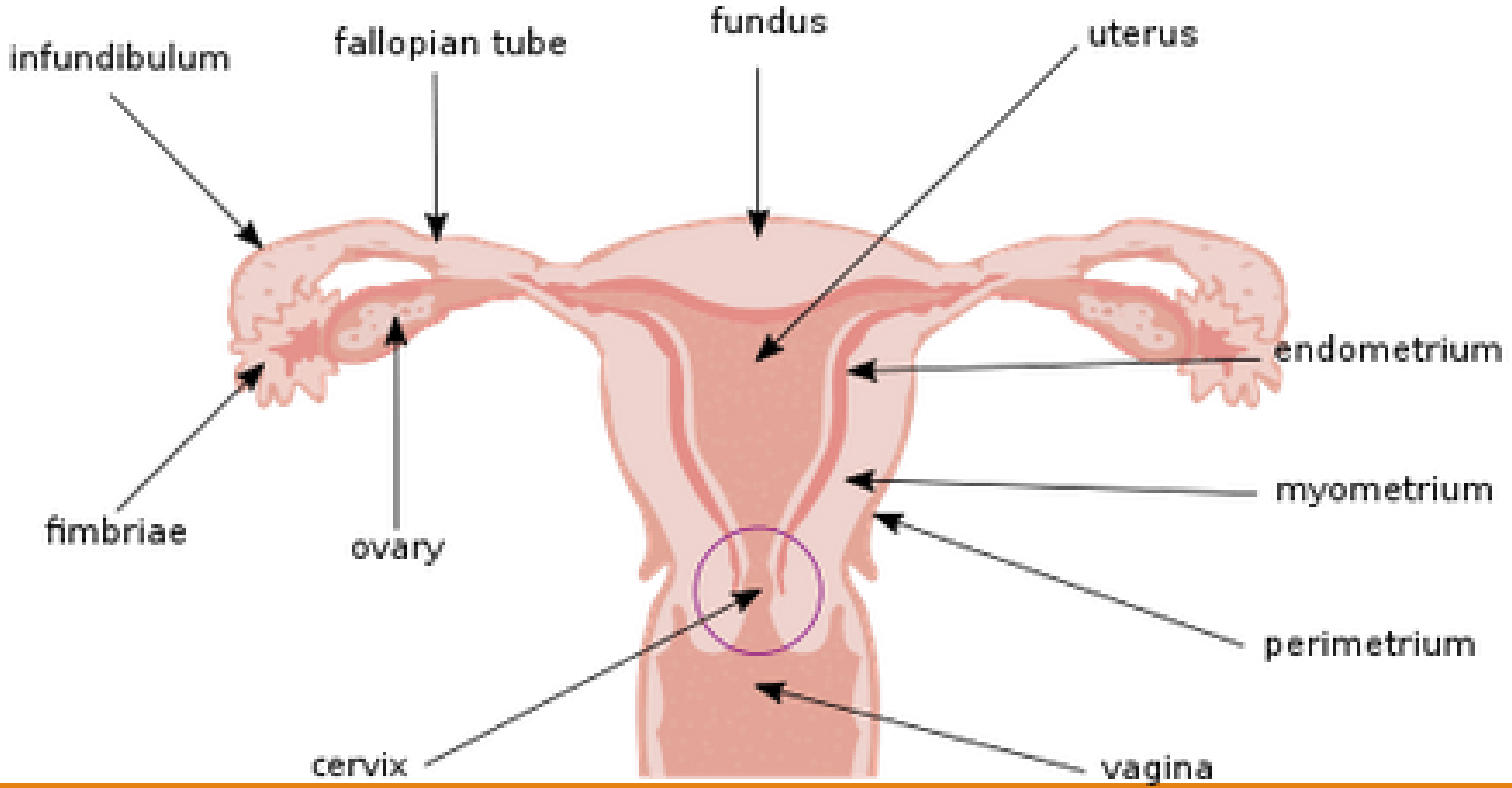
بسم الله نبدأ...

Female Genital System uterine pathology

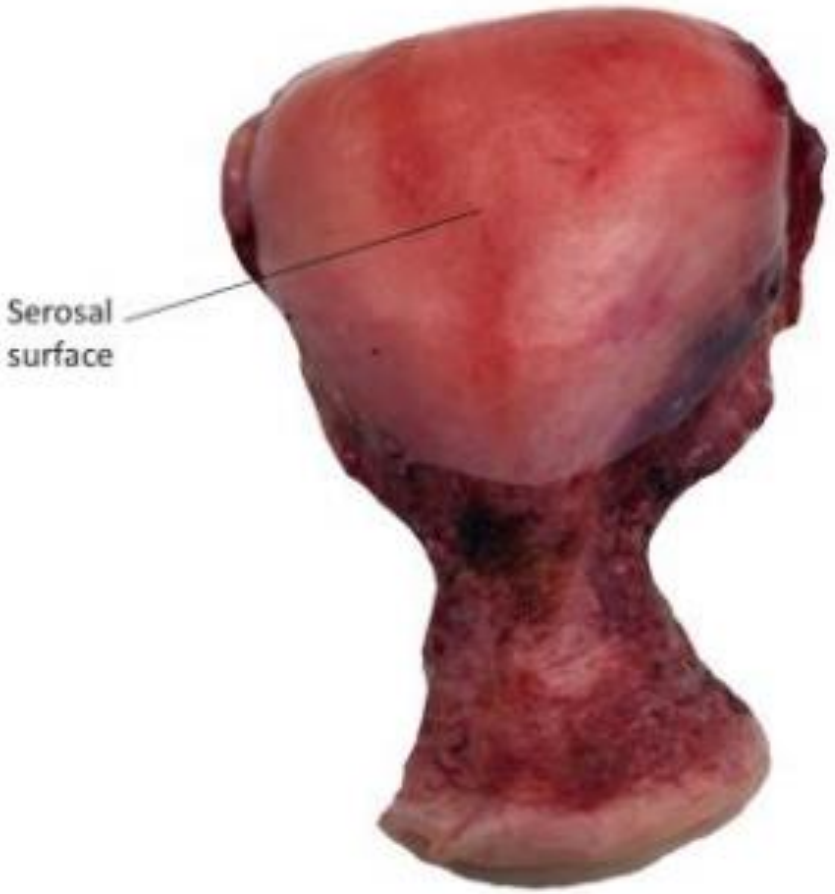
DR.EMAN KREISHAN, M.D.

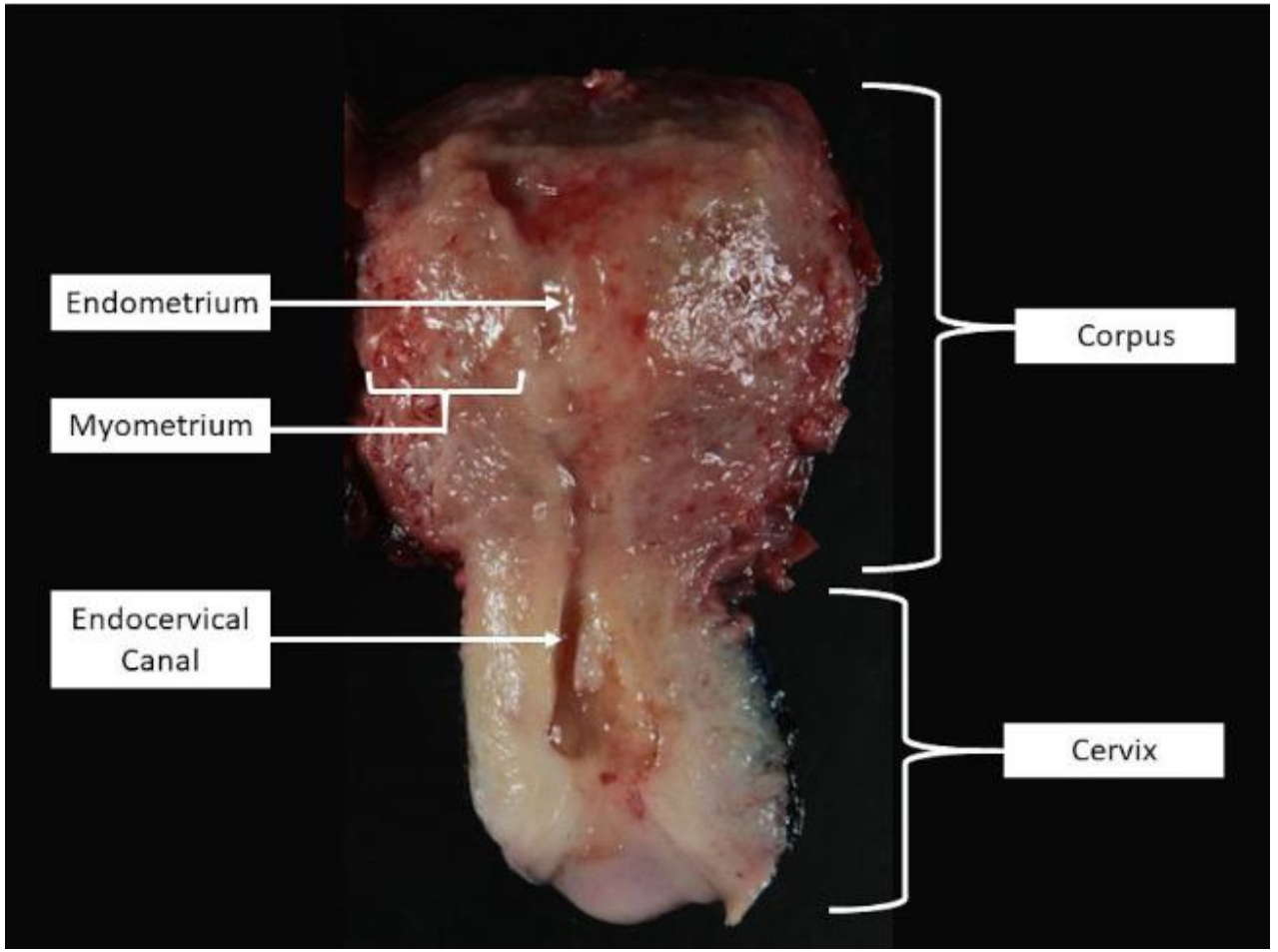
14-5-2025

Anatomy


infundibulum
fallopian tube
fundus
uterus
endometrium
myometrium
perimetrium
vagina
cervix
ovary
fimbriae

