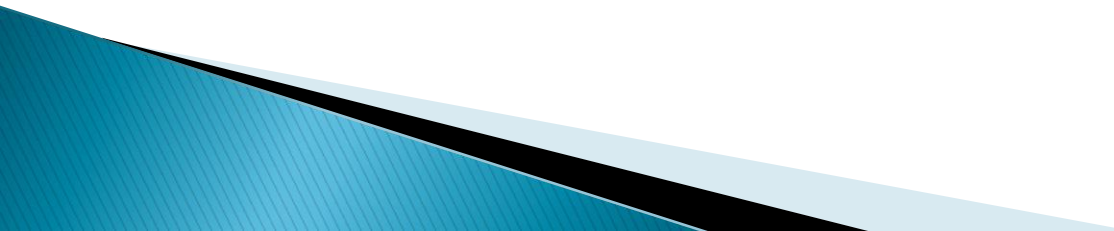


Female genital tract

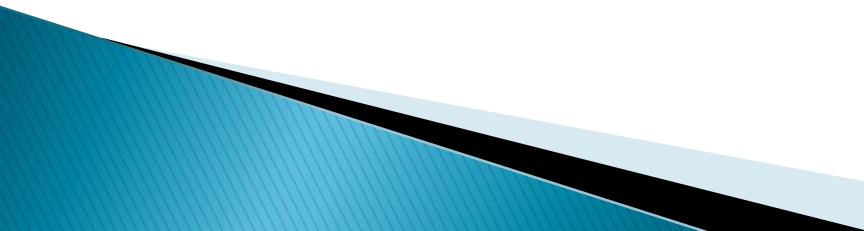
Germ cell tumors

- ▶ Teratoma
 - Immature teratoma
 - Mature teratoma
 - Cystic (dermoid cyst)
 - Solid
 - Monodermal teratoma
- ▶ Dysgerminoma
- ▶ Yolk sac tumor
- ▶ Choriocarcinoma
- ▶ Embryonal carcinoma
- ▶ Mixed germ cell tumors

Teratoma

- ▶ 15% to 20% of ovarian tumors
 - ▶ Occur in **the first two decades** of life
 - ▶ Young age ...↑ incidence of malignancy
 - ▶ > 90% are benign mature cystic teratomas
- 

Benign –Mature– Cystic Teratomas (Dermoid cyst)

- ▶ Most common ovarian tumors in childhood
 - ▶ 90% are unilateral, more on the right
 - ▶ **Complications:**
 - ▶ In 1%, malignant transformation of one of the tissue elements, usually SCC
 - ▶ 10–15% undergo torsion due to long pedicle
- 

Gross appearance

- ▶ Multiloculated cyst filled with sebum & matted hair
- ▶ Teeth protruding from a nodular projection
- ▶ Occasionally foci of bone and cartilage

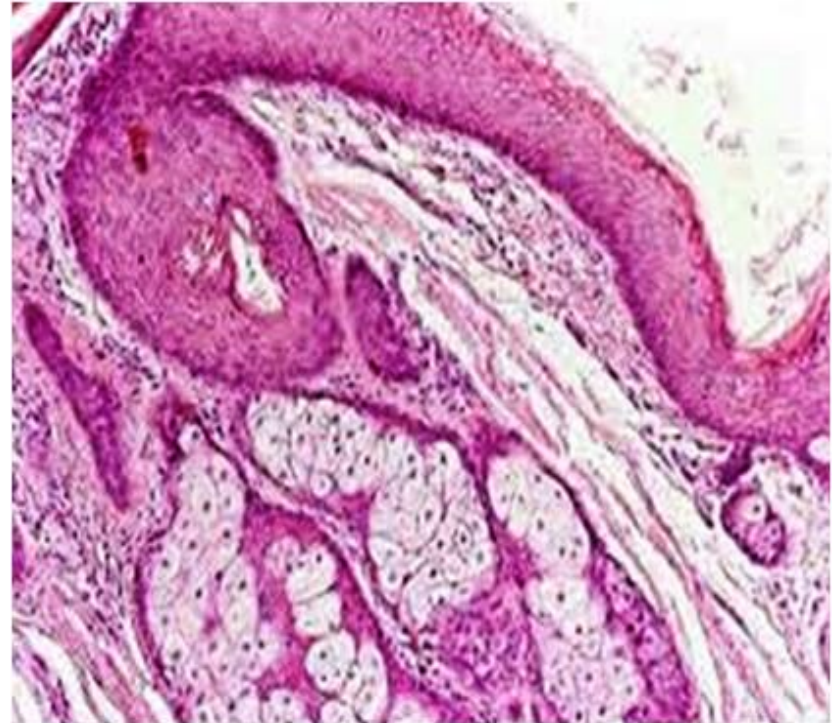


Mature cystic teratoma

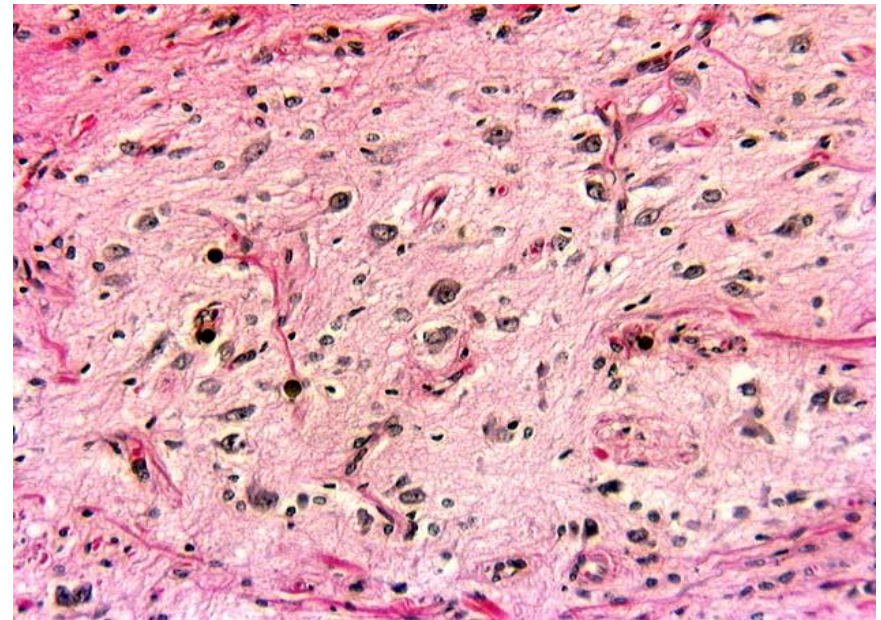
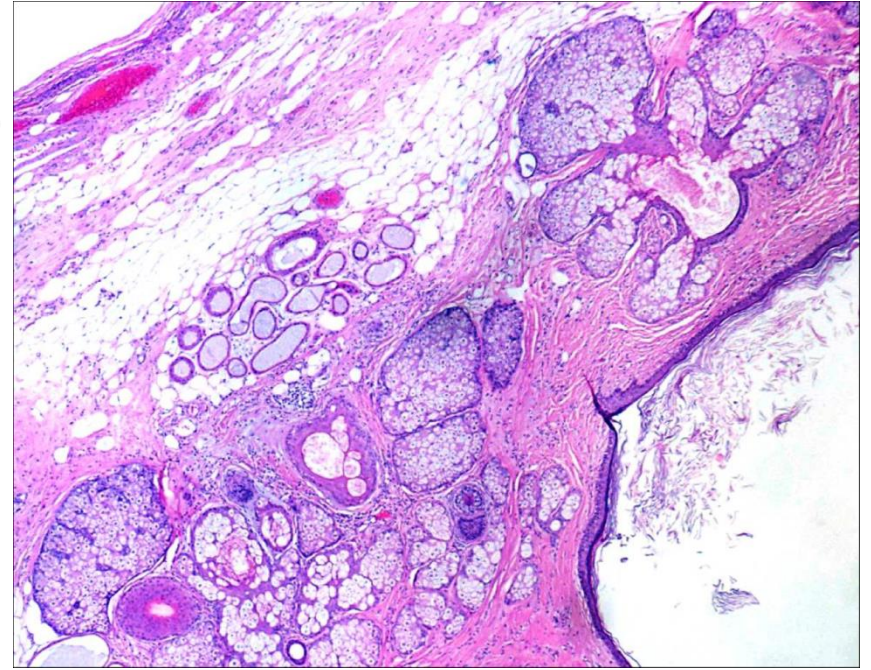
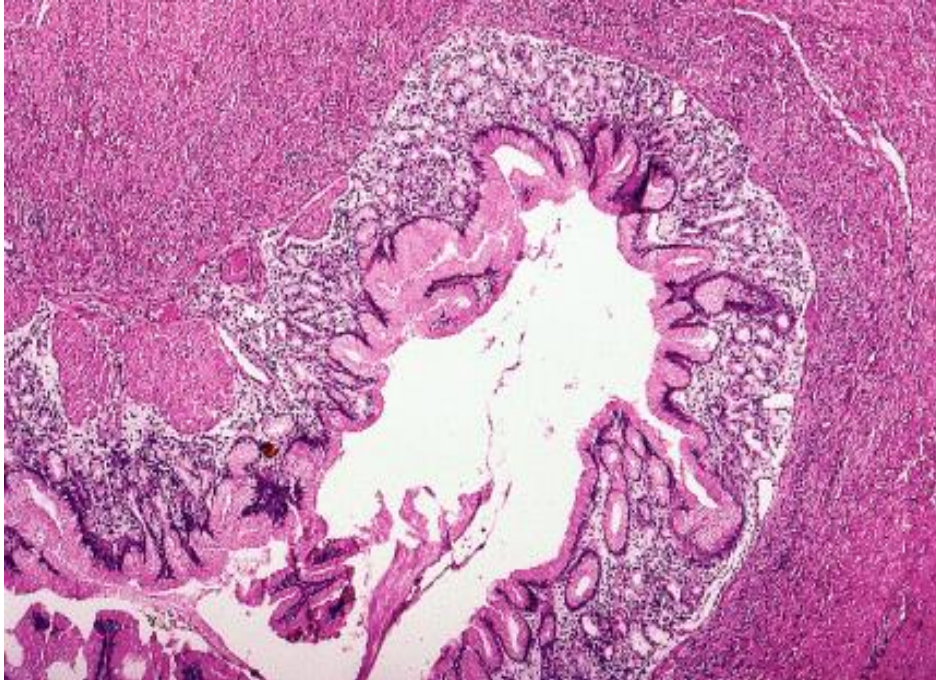


