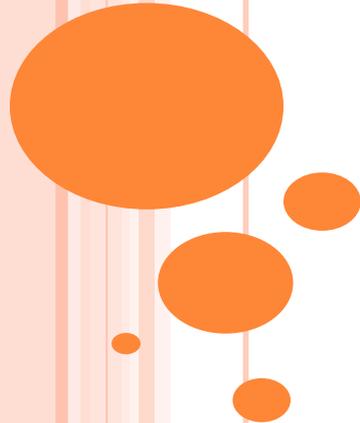


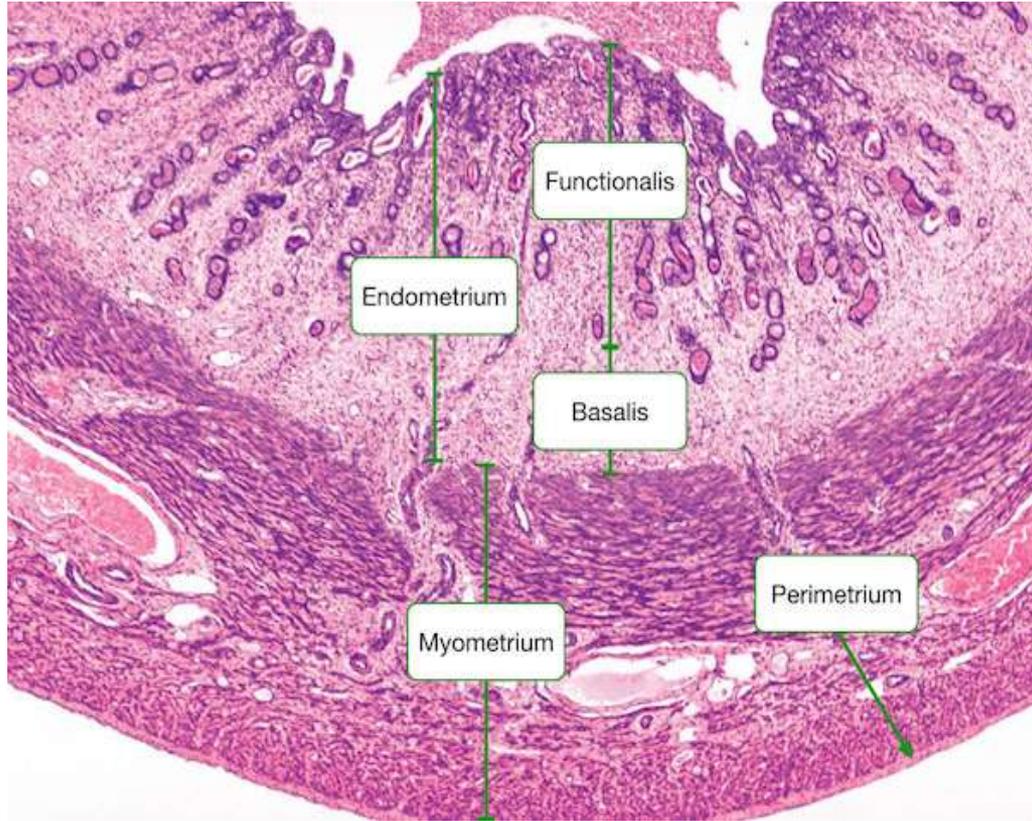


FEMALE GENITAL SYSTEM, LECTURE 3

BODY OF UTERUS



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School of Medicine- Department of Microbiology &
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UGS lectures 2023



UTERUS

Uterine body (corpus) is composed of:
endometrium, consisting of glands & stroma.
+**myometrium**, made up of smooth muscle.



UTERINE PATHOLOGY - ENDOMETRITIS

- Inflammation of the endometrium.
 - **Pathogenesis:** + Pelvic inflammatory disease (PID)
+ miscarriage or delivery (retained products of conception)
+ intrauterine device (IUCD).
 - **Presentation:** fever, abdominal pain, menstrual abnormalities, infertility & ectopic pregnancy due to damage to the fallopian tubes.
 - **Tx:** removal of cause, antibiotics.
- 

UTERINE PATHOLOGY - ADENOMYOSIS

- The presence of endometrial tissue in myometrium.
- Nests of endometrial stroma, glands, or both deep in myometrium between muscle bundles.
- Result in thickened uterine wall & enlarged uterus due to reactive muscle hypertrophy.
- Presentation: menorrhagia, dysmenorrhea.
- Coexist with: endometriosis.



UTERINE PATHOLOGY - ENDOMETRIOSIS

- Endometrial glands & stroma in locations outside uterus.
 - 10% of women in the reproductive years & ass with *infertility*.
 - Multifocal & involves pelvic structures (1) ovaries, (2) uterine ligaments, (3) rectovaginal septum, (4) cul de sac
 - Less frequently, involves distant areas of peritoneal cavity or periumbilical tissues.
- 

