Female Genital System, Lecture3

BODY OF UTERUS

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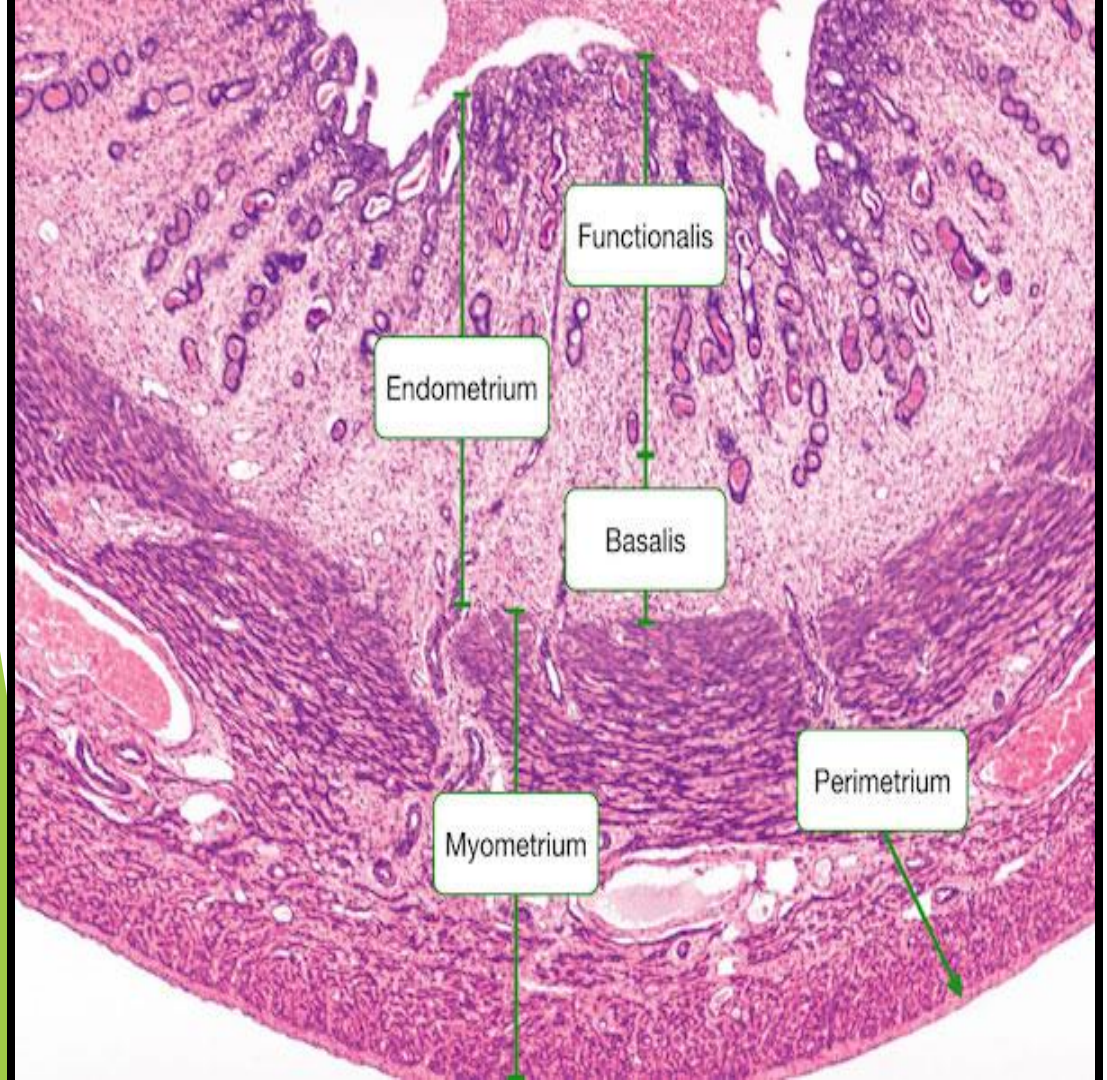
May 13 2024



