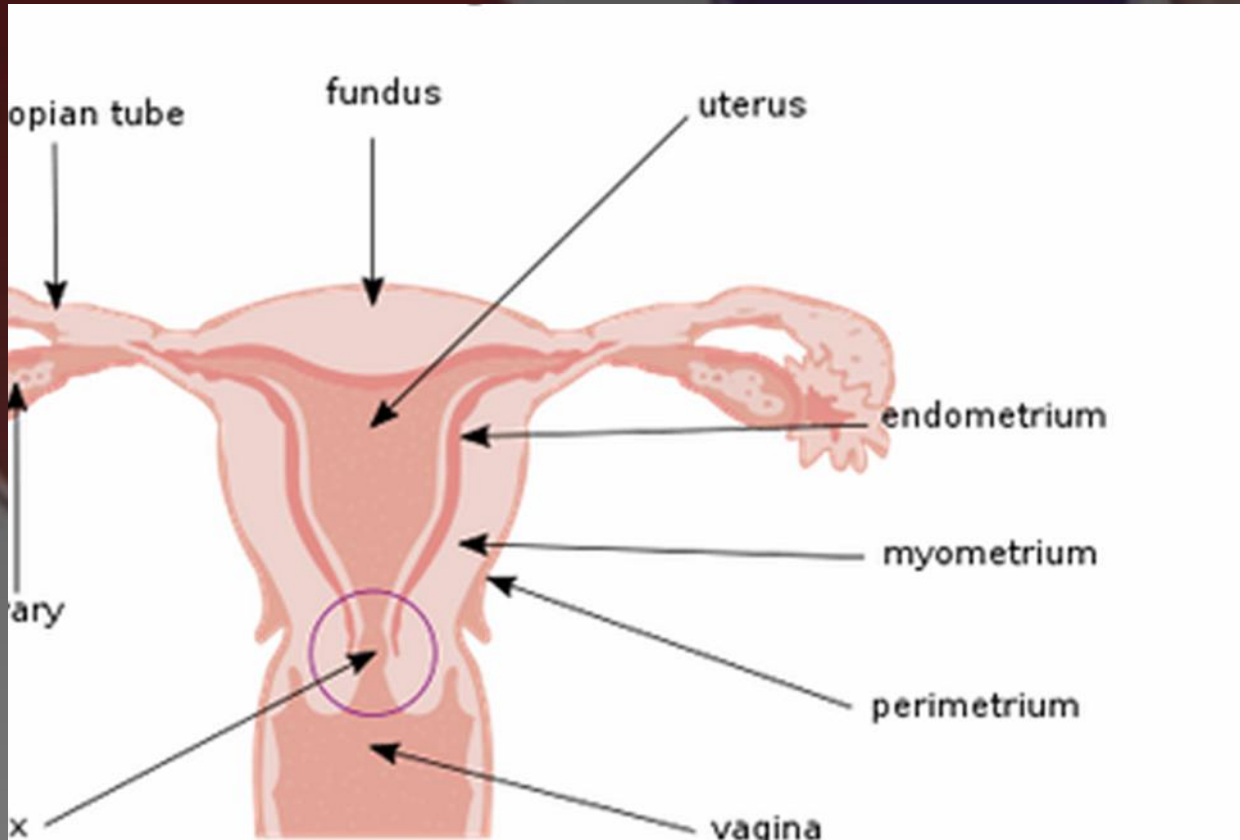


FEMALE GENITAL SYSTEM, LECTURE 3

Uterus and GTD

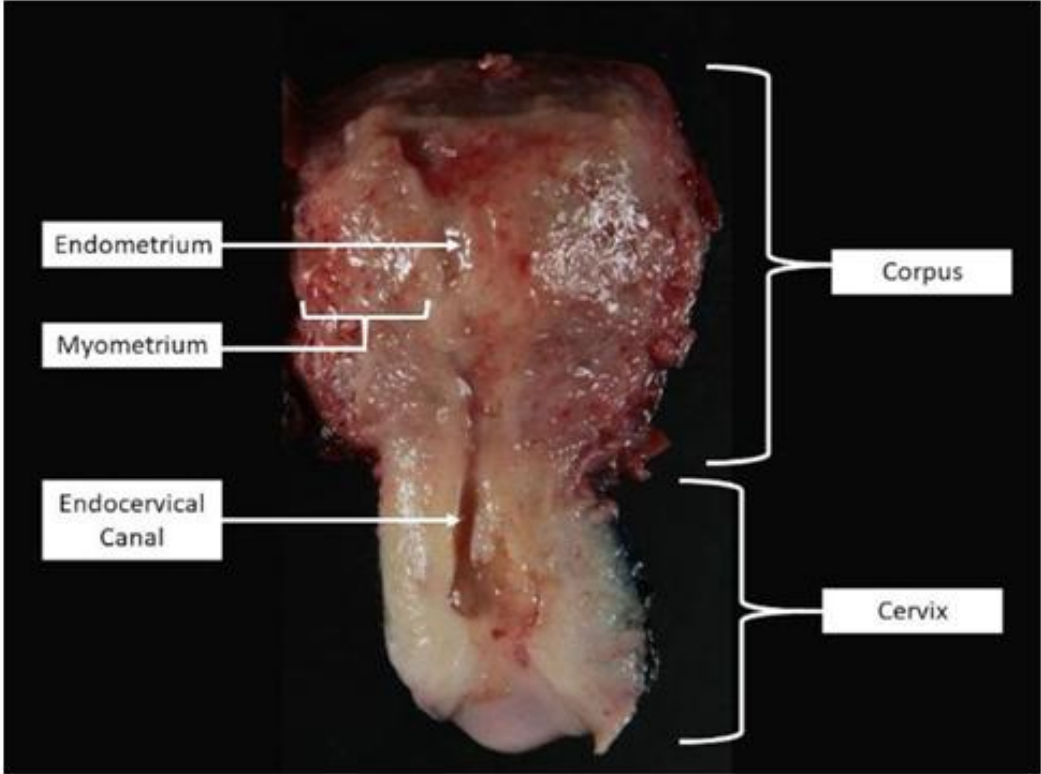


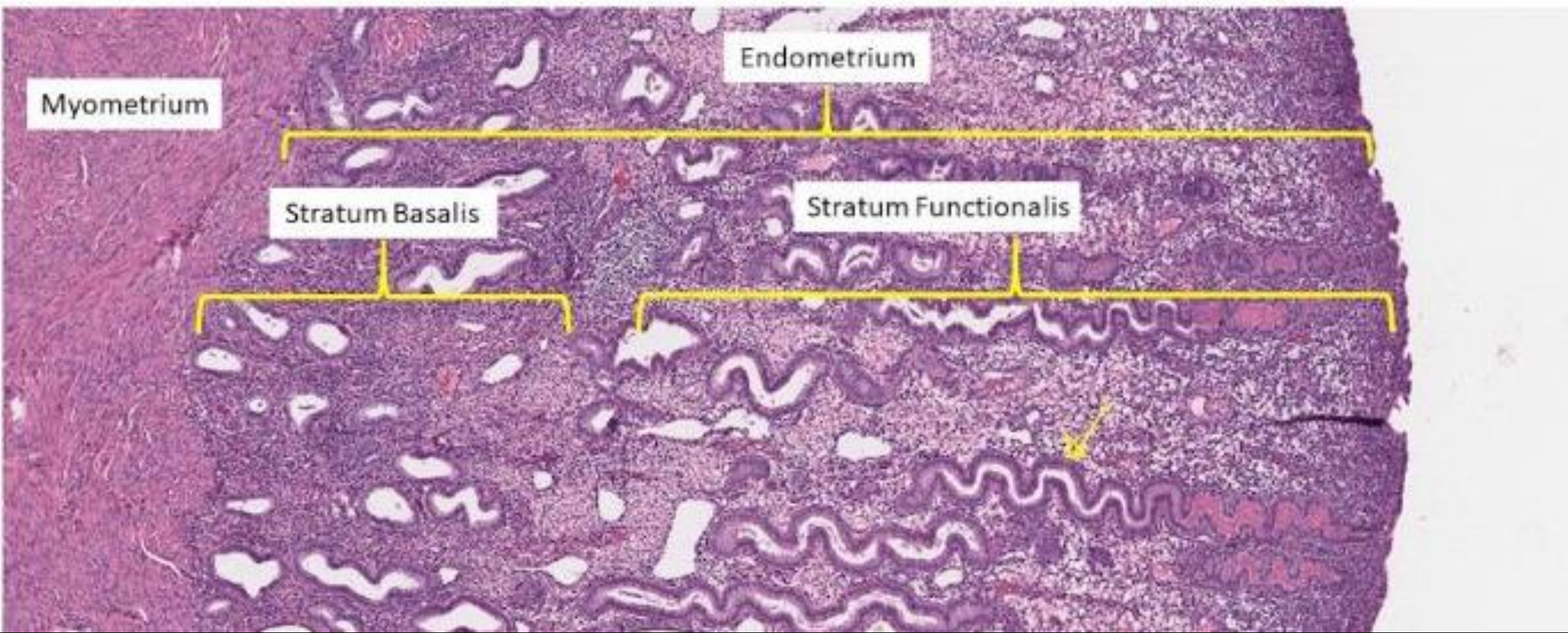
”من لَمَحَ عَجْرَ الأَجْرِ
هَانَ عَلَيْهِ خِلالَ التَّكْلِيفِ“

Dr. Bushra AlTarawneh, MD

- Anatomical pathologist-Gynecologic and Breast pathologist
- Department of Microbiology & Pathology
- Mutah University School of Medicine
- UGS lectures 2026

Gross anatomy





Histology

Uterine pathology

- *inflammatory*
➤ Non-neoplastic:
 - Endometritis.
 - Adenomyosis.
 - Endometriosis.
 - Hyperplasia without atypia.
- Neoplastic:
 - Hyperplasia.
 - Malignant tumors.

1. Endometritis

- Inflammation of the endometrium.

- Risk factors:

 - Pelvic inflammatory disease (PID).

 - Retained products of conception.

 - Intrauterine device (IUCD).

- Clinically: fever, abdominal pain, menstrual abnormalities, infertility & ectopic pregnancy

 - due to damage to the fallopian tubes.

- Management: Correct the cause, antibiotics.