ENDOMETRIOSIS - PATHOGENESIS

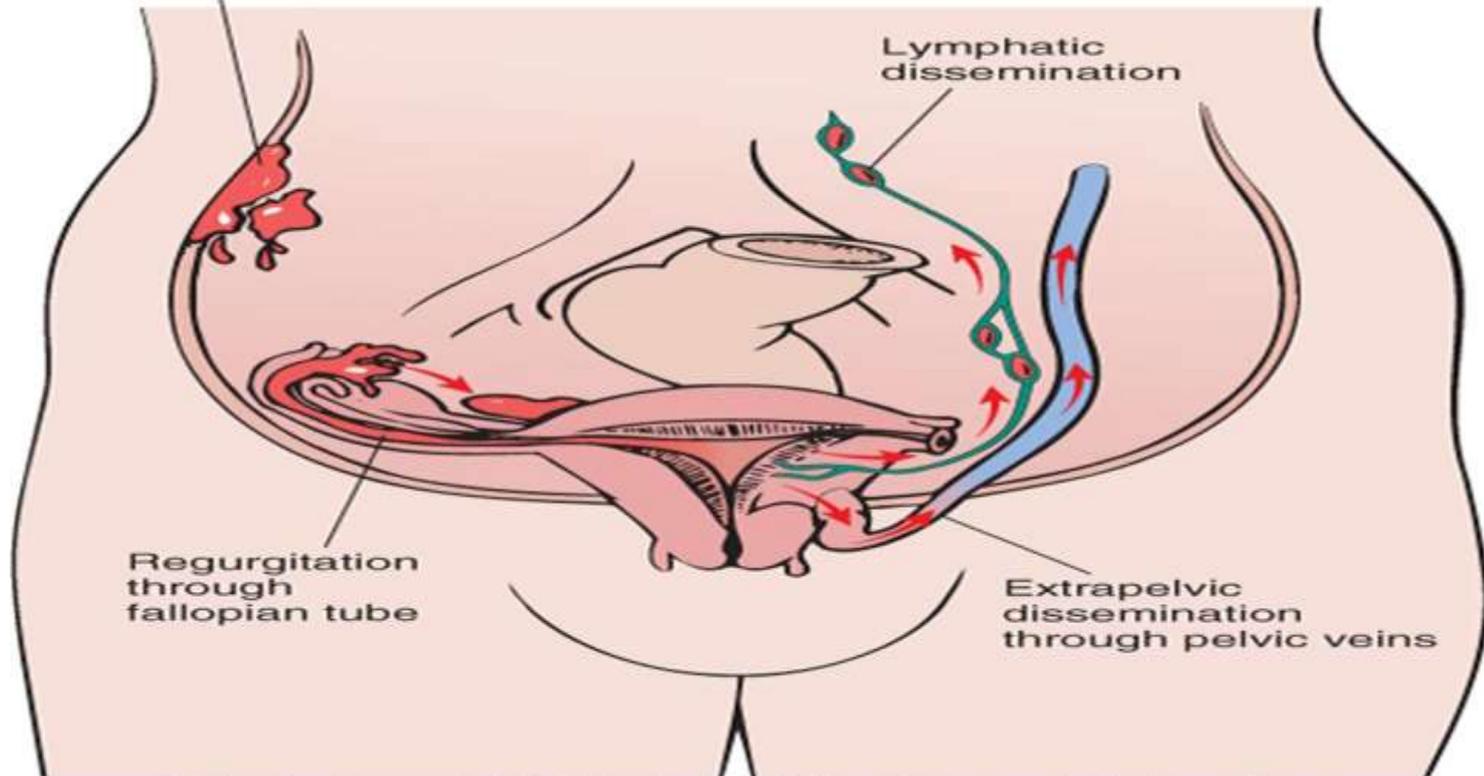
Four hypotheses:

1. Regurgitation theory, **favored**, → menstrual backflow through the tubes → implantation.
2. Benign vascular and lymphatic dissemination.
3. Metaplastic theory, endometrial differentiation of coelomic epithelium
4. The extrauterine stem/progenitor cell theory.



ENDOMETRIOSIS - PATHOGENESIS

Metaplastic differentiation
of coelomic epithelium



ENDOMETRIOSIS - CLINICAL

- Typically consists of **functioning endometrium**
 - undergoes cyclic bleeding → organization of blood
 - widespread fibrosis → adhesions among pelvic structures.
- **Presentation: dysmenorrhea**, pain on defecation, dyspareunia (painful intercourse) and dysuria (painful urination).



ENDOMETRIOSIS - GROSS

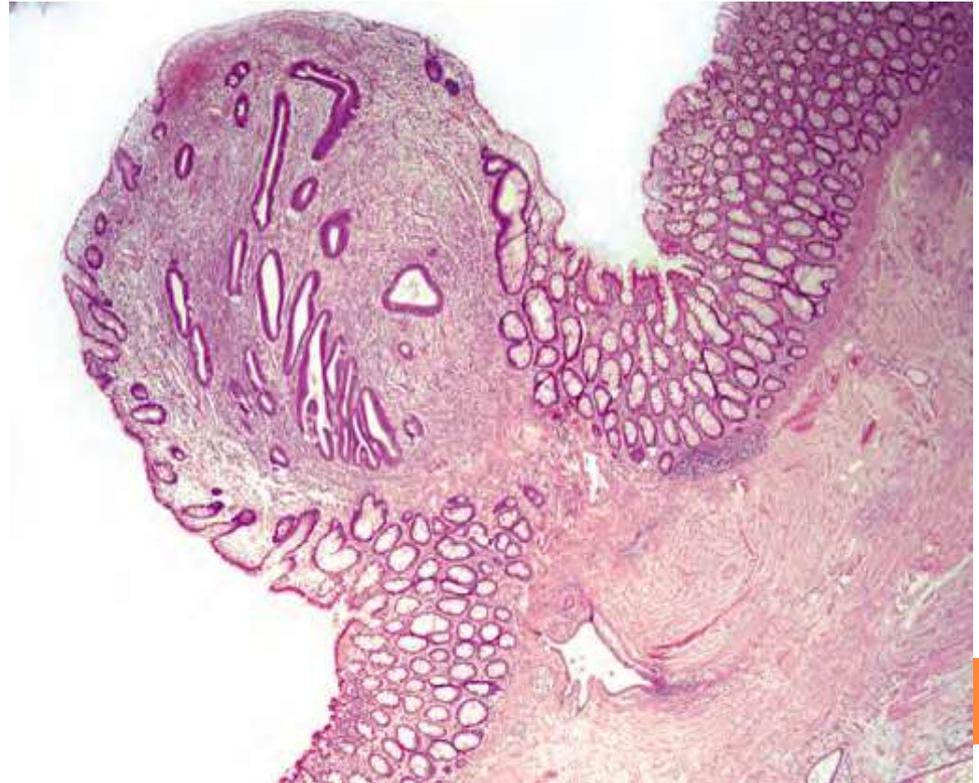
Ovarian endometriosis: ovary + a large endometriotic cyst with degenerated blood (“chocolate cyst”).