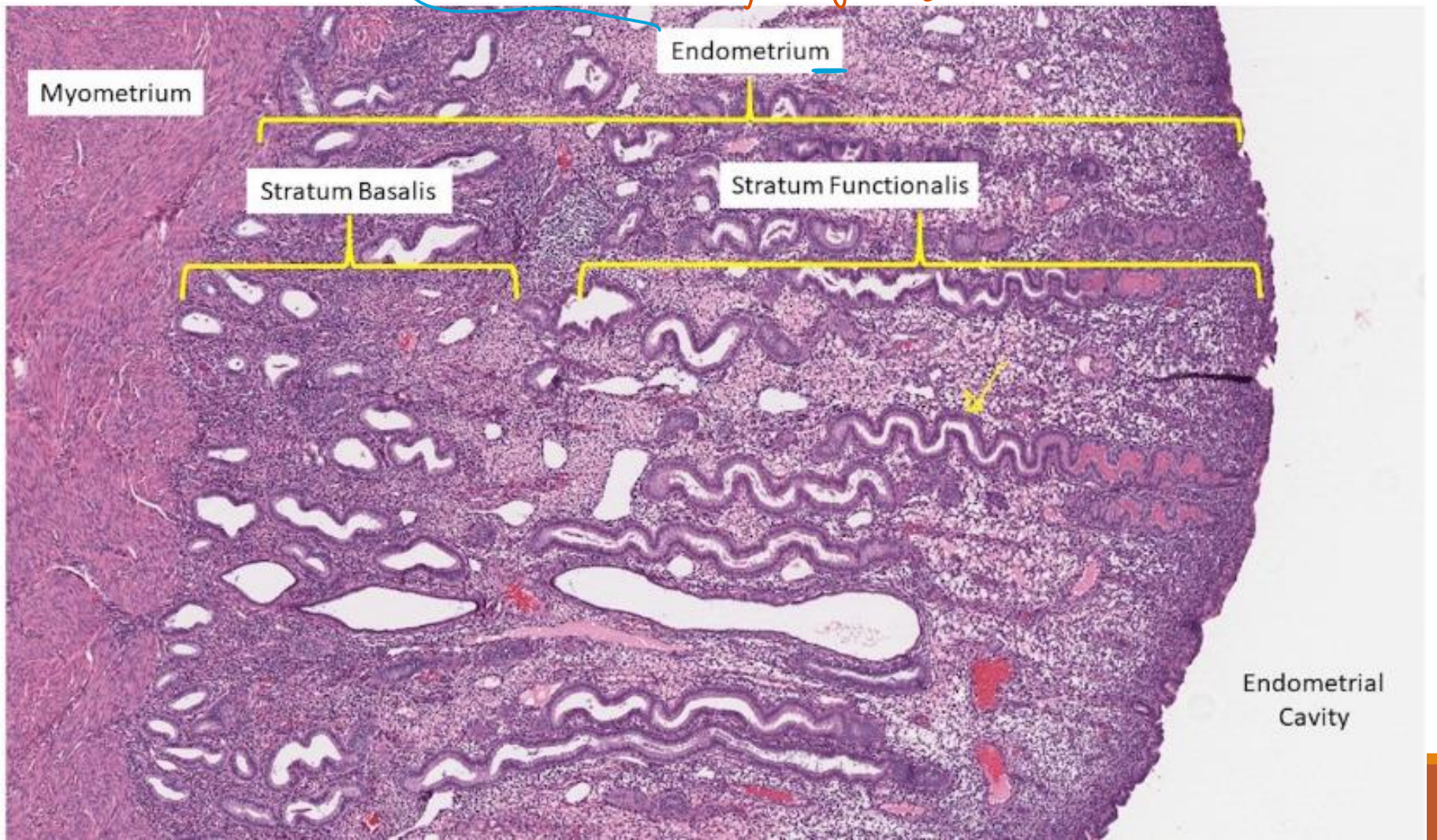
Gross anatomy





Histology

true epithelium → gland + supportive stroma
↳ change throughout cycle according to hormons



Uterine pathology

- Non-neoplastic:

- Endometritis.
- Adenomyosis.
- Endometriosis.
- Hyperplasia.

- Neoplastic:

- Hyperplasia.
- Malignant tumors.

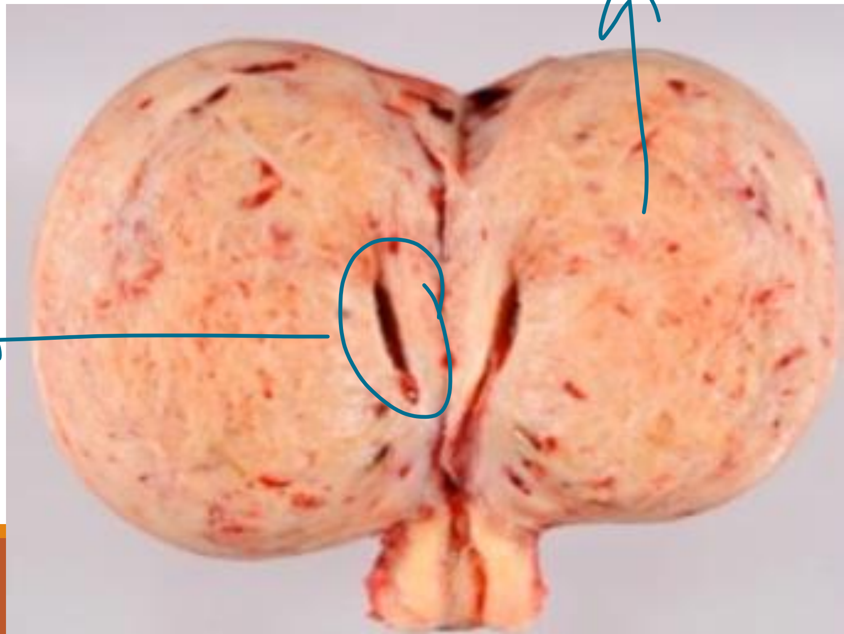
1. Endometritis

- Inflammation of the endometrium.
- Risk factors:
  - Pelvic inflammatory disease (PID).
  - Retained products of conception. → After Abortion
  - Intrauterine device (IUCD).
- Clinically: fever, abdominal pain, menstrual abnormalities, infertility & ectopic pregnancy due to damage to the fallopian tubes.
  ↳ fibrosis and scarring due to inflammation.
- Management: Correct the cause, antibiotics.

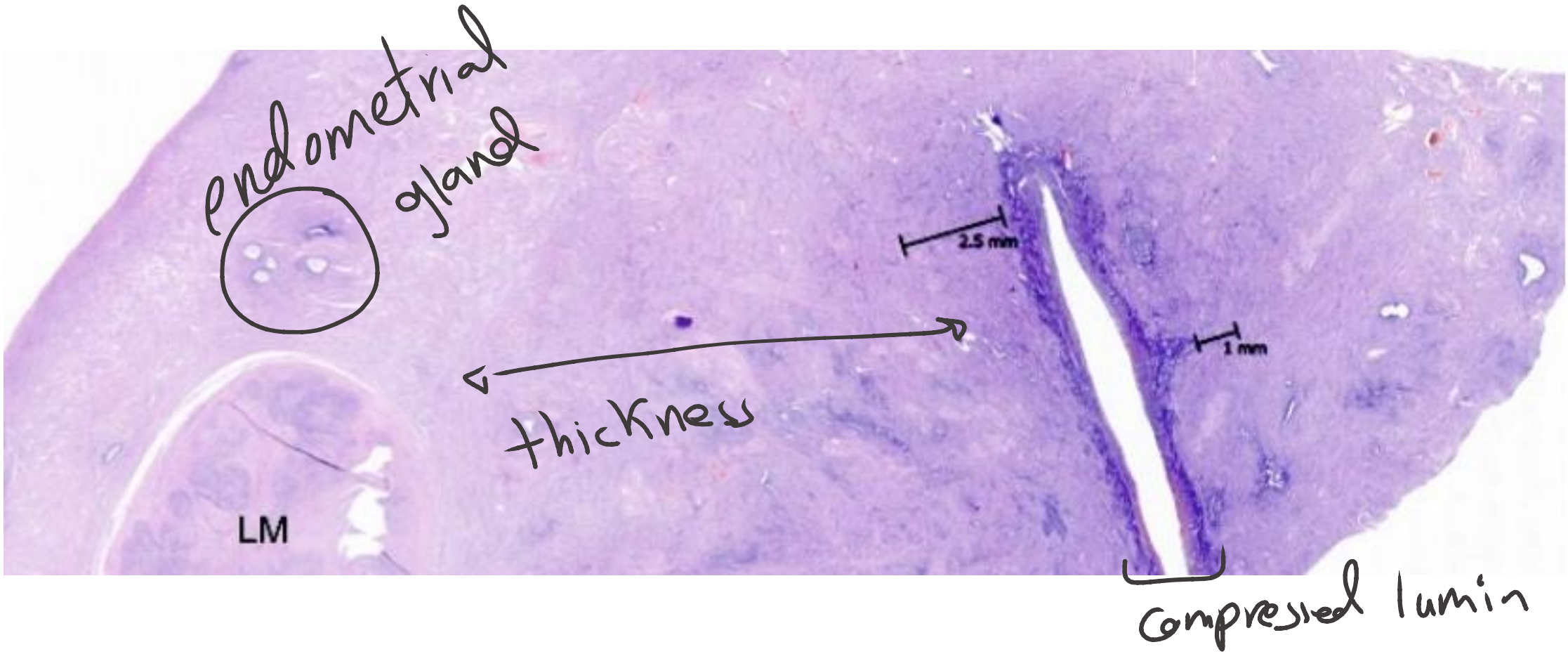
2. Adenomyosis

- The presence of endometrial tissue (stroma, glands, or both)in myometrium between muscle bundles.
- Result in "thickened" uterine wall & enlarged uterus due to reactive muscle hypertrophy.
- Presentation: menorrhagia, dysmenorrhea.
  excessiv bleeding — painful
- Usually Coexist with: endometriosis.

وجود endometrial في myometrium بيصير لها
shedding during menstruation
↳ bleeding in muscle bundle
↳ reactive hypertrophy + fibrosis and scarring
Causes abortion and infertility



Microscopic features



3. Endometriosis

- The presence of estrogen-dependent endometrial tissue outside the uterine cavity.

= all uterus estrogen dependant except strombasalis "nonfunctional and non hormonal sensitive"

- Affecting women in the reproductive years.

