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Gestational Lab

Fallopian Tube, Trophoblastic Diseases, and Endometriosis

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Winter 2009

University of Michigan
Medical School

Fallopian Tube

23-year-old sexually active G0 presents with an acute abdomen. Birth Control – none reported. Symptoms began in the week following her menses and have gradually worsened. She is febrile and guards on examination of her lower abdomen. Pelvic exam demonstrates a mucopurulent discharge from her cervical os and positive cervical motion tenderness.

Differential diagnosis:

- appendicitis
- ectopic pregnancy
- ovarian torsion

Neisseria gonorrhea
Chlamydia trachomatis
Mtcoplasma
Ureaplasma species

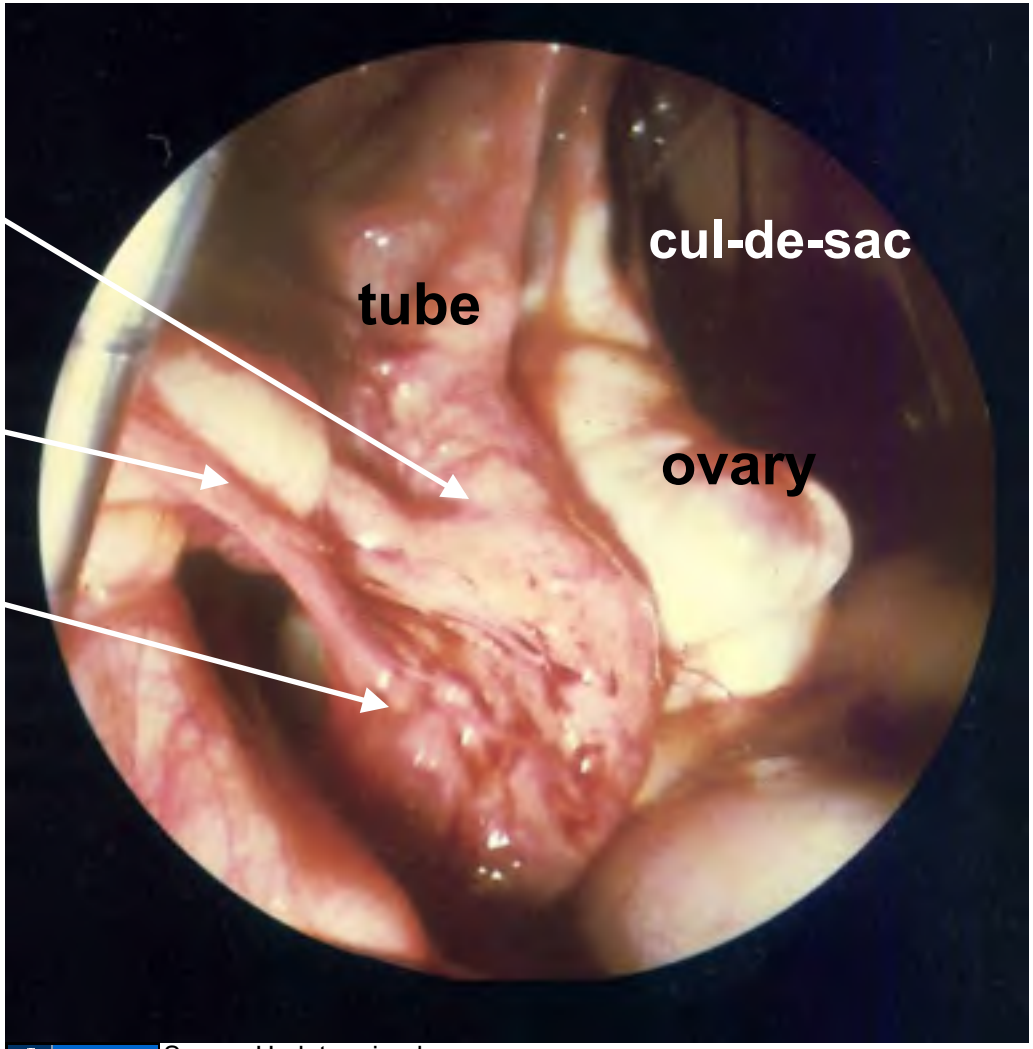
Long term complications

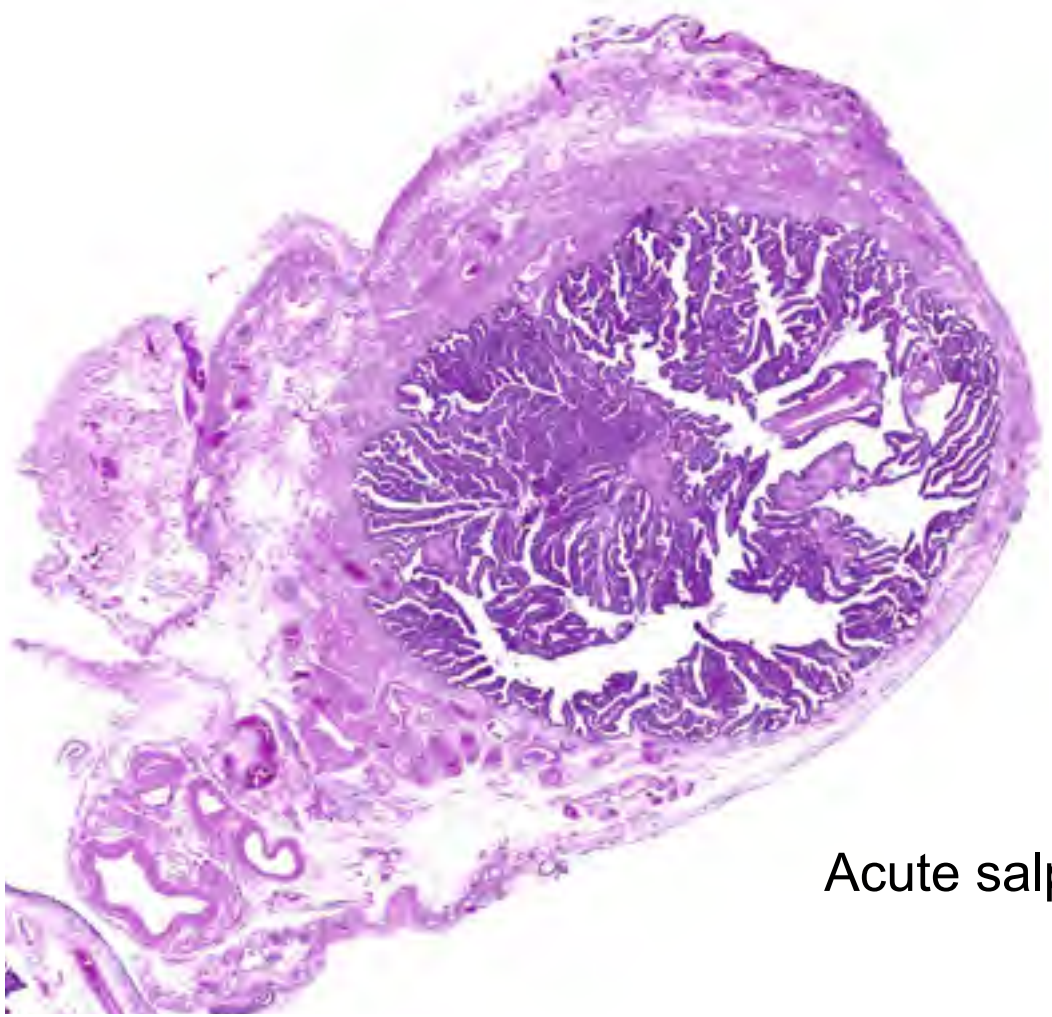
Acute Salpingitis
(laparoscopic photos)