ENDOMETRIOSIS - MICROSCOPICALLY

Diagnosis; **2 of 3**
features:

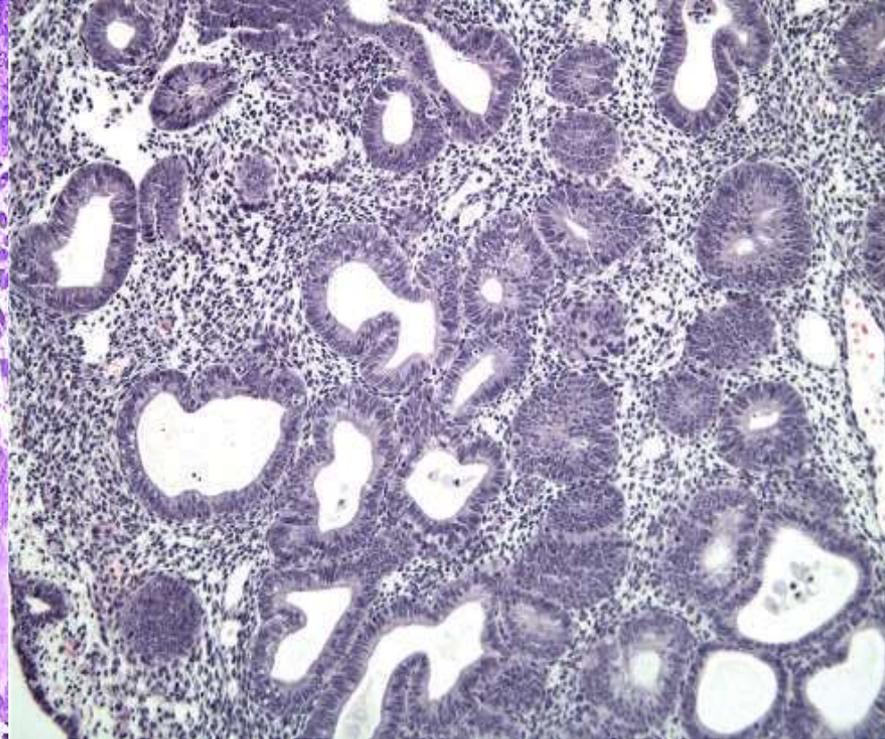
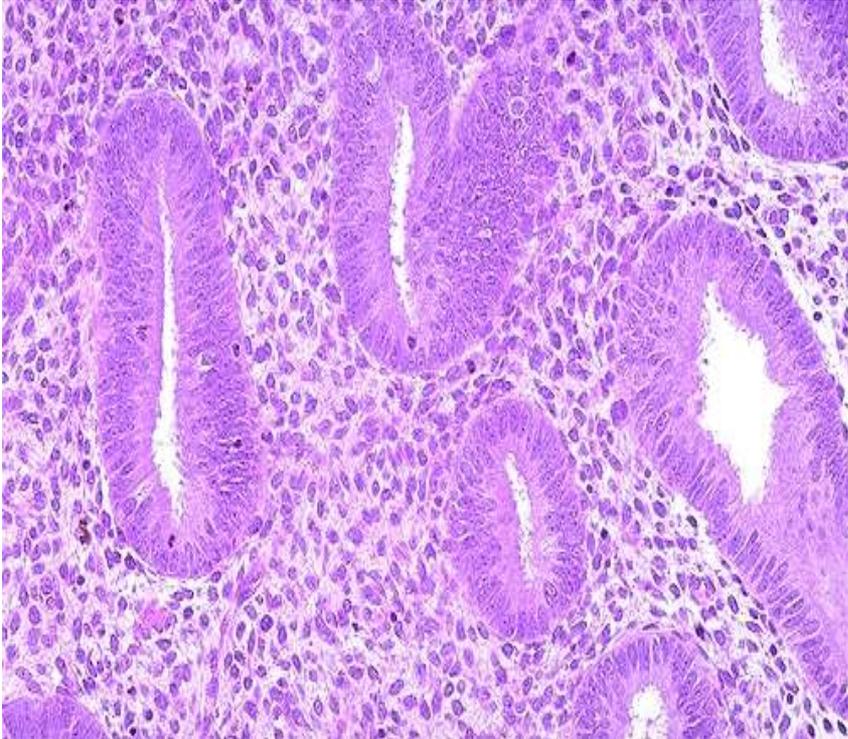
endometrial glands,
endometrial stroma,
or hemosiderin
pigment.