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

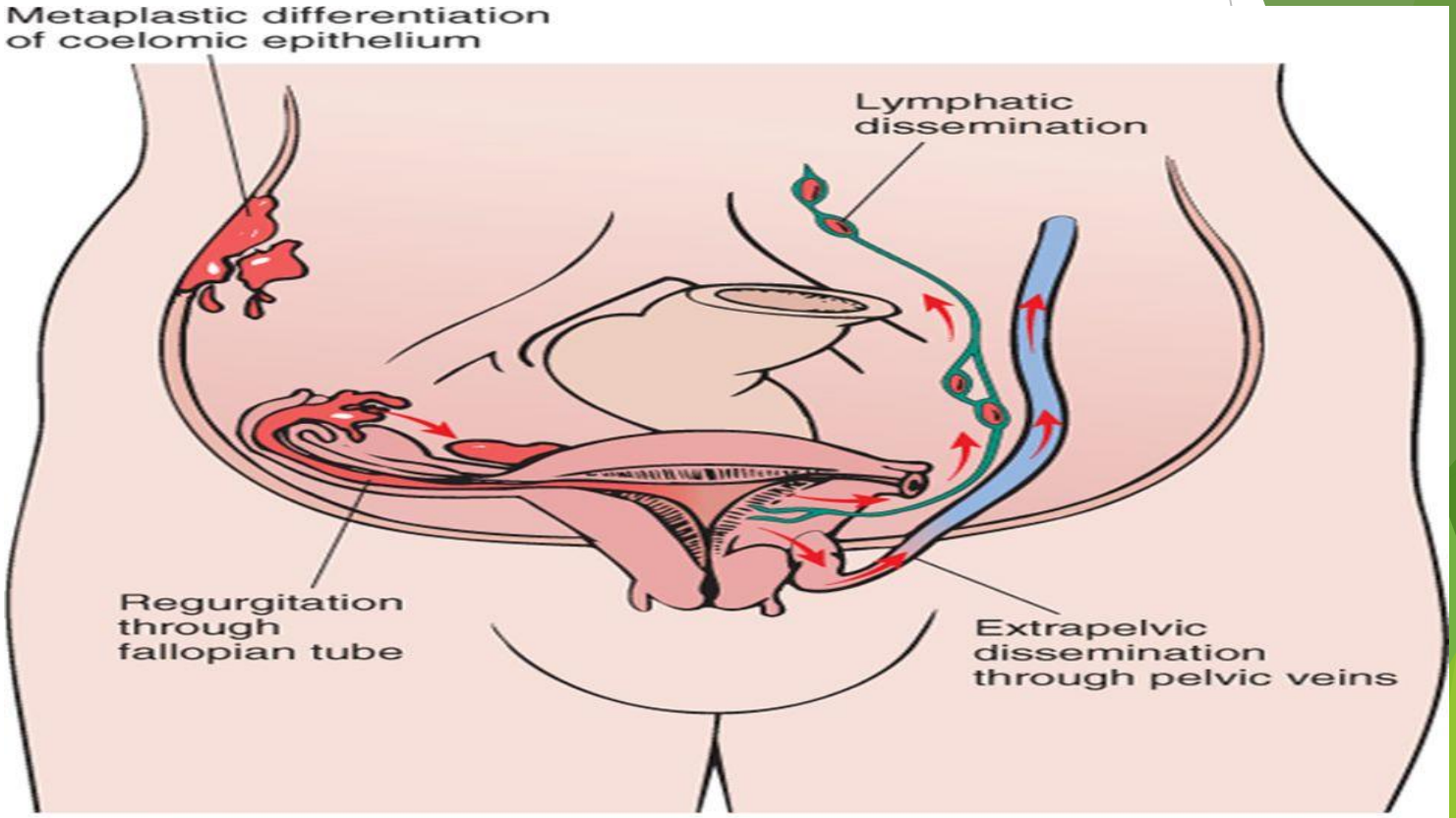
- Endometrial glands & stroma in locations outside uterus.
- 10% of women in the reproductive years & ass with infertility.
- Multifocal & involves pelvic structures (1) ovaries, (2) uterine ligaments,(3) rectovaginal septum, (4) cul de sac
- Less frequently, involves distant areas of peritoneal cavity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