fallopian tube with fibrinopurulent exudate

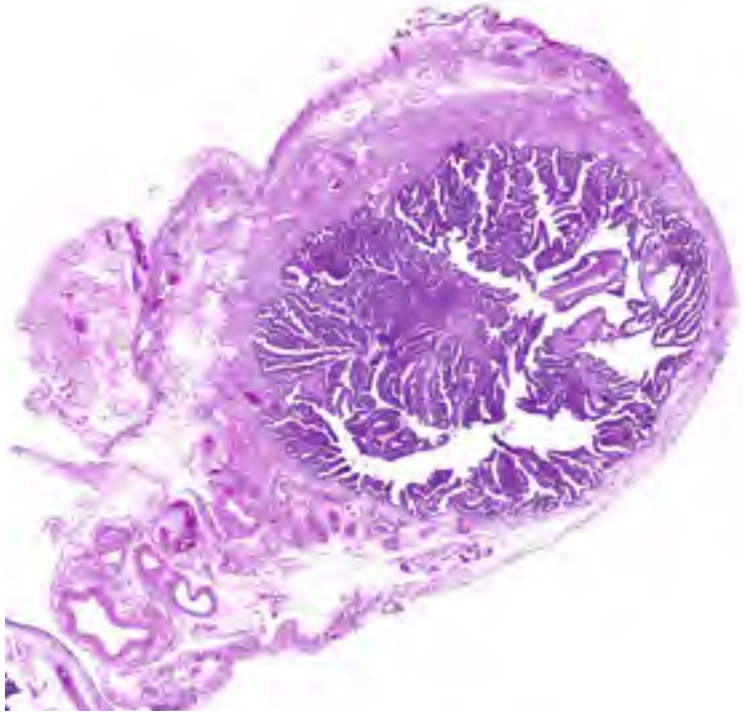
adhesions

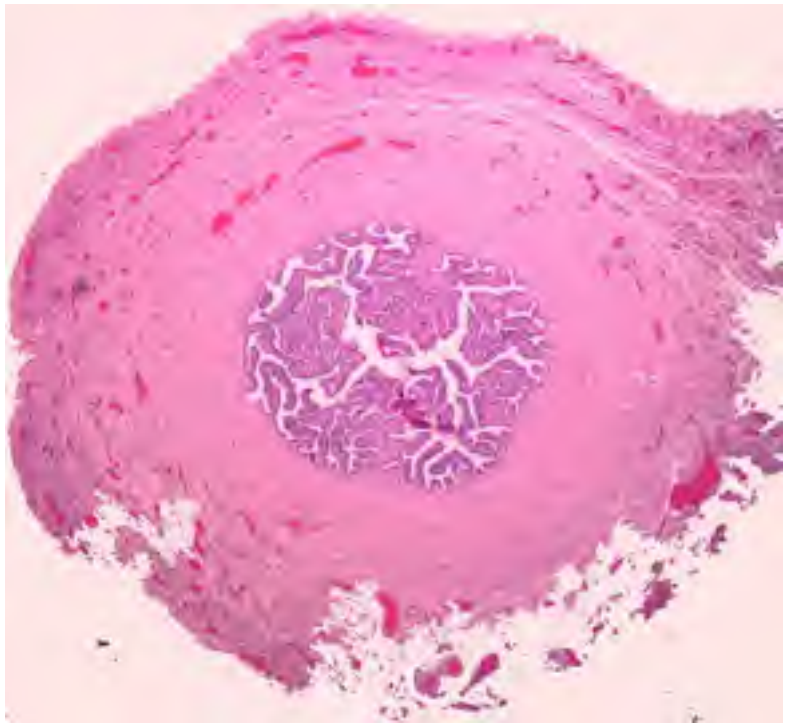