Microscopic appearance

- ▶ Mature tissues representing all three germ cell layers
- ▶ A cyst lined by epidermal type epithelium with **adnexal appendages**



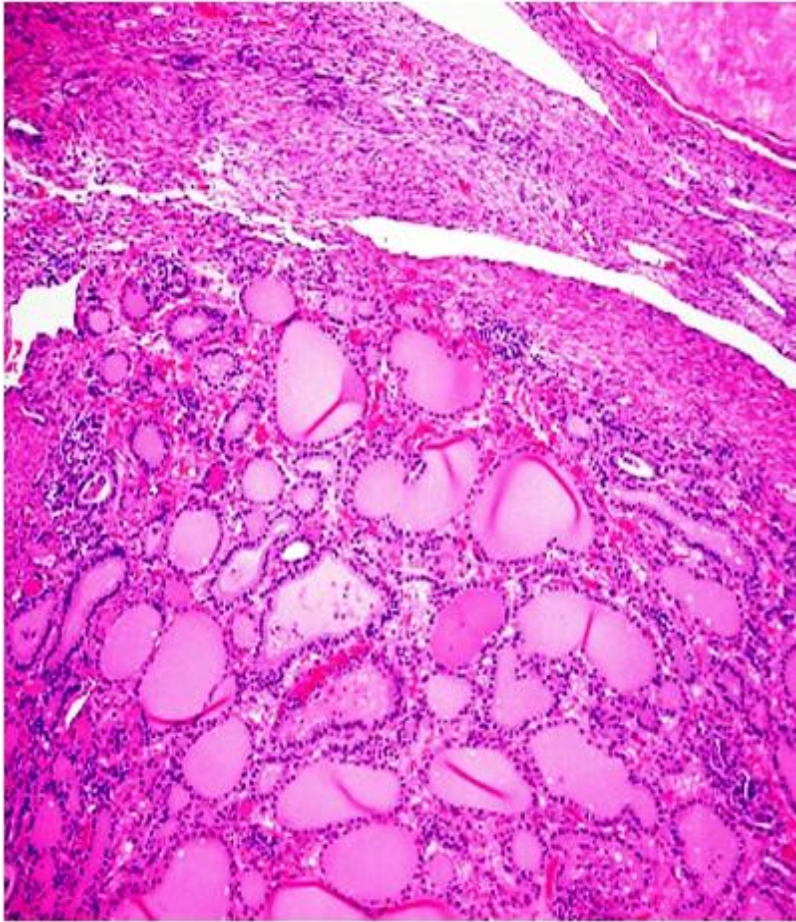
Mature cystic teratoma



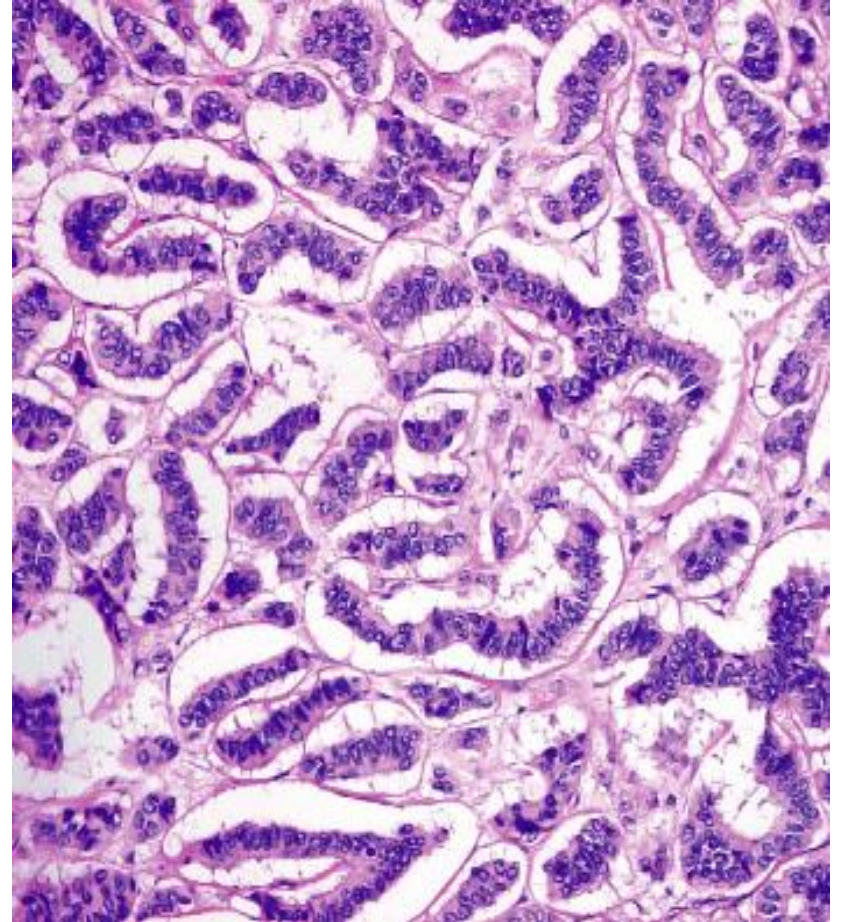
Monodermal –Specialized– teratoma

- ▶ Usually solid and unilateral
- ▶ **Struma ovarii**
 - Composed of mature thyroid tissue
 - May produce hyperthyroidism
 - Thyroid tumors may arise in this tissue
- ▶ **Ovarian carcinoid**
 - Rarely produce carcinoid syndrome
- ▶ **Combined struma ovarii and carcinoid**