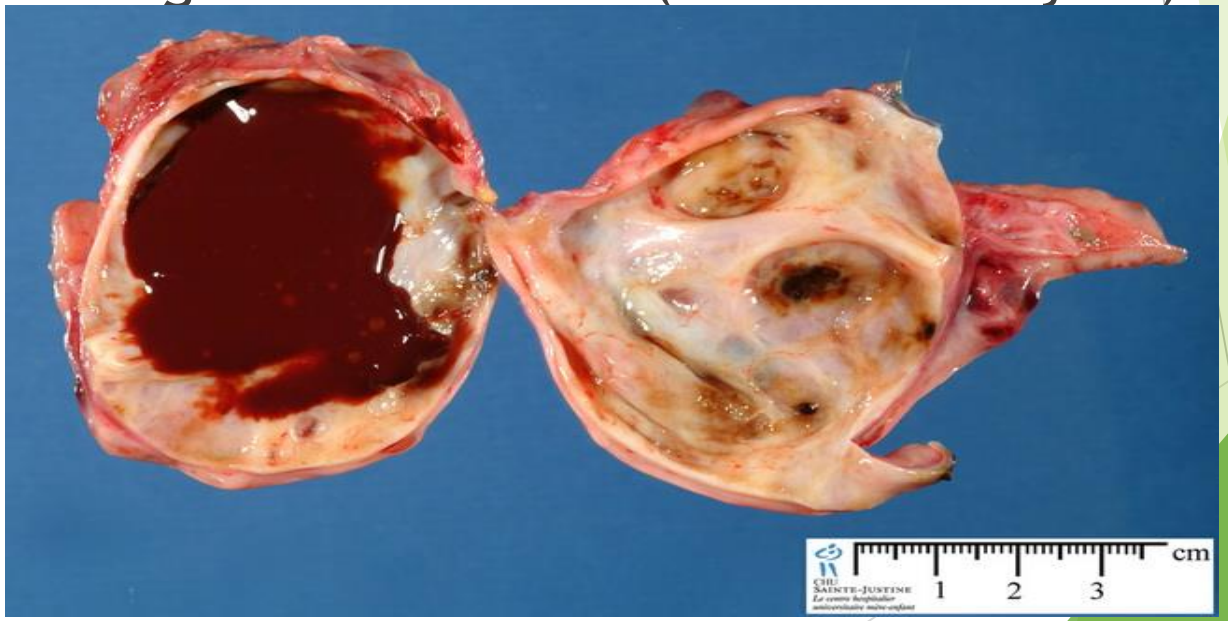


Endometriosis - Clinical

- 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

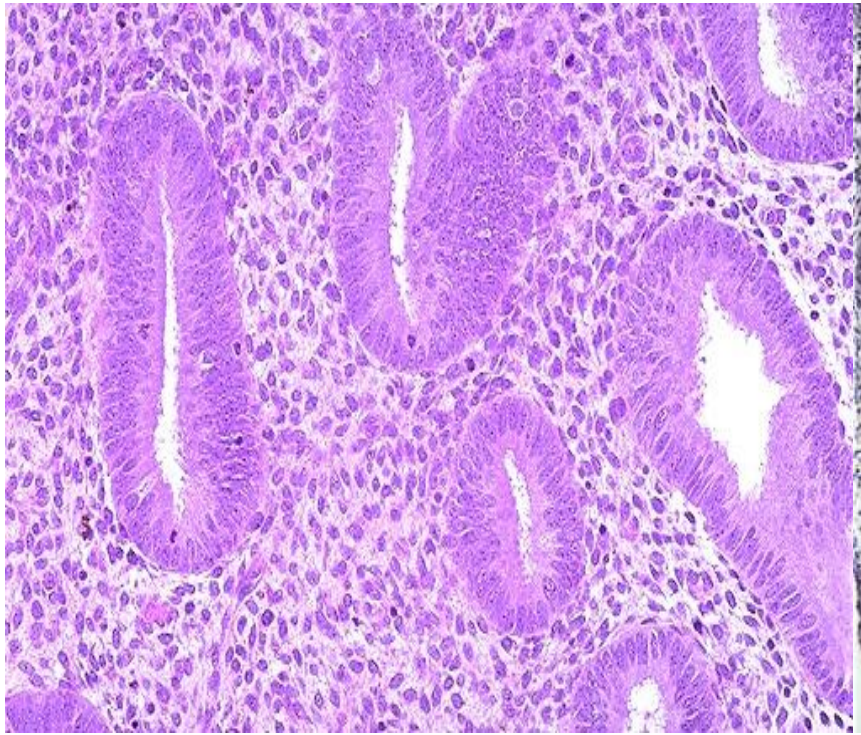
Diagnosis; **2 of 3 features:** endometrial glands, endometrial stroma, or hemosiderin pigment.

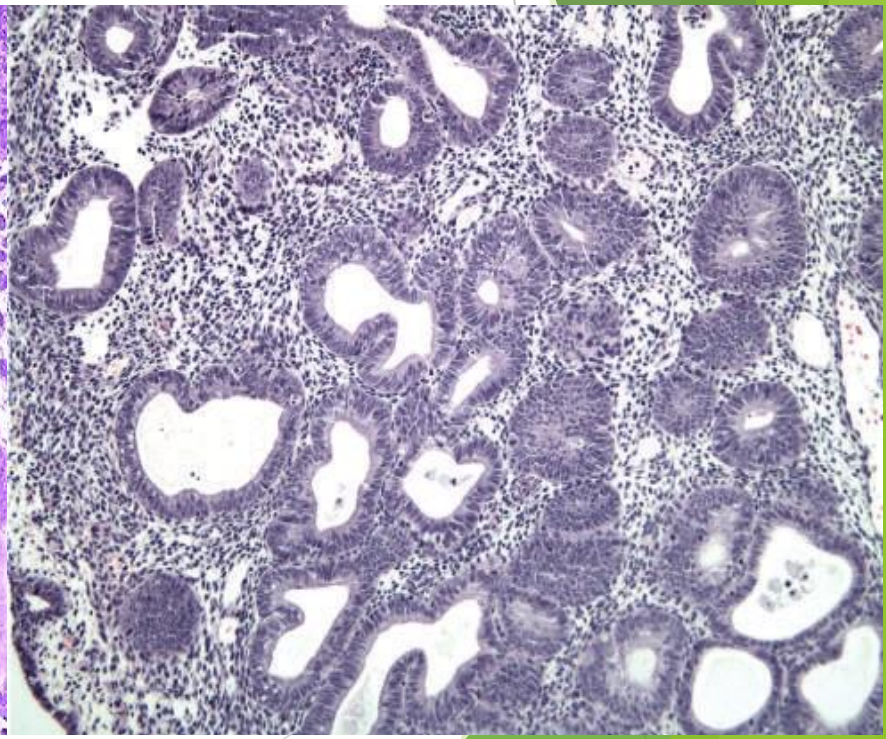
Uterine Pathology - Endometrial Hyperplasia

- Pathogenesis: prolonged or marked excess of estrogen relative to progestin → exaggerated proliferation.
- An important precursor of endometrial carcinoma.
- Two categories based on the presence of cytologic atypia:

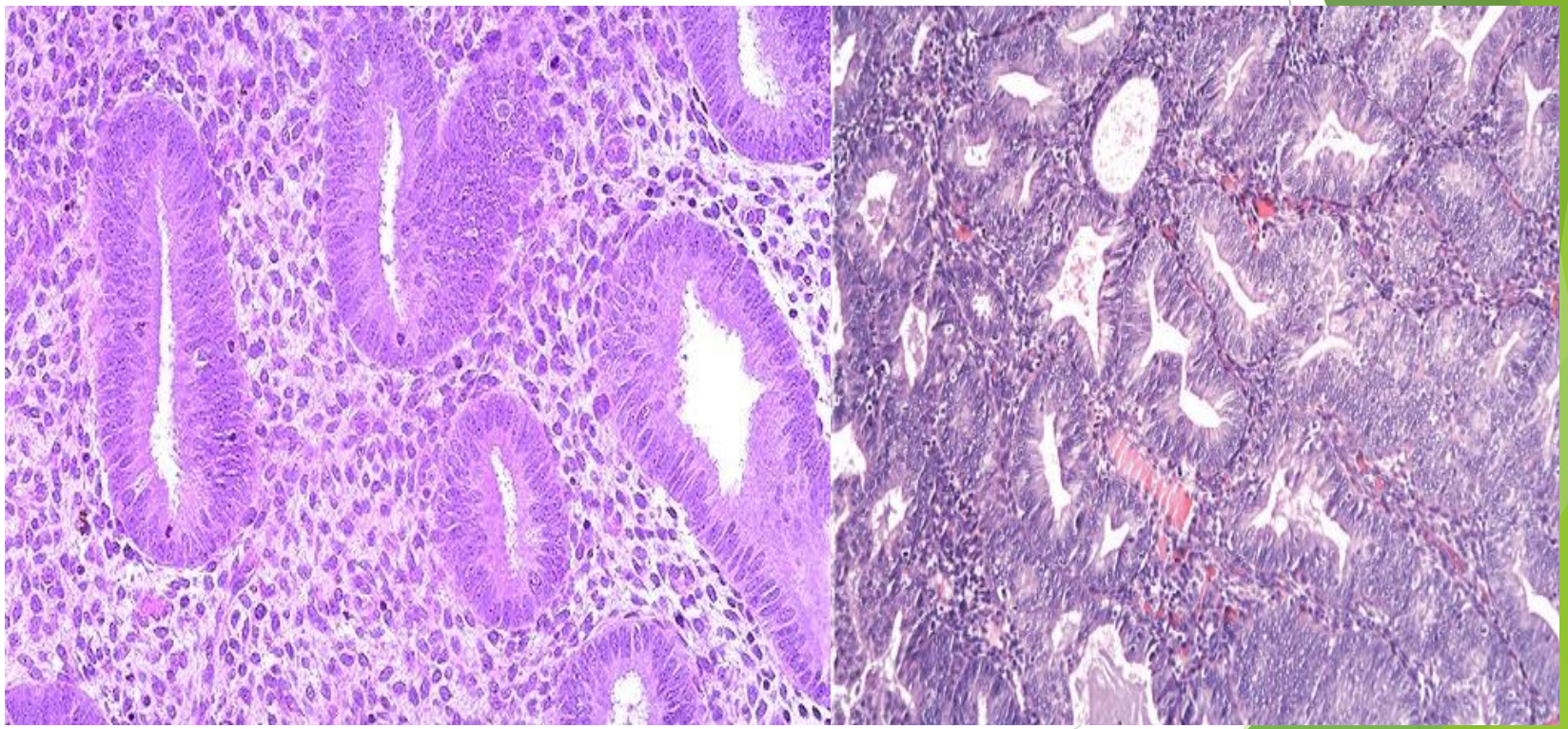
1. Hyperplasia without atypia; low risk for progression to endometrial Ca.
2. Hyperplasia with atypia(endometrial intraepithelial neoplasia (EIN) higher risk for progression to endometrial Ca. → 20%.

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 scenario:

1. Estrogen excess in the setting of endometrial hyperplasia in perimenopausal women → Endometrioid carcinomas.
2. Endometrial atrophy in older postmenopausal women → Serous carcinomas

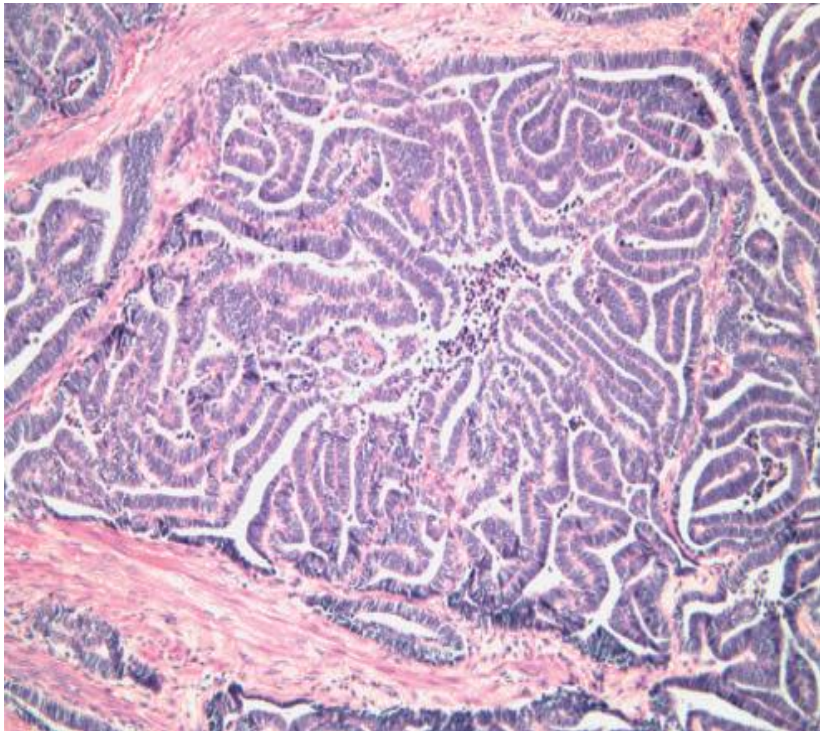
Tumors of Endometrium- Endometrioid carcinomas