- Usually it's a multifocal process involving:
  - pelvic structures: ovaries, uterine ligaments, rectovaginal septum, cul de sac
  - OR involves distant areas of peritoneal cavity or periumbilical tissues.

between rectum and uterine

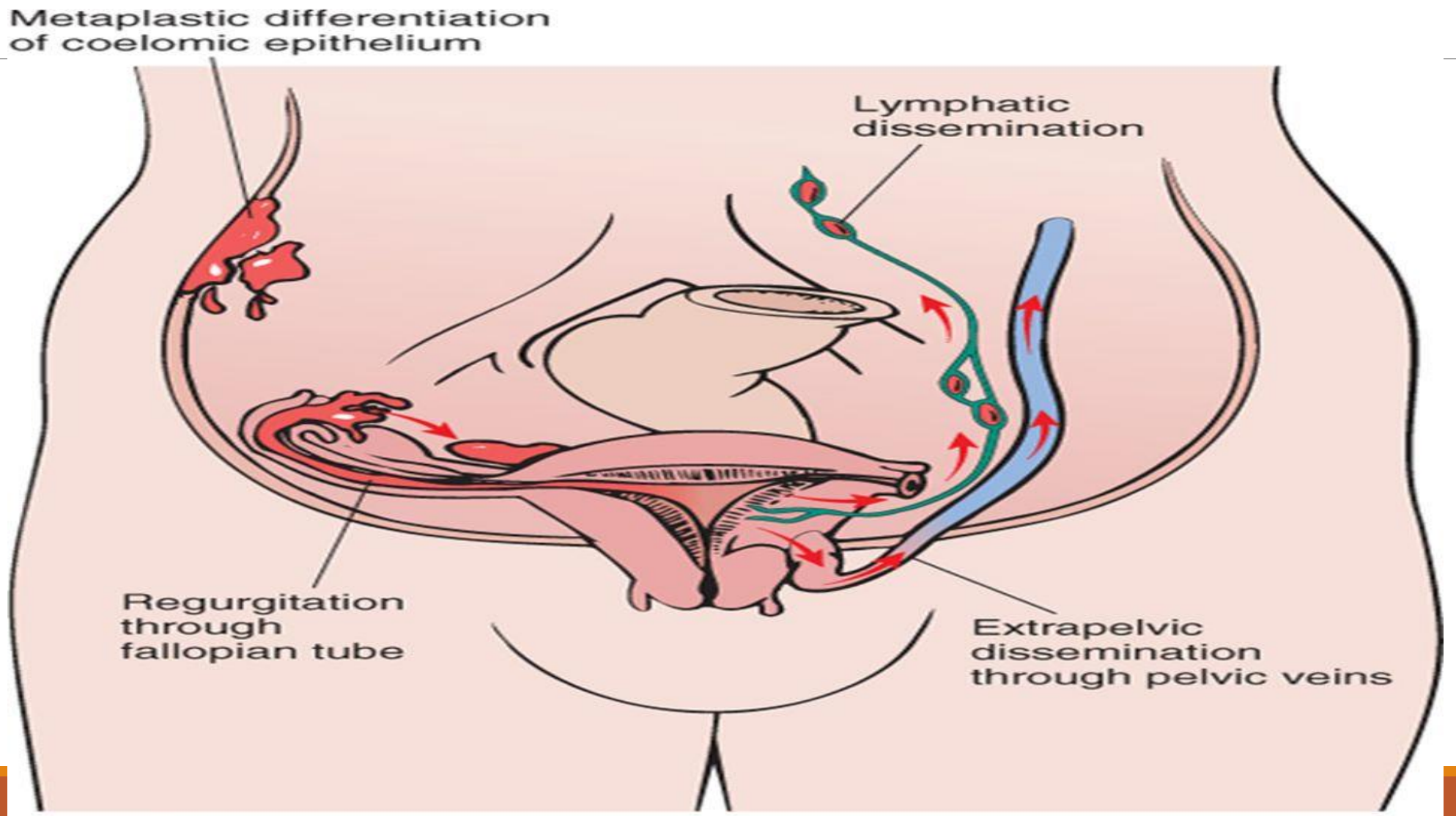
Endometriosis - Pathogenesis

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 → primitiv epithelium
4. The extrauterine stem/progenitor cell theory.

ovarin + tube N
cause bleeding
+ excessive scarring and fibrosis

Endometriosis - Pathogenesis



Clinical presentation

- Clinically presented with pain and infertility……
- Dysmenorrhea.
- pain on defecation.
- dyspareunia
- dysuria

due to f.bross

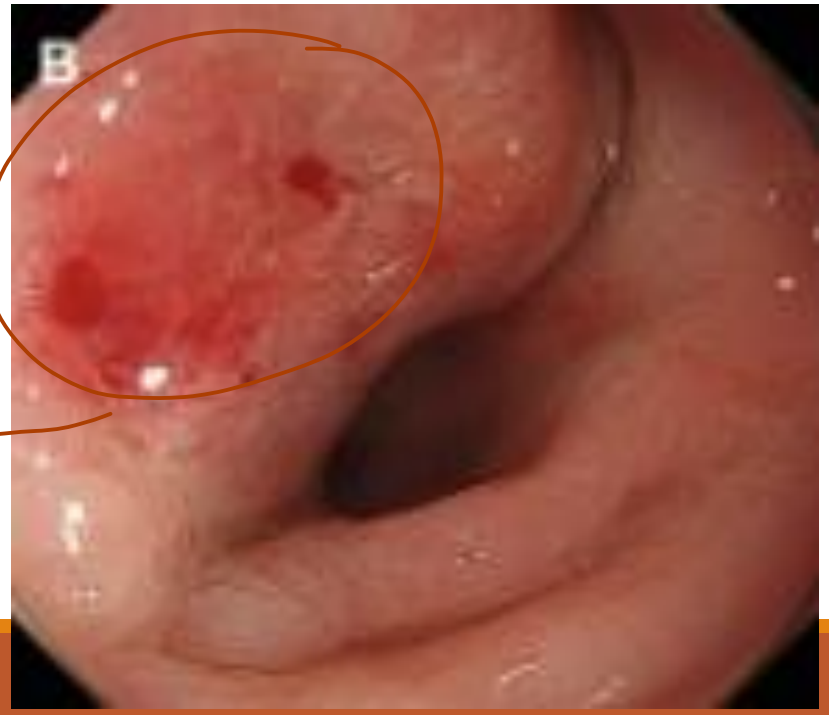
adhision on rectum

Adhesion on bladder

Endometriotic foci

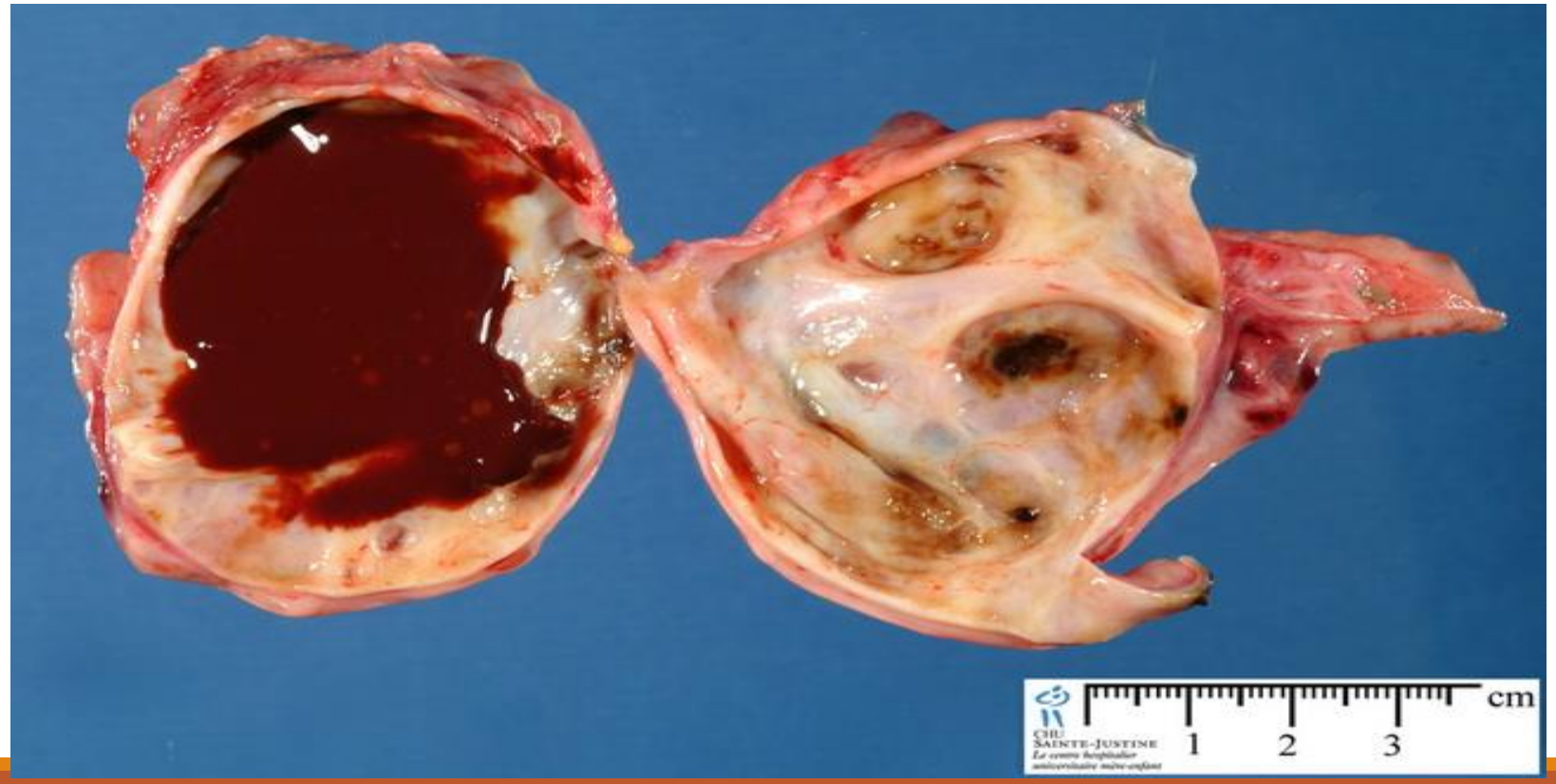
- consists of functioning endometrium → undergoes cyclic bleeding → organization of blood → widespread fibrosis →adhesions among pelvic structures.

endometrium gland + stroma



Gross features

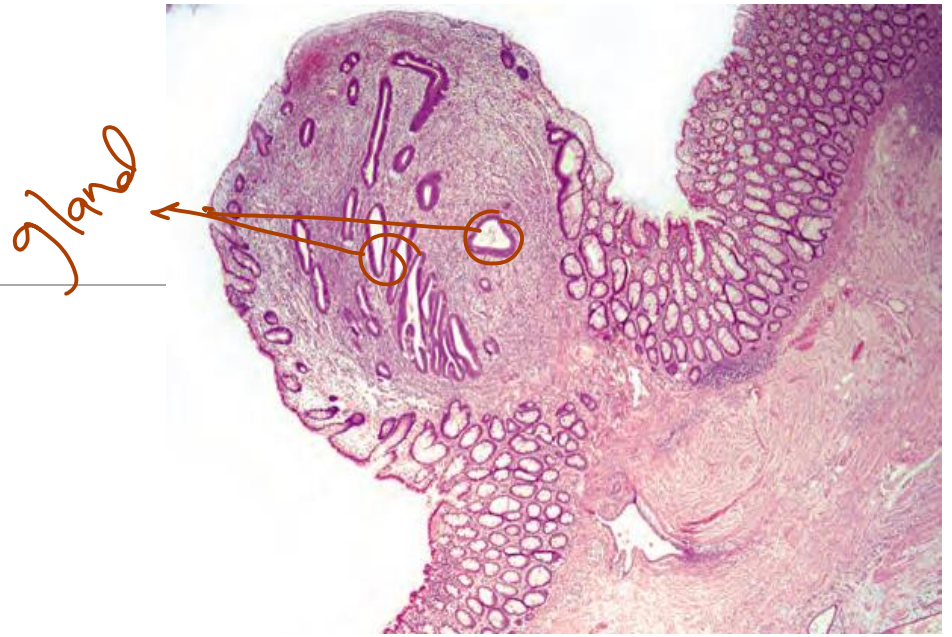
Ovarian endometriosis: chocolate cyst.

