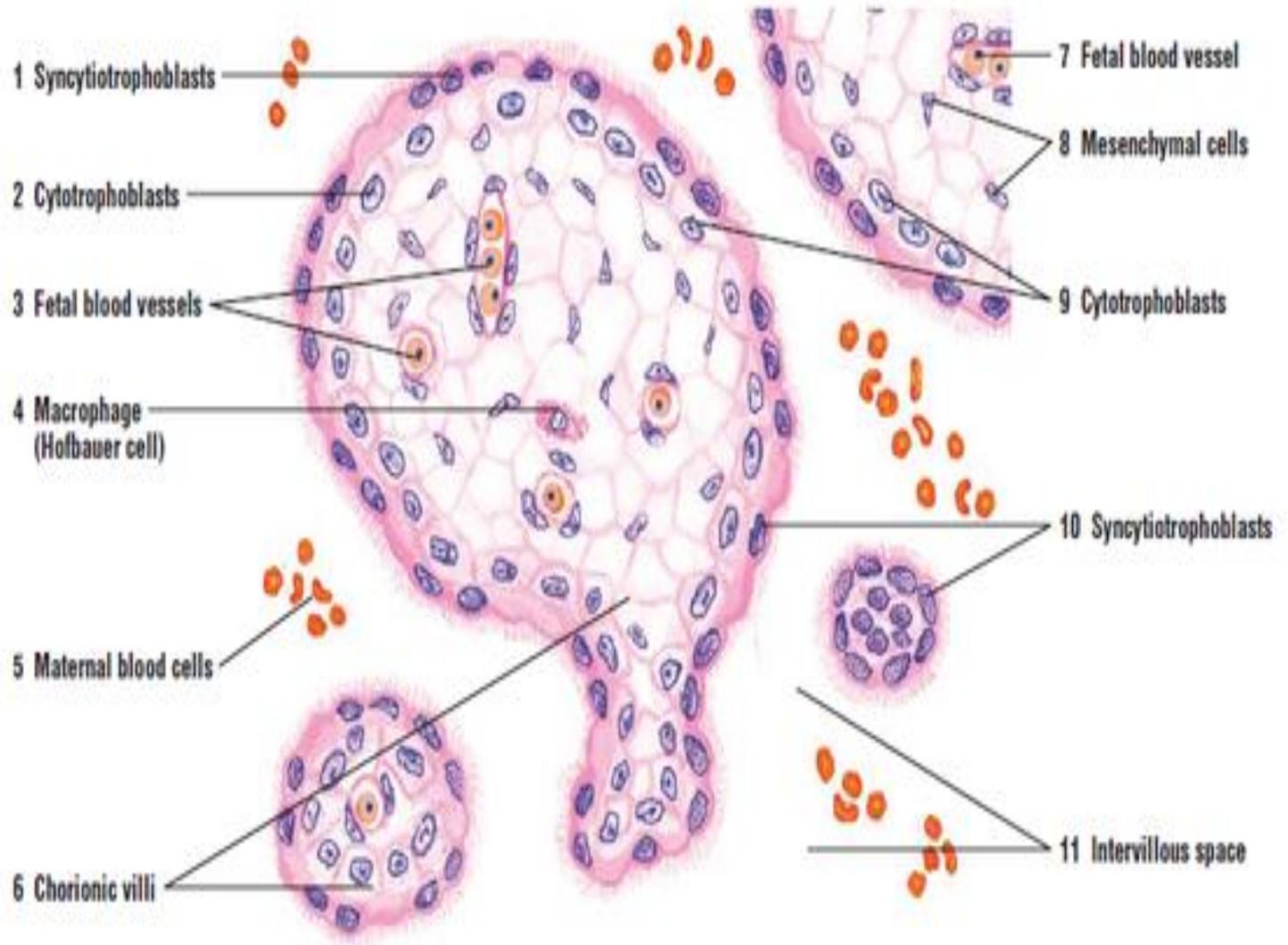


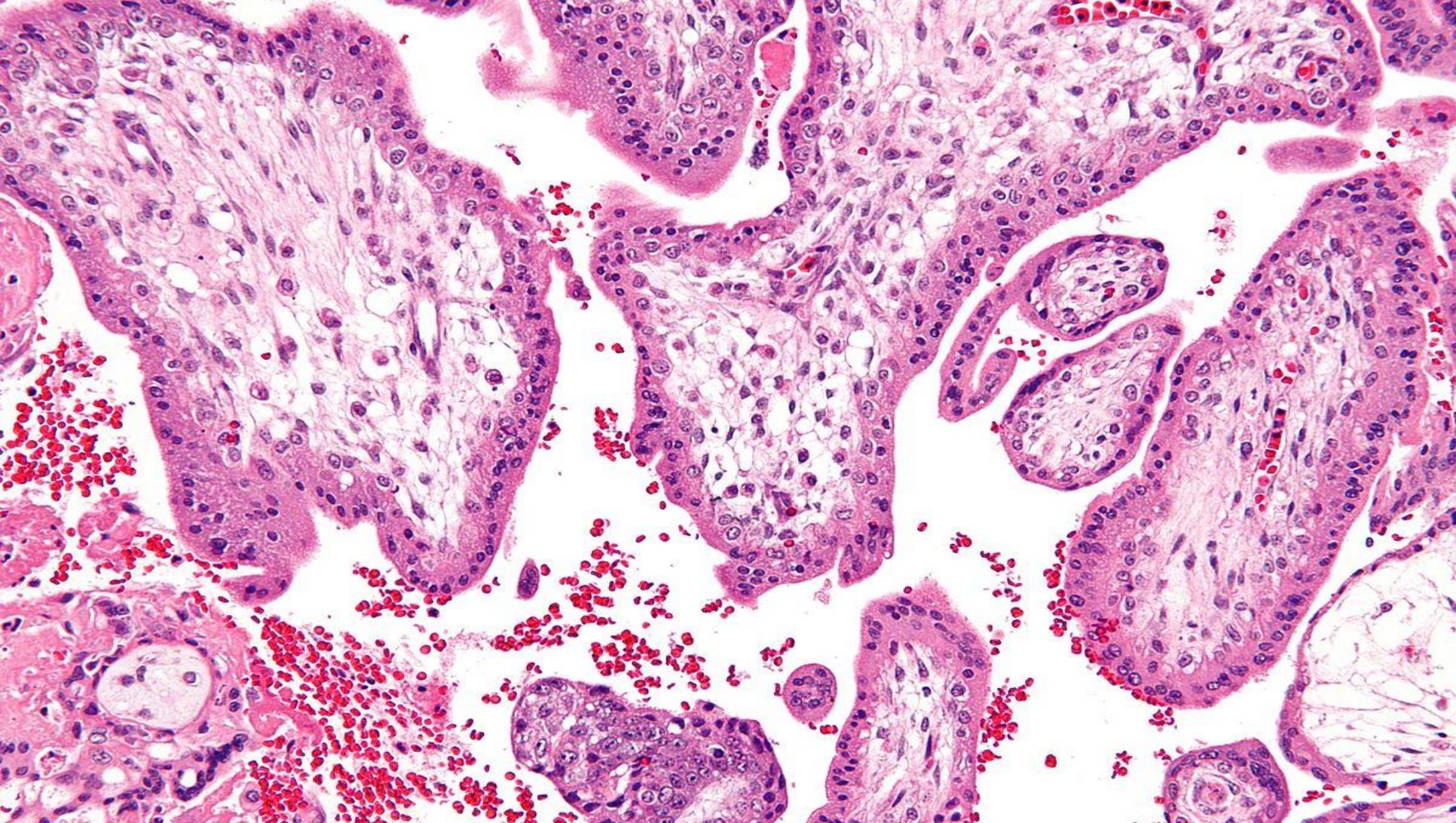
# Female Genital System, Lecture 5

## Gestational trophoblastic disease

**Dr. Sura Al Rawabdeh**  
**UGS lectures 2024**

# Placental disc histology





# Gestational trophoblastic disease

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- ← 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).