Monodermal teratoma



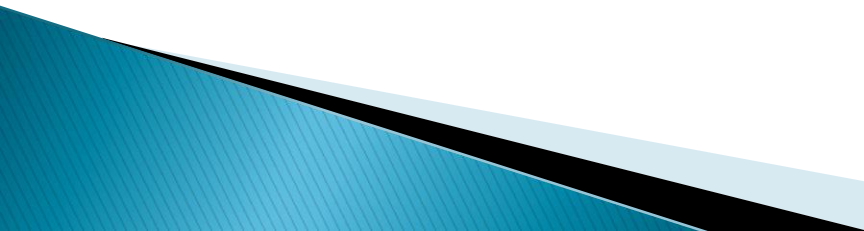
Struma ovarii



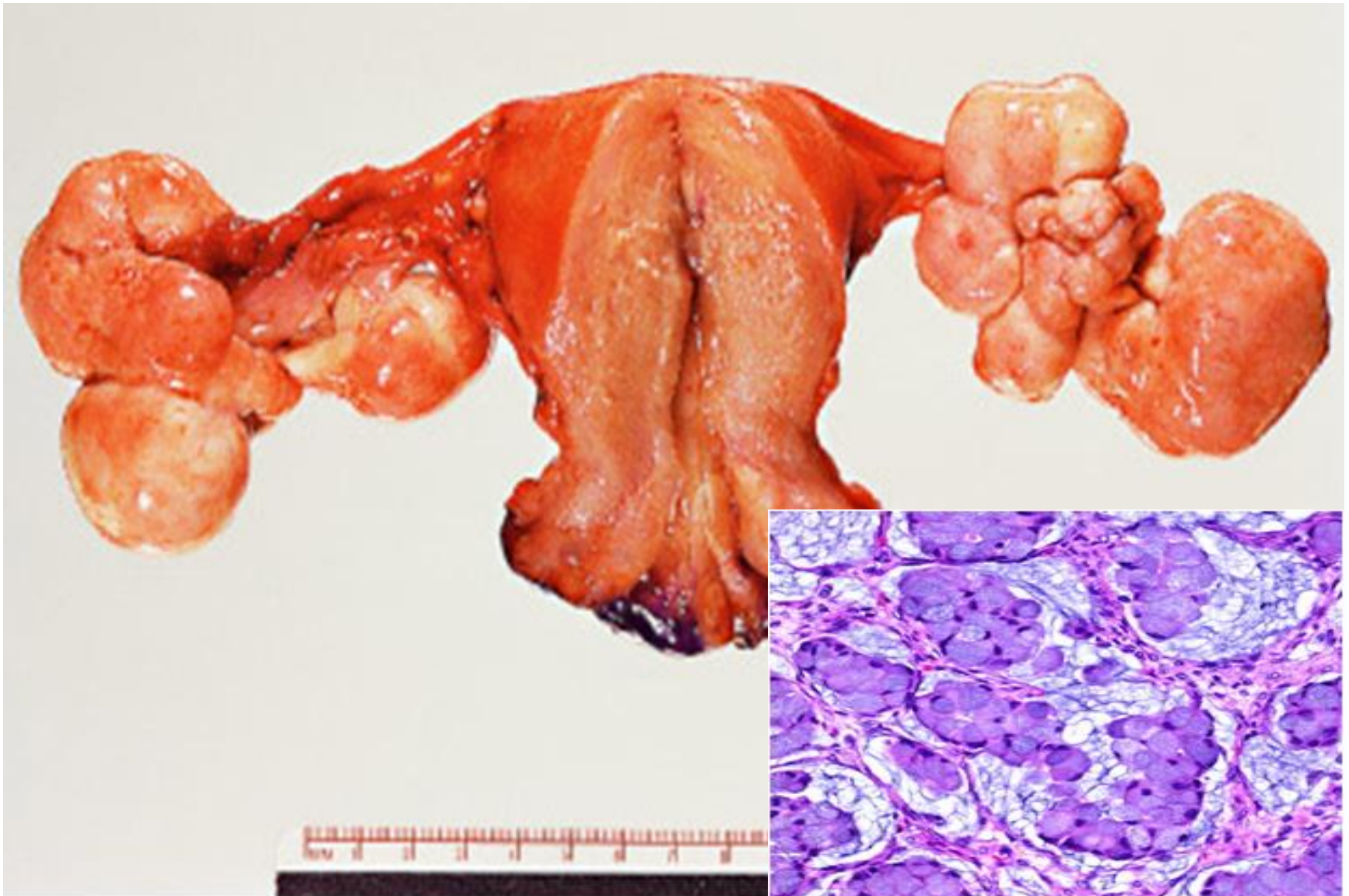
Ovarian carcinoid

Metastasis to ovary

- ▶ Usually older ages
 - ▶ Mostly **bilateral and multinodular**
 - ▶ Usually solid gray–white masses

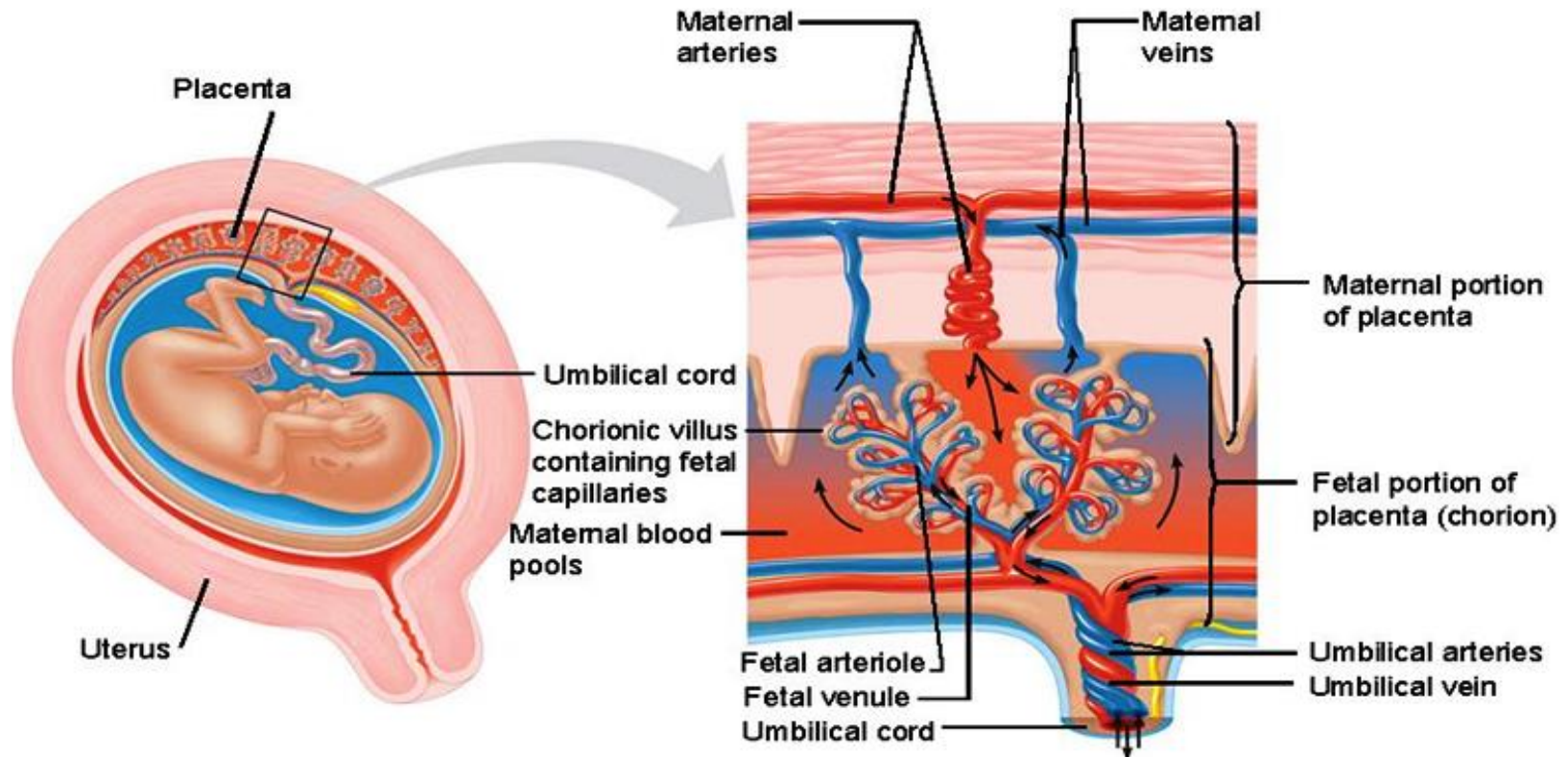
 - ▶ Malignant tumor cells arranged into cords and glands in a desmoplastic stroma
 - ▶ Cells may be "signet–ring" mucin–secreting
 - ▶ Primaries: GI (**Krukenberg tumors**), breast, lung
- 