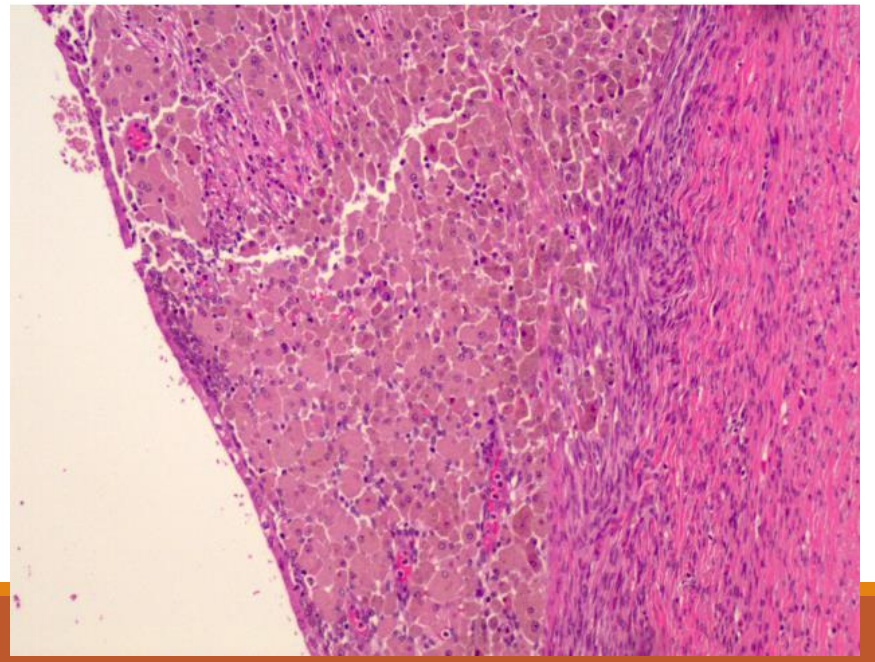


Microscopically

At least 2 of the following 3 features

- endometrial glands.
- endometrial stroma.
- hemosiderin pigment.





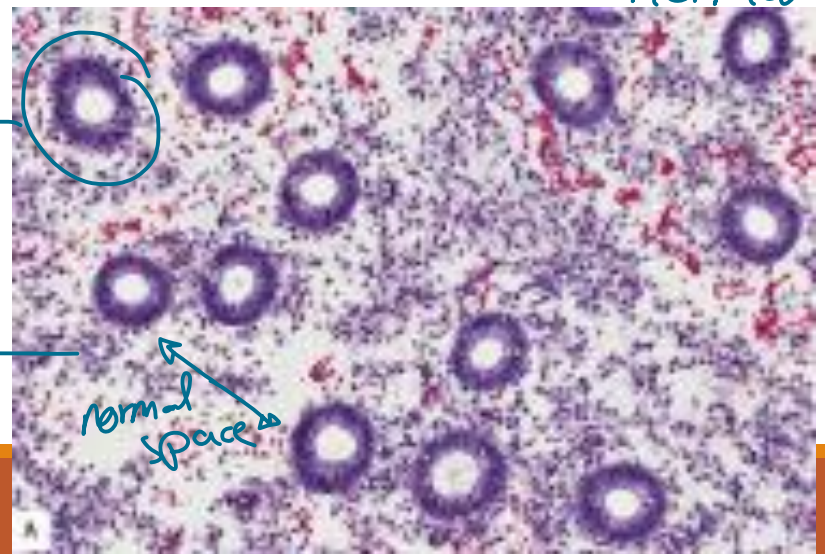
4. Endometrial Hyperplasia

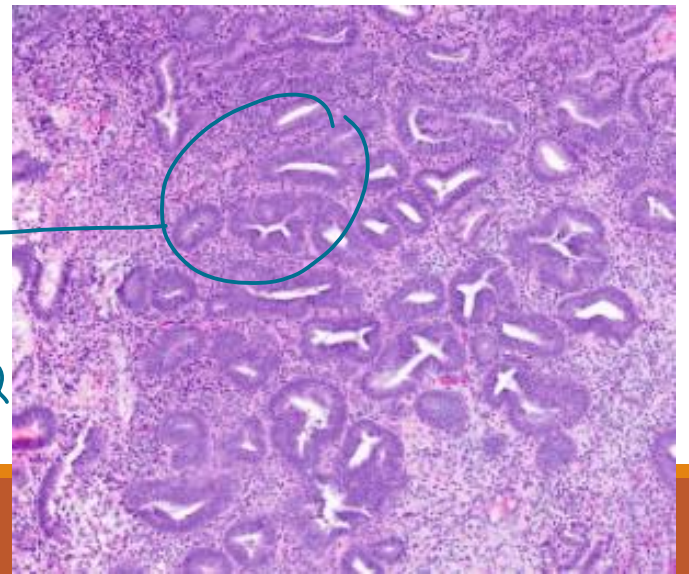
- Proliferation of endometrial glands with a resulting increase in gland to stroma ratio.
- Increased endogenous or exogenous estrogen, unopposed by progesterone .
- Chronic estrogenic stimulation without progesterone affects glands to a greater extent → glandular overgrowth (hyperplasia)