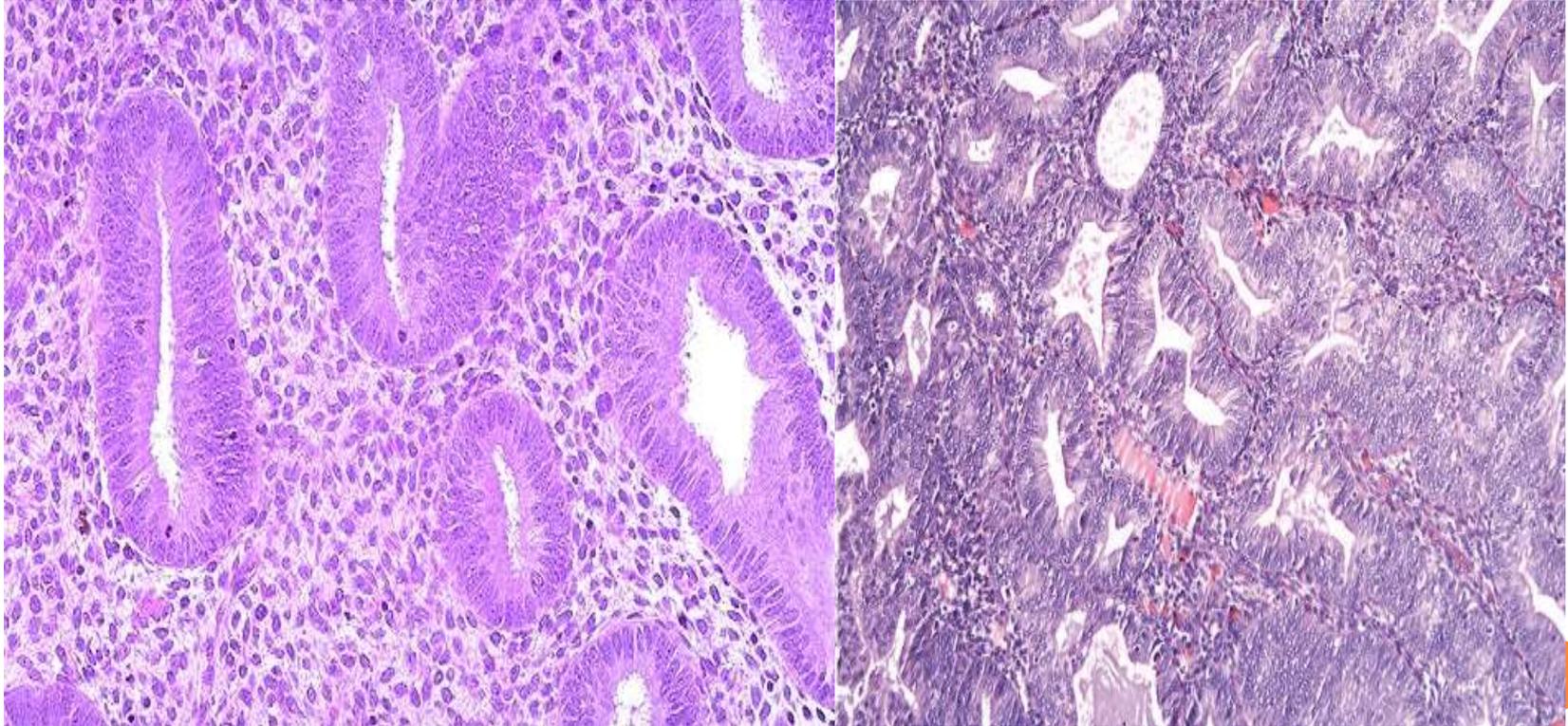
UTERINE PATHOLOGY - ENDOMETRIAL HYPERPLASIA

- **Pathogenesis:** prolonged or marked excess of estrogen relative to progesterin → exaggerated proliferation.
- An important **precursor** of endometrial carcinoma.
- Two categories based on the presence of cytologic atypia:
 1. Hyperplasia without atypia; low risk for progression to endometrial Ca.
 2. Hyperplasia with atypia(**endometrial intraepithelial neoplasia (EIN)**) higher risk for progression to endometrial Ca. → 20%.

UTERUS- HYPERPLASIA W/O ATYPIA



UTERUS- HYPERPLASIA WITH ATYPIA



TUMORS OF THE ENDOMETRIUM



TUMORS OF ENDOMETRIUM- ENDOMETRIAL POLYPS

- Exophytic masses of variable size that project into the endometrial cavity.
- Endometrial dilated (cystically) glands, with small muscular arteries and fibrotic stroma.
- Present with abnormal uterine bleeding.



TUMORS OF ENDOMETRIUM- ENDOMETRIAL CARCINOMA

- The most frequent cancer occurring in the female genital tract.
 - 50s & 60s
 - **Two** main scenarios:
 1. Estrogen excess in the setting of endometrial hyperplasia in perimenopausal women → **Endometrioid carcinomas.**
 2. Endometrial atrophy in older postmenopausal women → **Serous carcinomas**
- 

TUMORS OF ENDOMETRIUM- ENDOMETRIOID CARCINOMAS

- 80% of cases of endometrial carcinomas.
- Designated endometrioid because of their histologic similarity to normal endometrial glands.
- **Risk factors**; (1) obesity, (2) diabetes, (3) hypertension, (4)infertility, & (5) exposure to unopposed estrogen.
- **Genetic**: Mutations in mismatch repair genes & PTEN tumor suppressor gene.