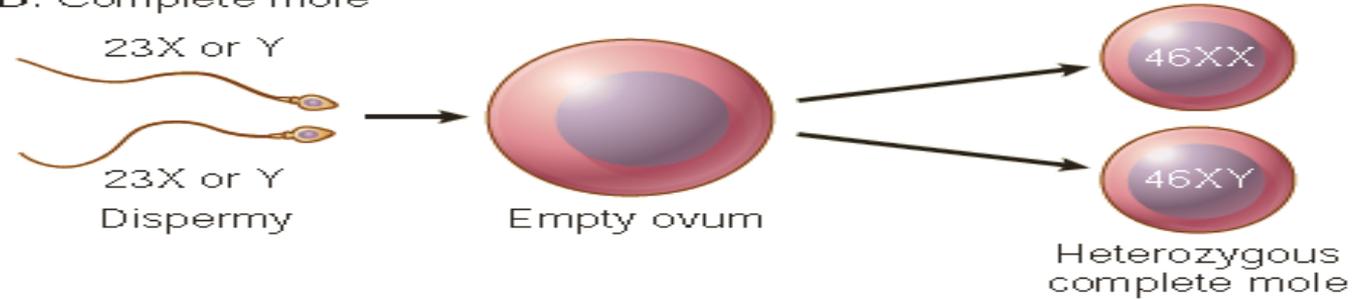
# Hydatidiform Mole - Pathogenesis

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

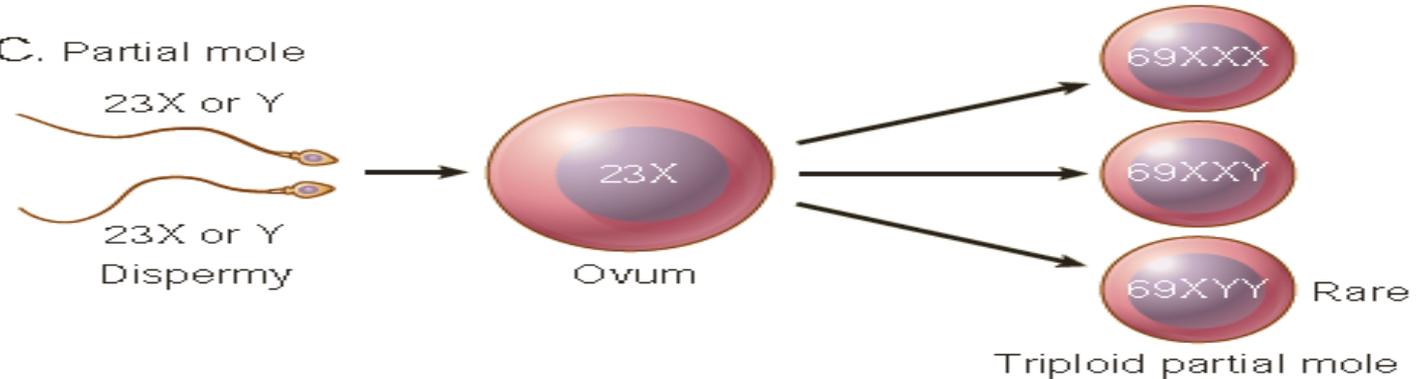
### A. Complete mole



### B. Complete mole

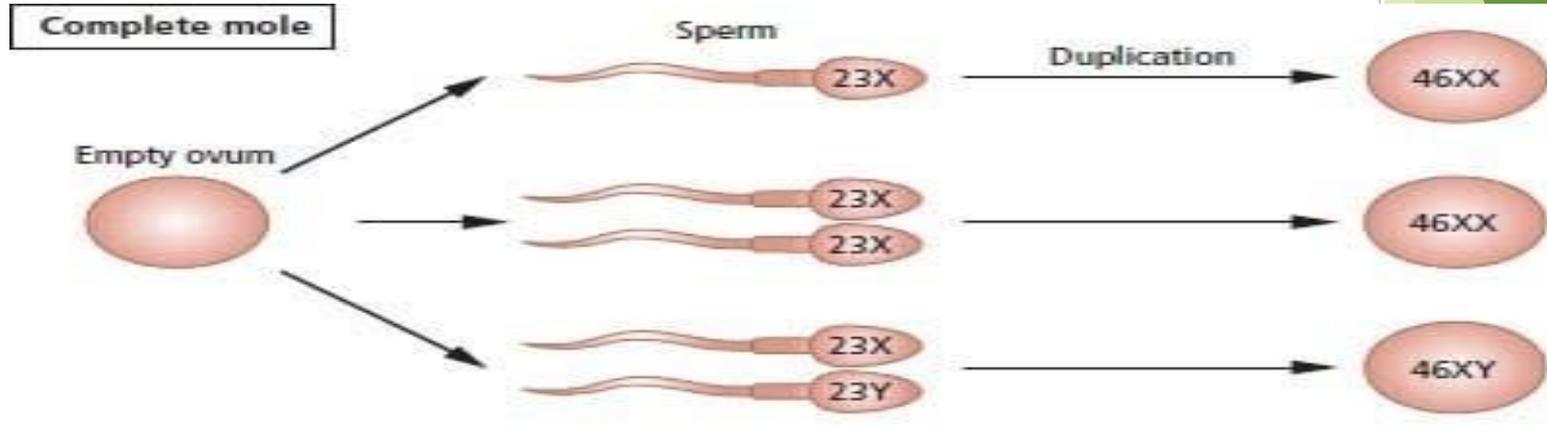


### C. Partial mole



# Hydatidiform Mole - Complete

- Complete moles are not compatible with embryogenesis & **does not contain fetal parts**. The chorionic epithelial cells are diploid (46,XX or, uncommonly, 46,XY)