oral contraceptive pills

increase also in tumor ovarian + obese female

normal

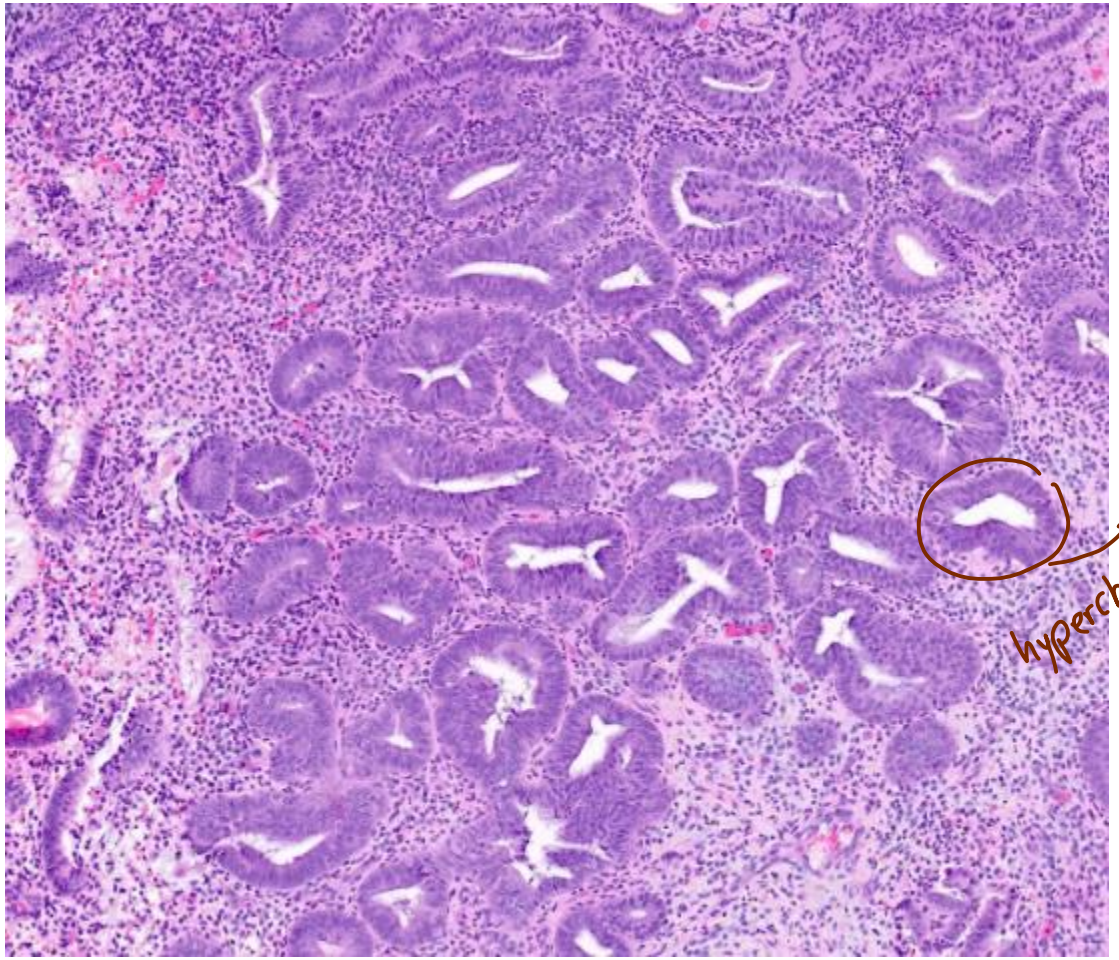




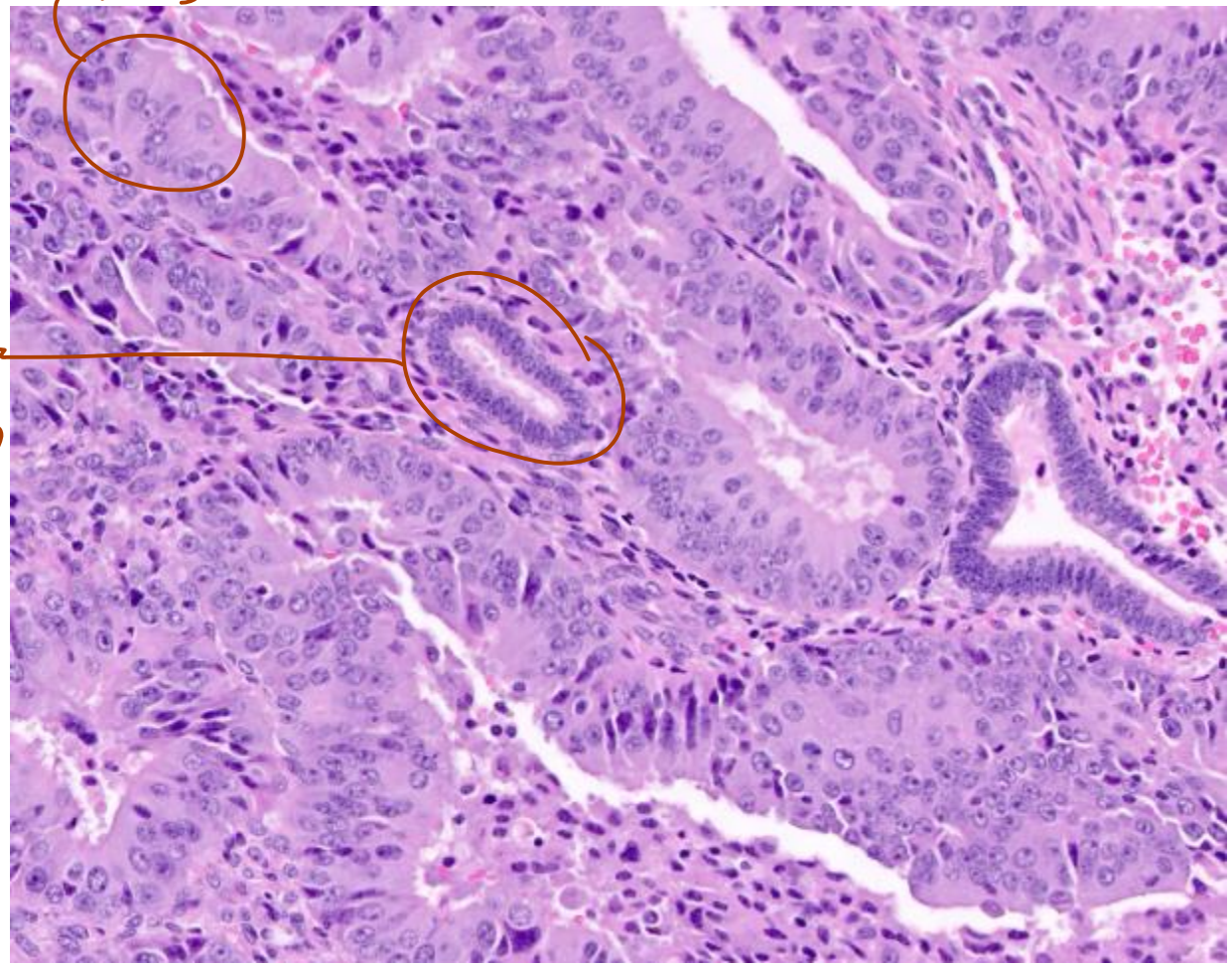
Two categories based on the presence of cytologic atypia:

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 only organ which hyperchrome or endometrium
not apply to malignant.



large cell + prominent nuclei + open chromasin



Hyperplasia without atypia

neoplasia ass/with openchromatin

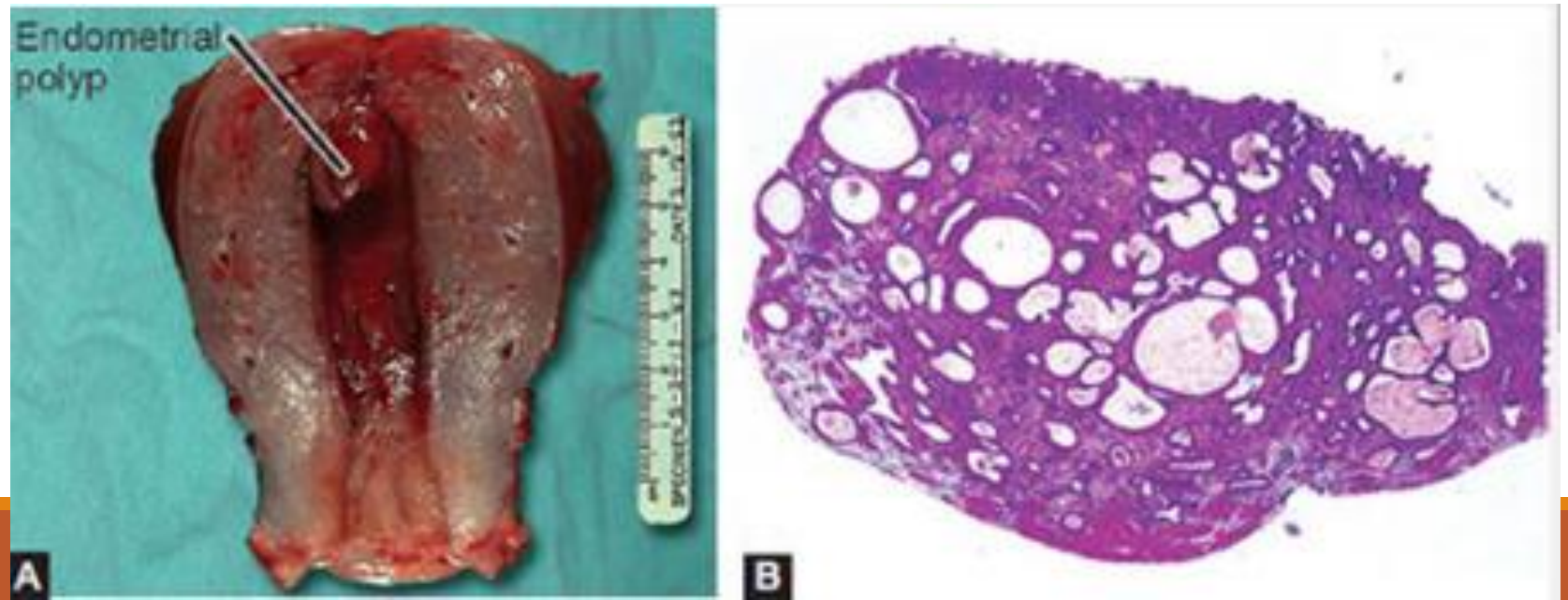
Hyperplasia with atypia

Tumors

- Endometrial tumors.
- Myometrial tumors.

1. 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.



2. Endometrial Carcinoma

- The most frequent cancer occurring in the female genital tract.
- Affecting female between 50s & 60s.

- Presentation: irregular or postmenopausal bleeding. With progression, the uterus enlarges.

↳ bad sign
most ass/with cancer

- Two histological subtypes:
- 1. Endometrioid carcinomas.
- 2. Serous carcinoma.

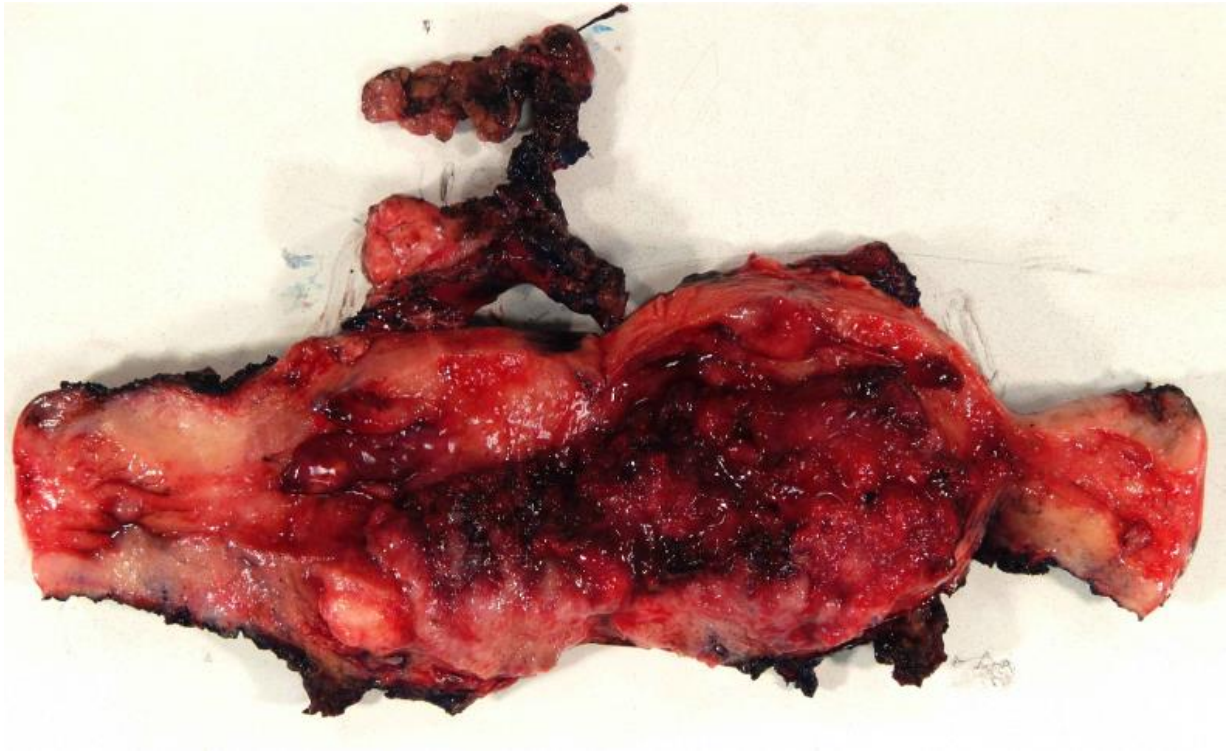
1. Endometrioid carcinomas.