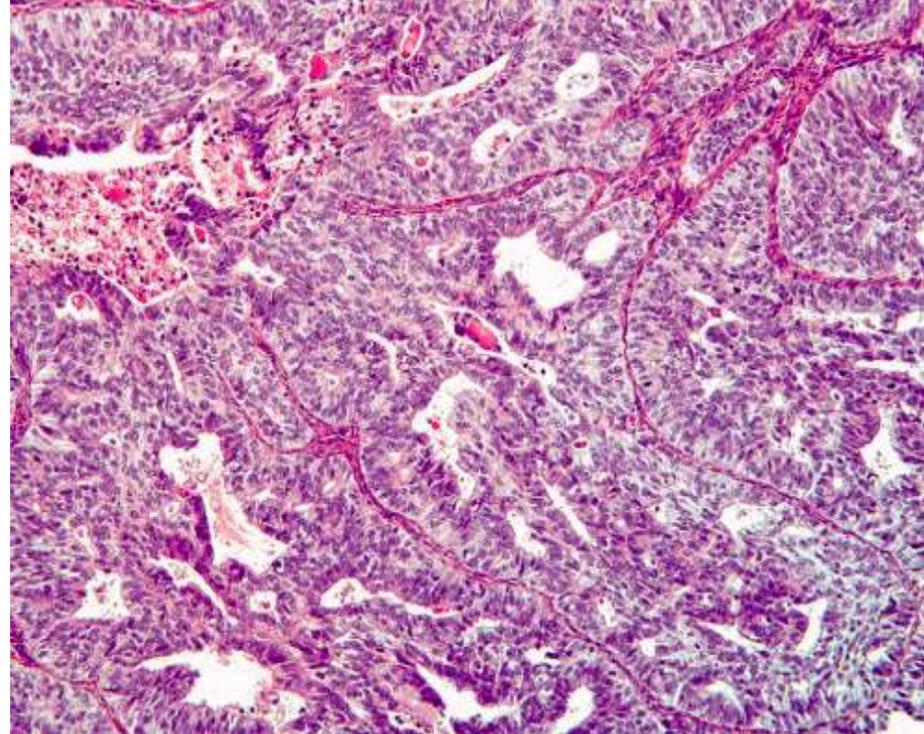
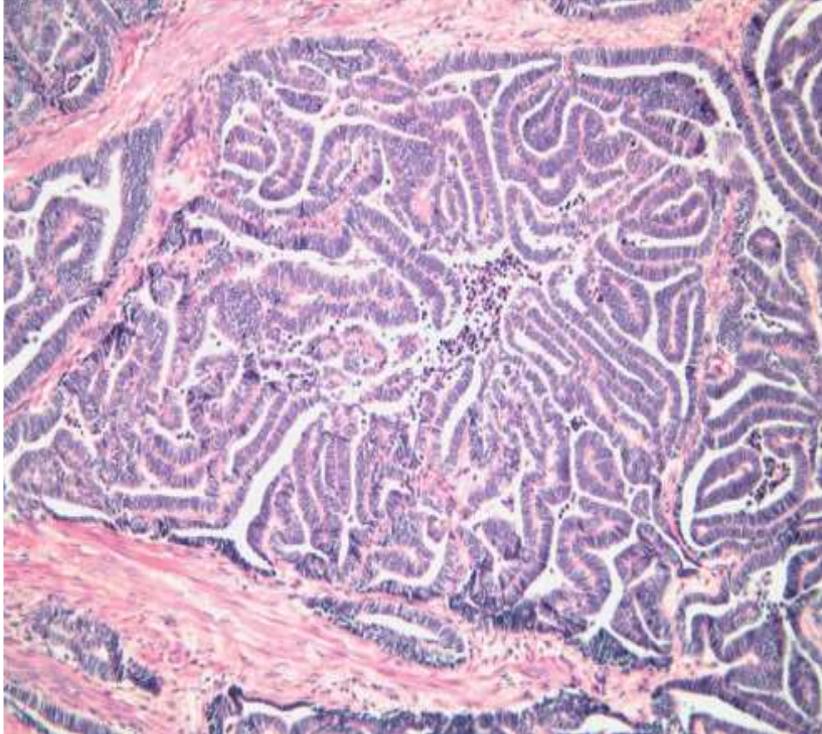


TUMORS OF ENDOMETRIUM- ENDOMETRIOID CARCINOMAS

- resemble normal endometrium (exophytic or infiltrative)
- Often infiltrate the myometrium & can enter vascular spaces (lymphovascular invasion).
- Graded 1-3, based on the degree of differentiation
- Stage: TNM, T: Tumor, N:lymph node, M: Metastases



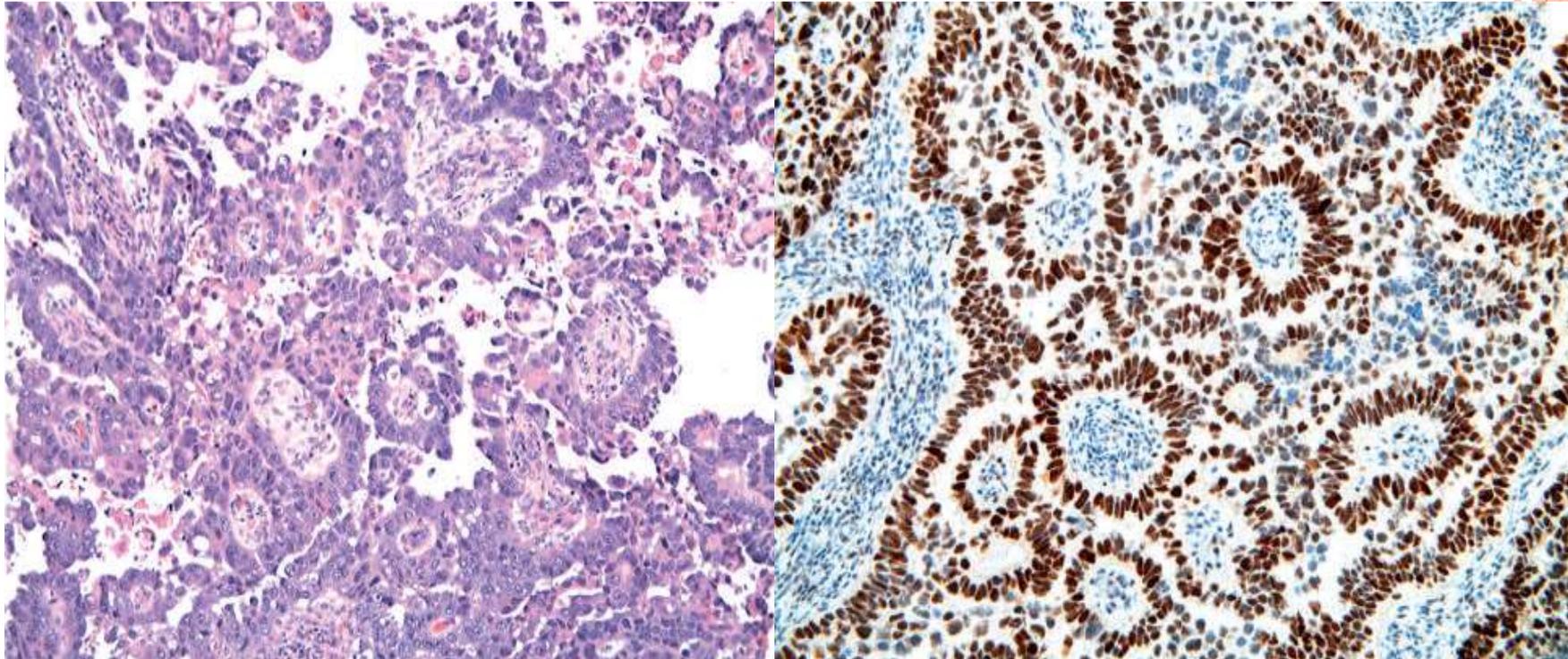
TUMORS OF ENDOMETRIUM - ENDOMETRIOID CARCINOMA