loss of fimbriae

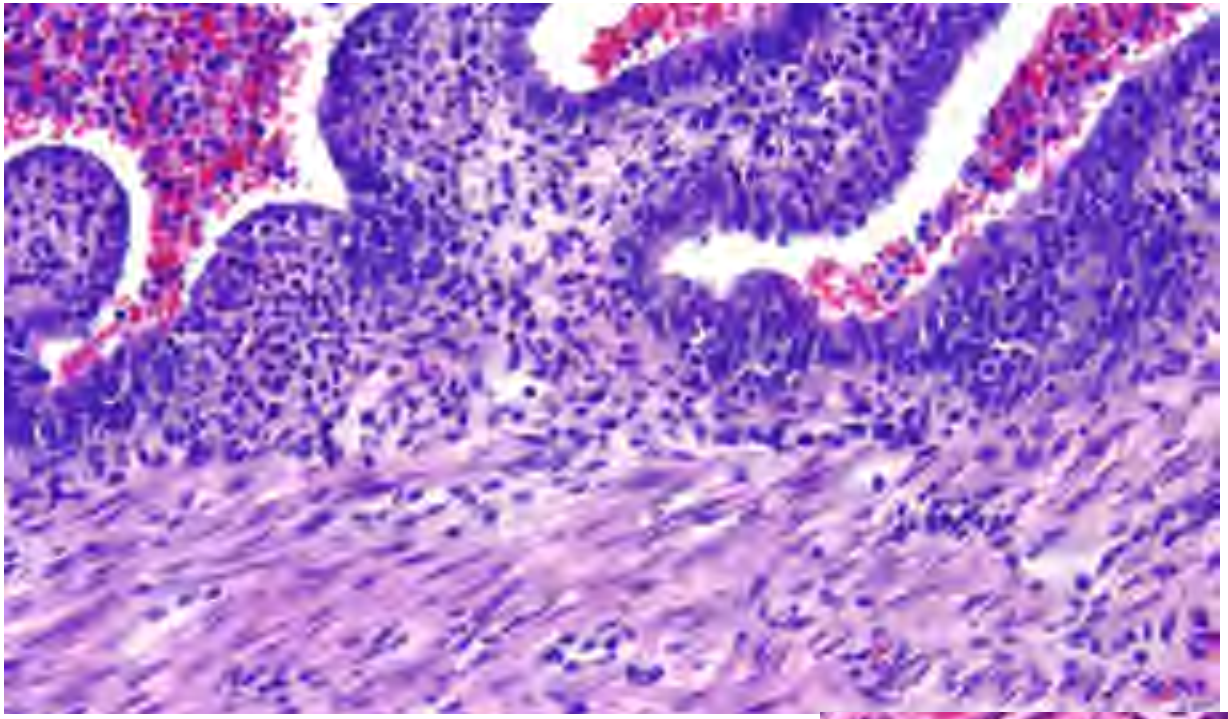




Acute salpingitis

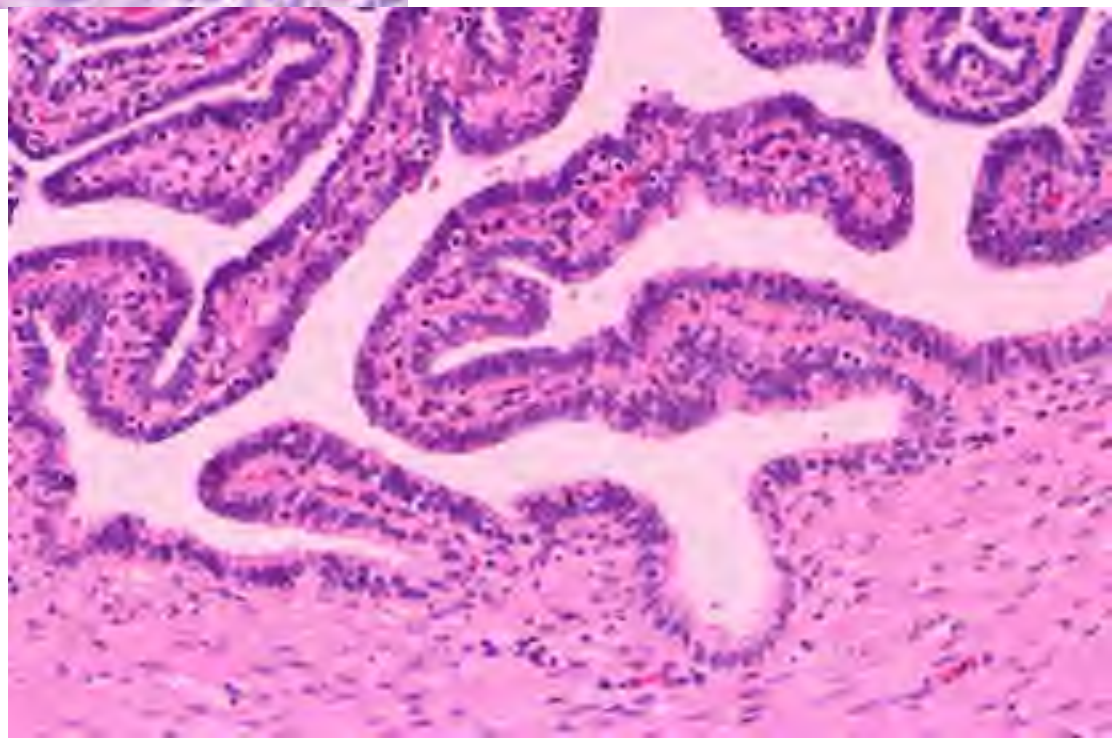