- 80% of cases of endometrial carcinomas.
- Designated Endometrioid because of their histologic similarity to normal endometrial glands.
- Genetic: Mutations in mismatch repair genes & PTEN tumor suppressor gene.
- Risk factors: → high estrogen
  - (1) obesity.
  - (2) diabetes.
  - (3) hypertension.
  - (4)infertility. = progestron not rise to high level as Pregnancy
  - (5) exposure to unopposed estrogen. = progestron not in normal level to inhibit growth endometium ⇒ so ↑ estrogen ↑ growth

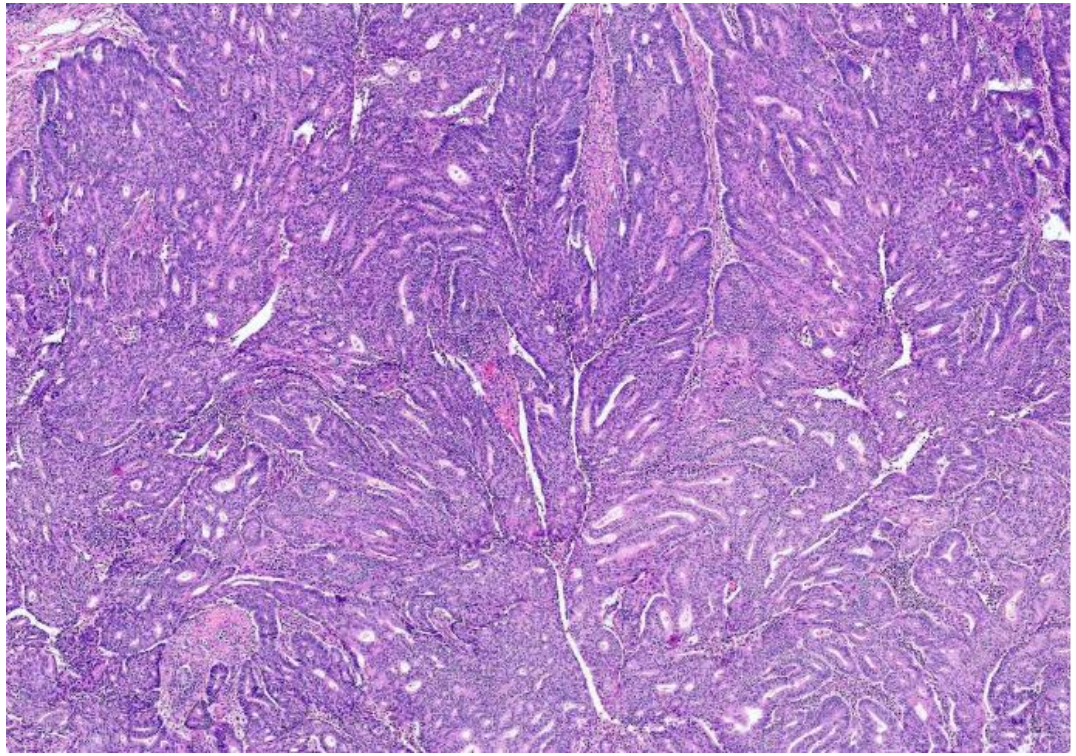
high estrogen

- Prognosis: slow to metastasize, but if untreated, eventually disseminates to regional nodes & distant sites.

Gross and microscopic features



#Friable, hemorrhagic mass occupying the endometrial cavity

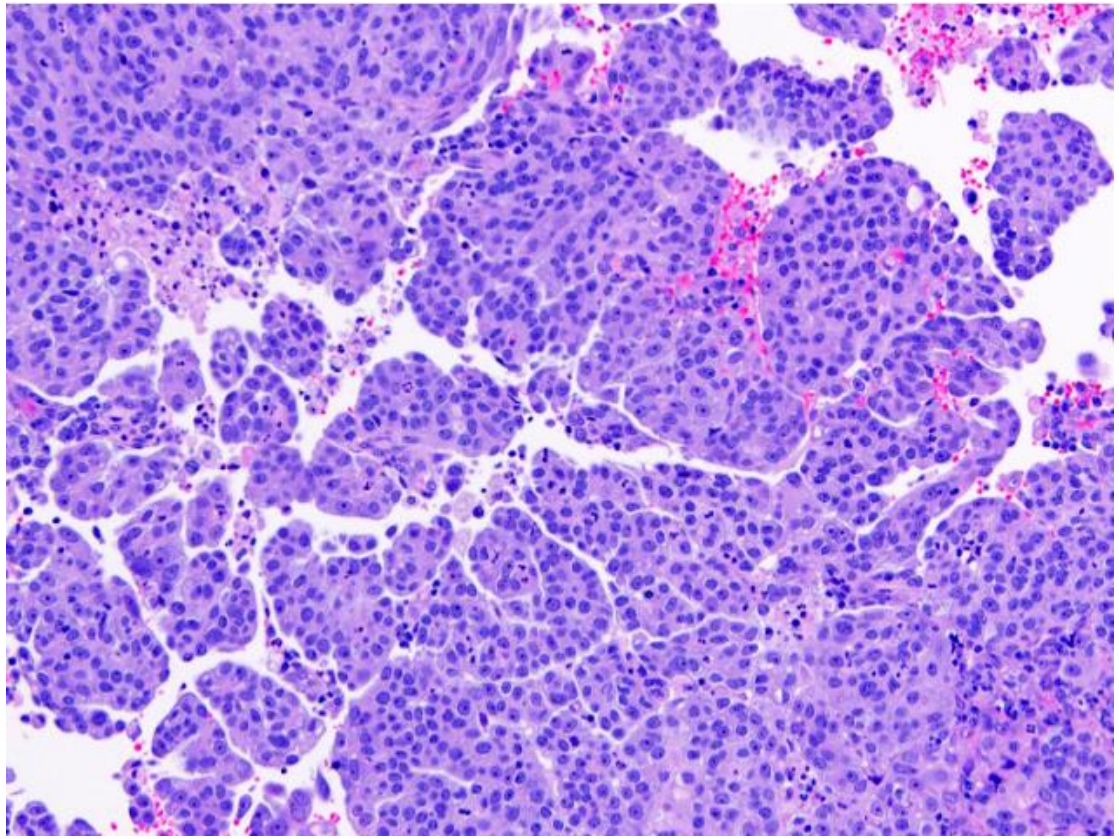


#back to back glands lacking intervening stroma.
#nuclear atypia.

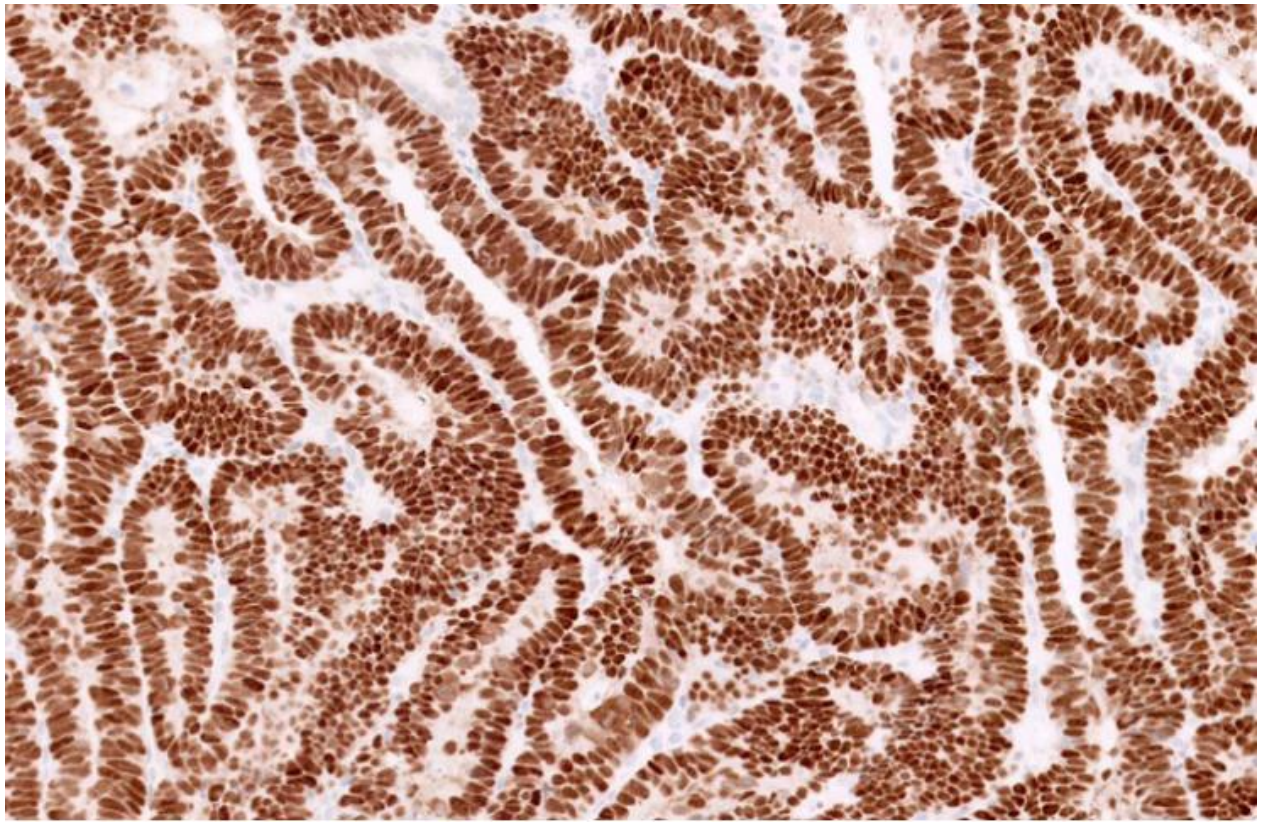
2. Serous carcinoma.

- Less common but far more aggressive.
- Not associated with unopposed estrogen or hyperplasia. ⇒ old age
- Genetic: mutations in the TP53 tumor suppressor gene.
- Prognosis: strongly dependent on staging but because of its aggressive behavior → often high-stage disease with a poor prognosis.

Microscopic features



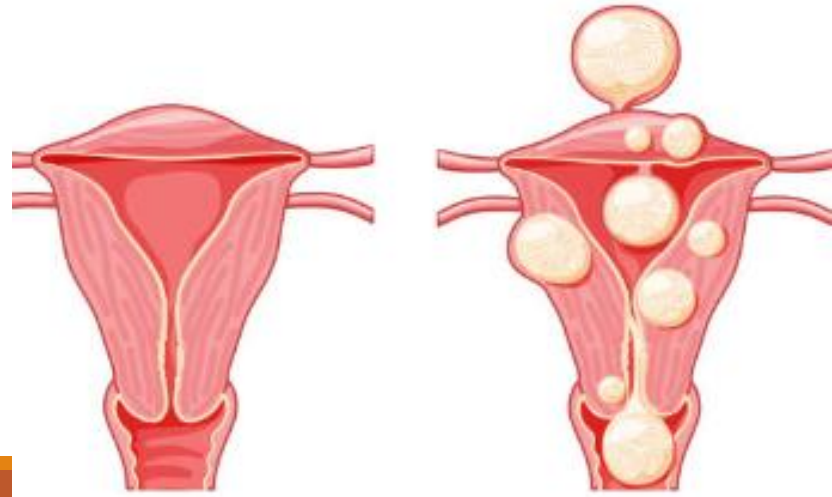
#Sheets and small papillae of endometrial serous carcinoma



#Strong and diffuse overexpression of p53

Tumors of the Myomertium
1. 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.