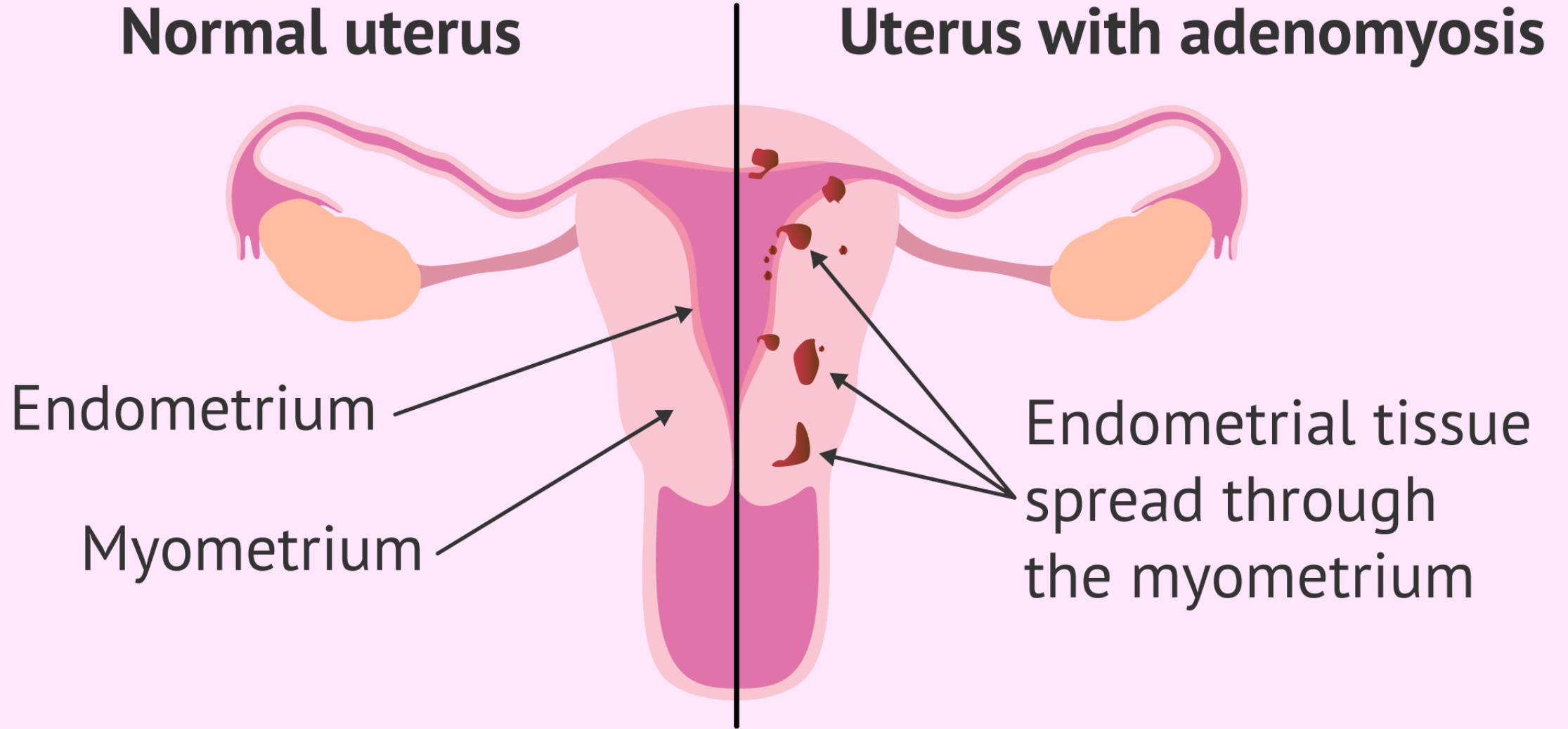
one plasma cell

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.
- Usually Coexist with endometriosis.

مفهوم تشخيصي
ultrasound + hysteroscopy

Microscopic features



3. Endometriosis

Gland + stroma
↳ outside the uterus

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

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.

Endometriosis - Pathogenesis

قرآن کلام

Four hypotheses:

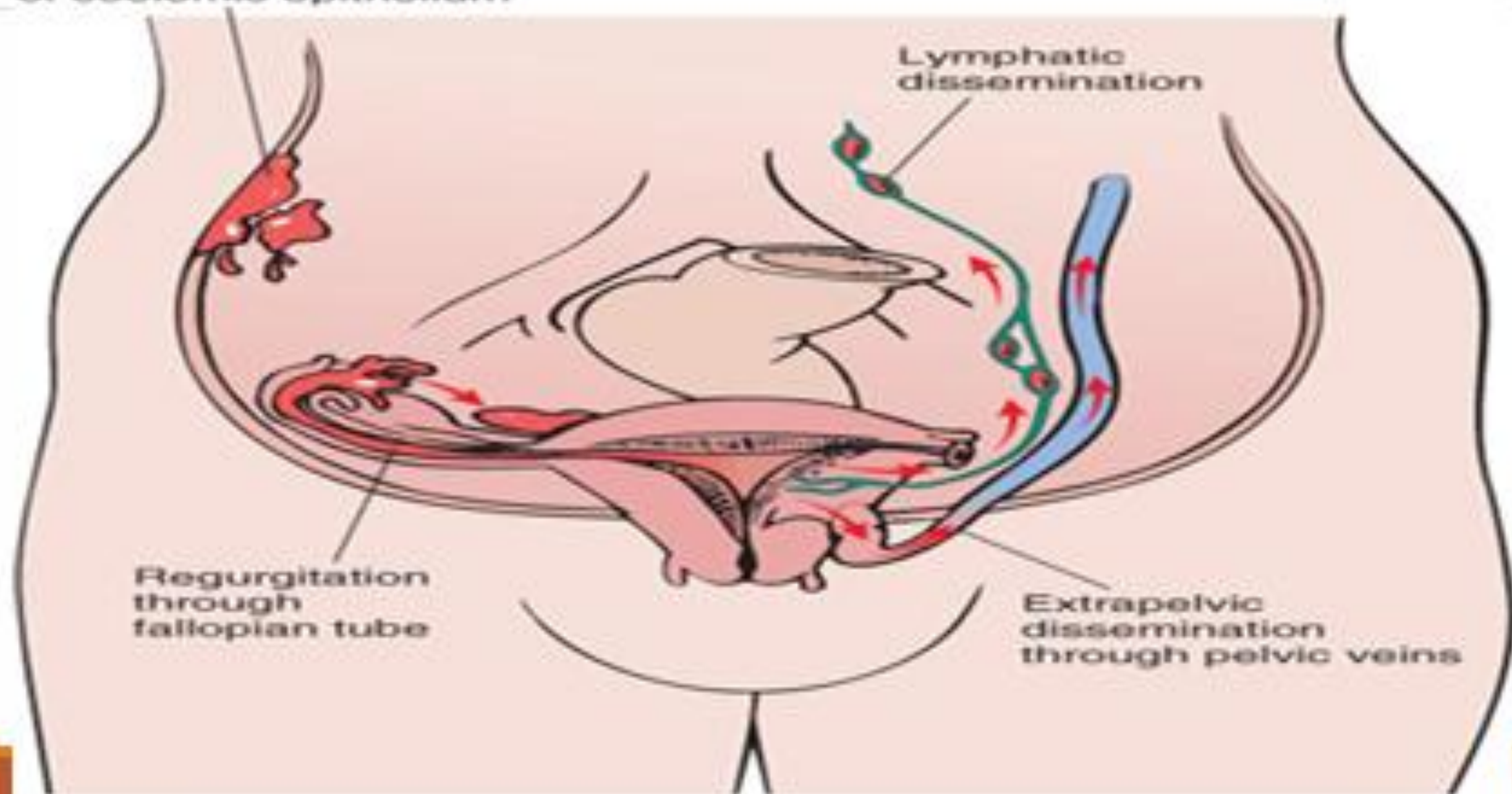
1-Regurgitation theory, favored, → menstrual backflow through the tubes → implantation.

2-Benign vascular and lymphatic dissemination.

3-Metaplastic theory, endometrial differentiation of coelomic epithelium. *menstrual cycle in the liver*

4-The extrauterine stem/progenitor cell theory.

**Metaplastic differentiation
of coelomic epithelium**



Fibrosis So Adhesion

Clinical presentation

▪ Clinically presented with pain and **infertility.**

#

main complication

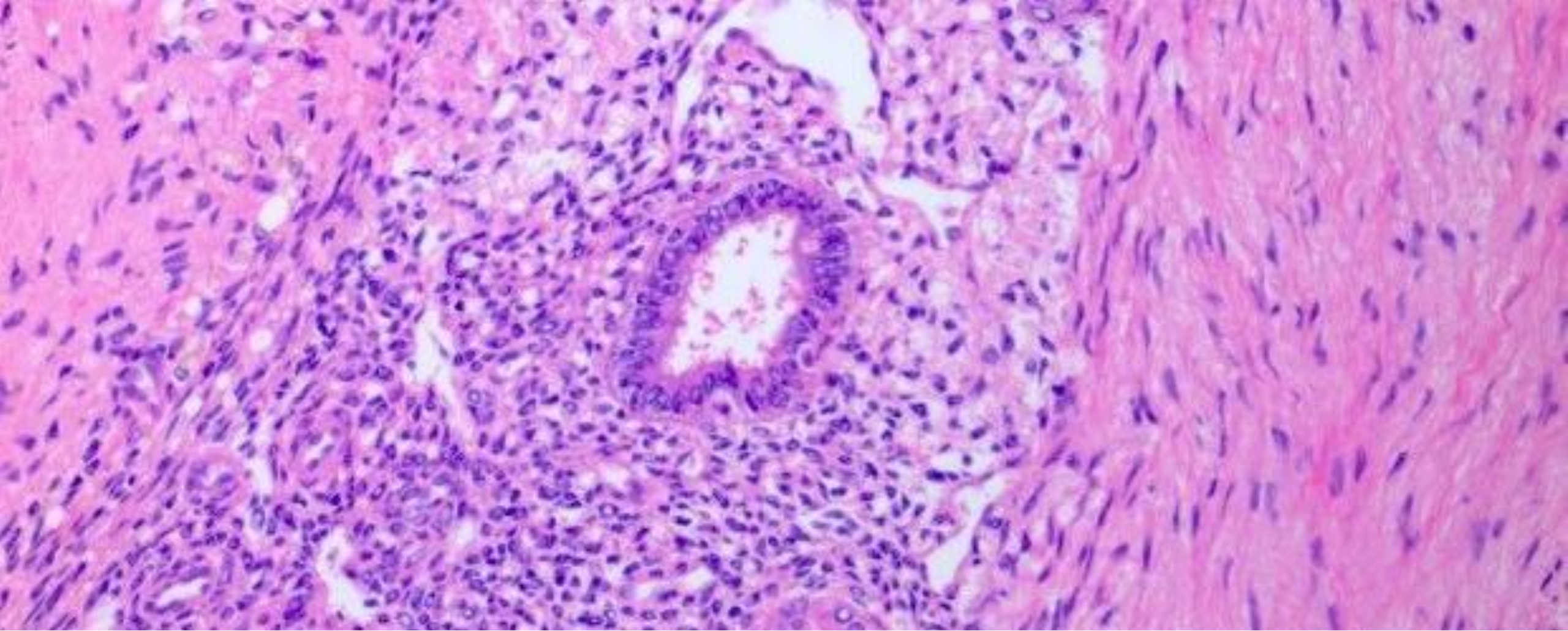
• Dysmenorrhea.

وجع في الشهر

• pain on defecation.

• dyspareunia

• dysuria



Endometriotic foci

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

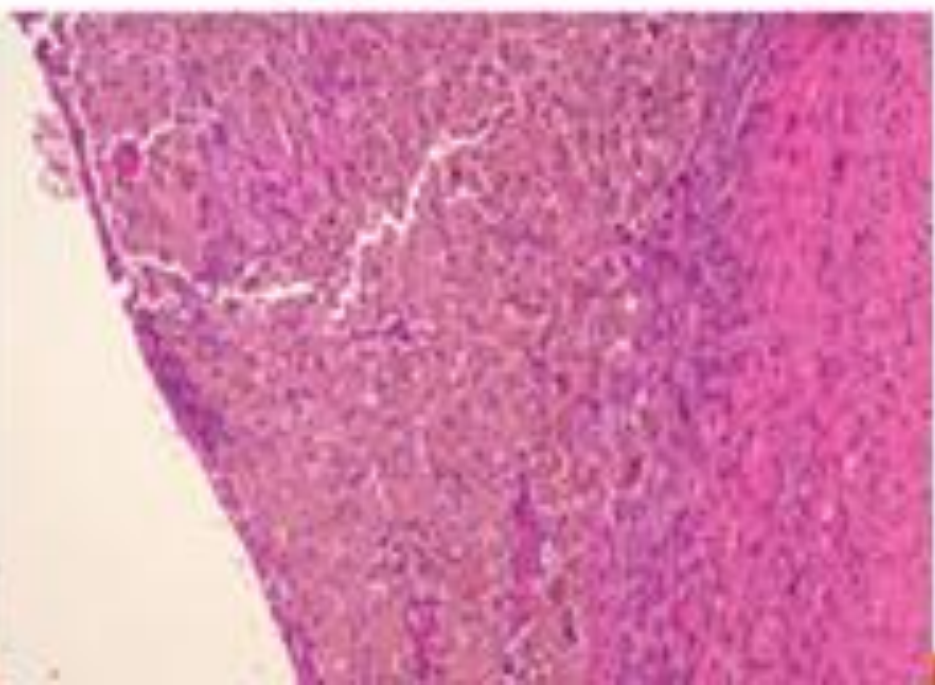
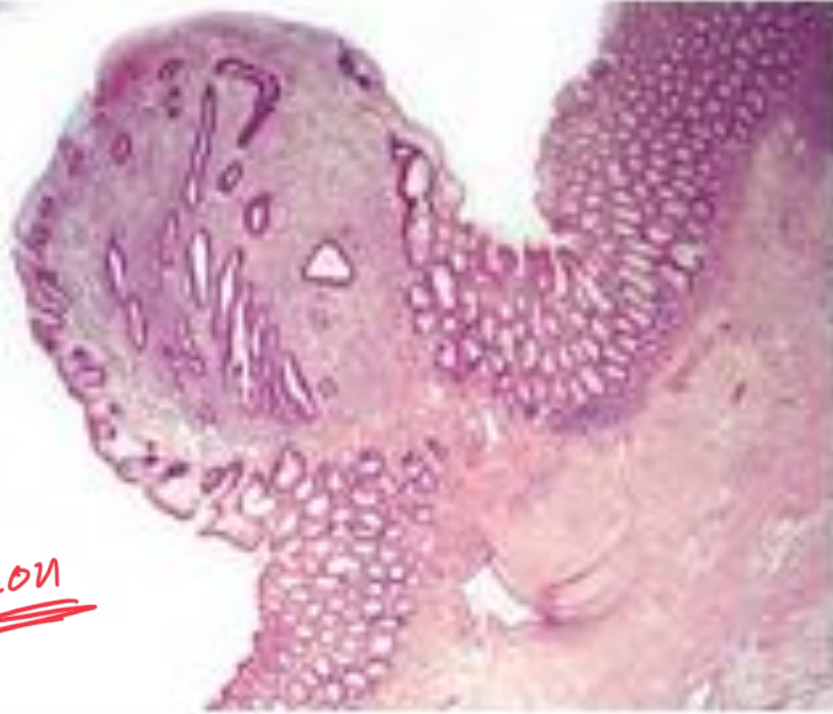
Gross features Ovarian endometriosis: chocolate cyst.