Acute salpingitis

Normal



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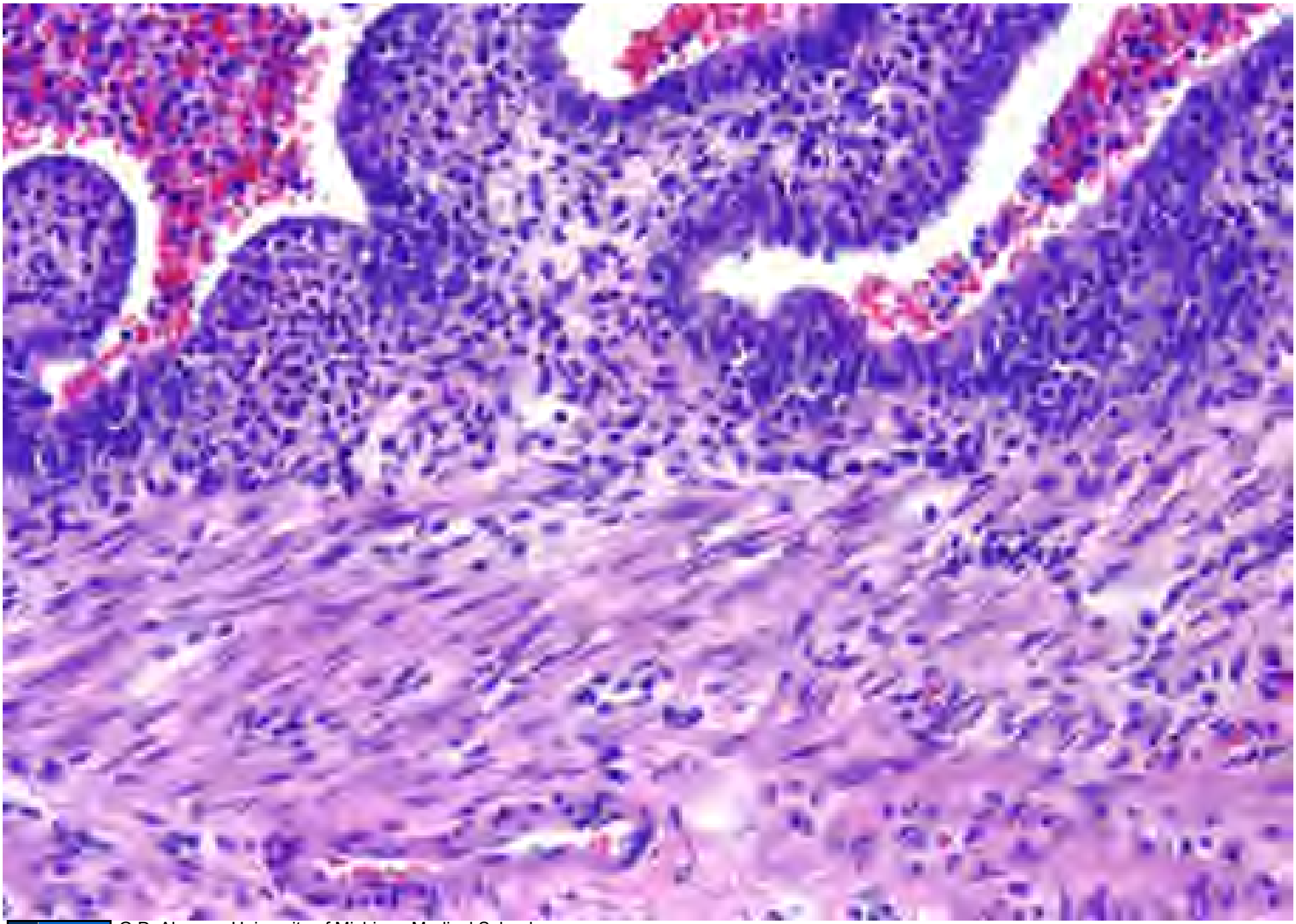
(Both Images)