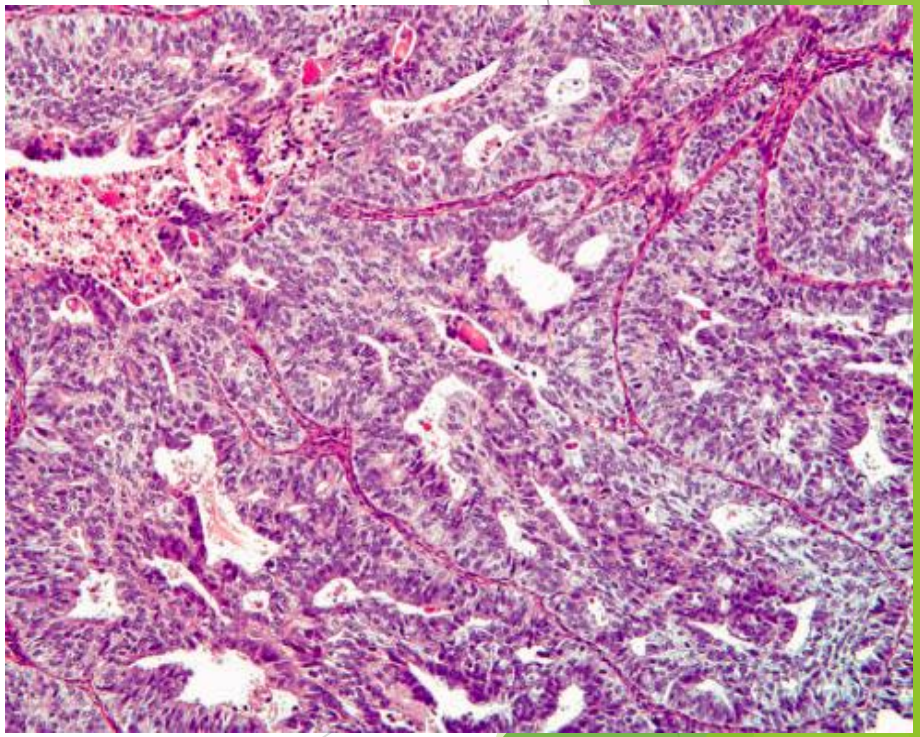
- 80% of cases of endometrial carcinomas.
- Designated endometrioid because of their histologic similarity to normal endometrial glands.
- Risk factors; (1) obesity, (2) diabetes, (3) hypertension, (4)infertility, & (5) exposure to unopposed estrogen.
- Genetic: Mutations in mismatch repair genes & PTEN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