Krukenberg tumor



Diseases of the placenta

- ▶ Ectopic pregnancy
- ▶ Gestational trophoblastic disease



ECTOPIC PREGNANCY

- ▶ **Definition:**

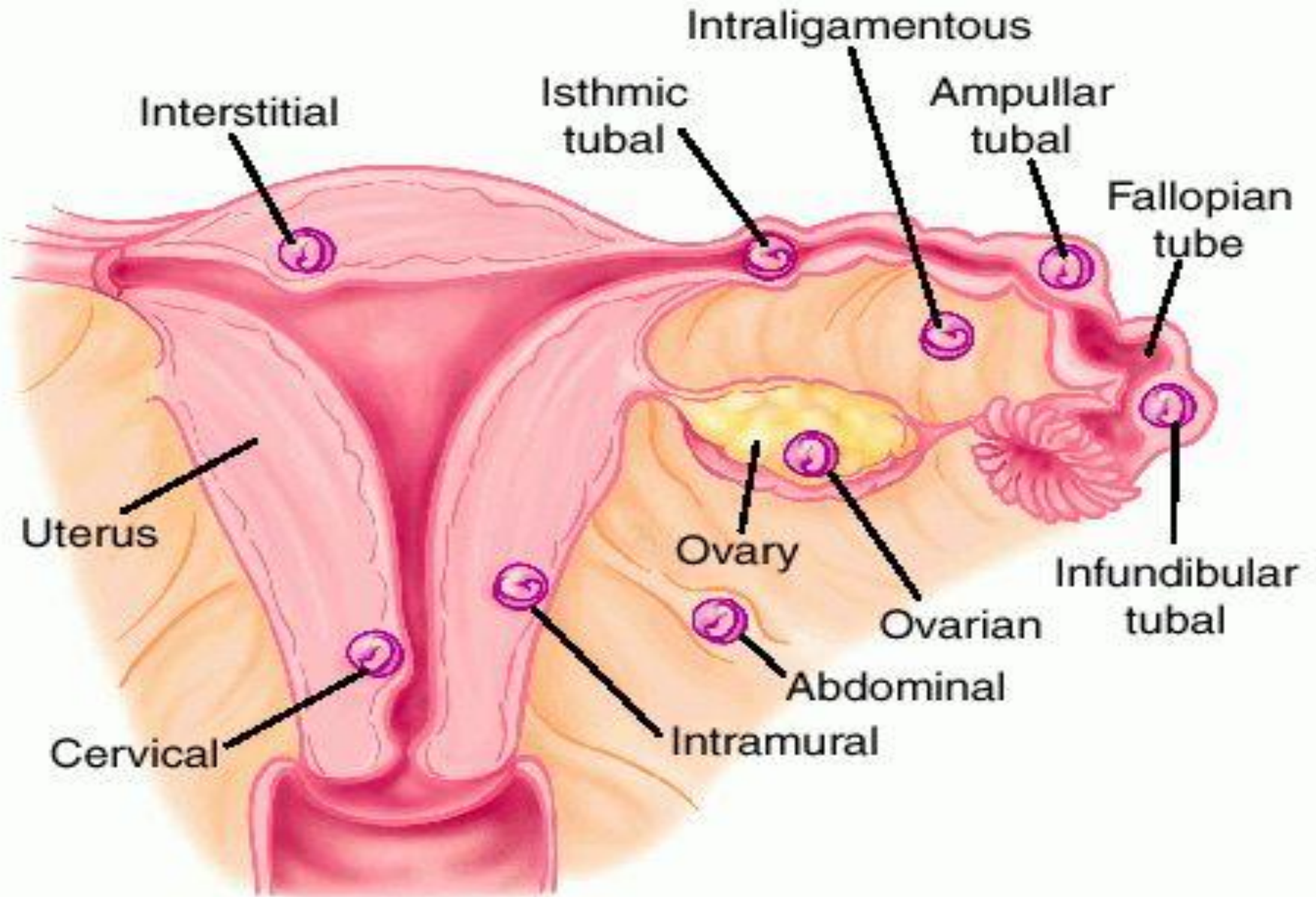
“Implantation of the fertilized ovum in any site other than the uterine cavity”

- ▶ 1% of pregnancies

- ▶ **Site:**

- In > 90% tubal pregnancy
- The cervix, the ovaries, the abdominal cavity
- ▶ Abdominal pregnancy occasionally reach term

Potential sites for ectopic pregnancy



Predisposing factors and pathogenesis

Tubal pregnancy:

- Chronic salpingitis and obstruction of fallopian tubes
- Congenital tubal anomalies
- Functional tubal disturbances
- Intrauterine tumors
- Endometriosis

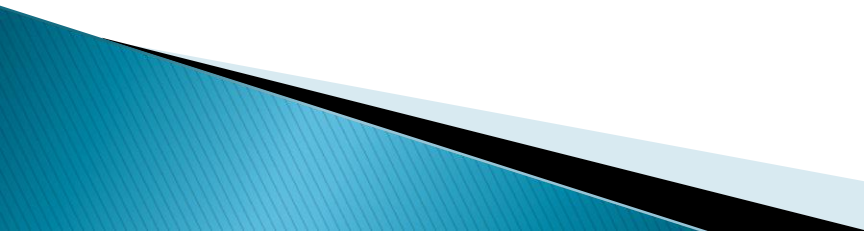
Ovarian pregnancy:

- Fertilization of ovum within its follicle at the time of rupture

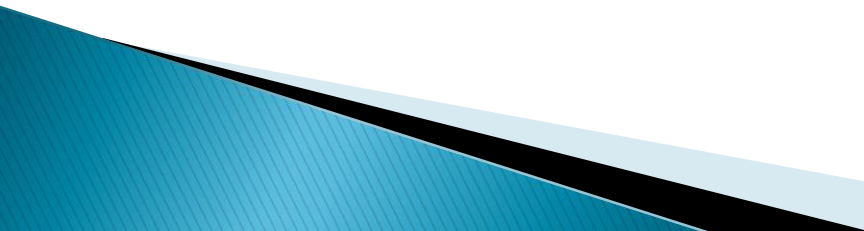
Abdominal pregnancy:

- Dropping of the fertilized egg from fallopian tube and implantation on the peritoneum

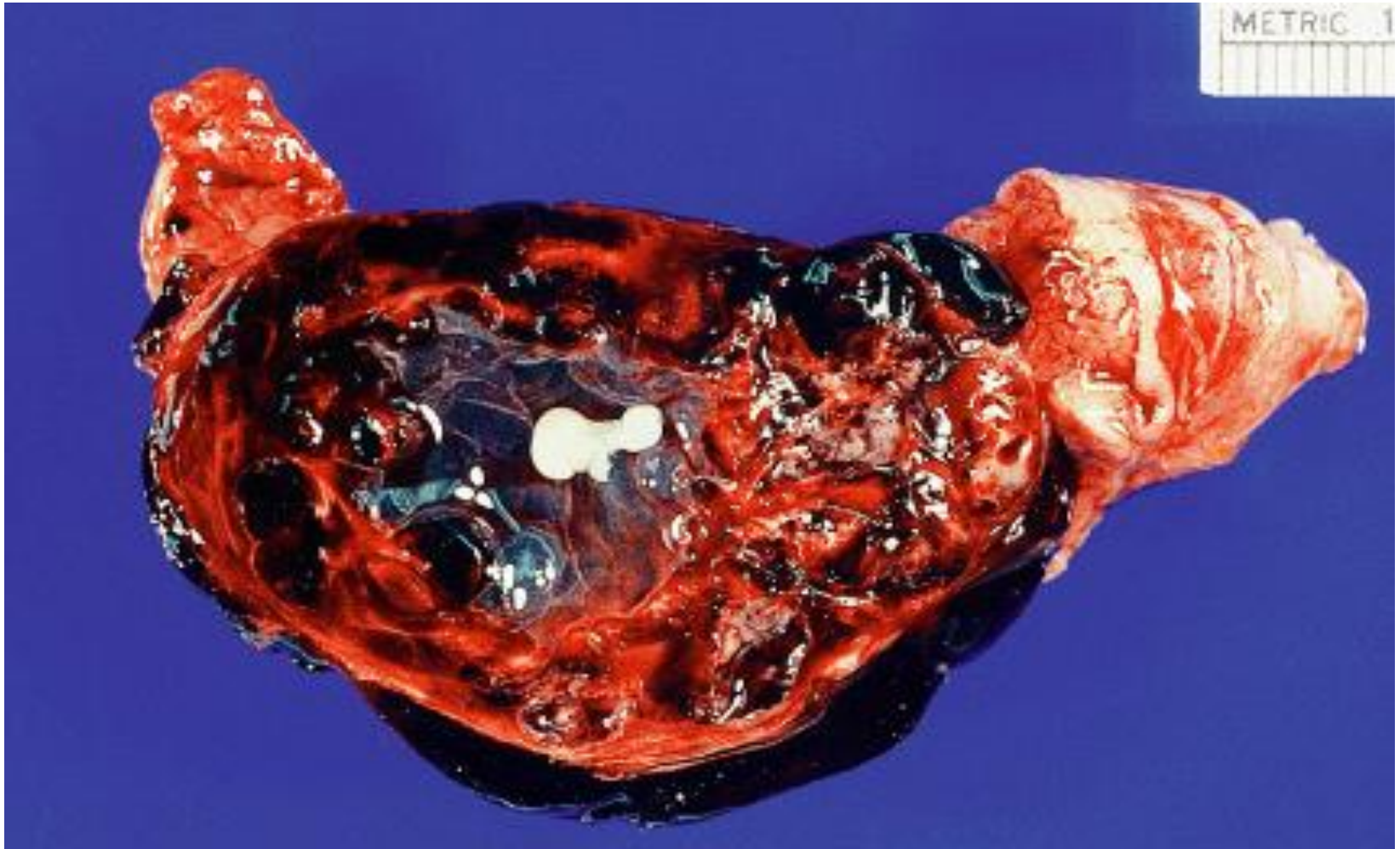
Tubal pregnancy

- ▶ Most common in the **mid-portion (ampulla)**
 - ▶ Gestational sac develop in the tube
 - ▶ Chorionic villi are partially attached causing hemorrhage in the tube (**hematosalpinx**)
 - ▶ Chorionic villi penetrate the BVs and the wall causing **tubal rupture and intra-abdominal hemorrhage**
 - ▶ The uterine cavity shows **decidual reaction** with the absence of villi or fetal parts
- 

Tubal pregnancy

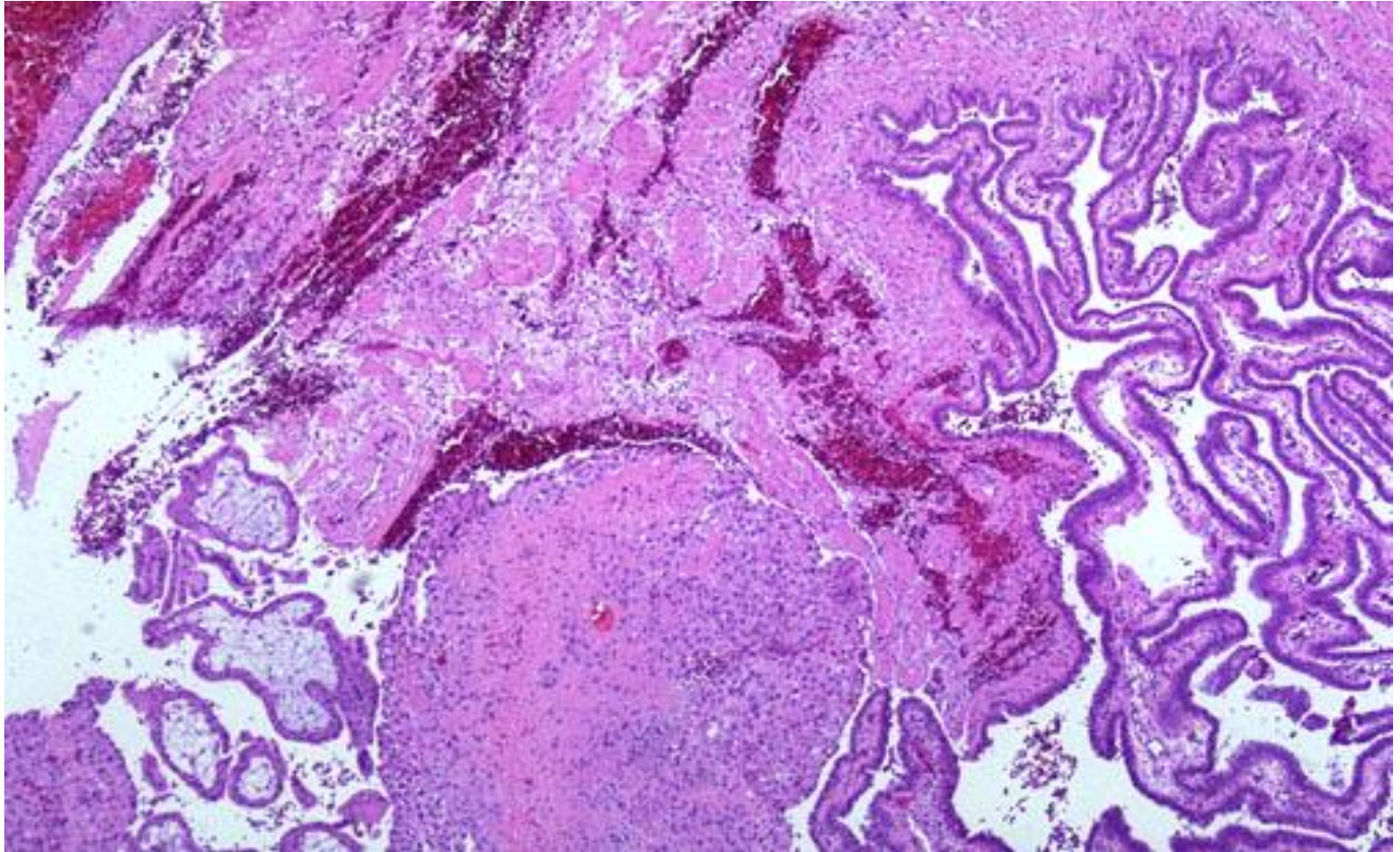
- ▶ **Gross morphology:**
 - ▶ The tube is distended by freshly clotted blood, gray placental tissue and fetal parts
 - ▶ **Histologic diagnosis:**
 - ▶ Depends on identification of placental villi or, rarely the embryo within the fallopian tube.
 - ▶ Rarely, death of the embryo with spontaneous proteolysis and absorption occur
- 