Brown

outside the uterus



colon



Microscopically:
At least 2 of the following 3
features:

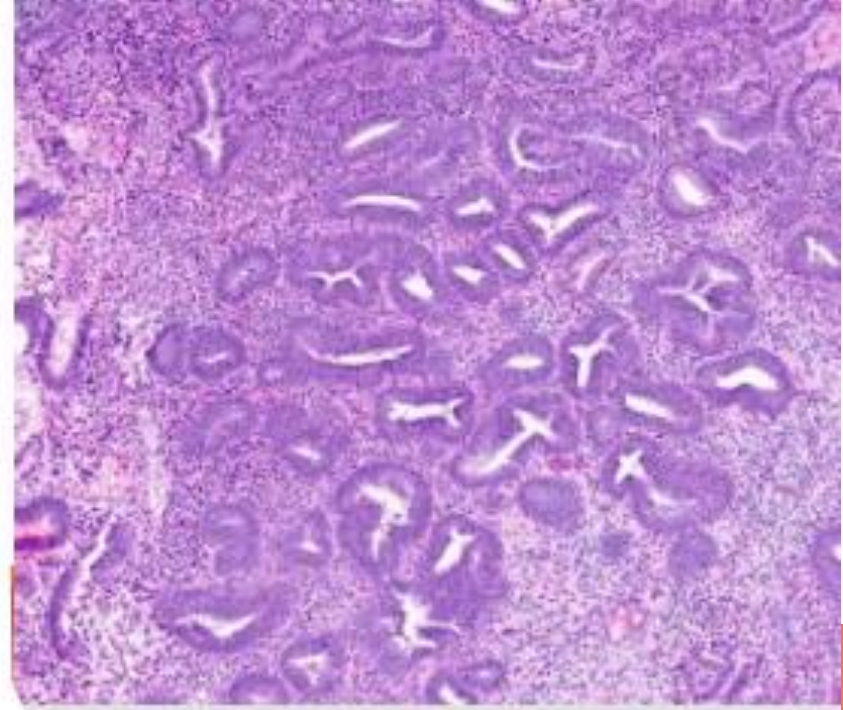
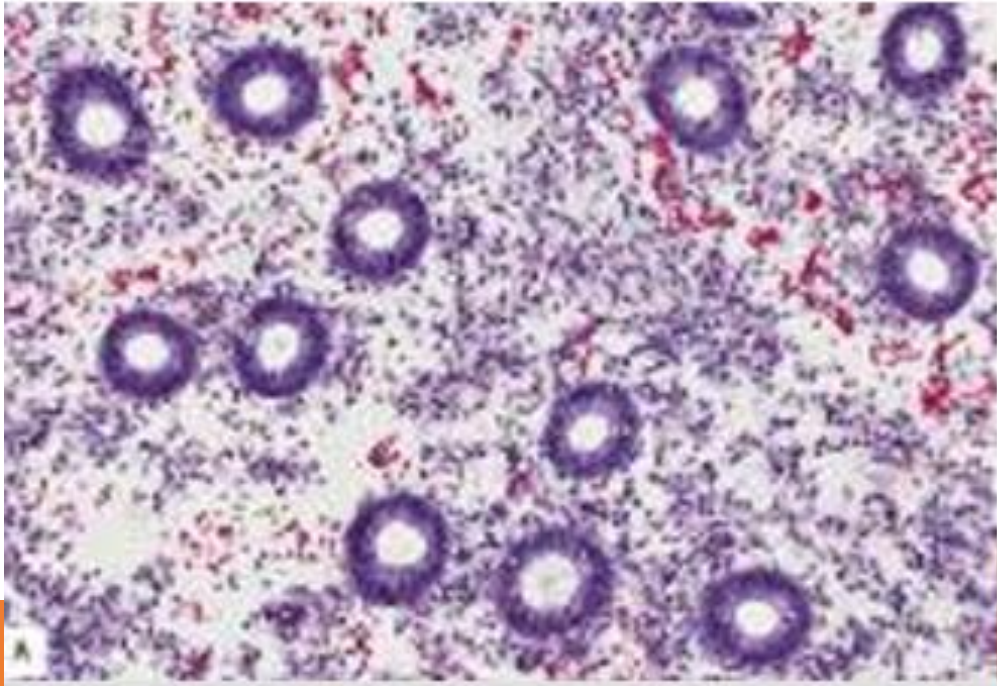
- ❖ endometrial glands. ✓
- ❖ endometrial stroma. ✓
- ❖ hemosiderin pigment. ✓

#

No age → heavy period → endometrial hyperplasia
obese 11" endia

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)



Two categories based on the presence of cytologic atypia:

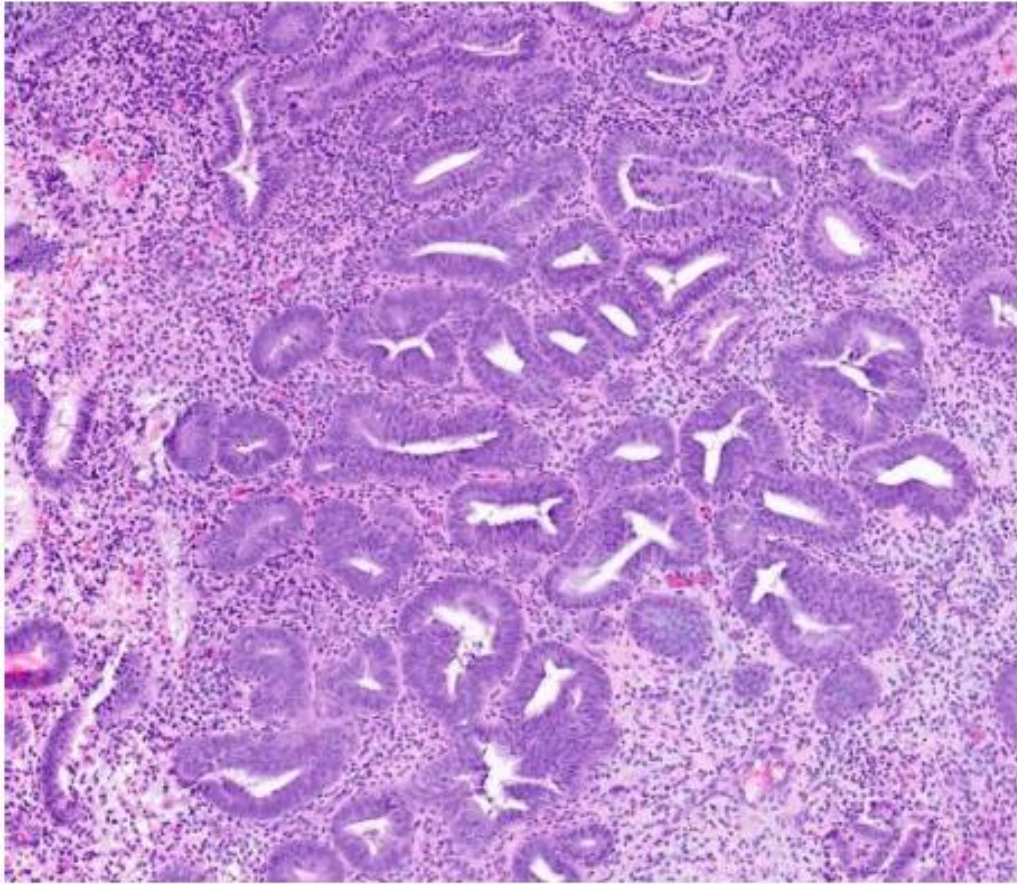
what is the EIM? :- في الـ EIM يعني :-
↳ it is Endometrial hyperplasia with atypia

Two categories based on the presence of cytologic atypia:

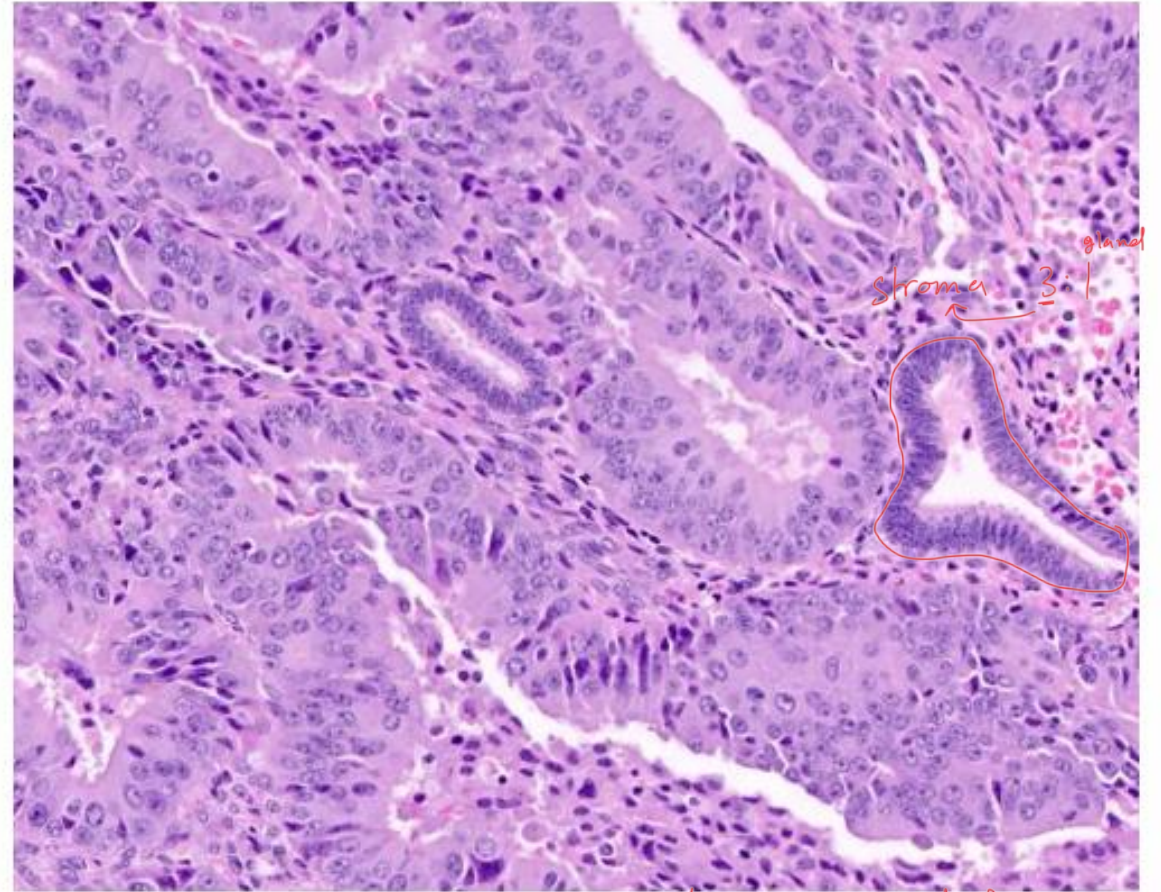
Hyperplasia without atypia; low risk for progression to endometrial Ca. *neuclear features لا في*