# Hydatidiform Mole - Partial

- Partial mole is compatible with early embryo formation  
 → **may contain fetal parts & some normal chorionic villi**. Chorionic epithelial cells almost always triploid (e.g., 69,XXY)



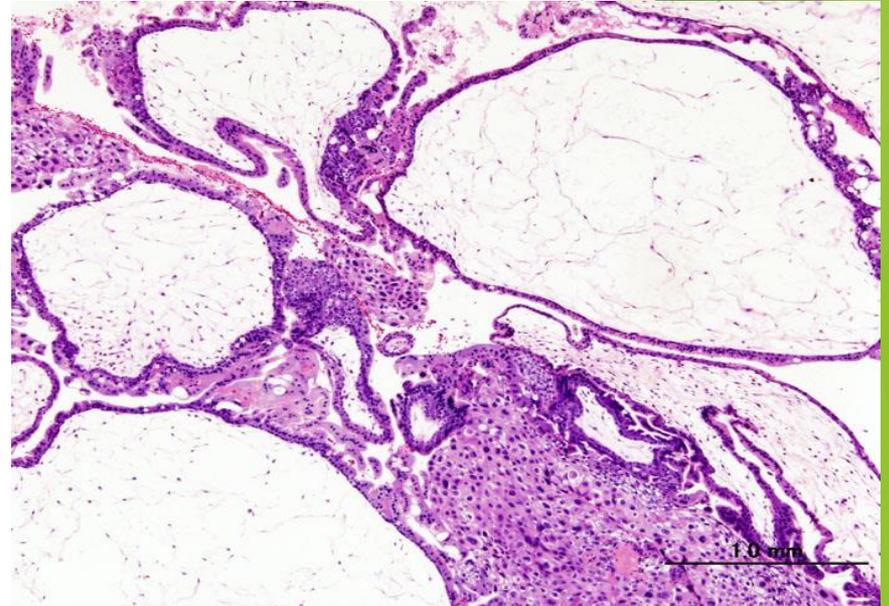
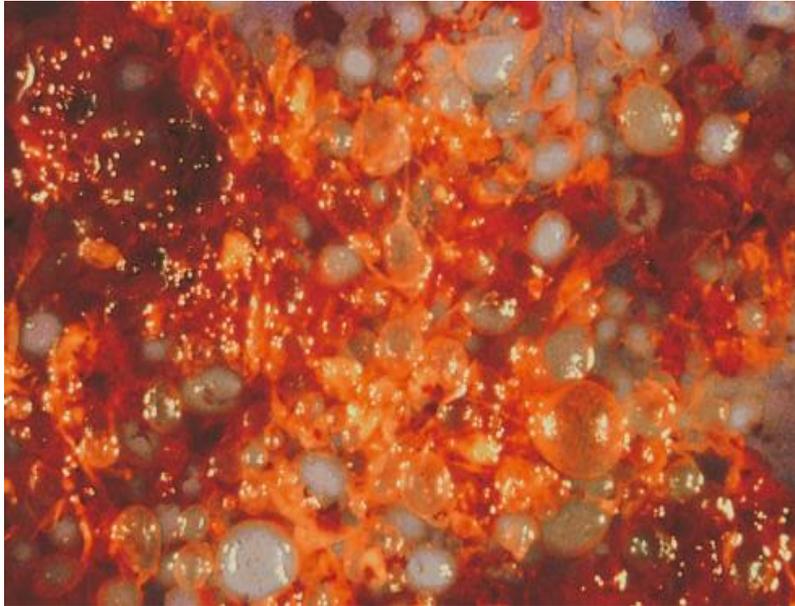
# Hydatidiform Mole - Epidemiology & clinical

9

- 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.