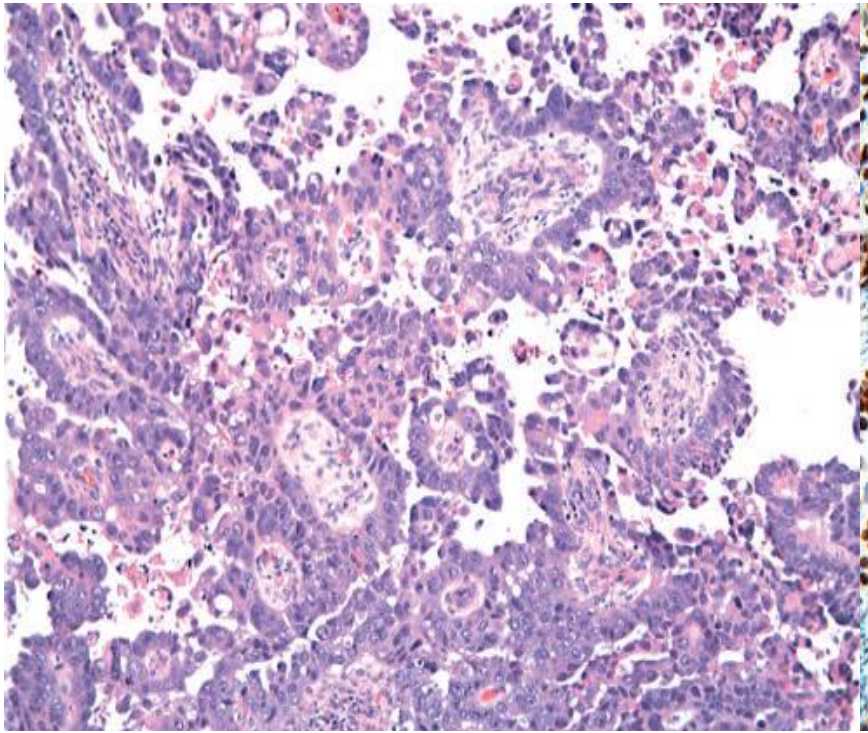


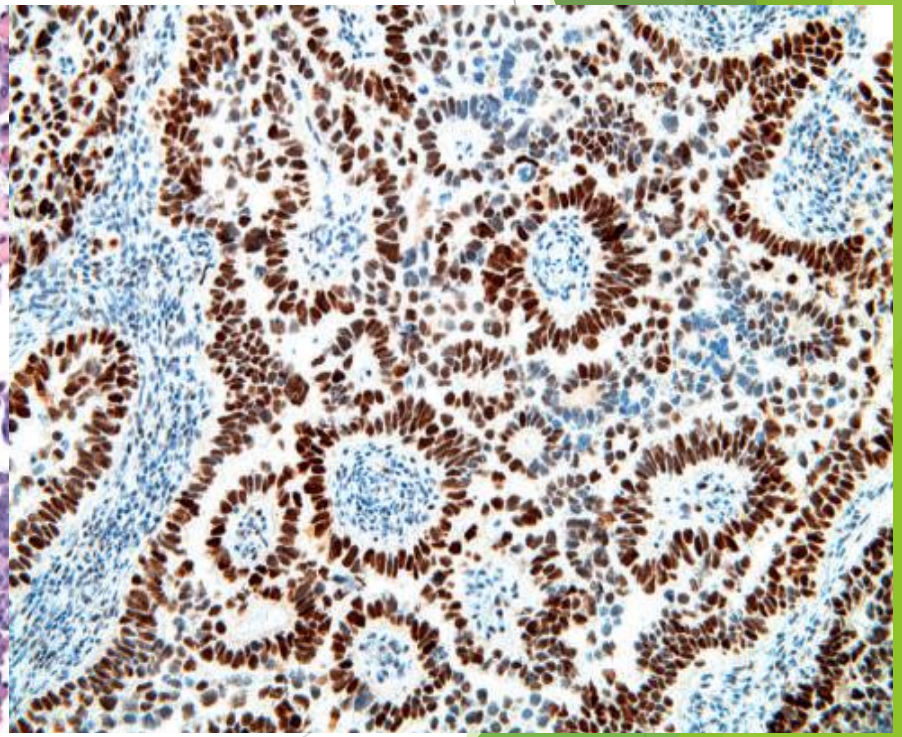


Tumors of Endometrium - Serous carcinoma

- 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

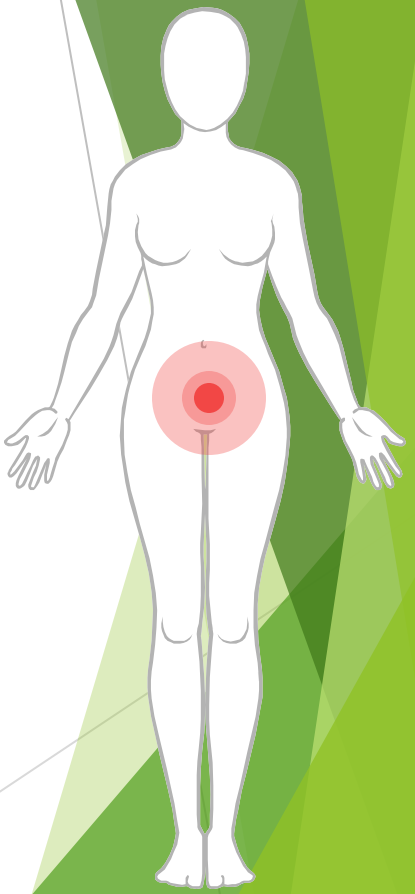




Tumors of Endometrium – Clinical features

- 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 Myomertium



Tumors of Myomertium - 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 Myomertium – Leiomyomas (fibroids)

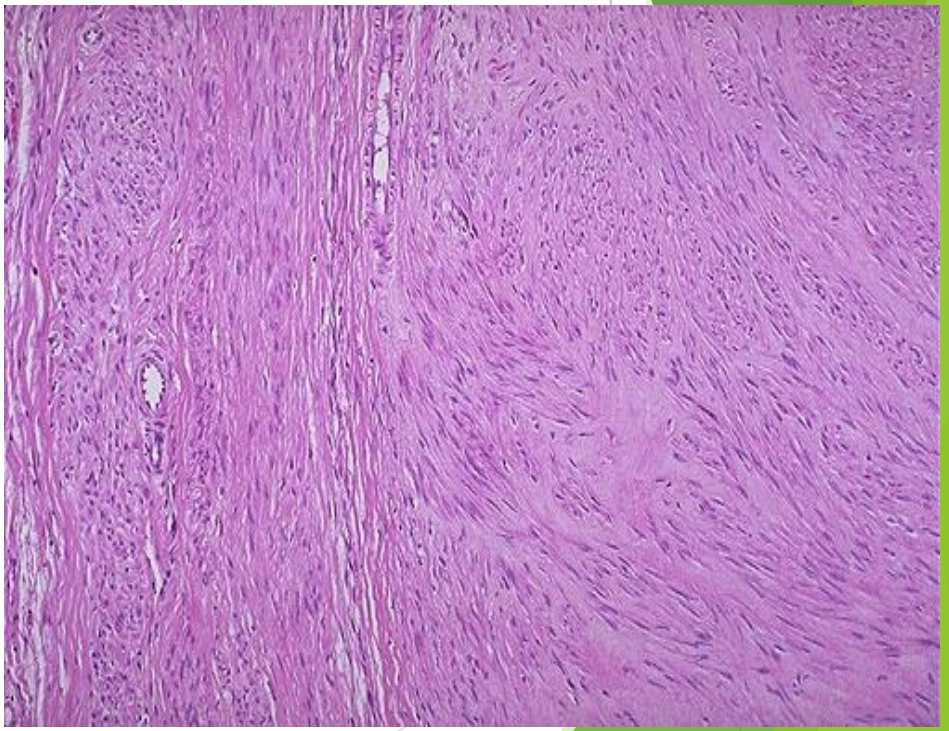
Location: within the myometrium (intramural), beneath the endometrium (submucosal) or or the serosa (subserosal)