↳ *neuclear features في*

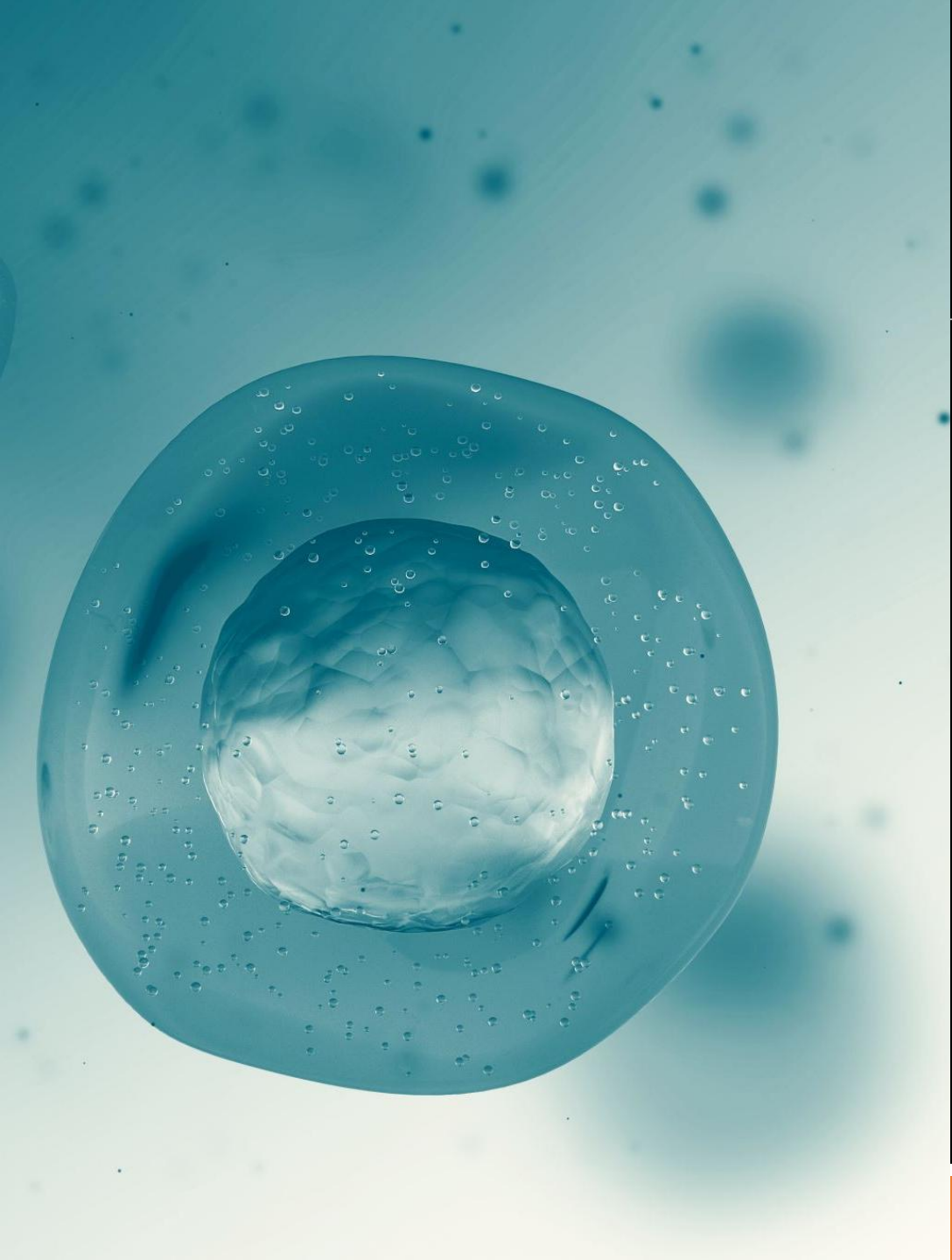
Hyperplasia with atypia (endometrial intraepithelial neoplasia (EIN) higher risk for progression to endometrial Ca. → 20%.



Hyperplasia without atypia



Hyperplasia with atypia main charab

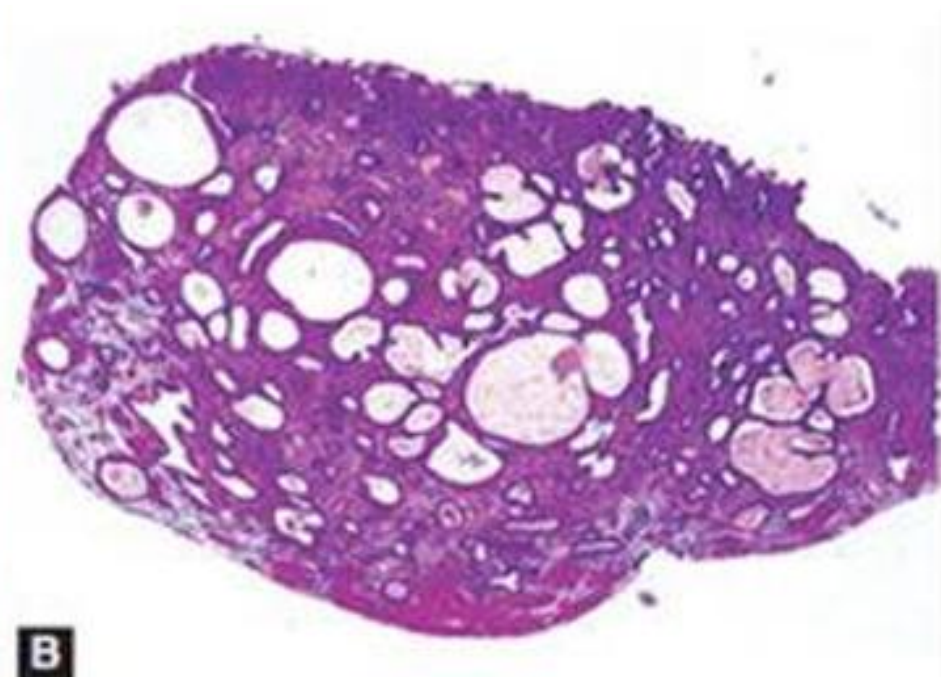
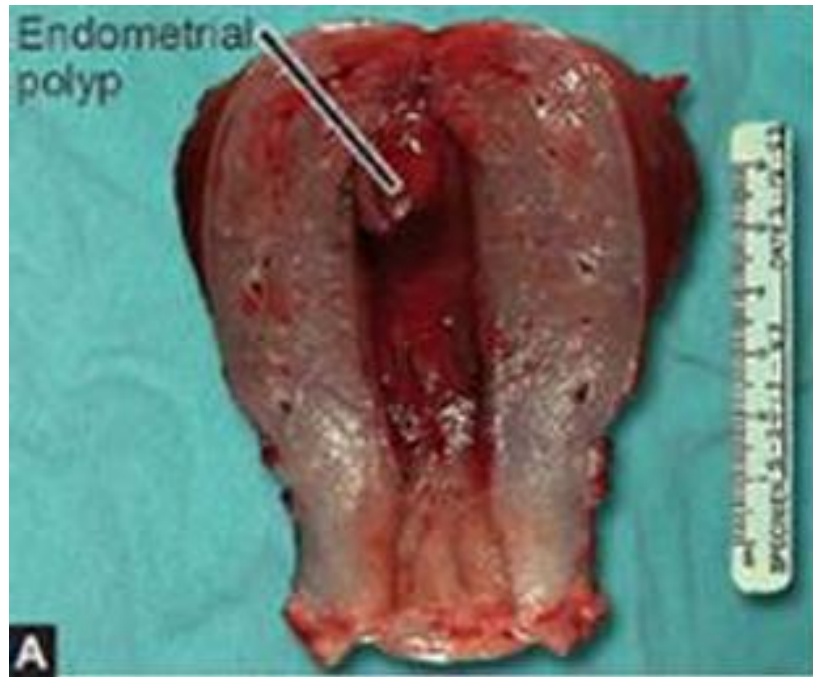


Tumors:

- 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.

▪ Two histological subtypes:

1. Endometrioid carcinomas.

Endometrial hyperplasia
more crud gland
with atypia

بیشتر ال
دیها
انگتر

2. Serous carcinoma.

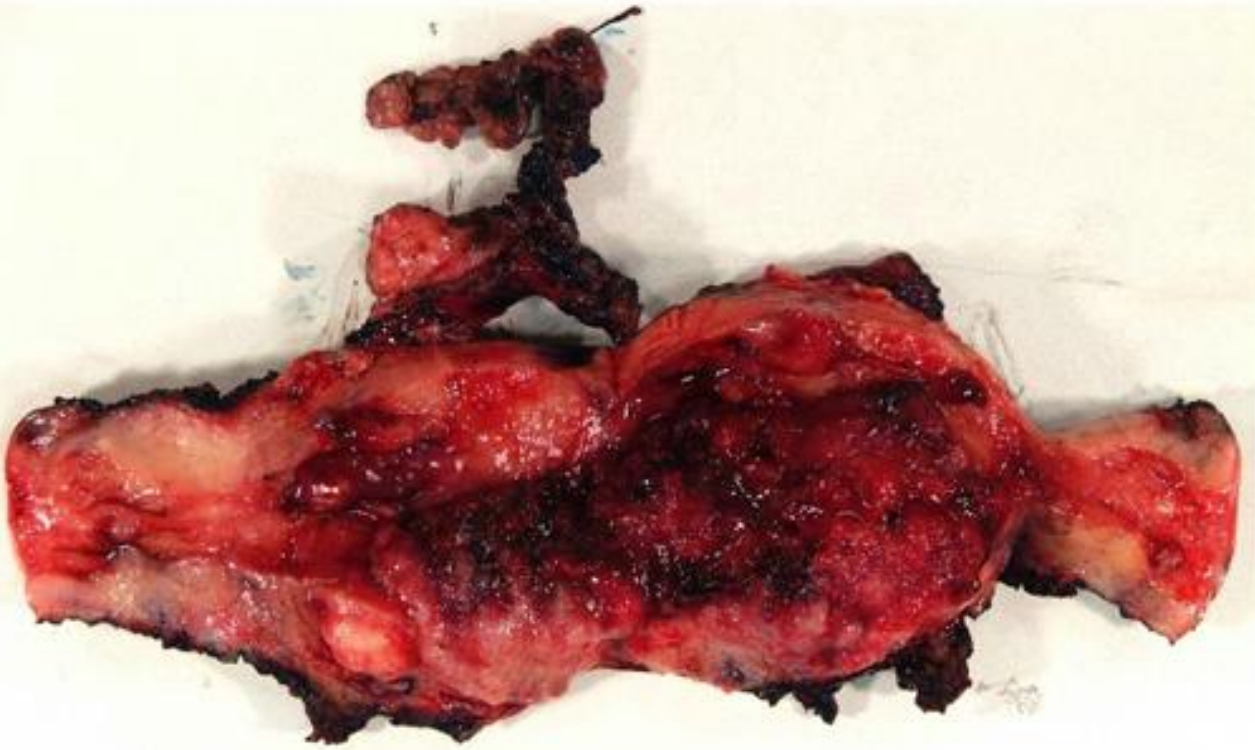
↳ bad prognosis دانا

لفظى ال risk factors تبغون hyperplasia

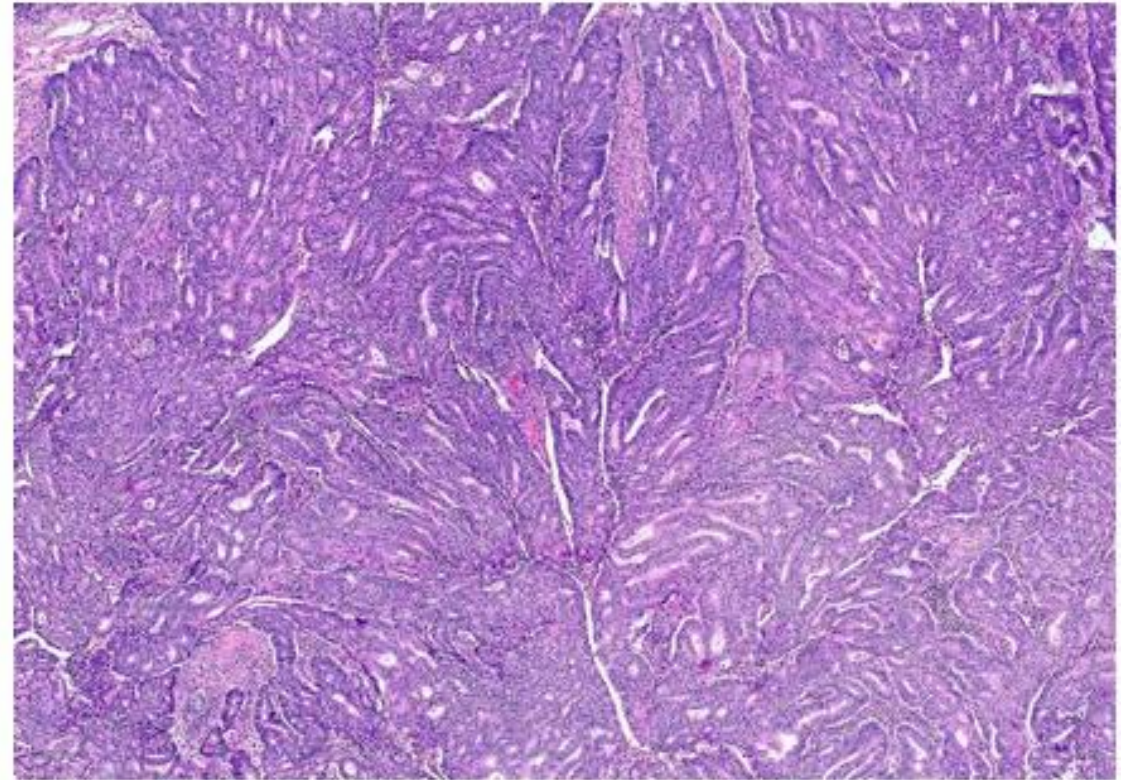
1. Endometrioid carcinomas:

- 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:
 - (1) obesity. ✓
 - (2) diabetes. ✓
 - (3) hypertension. >
 - (4) infertility. ✓
 - (5) exposure to unopposed estrogen. ✓
- Prognosis: *good 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

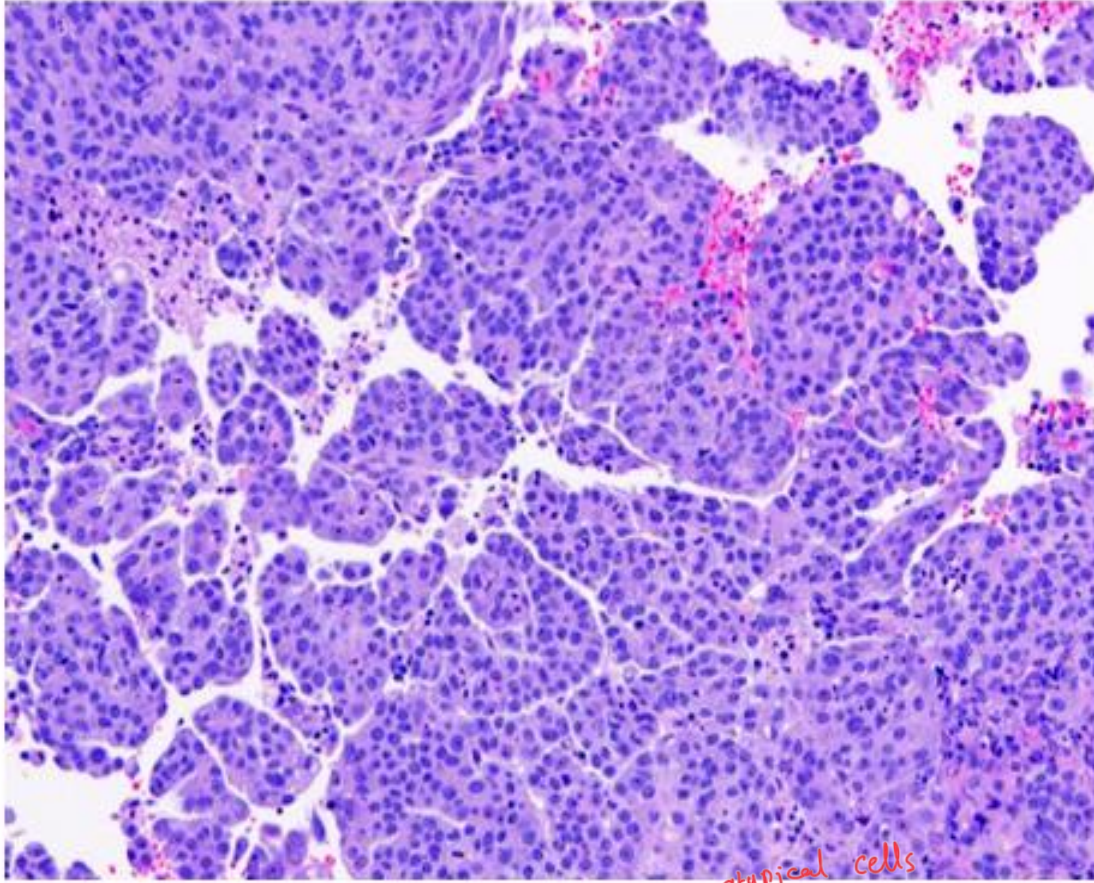


#back to back glands lacking intervening stroma.
#nuclear atypia.

2. Serous carcinoma.

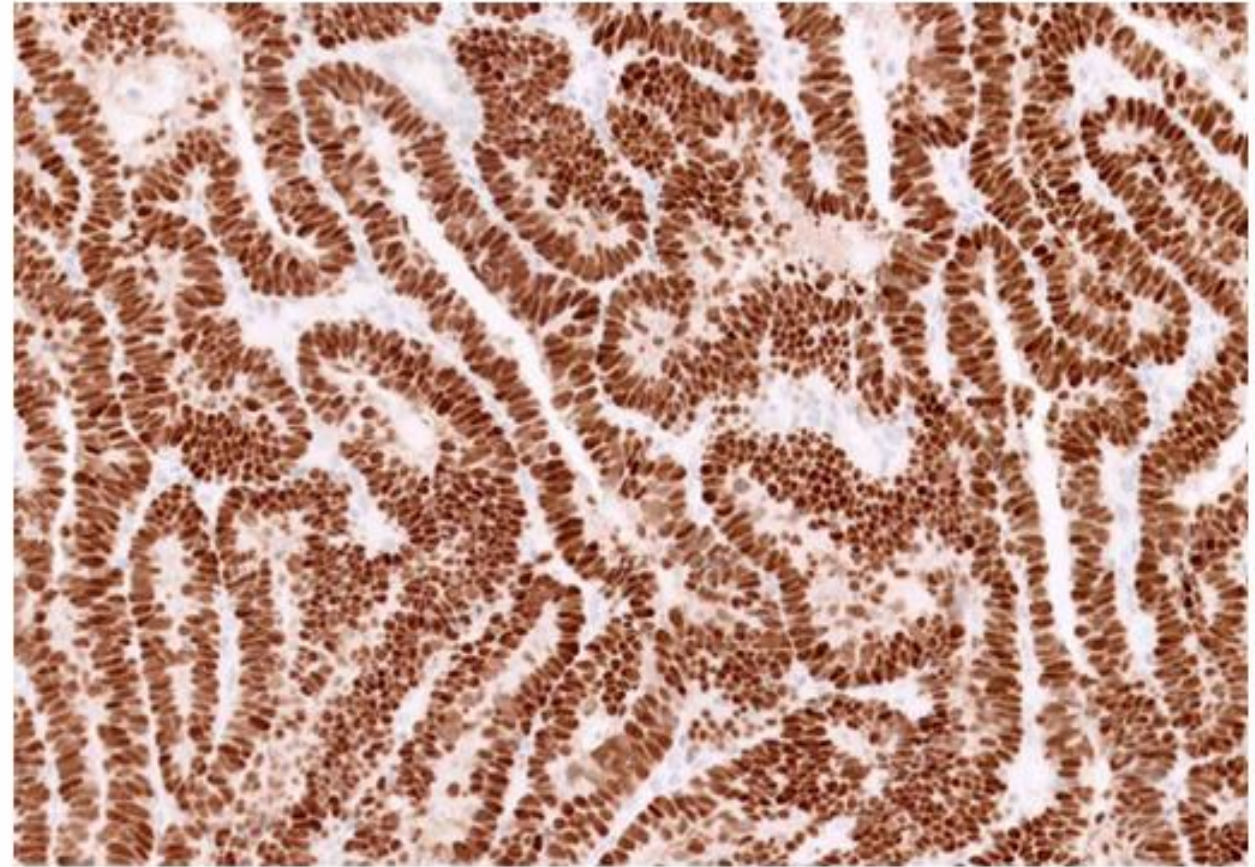
- Less common but far more aggressive.
- Not associated with unopposed estrogen or hyperplasia.
- Genetic: mutations in the TP53 tumor suppressor gene.
- Prognosis: strongly dependent on staging but because of its aggressive behavior → often high-stage disease with a poor prognosis.

Microscopic features



atypical cells

#Sheets and small papillae of endometrial serous carcinoma



#Strong and diffuse overexpression of p53

Tumors of the Myometrium

1. Leiomyomas (fibroids):

- Benign tumors from the smooth muscle cells.
- The most common benign tumor in females, 30-50% of women of reproductive age. *↓. 20% #*
- 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.