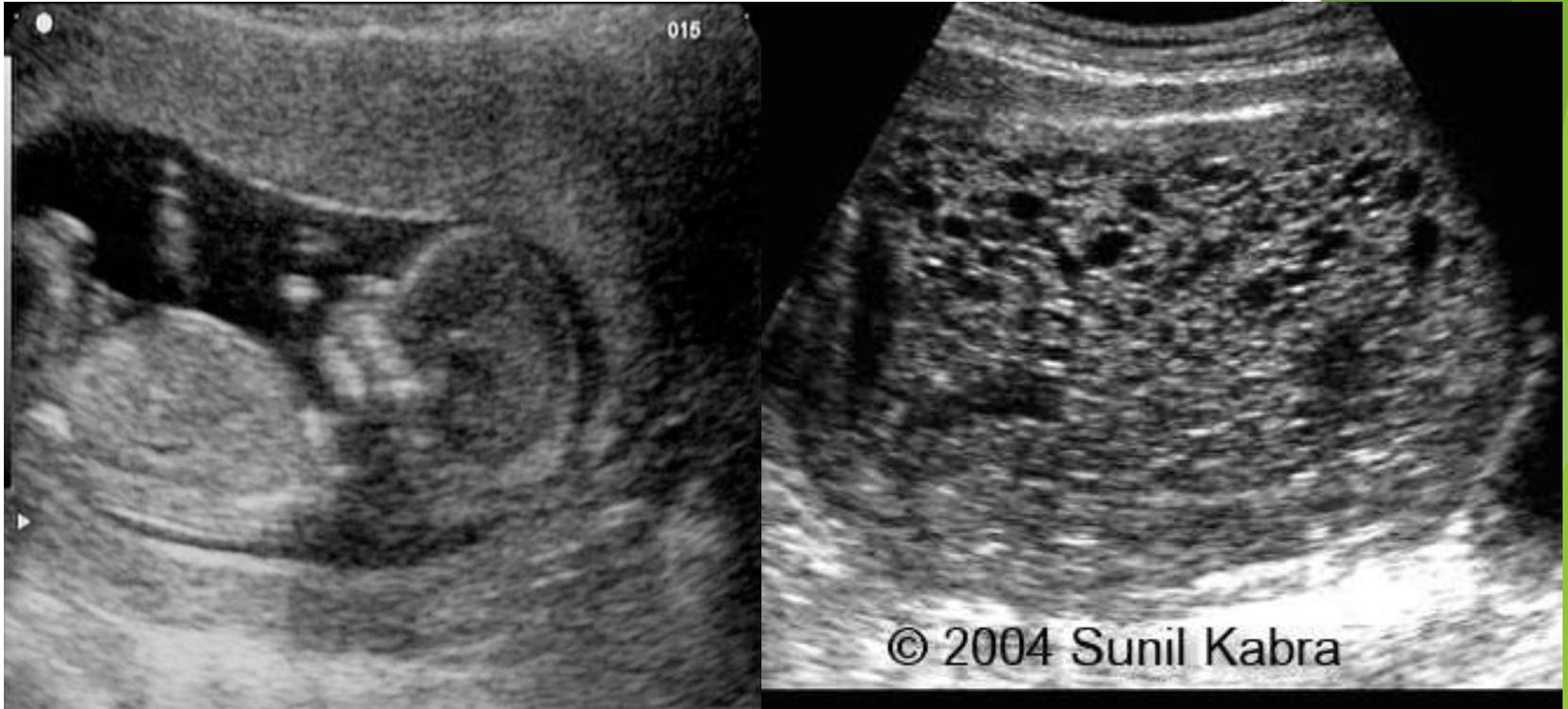
# Hydatidiform Mole - Morphology

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.