Tubal pregnancy



Hematosalpinx with tiny embryo present in the center of blood clot

Tubal pregnancy



Tubal epithelium at the right, with rupture site and chorionic villi at the lower left

GESTATIONAL TROPHOBLASTIC DISEASE (GTD)

- ▶ A group of diseases characterized by proliferation of **gestational trophoblasts**

Classification

Benign GTD

Complete hydatidiform mole

Partial hydatidiform mole

Malignant GTD

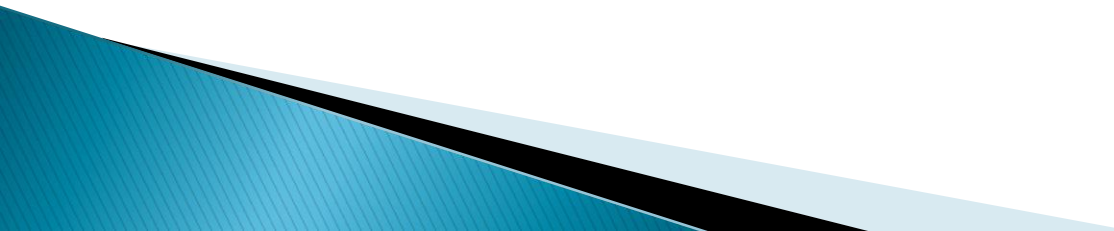
Invasive mole “chorioadenoma destruens”

Gestational choriocarcinoma

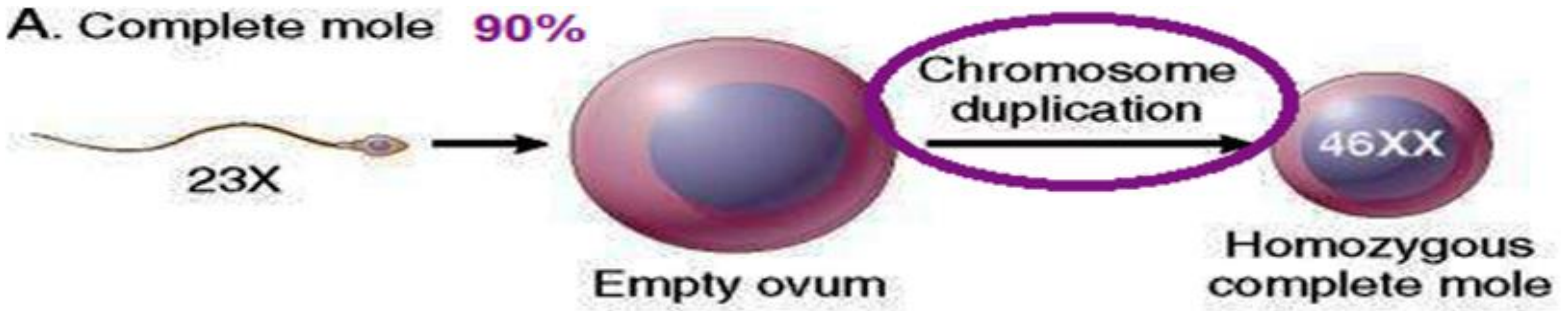
Placental site trophoblastic tumors (PSTT)

Hydatidiform Mole

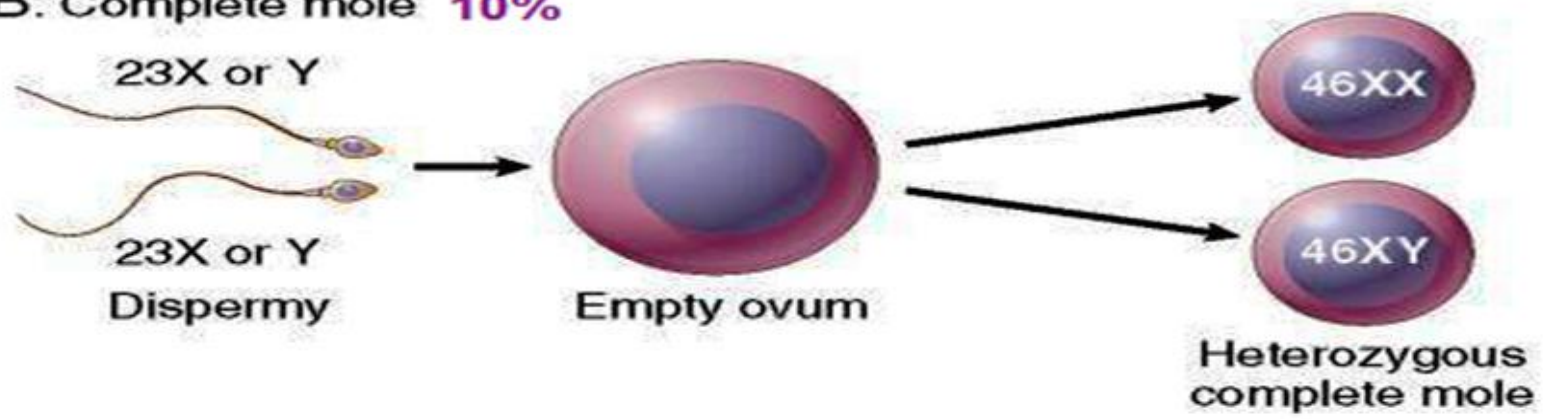
- ▶ Complete mole
 - ▶ Partial mole (15–35%)

 - ▶ The incidence is high in [Asia](#)
 - ▶ Most common < 20 and > 40 years
 - ▶ A history of molar pregnancy increases the risk in subsequent pregnancies
- 