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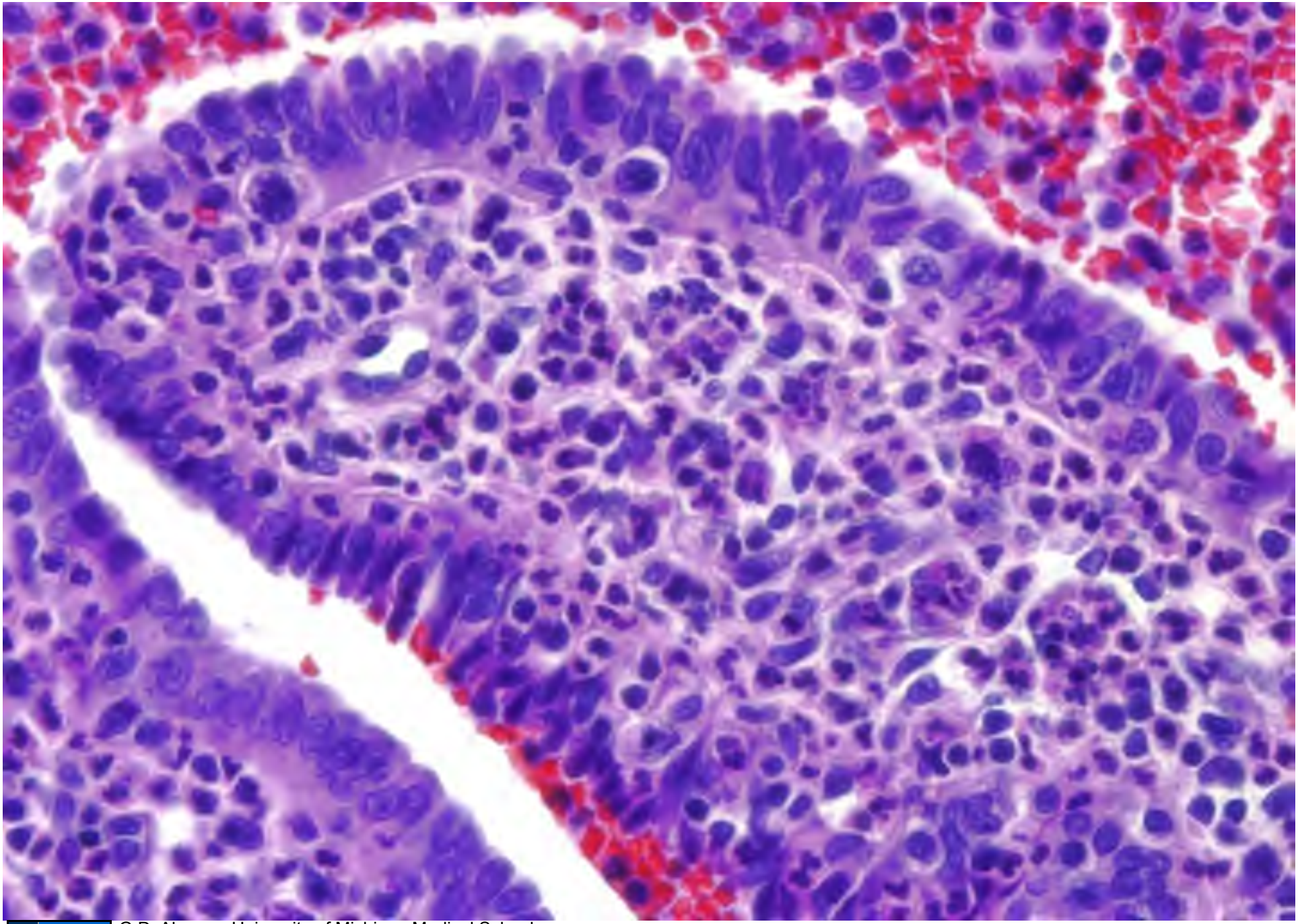