TUMORS OF ENDOMETRIUM - SEROUS CARCINOMA

- Less common but far more aggressive.
 - Not associated with unopposed estrogen or hyperplasia.
 - **Genetic:** mutations in the TP53 tumor suppressor gene.
 - So, immunohistochemistry shows strong staining for p53.
 - **Microscopic:** typically grow in small papillae with **marked** cytologic atypia.
- 

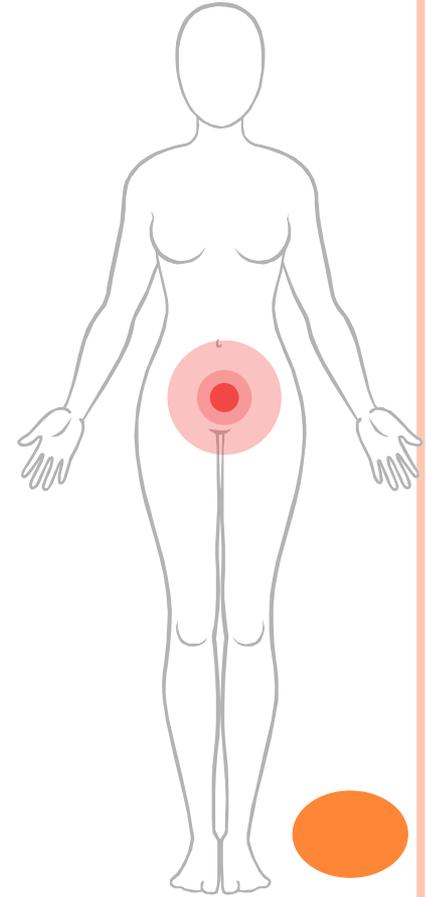
TUMORS OF ENDOMETRIUM - SEROUS CARCINOMAS



TUMORS OF ENDOMETRIUM – CLINICAL FEATURES

- Presentation: irregular or postmenopausal bleeding. With progression, the uterus enlarges.
 - Endometrioid: slow to metastasize, but if untreated, eventually disseminates to regional nodes & distant sites.
 - Serous: strongly dependent on staging but because of its aggressive behavior → often high-stage disease with a poor prognosis.
- 

TUMORS OF THE MYOMETRIUM



TUMORS OF MYOMETRIUM – LEIOMYOMAS (FIBROIDS)

- Benign tumors from the smooth muscle cells.
- The most common benign tumor in females, 30-50% of women of reproductive age.
- Estrogens stimulate the growth; shrink postmenopausally.
- Often asymptomatic, most frequent sign is menorrhagia.
- Rarely, if ever, transform into sarcomas, multiple lesions does not increase the risk of malignancy.

TUMORS OF MYOMETRIUM – LEIOMYOMAS (FIBROIDS)

Location: within the myometrium (intramural), beneath the endometrium (submucosal) or or the serosa (subserosal)



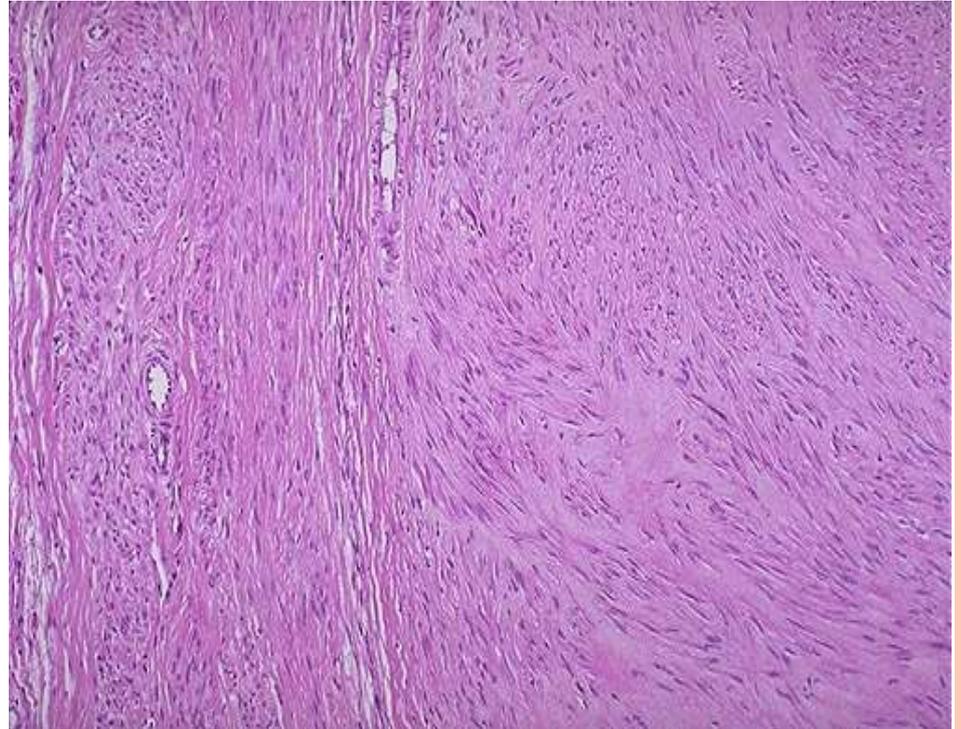
TUMORS OF MYOMETRIUM – LEIOMYOMAS (FIBROIDS)