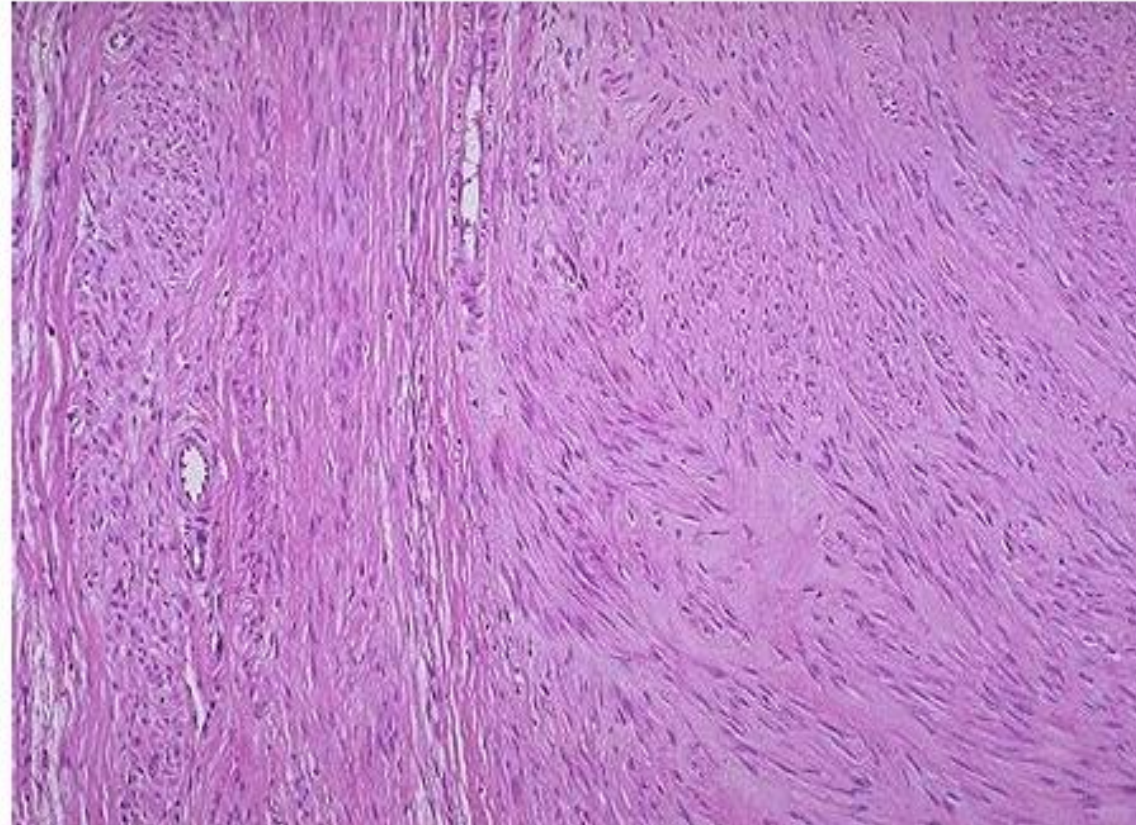
Histological features

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

myometrium

کثیرتبیہ ال

کثیرتبیہ ال
بسیار



leiomyoma → مفرد
leiomyosarcoma → جمع
leiomyomas

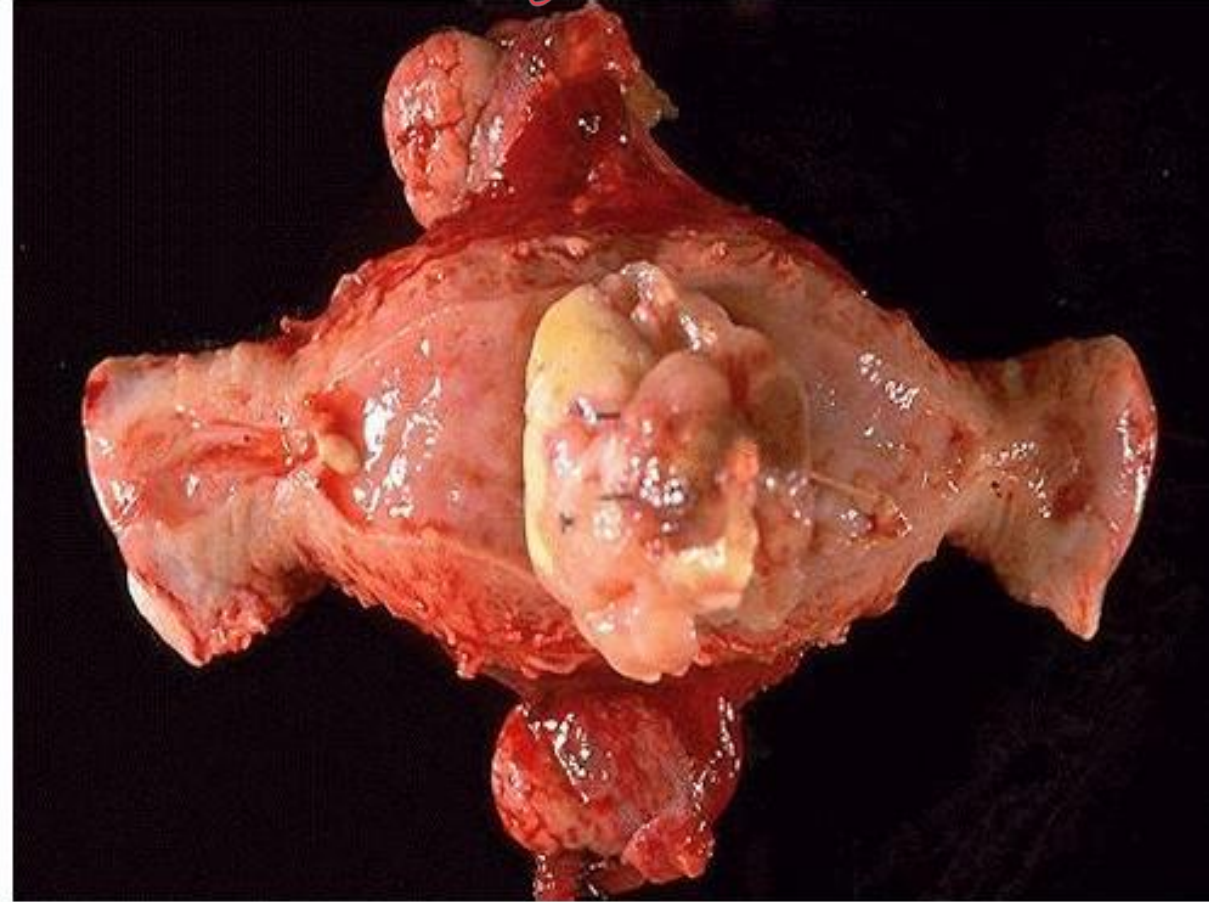
2. Leiomyosarcoma

- 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.

Gross features

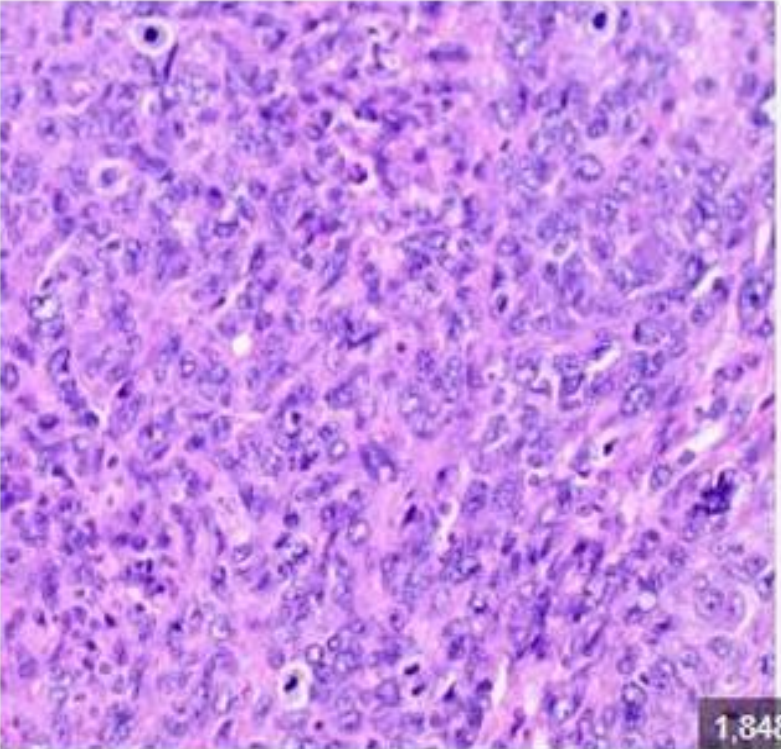
Single mass

soft, hemorrhagic, necrotic masses.
Irregular borders.



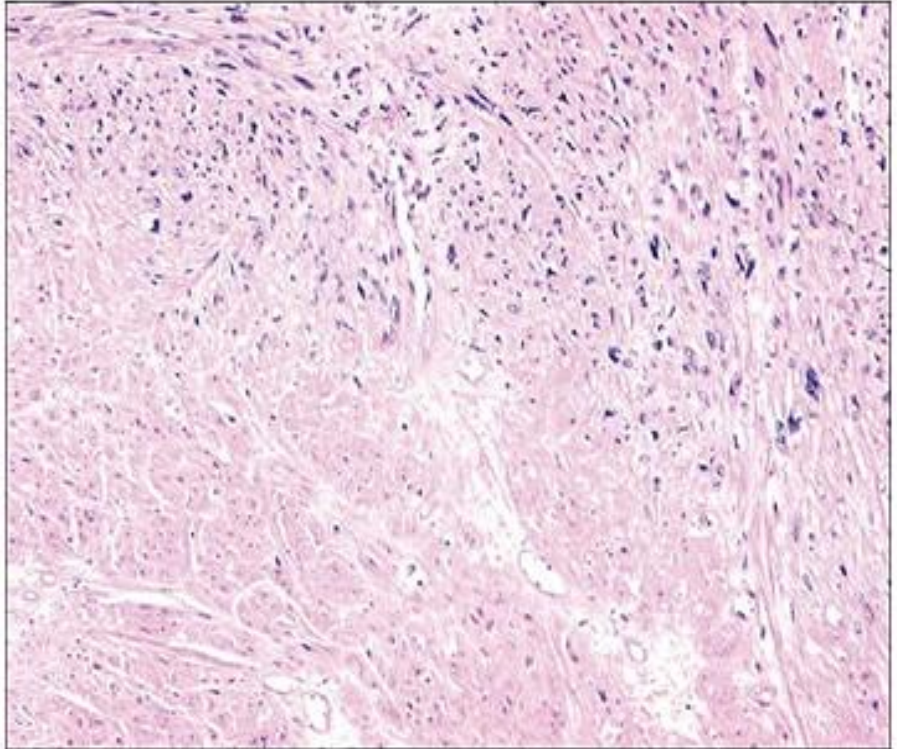
Microscopic features

Diagnostic features of leiomyosarcoma:



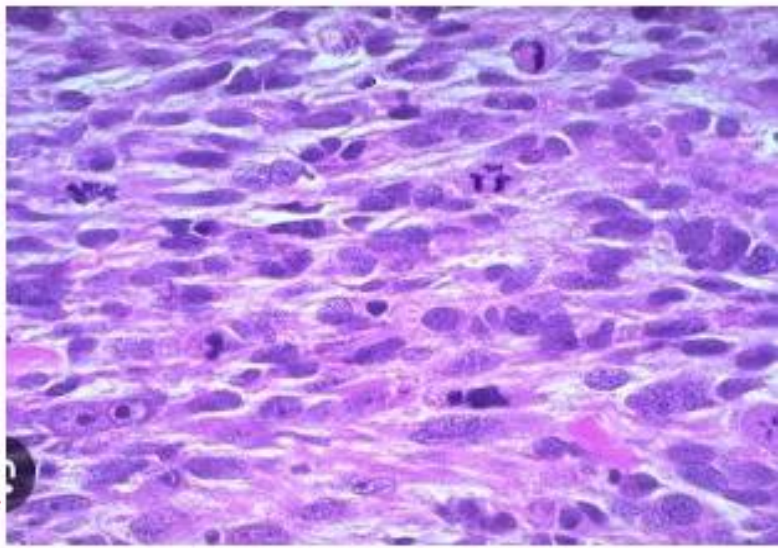
①

cytologic atypia



②

tumor necrosis

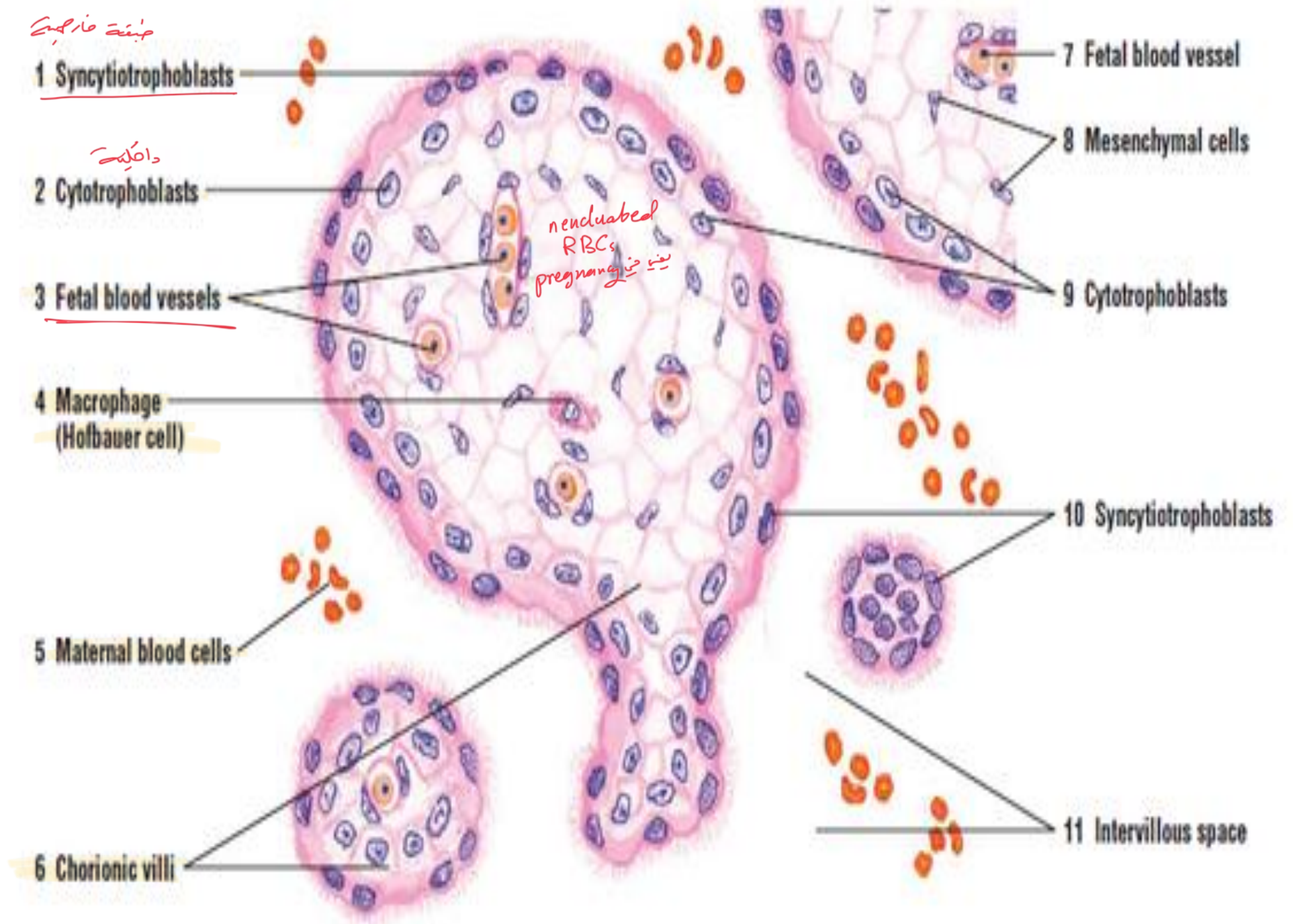


③

mitotic activity

[will upgrad liomyoma to liomyosarcoma ← إذا لقيت هذا الستا

Placental disc histology



آخر ما
مضلوبون الجيدول
الصور

Gestational trophoblastic disease

include molar pregnancy
الحمل الكاذب

An abnormal proliferation of fetal trophoblast cells. (normal cells of placenta in pregnancy)



In early embryo trophoblast cells form chorionic villi → in time they make the placenta (provide a large contact area between fetal & maternal circulations to allow gas & nutrient exchange).



All elaborate human chorionic gonadotropins (hCG) → detected in the blood & urine at levels higher than those found during normal pregnancy. (diagnosis, follow up).

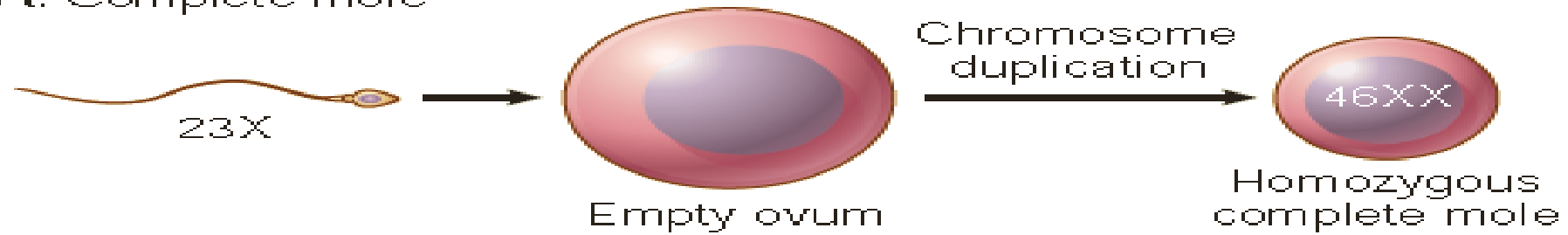
Hydatidiform Mole - Pathogenesis

An abnormal gestational process due to abnormal fertilization with an excess of paternal genetic material, two forms:

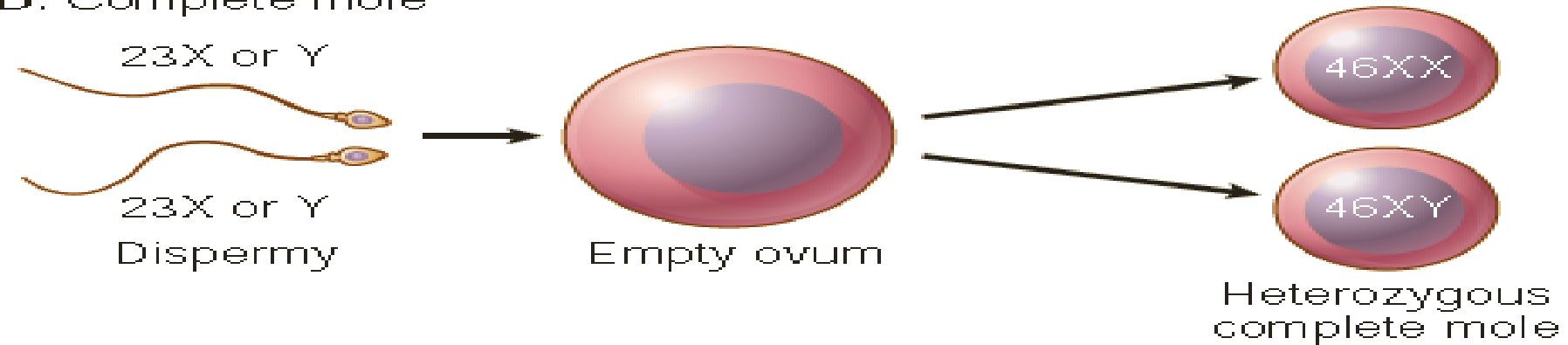
1-Complete mole: an empty egg fertilized by two spermatozoa (or a diploid sperm) → diploid karyotype containing only paternal chromosomes. 2 no fetus

2-Partial mole: a normal egg is fertilized by two spermatozoa (or a diploid sperm) → triploid karyotype with a dominance of paternal genes. 3 fetus with problem