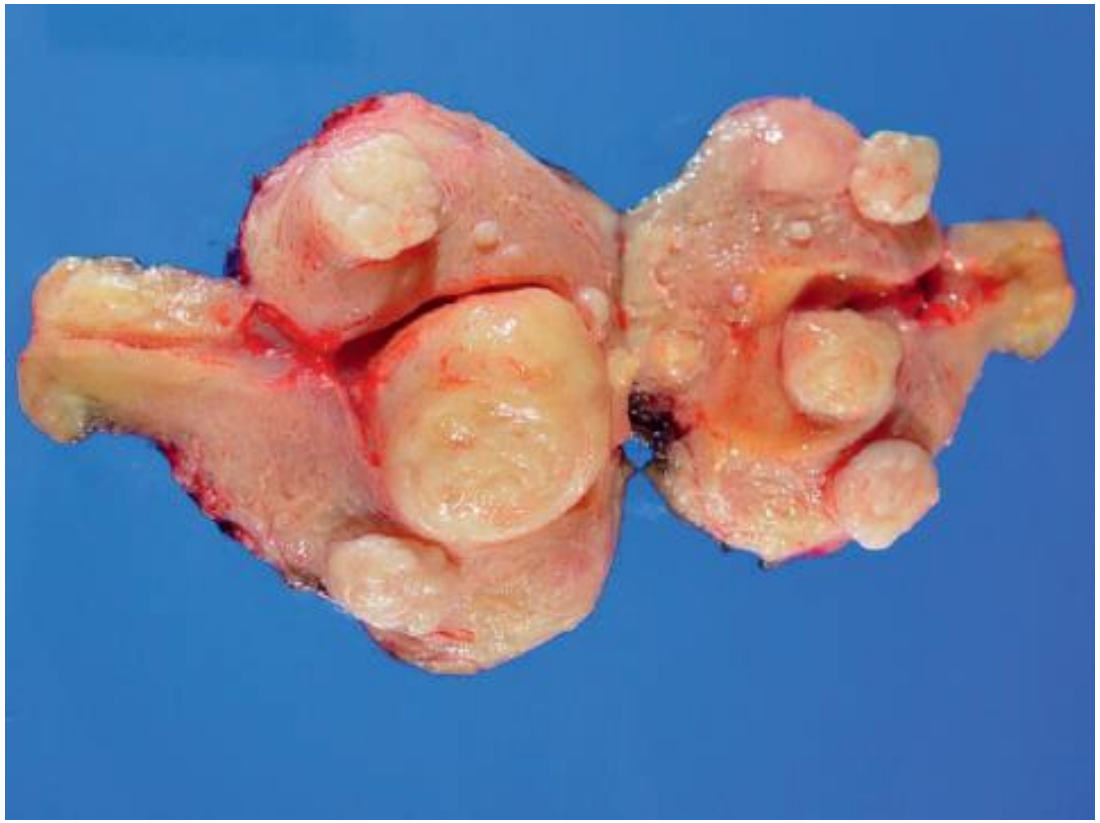


Gross morphology

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

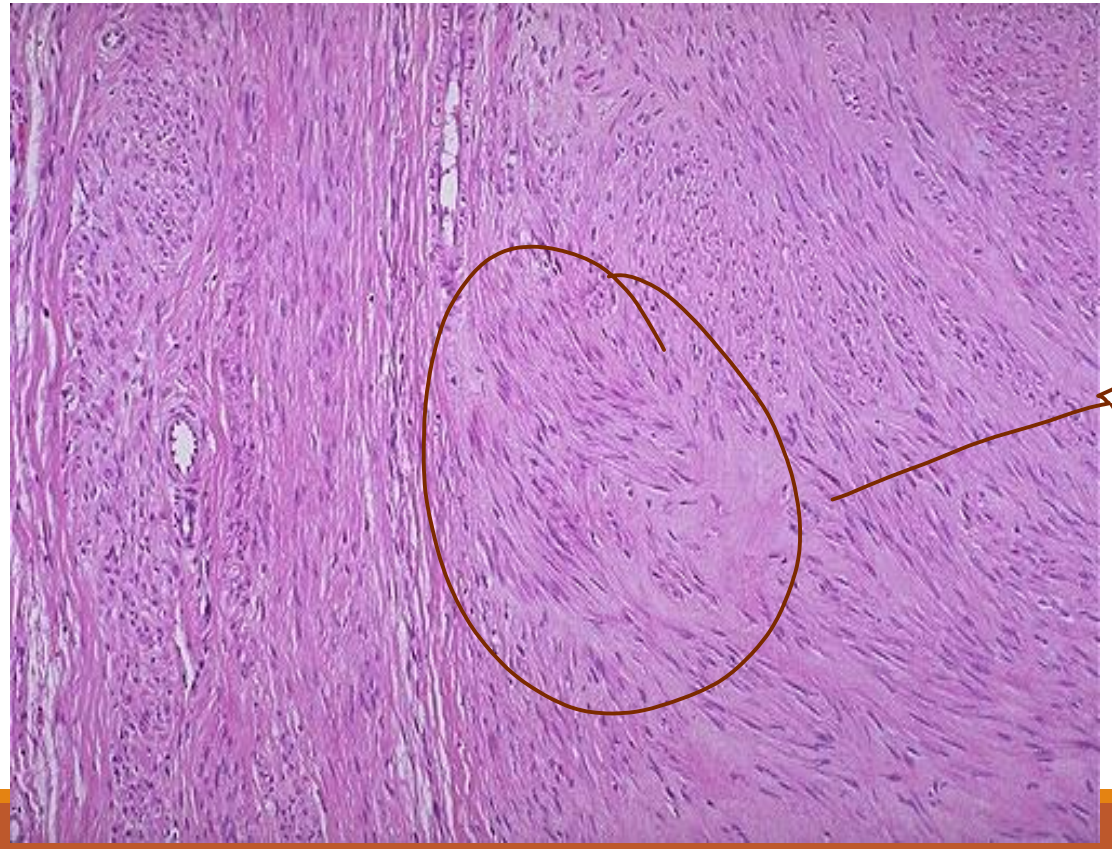
Possible location:

- Intramural.
- Submucosal.
- Subserosal.



Histological features

- Bundles of smooth muscle cells mimicking the appearance of normal myometrium



2. Leiomyosarcoma

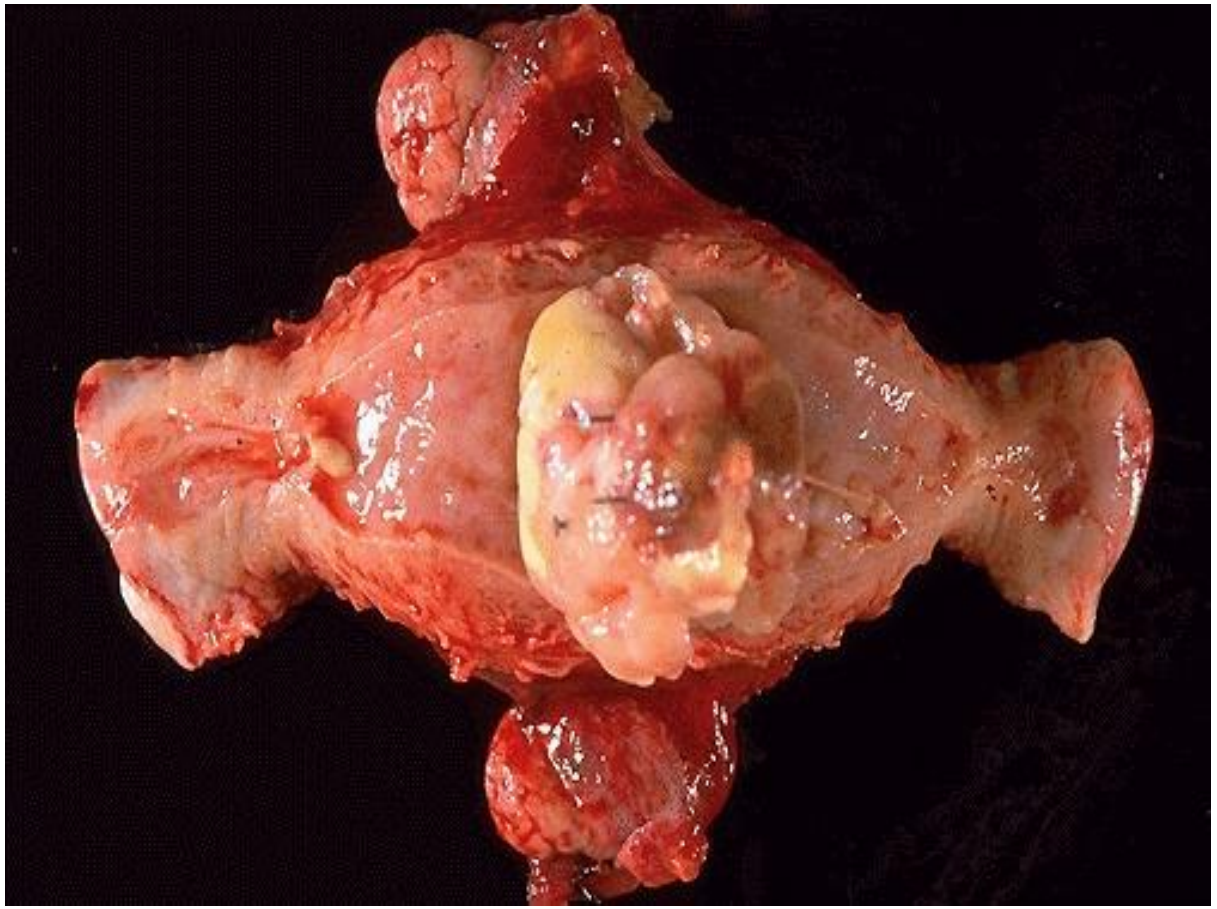
- Malignant counterpart of Leiomyoma.
- Always arise de novo (not from previous Leiomyoma)
- Solitary and mostly in postmenopausal women.
- Recurrent is common & many metastasize, typically lungs.

risk malignat tumor ⇒

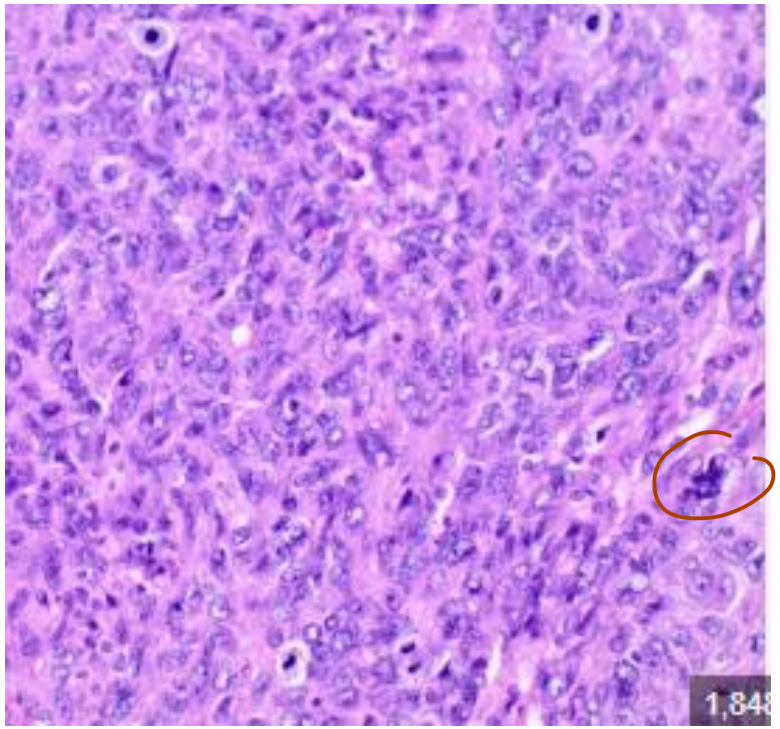
single tumor

Gross features

soft, hemorrhagic, necrotic masses.
Irregular borders.