# Hydatidiform Mole - Ultrasound snow storm

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# Hydatidiform Mole - treatment & prognosis

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- ← 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

<b>Feature</b>	<b>Complete Mole</b>	<b>Partial Mole</b>
<b>Karyotype</b>	<b>46,XX (46,XY)</b>	<b>Triploid (69,XXY)</b>
<b>Villous edema</b>	<b>All villi</b>	<b>Some villi</b>
<b>Trophoblast proliferation</b>	<b>Diffuse; circumferential</b>	<b>Focal; slight</b>
<b>Atypia</b>	<b>Often present</b>	<b>Absent</b>
<b>Serum hCG</b>	<b>Elevated</b>	<b><u>Less elevated</u></b>
<b>hCG in tissue</b>	<b>+++++</b>	<b>+</b>
<b>Behavior</b>	<b>2% choriocarcinoma</b>	<b>Rare choriocarcinoma</b>

# 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

# Gestational Choriocarcinoma - morphology

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- ← **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

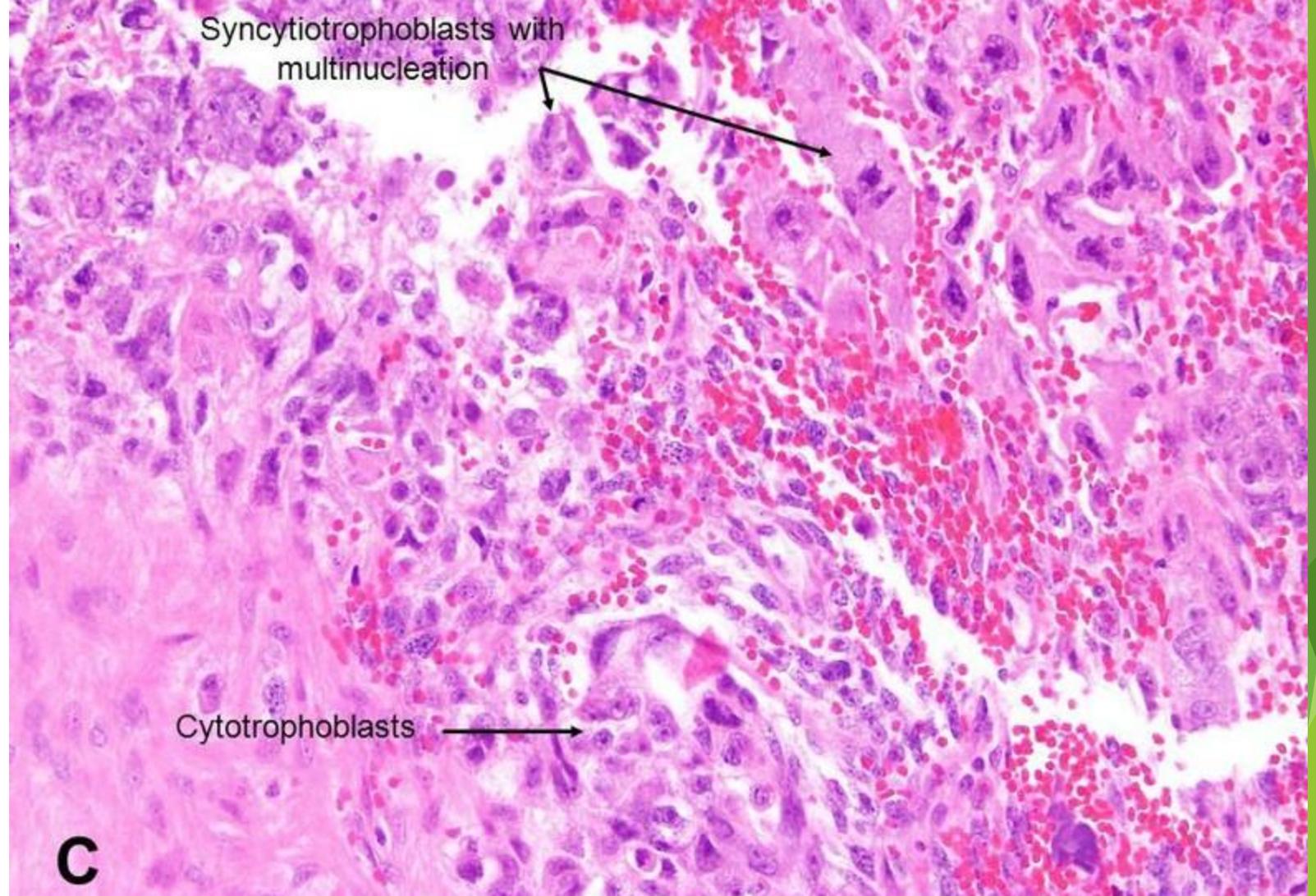
Syncytiotrophoblasts with multinucleation