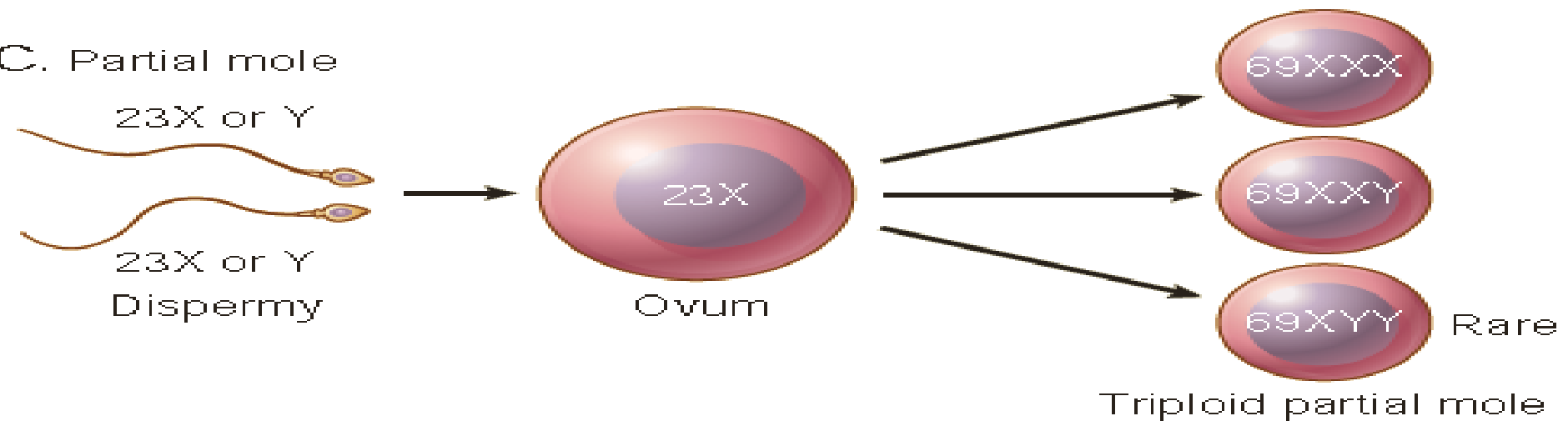
A. Complete mole



B. Complete mole



C. Partial mole



Hydatidiform Mole – Epidemiology & clinical

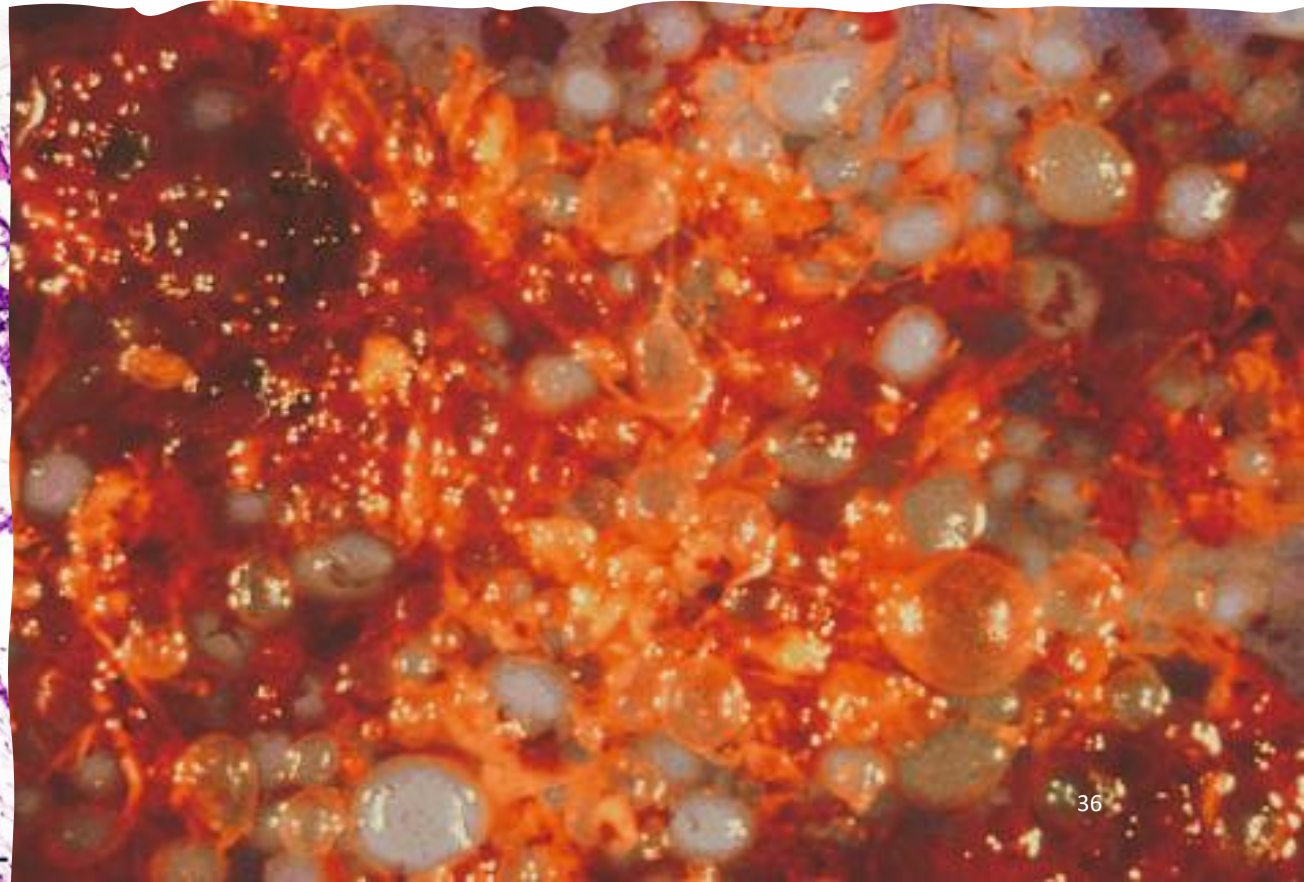
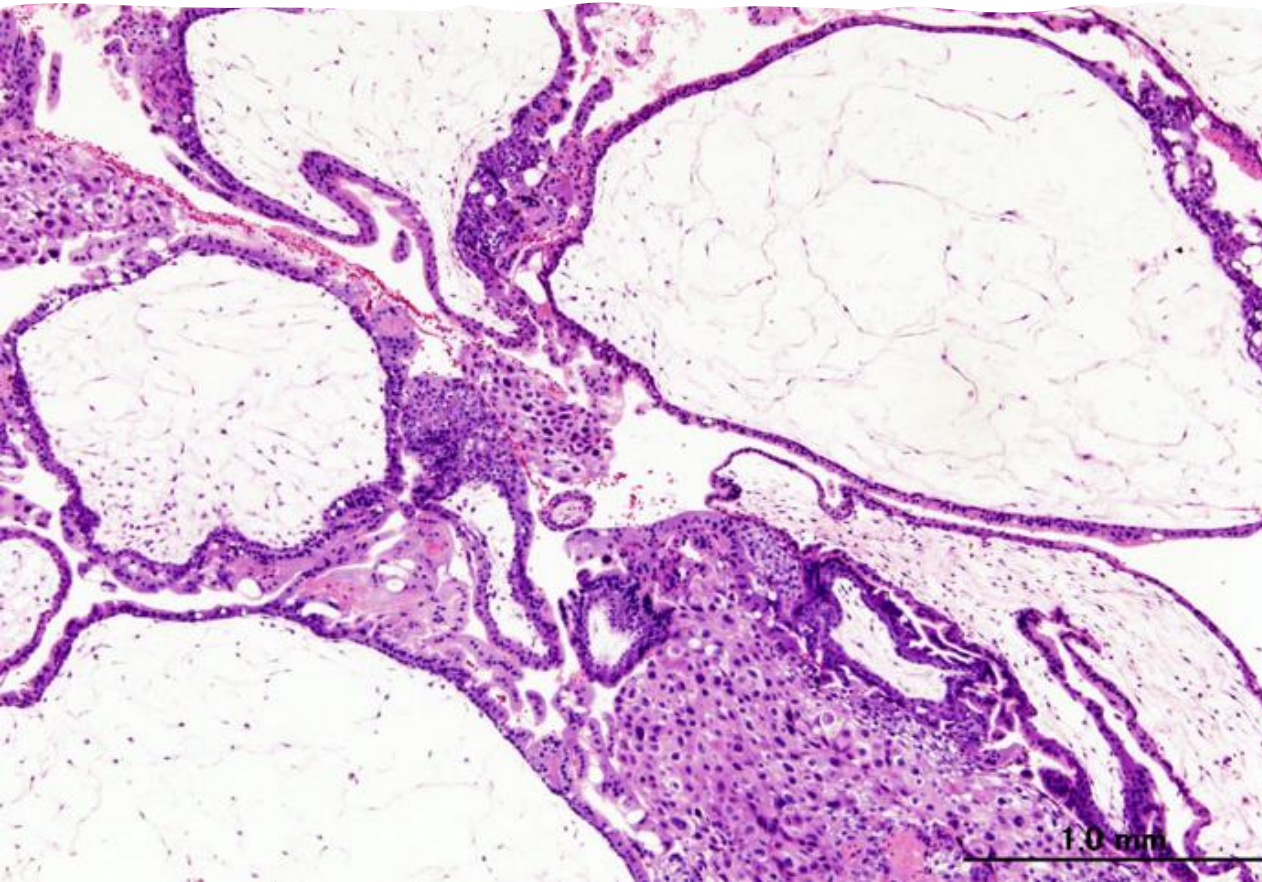
- Incidence complete hydatidiform mole is about 1 to 1.5 per 2000 pregnancies(higher in Asian)
- Most common before 20 & after 40 years (maternal age)
- History of Mole increases the risk for molar disease in subsequent pregnancies.**
- Presentation:** At 12-14 weeks of pregnancy during investigation for a gestation “too large for dates,”.
+both moles → Hyperemesis, elevation of hCG in maternal blood & no fetal heart sounds.

زیر حملوی باطاری

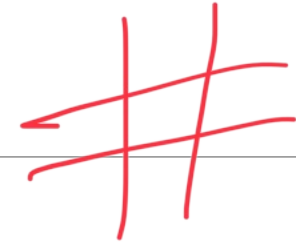
Hydatidiform Mole – Morphology

Uterine cavity is expanded by friable mass (**Grape-like villi**) composed of thin-walled, cystically dilated chorionic villi covered by varying amount of atypical chronic epithelium.

multiple viscle



normal



Hydatidiform Mole – Ultrasound snow storm



complete ← baby ❌
partial ← baby ⚡

Hydatidiform Mole – treatment & prognosis

Tx: surgical evacuation of the uterine cavity & close follow up with serum hCG.

The majority of moles do not recur after thorough curettage, 10% of complete moles are invasive

No more than 2-3% give rise to choriocarcinoma (usually complete, rarely partial).

So partial mole has much better prognosis

Flow up + methotrexate
ويعطى المثل من (6 - 12) مرة

مريض

↓

Feature هذا الجهد في فقط المطلوبه من آخرها الصوره ان + الصور	Complete Mole	Partial Mole هي الكلوبه صفة به 1
Karyotype	46,XX (46,XY)	Triploid (69,XXY)
Villous edema	All villi Hydatid form	Some villi
Trophoblast proliferation	Diffuse; circumferential	Focal; slight
Atypia	Often present	Absent
Serum hCG	Elevated	<u>Less elevated</u>
hCG in tissue 20000 normal 11	++++	+
Behavior	2% choriocarcinoma	Rare choriocarcinoma

Gestational Choriocarcinoma

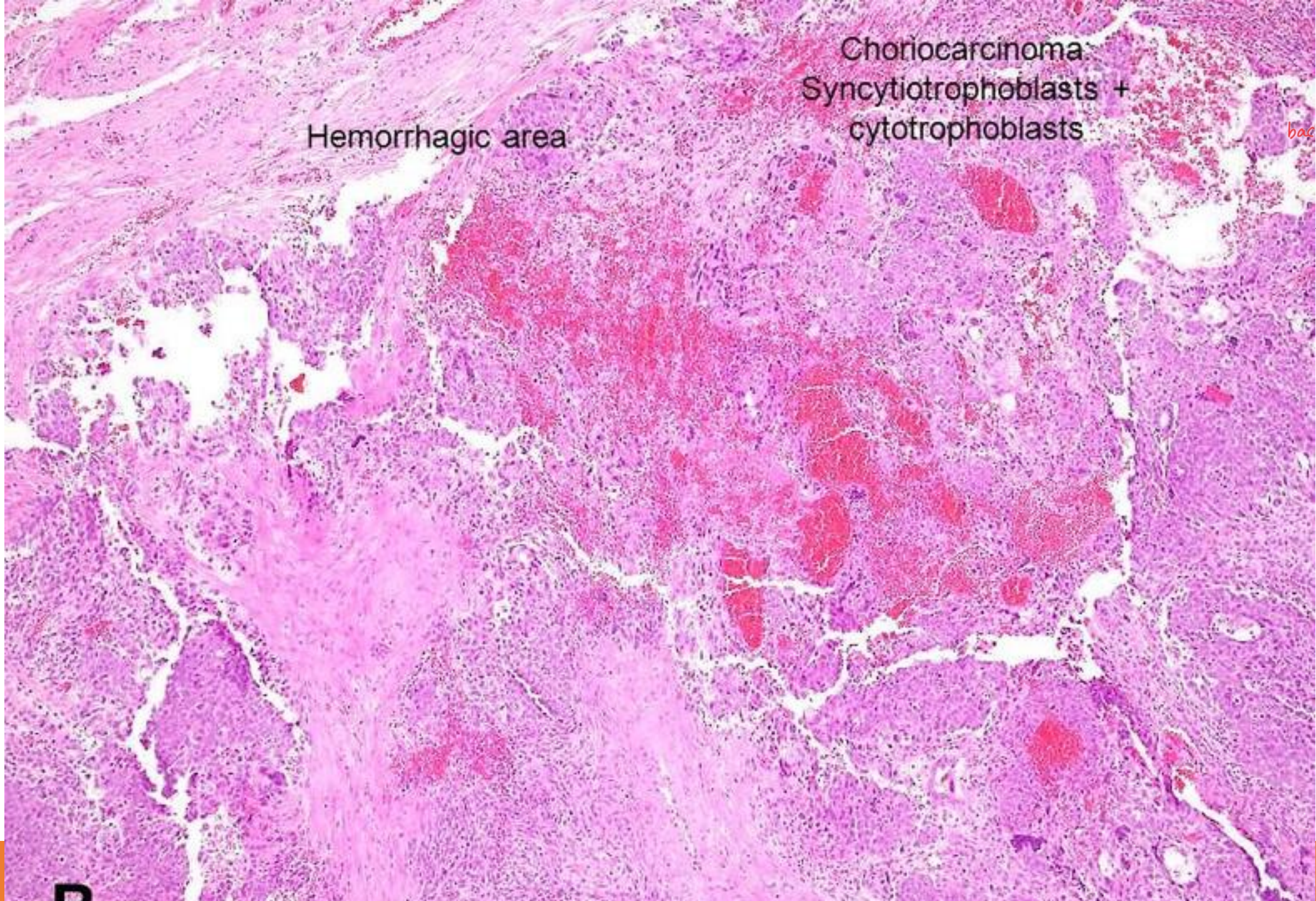
A very aggressive malignant tumor, arises from gestational chorionic epithelium or, less frequently, from totipotential cells within the gonads (as a germ cell tumor).

Rare tumor (higher in Asian)

Most common before 20 & after 40 years (maternal age)

50% from complete moles; 25% after an abortion, 25% after an apparently normal pregnancy

- **Presentation:** a bloody, brownish discharge, very high hCG absence of marked uterine enlargement (not like mole)
- **Gross:** hemorrhagic, necrotic uterine masses.
- **Microscopic:** In contrast with hydatidiform moles chorionic villi are not formed; the tumor is composed of anaplastic cuboidal cytotrophoblasts & syncytiotrophoblasts
- **Very aggressive disease.**
- At diagnosis widespread vascular (hematogenous) spread usually the lungs & brain.
- Lymphatic invasion is uncommon.
- Despite the extremely aggressive of placental choriocarcinoma → sensitive to chemotherapy.
- By contrast, response to chemotherapy in gonads choriocarcinomas is poor.



Hemorrhagic area

Choriocarcinoma:
Syncytiotrophoblasts +
cytotrophoblasts

severely
extensively
hemorrhagic
and necrotic
background containing
of Trophoblastic
cell with sever
atypia

D