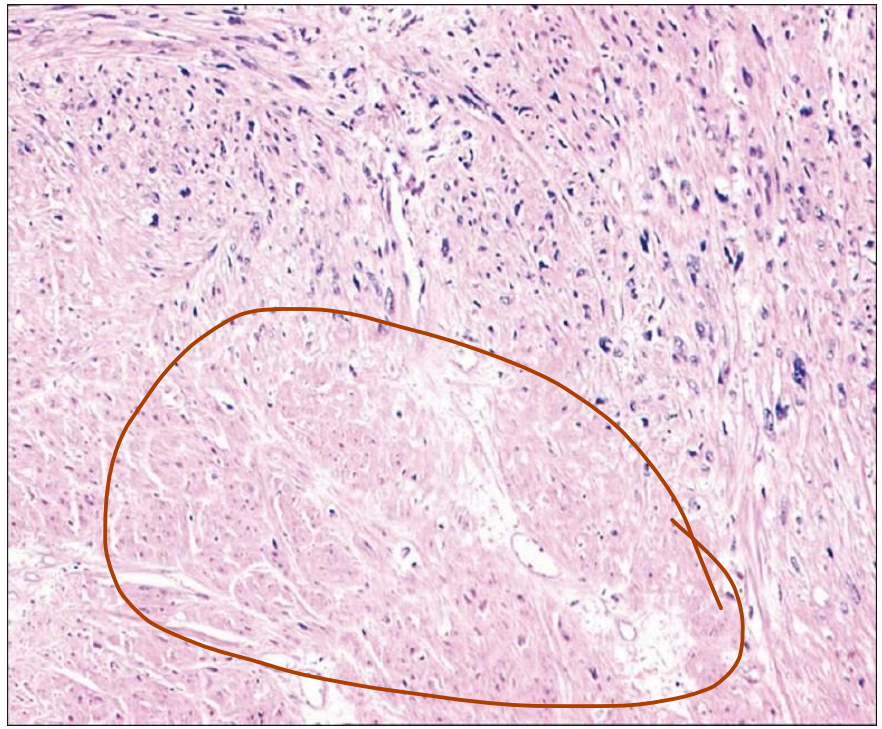


Microscopic features
Diagnostic features of leiomyosarcoma:



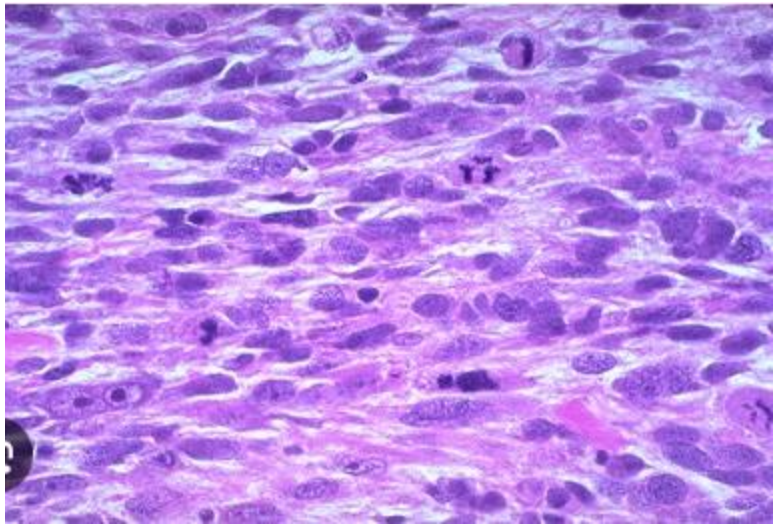
enlargmet
hyperchromatic
coss chromatin

cytologic atypia



Coagulitive necrosis

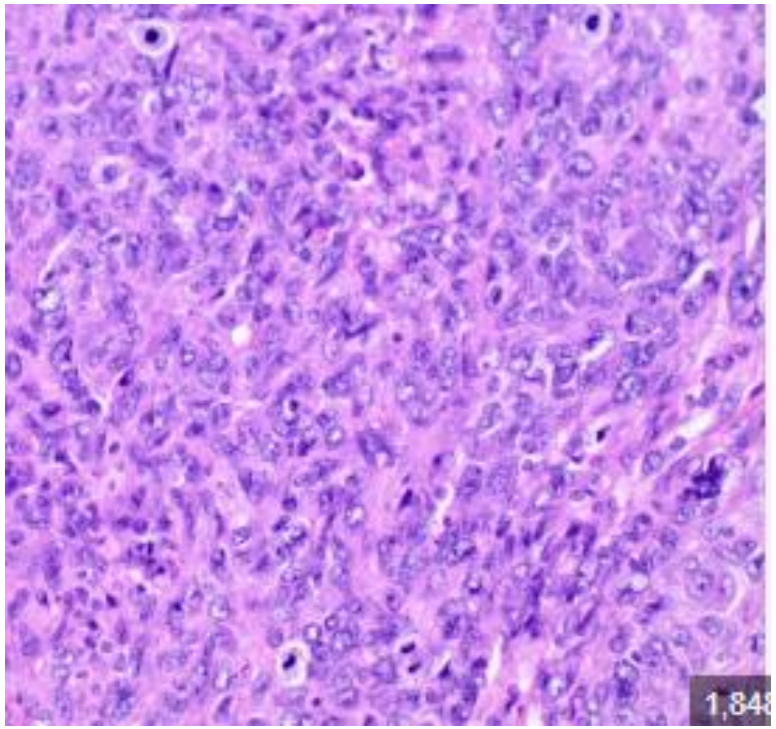
tumor necrosis



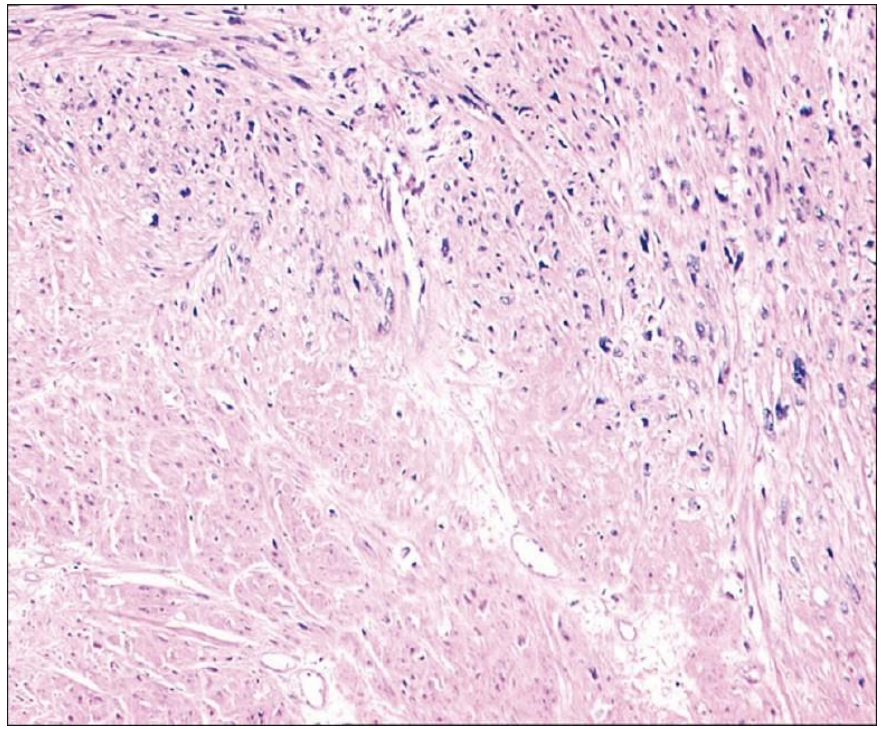
smooth muscle
irregular

mitotic activity

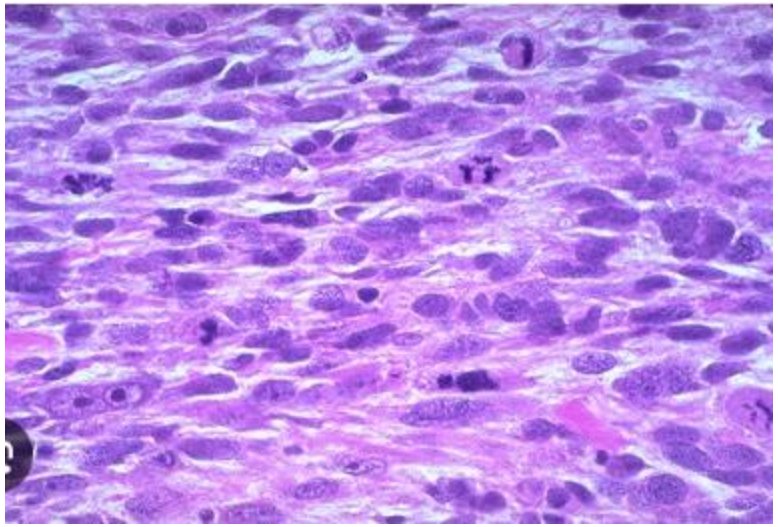
Microscopic features
Diagnostic features of leiomyosarcoma:



cytologic atypia



tumor necrosis



mitotic activity