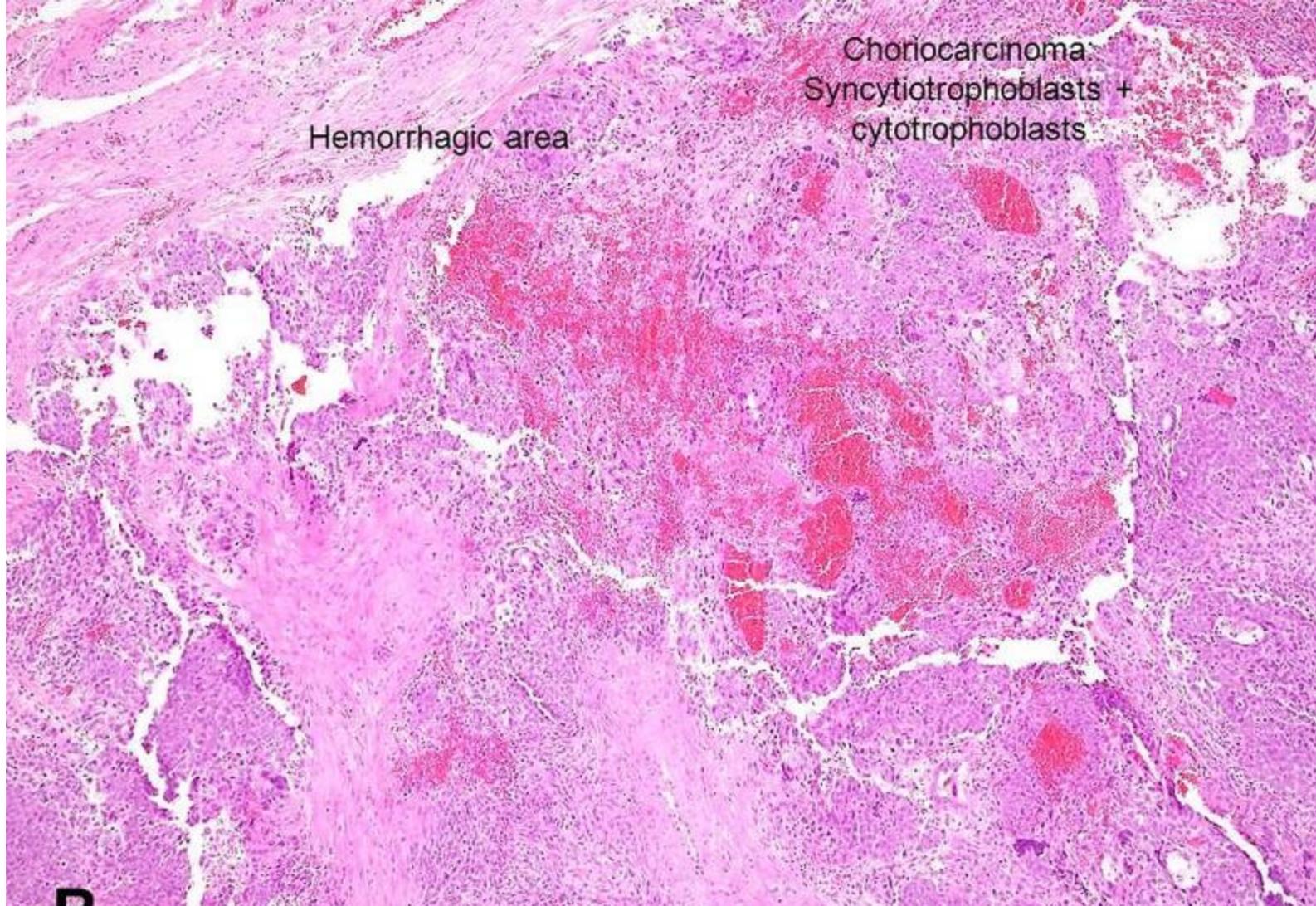


Cytotrophoblasts



**C**





# Gestational Choriocarcinoma - prognosis

- ← **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**.

Good luck in your exams