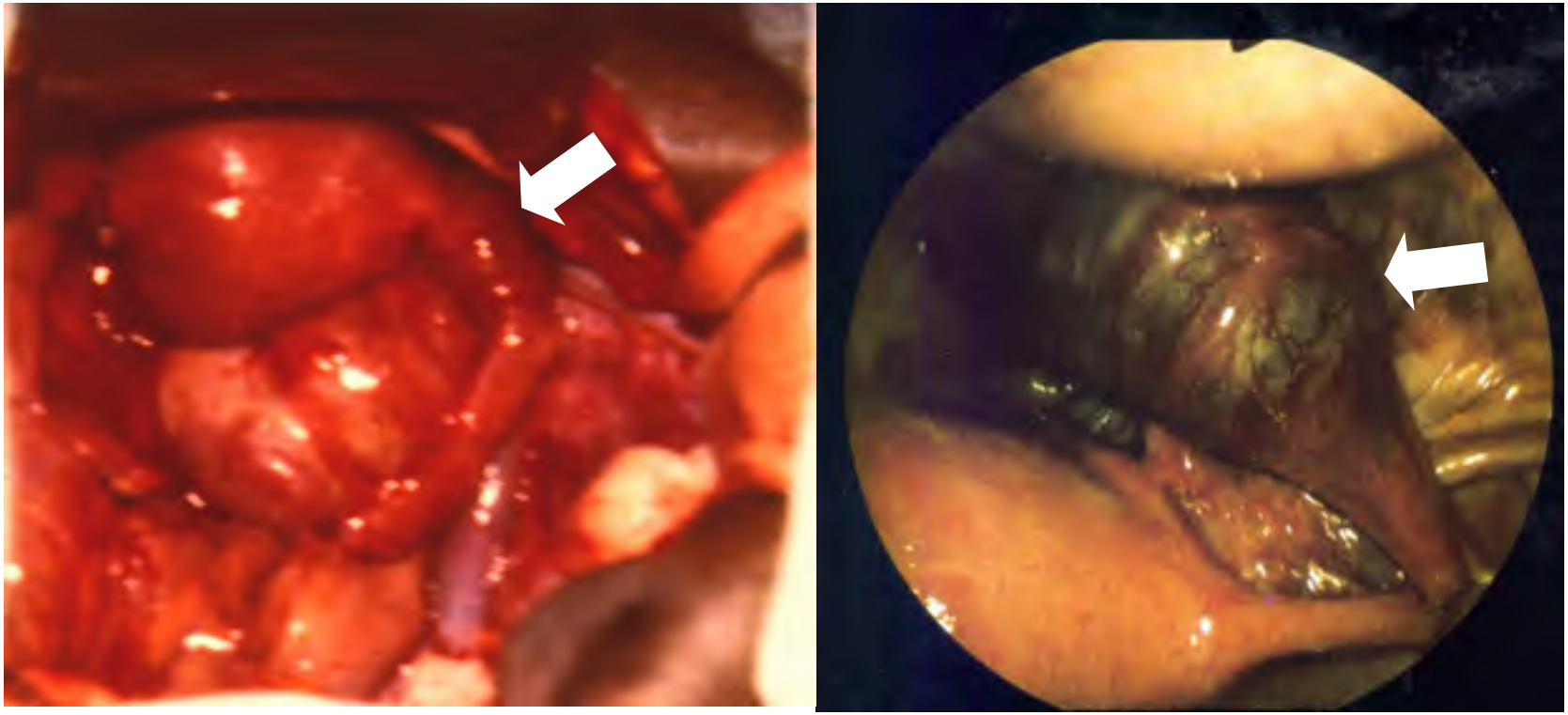
Salpingitis - Key Histology

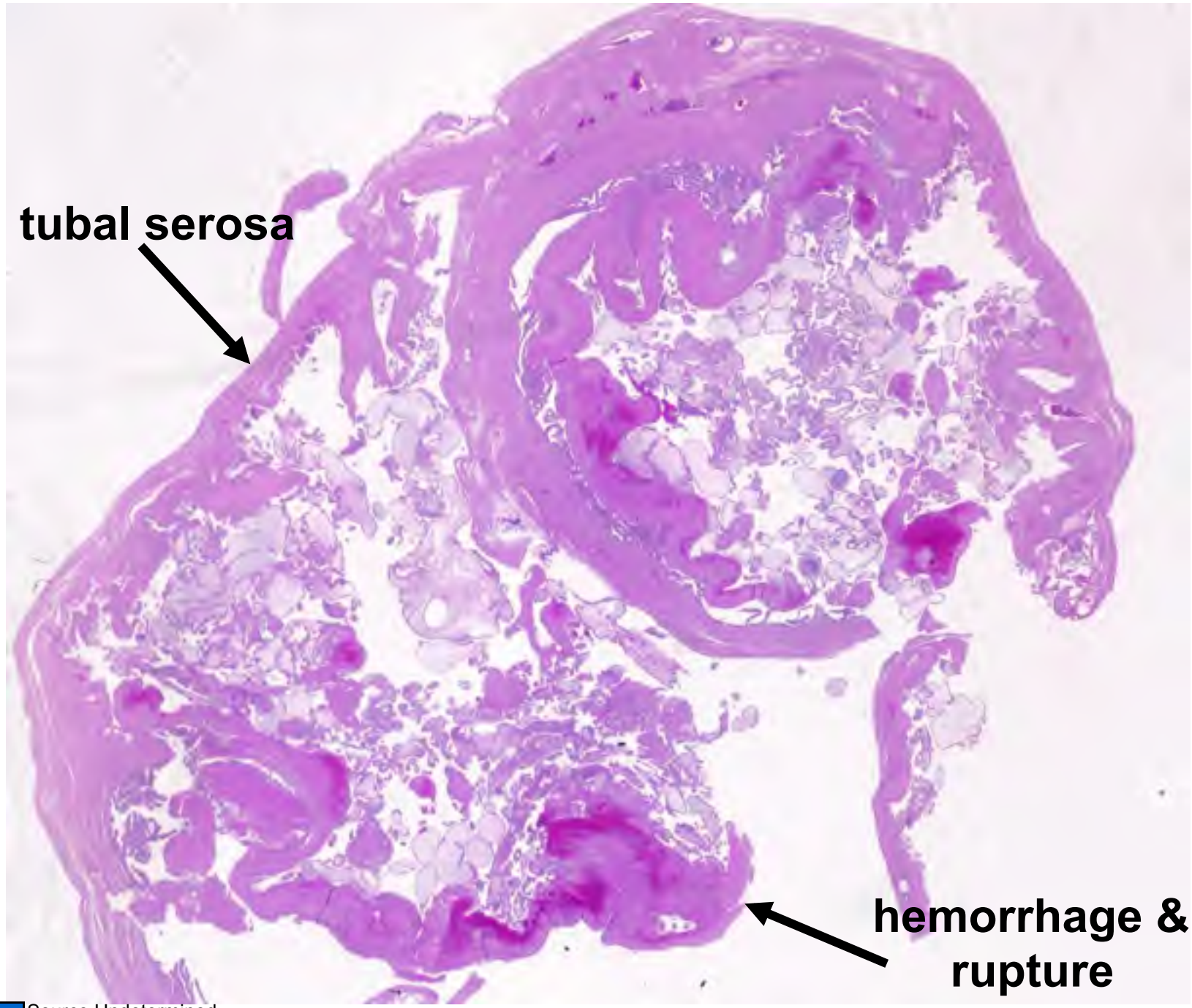
- inflammation and edema
- acute (and chronic) inflammatory infiltrate
  - lumen
  - muscularis
- serosal adhesions