Tumors of Myomertium – Leiomyomas (fibroids)

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

Tumors of Myomertium – Leiomyomas (fibroids)

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



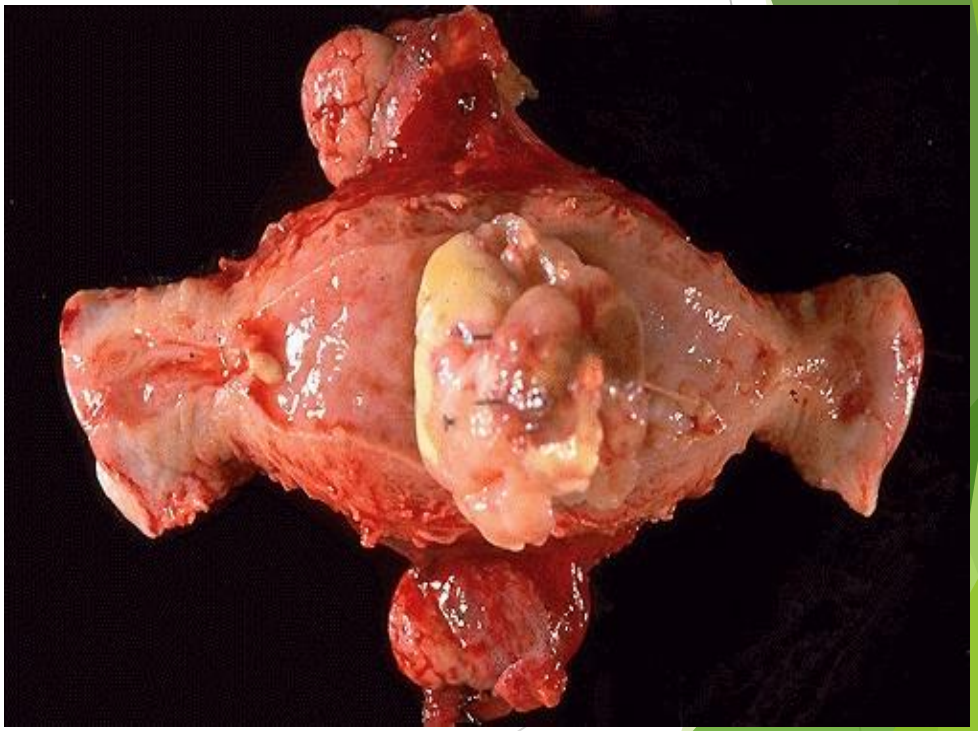
Tumors of Myomertium – Leiomyosarcoma

- 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 Myomertium – Leiomyosarcoma

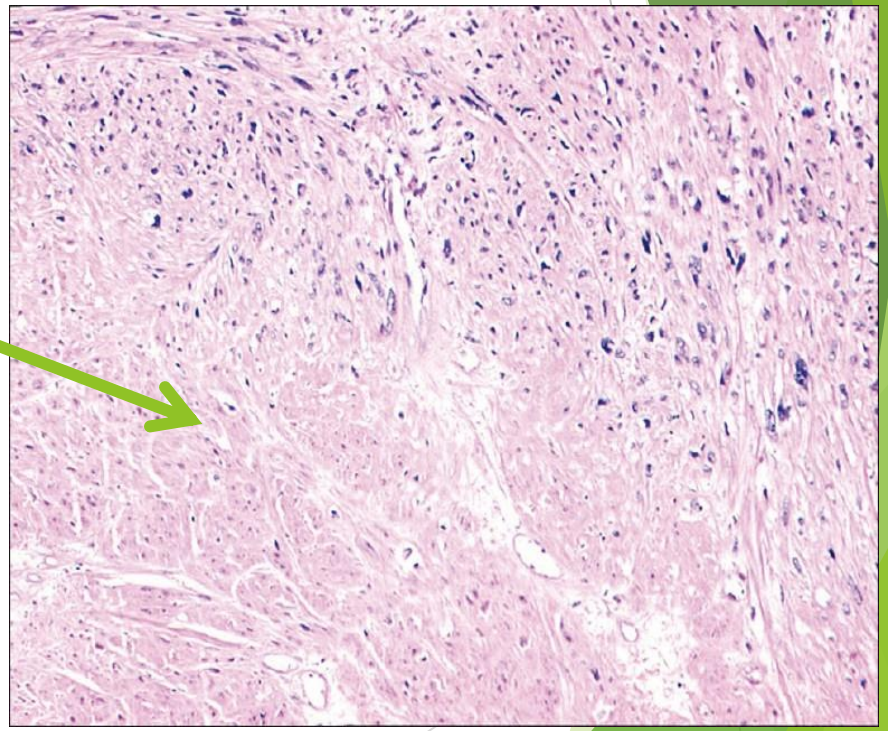
Gross: soft, hemorrhagic, necrotic masses.

