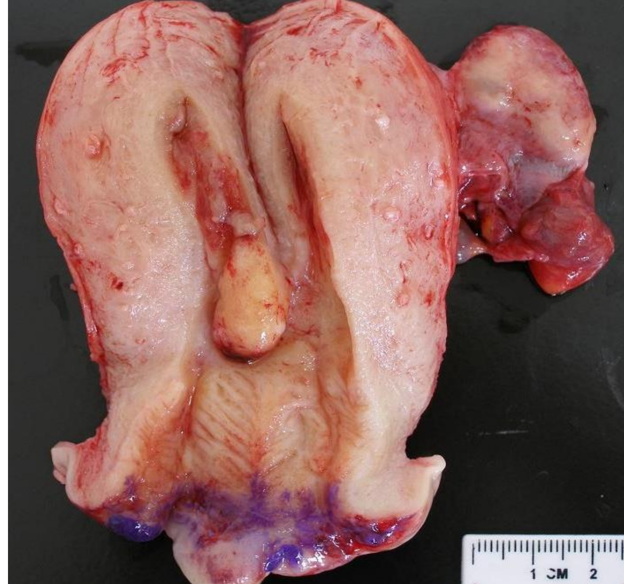
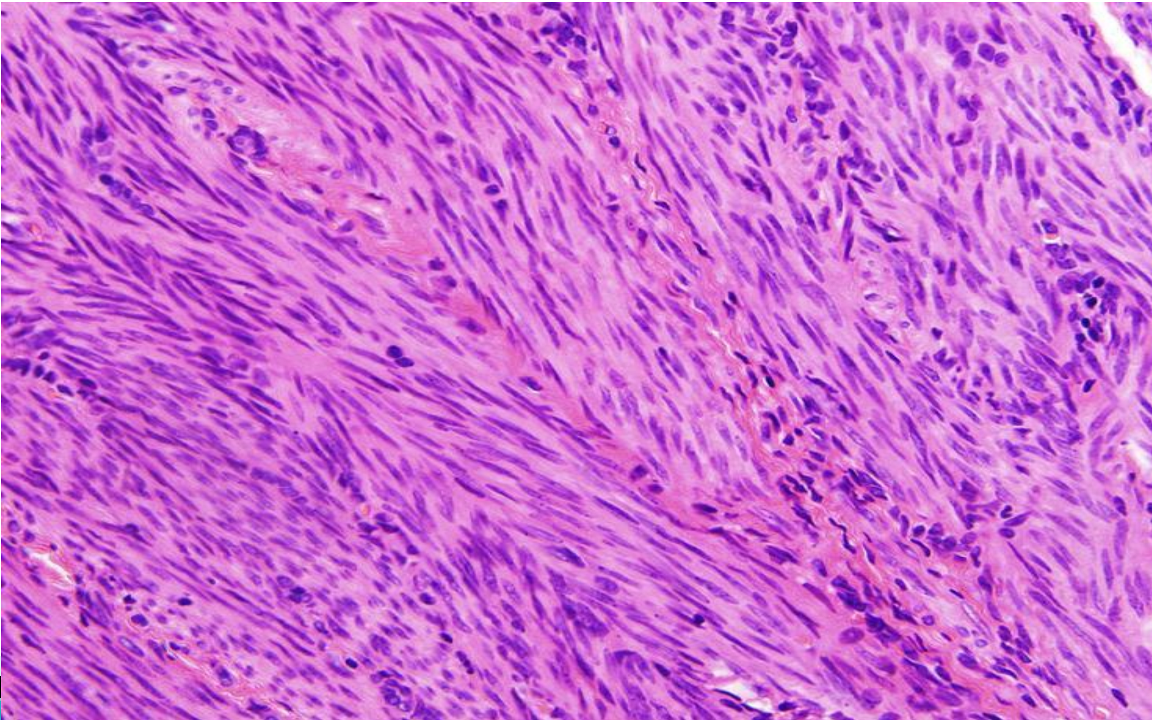
Tumors of the myometrium



- **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 gray-white masses with whorled cut surface.

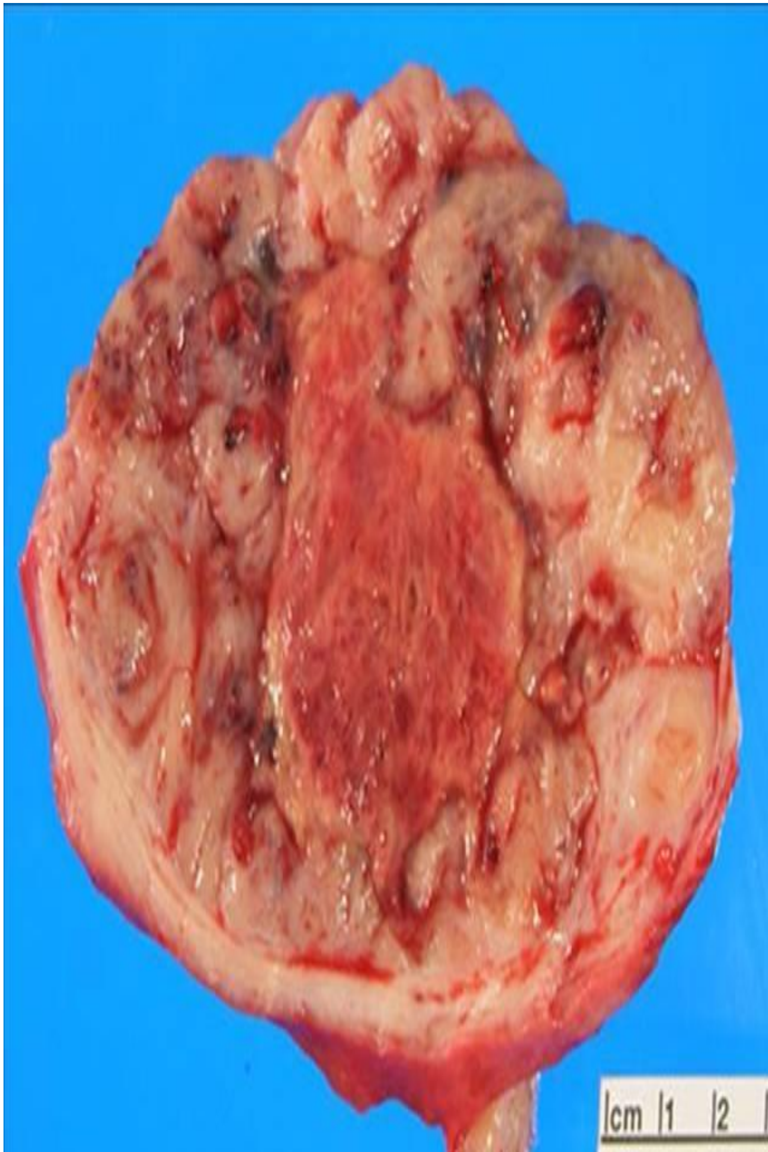
Leiomyomas

- 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, and the presence of multiple lesions *does not* increase the risk of malignancy.




1 CM 2


Lieomyosarcoma

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


cm 1 2