Gross: typically **sharply circumscribed**, firm gray white masses with a characteristic **whorled cut surface**, often occur as **multiple tumors**.



TUMORS OF MYOMETRIUM – LEIOMYOMAS (FIBROIDS)

Histologic examination,
bundles of smooth
muscle cells mimicking
the appearance of normal
myometrium



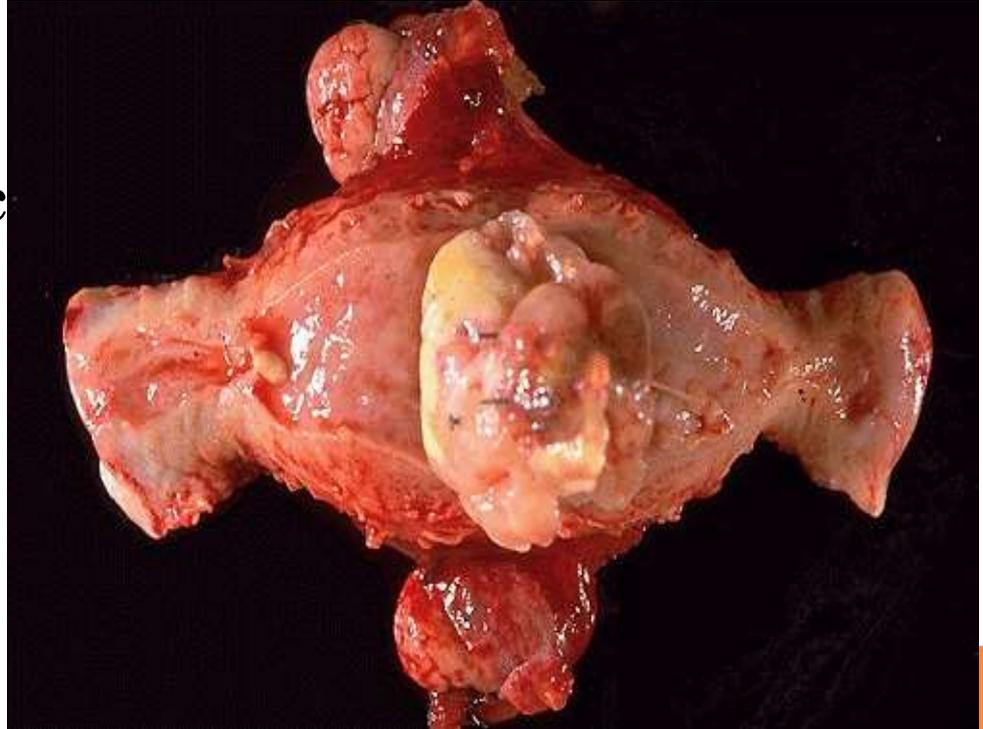
TUMORS OF MYOMETRIUM – LEIOMYOSARCOMA

- Malignant counterpart of Leiomyoma.
- Always arise de novo (**not from** previous Leiomyoma)
- Solitary and mostly in postmenopausal women.
- Recurrent is common & many metastasize, typically **lungs**.



TUMORS OF MYOMETRIUM – LEIOMYOSARCOMA

Gross: soft,
hemorrhagic, necrotic
masses.
Irregular borders.