Irregular borders.



Tumors of Myomertium – 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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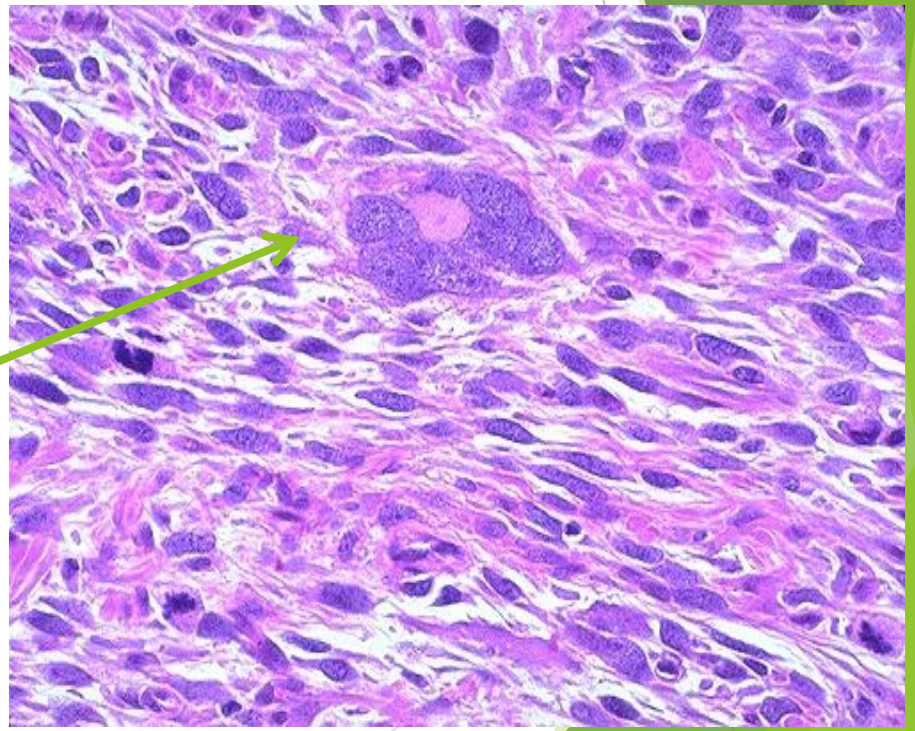

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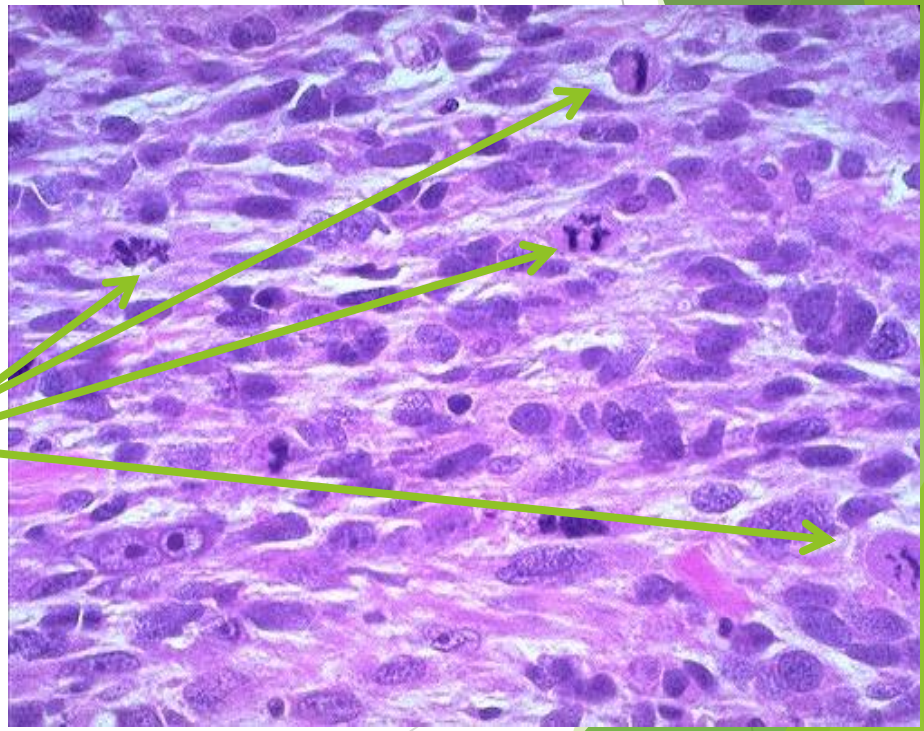

Good Luck

- THANK YOU