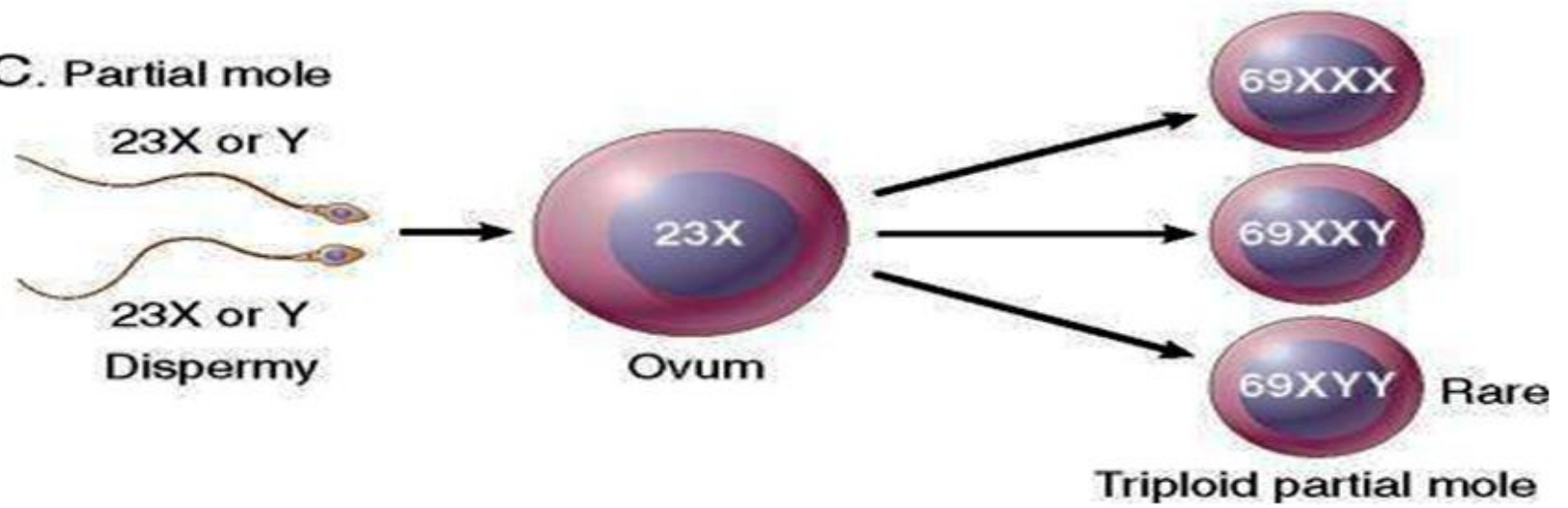
A. Complete mole 90%



B. Complete mole 10%



C. Partial mole



Morphology

- ▶ **Gross appearance:**
 - Voluminous mass of swollen chorionic villi appearing as **grapelike** structures
 - **Fetal parts may be seen in partial mole**
- ▶ **Microscopic appearance:**
 - The swollen villi are covered by varying amounts of **proliferating trophoblasts**

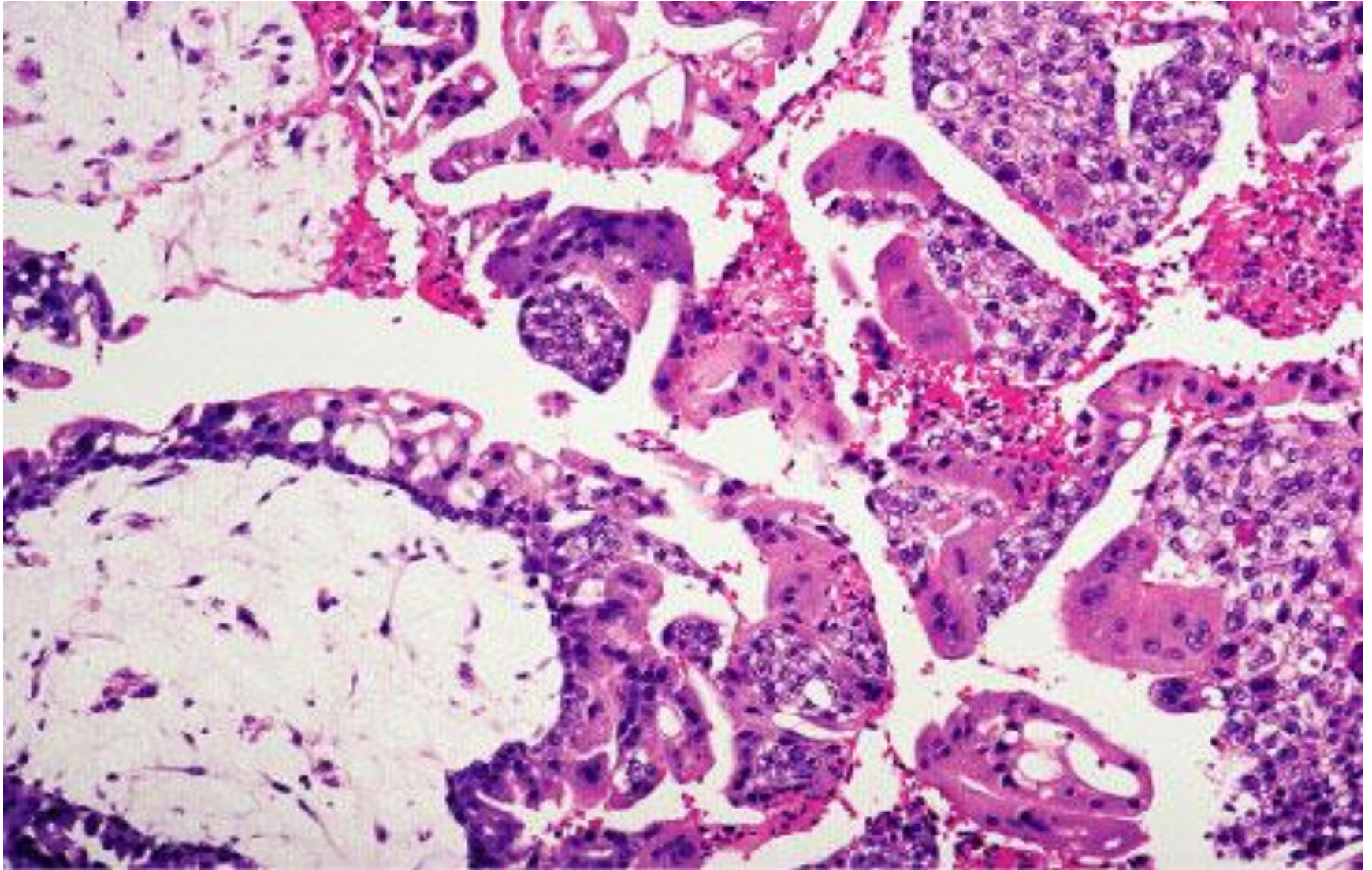
Complete mole



Complete mole

- ▶ Hydropic swelling of **all** chorionic villi
- ▶ Absence of fetal RBCs or fetal parts
- ▶ **Cistern formation:**
 - The centre of the villi is loose and myxomatous with broken strands
- ▶ Trophoblastic hyperplasia with **atypia**
 - Proliferation of cyto- and syncytiotrophoblast
 - **Diffuse and circumferential**