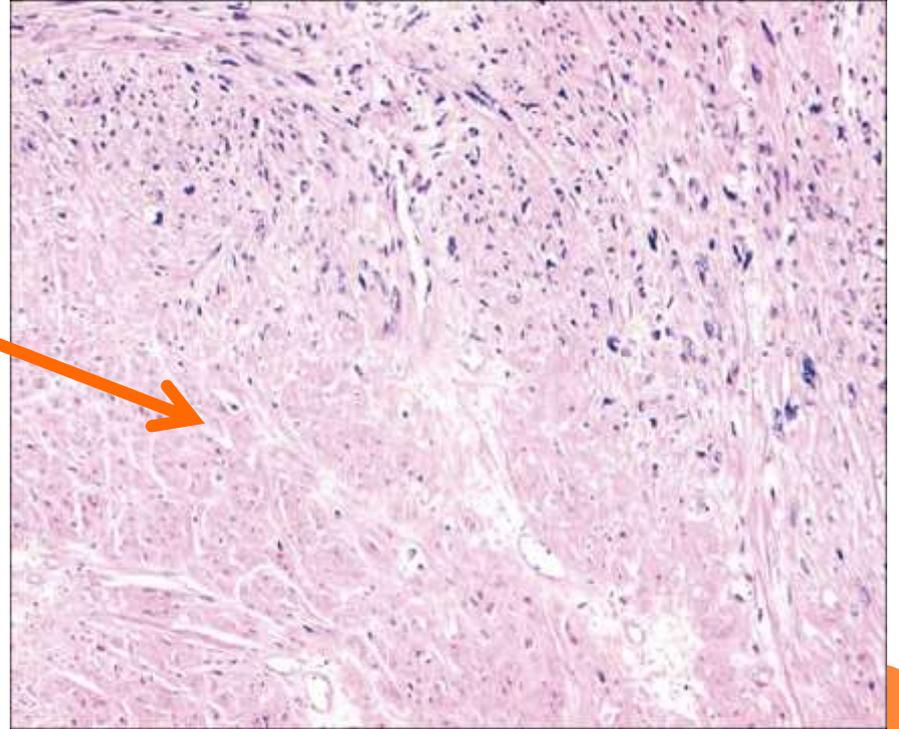
TUMORS OF MYOMETRIUM – LEIOMYOSARCOMA

Microscopic:

Diagnostic features of leiomyosarcoma;

- (1) tumor necrosis,
- (2) cytologic atypia, and
- (3) mitotic activity.

Assessment of all three is necessary to make a diagnosis.



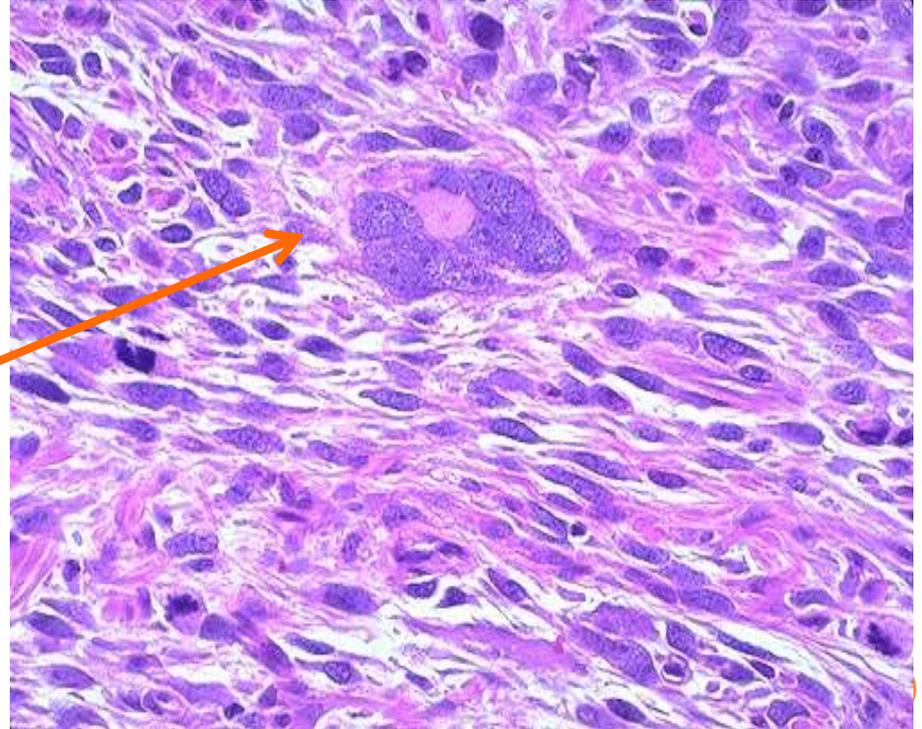
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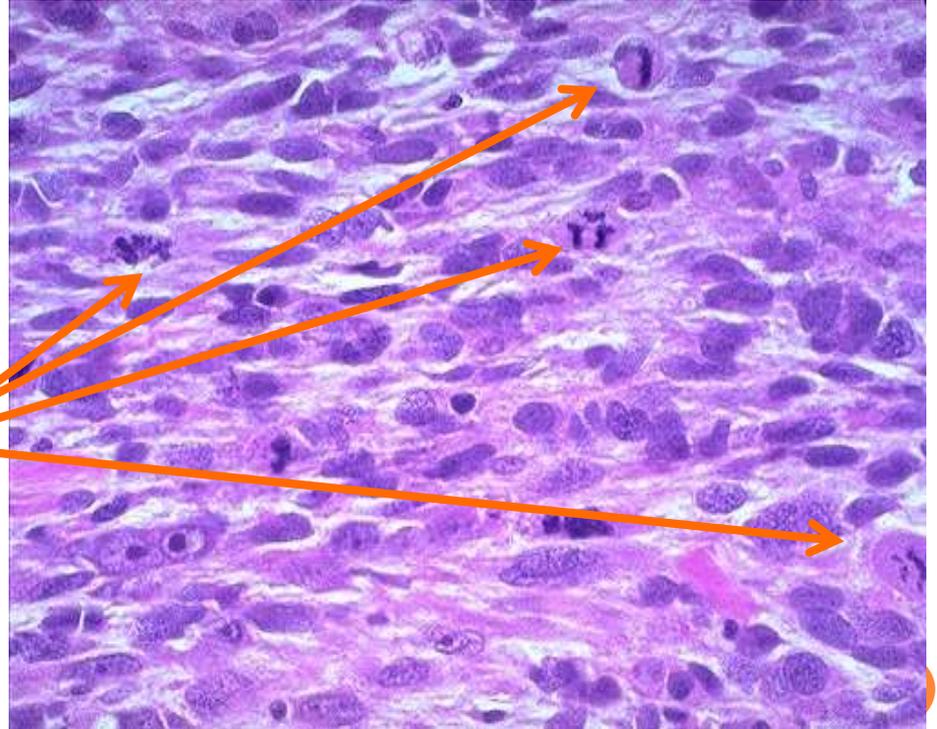
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 THANK YOU