Complete mole

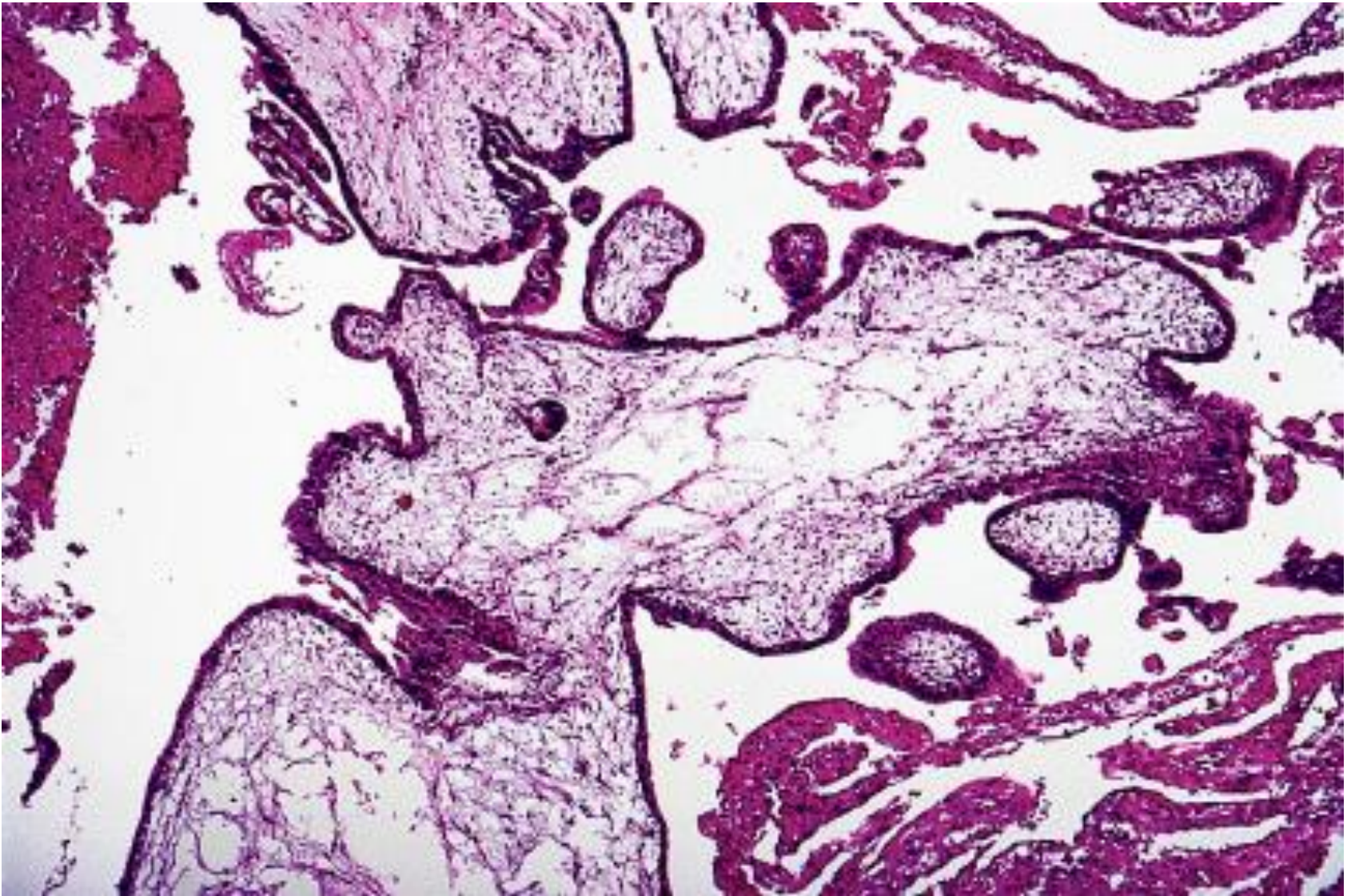


Partial mole

- ▶ Edema of **some** of the villi
- ▶ The villi have **scalloped margin**
- ▶ **Focal** trophoblastic proliferation

- ▶ Evidence of an embryo or fetus
 - Normal villi
 - Fetal red blood cells in the villi
 - A fully formed fetus in some cases

Partial mole



Feature	Complete Mole	Partial Mole
Karyotype	Diploid 46,XX (46,XY) Paternal chromosomes	Triploid (69,XXY) Paternal & maternal
Fetal parts	Absent	Fetal parts, some normal villi & fetal RBCs
Villous edema	All villi	Some villi
Trophoblast proliferation	Diffuse; circumferential	Focal; slight
Atypia	Often present	Absent
Serum hCG	Elevated	Less elevated
hCG in tissue	++++	+
Behavior	10% invasive mole 2% choriocarcinoma	Rare choriocarcinoma

Clinical picture

- ▶ Complete mole was discovered at 12–14 weeks due to **vaginal bleeding & large for date uterus**
- ▶ Antenatal care has lowered age of detection
- ▶ Complete & partial mole:
- ▶ Elevated B–HCG in the blood and urine
 - Aid the diagnosis
 - Monitor response to therapy
- ▶ **Management:** Suction curettage + serial B–HCG

Gestational choriocarcinoma

- ▶ A very aggressive malignant tumor arises from gestational chorionic epithelium
- ▶ **Incidence:**
 - Rare in the West, 1 / 30,000 pregnancies
 - More common in **Asia and Africa**, 1 / 2000
 - The risk \uparrow < age 20 and > age 40

Gestational choriocarcinoma

- ▶ 50% arise in **complete moles**
- ▶ 25% arise after an abortion
- ▶ 22% in a normal pregnancy
- ▶ The remainder in ectopic pregnancy

- ▶ **Clinical picture**
 - Bloody vaginal discharge
 - Absence of marked uterine enlargement
 - **Very high titer of B-hCG** in blood and urine
 - X-ray of chest & bone detect mets

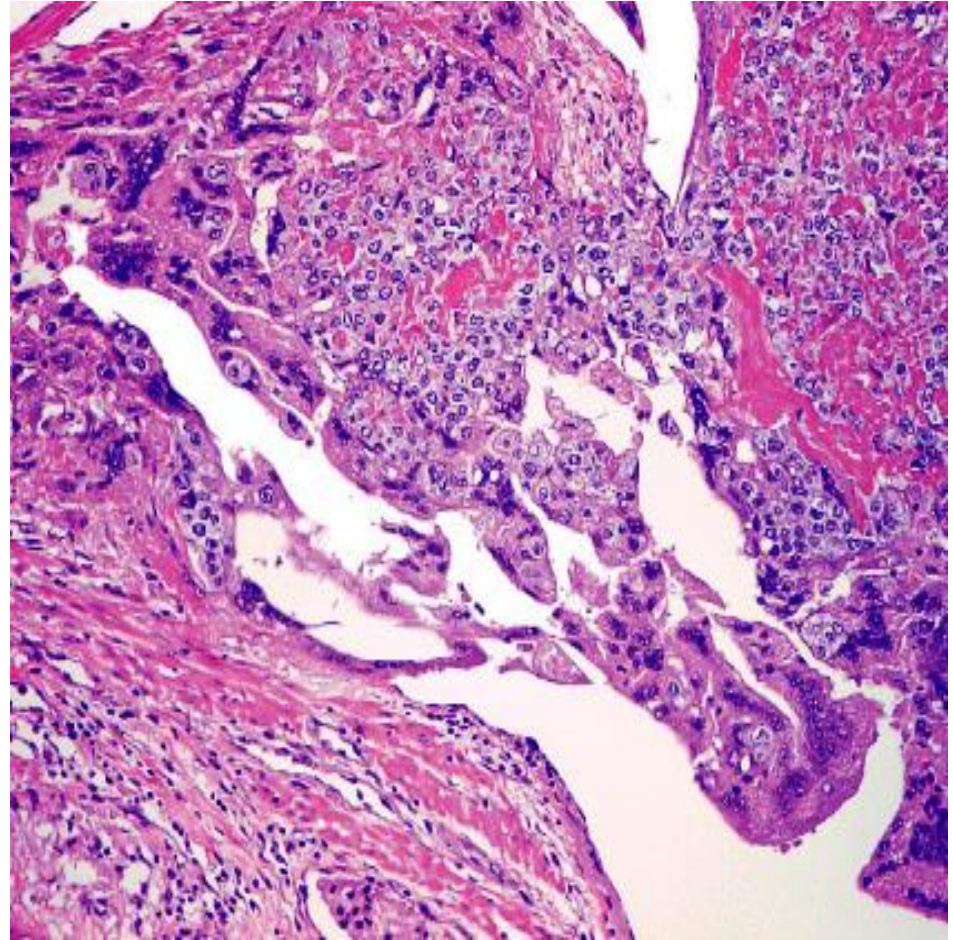
Gross appearance

- ▶ Hemorrhagic and necrotic masses within the uterus
- ▶ The necrosis may be complete



Microscopic appearance

- ▶ Dimorphic tumor composed of anaplastic cyto- & syncytiotrophoblasts
- ▶ **Chorionic villi are absent**



Prognosis and treatment

- ▶ Widespread blood dissemination to the **lungs** (50%), vagina, brain, liver, and kidneys
- ▶ Lymphatic invasion is uncommon
- ▶ MAC regimen of CTX (methotrexate, actinomycin D and chlorambucil)
- ▶ Survival rates:
 - ~ 100% for tumors confined to uterus
 - ~ 83% for metastatic tumors