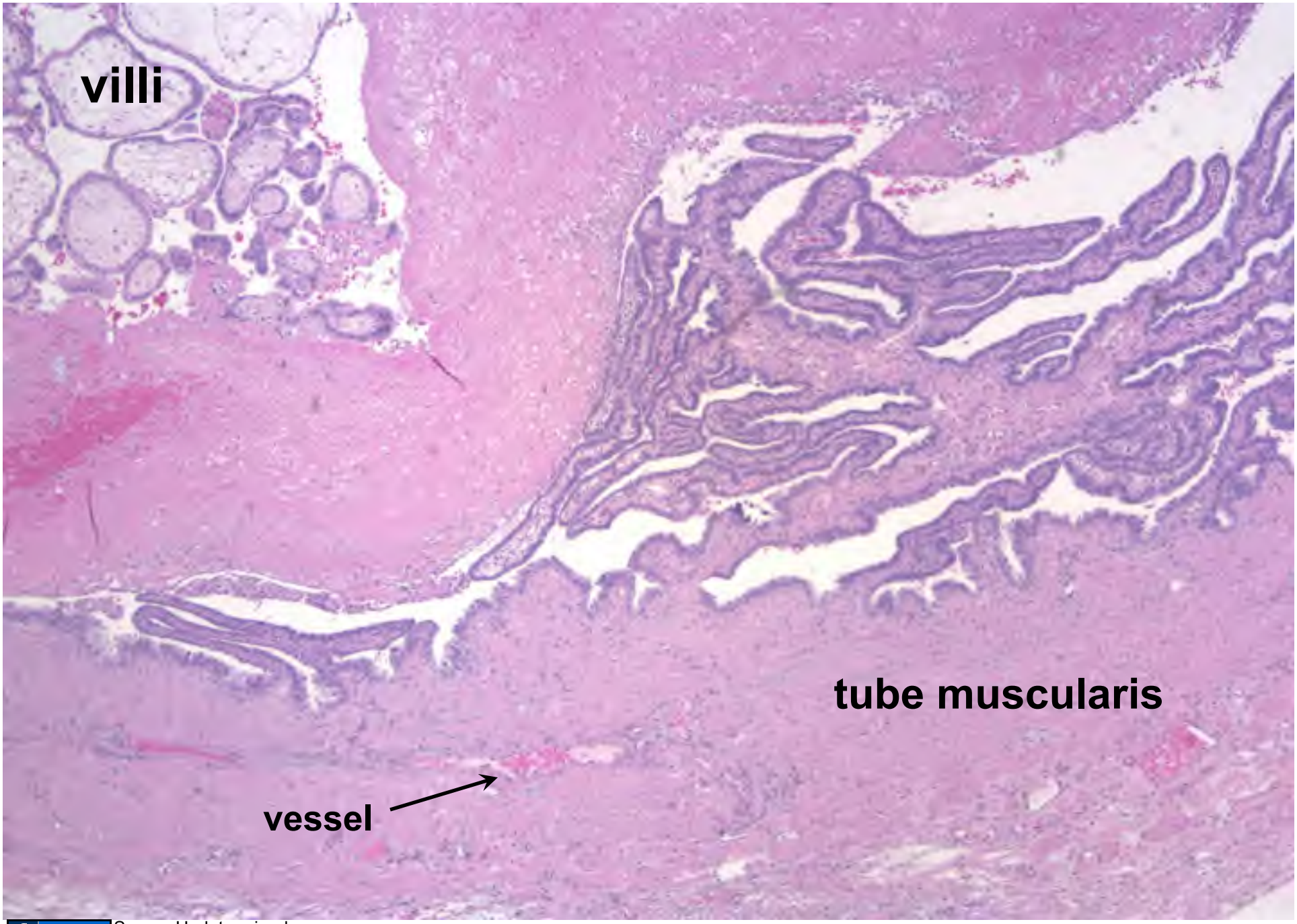
Fallopian Tube

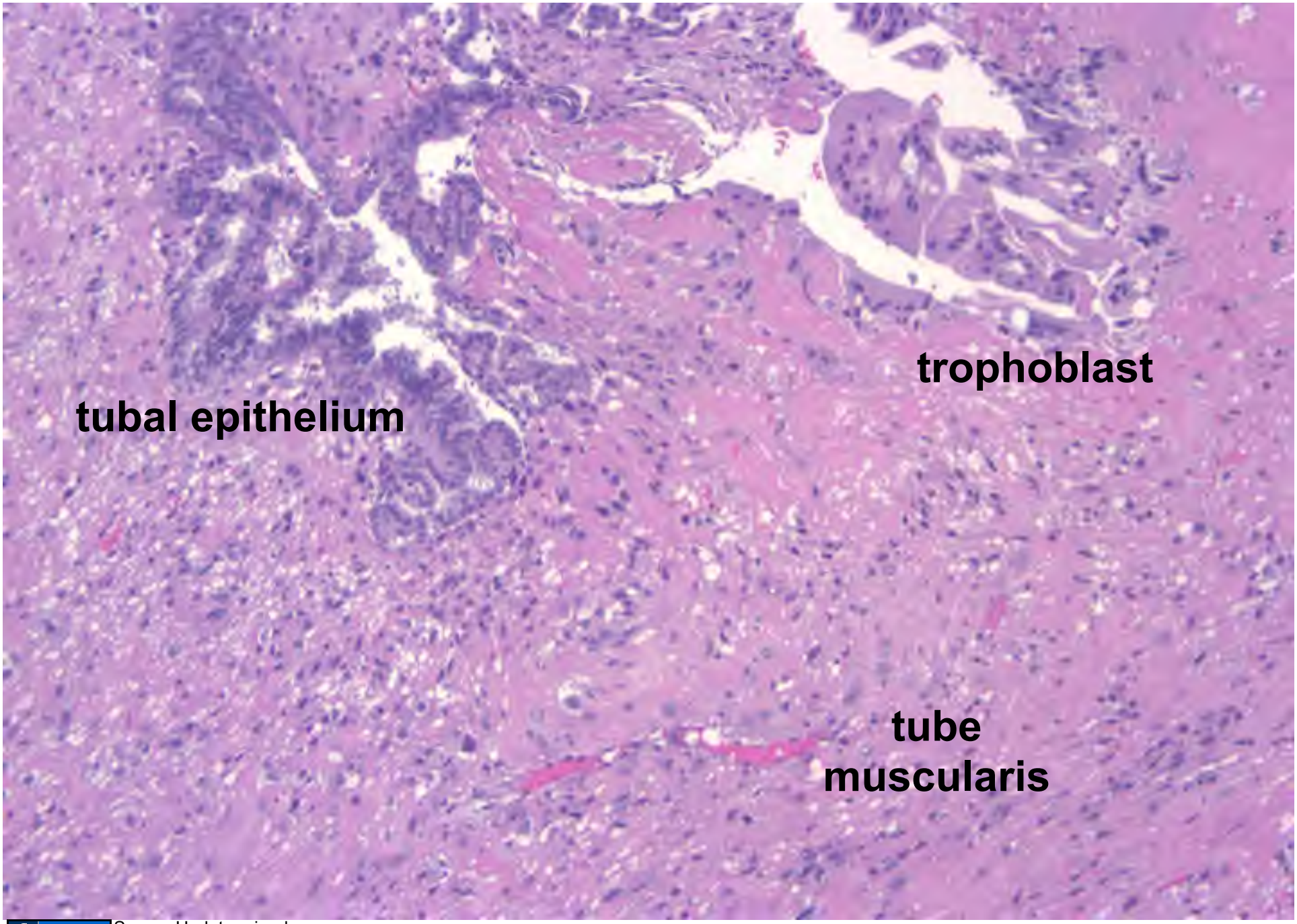
Same patient as in the first case of this lab. Following medical treatment of her condition, her symptoms resolve. Time passes and she conceives. She presents to her obstetrician at around 8 weeks gestational age with right lower quadrant pain and vaginal bleeding. On exam, her cervical os is closed with a small amount of blood noted. Her uterus is “6-8 weeks size” and she has some right lower quadrant “fullness.”

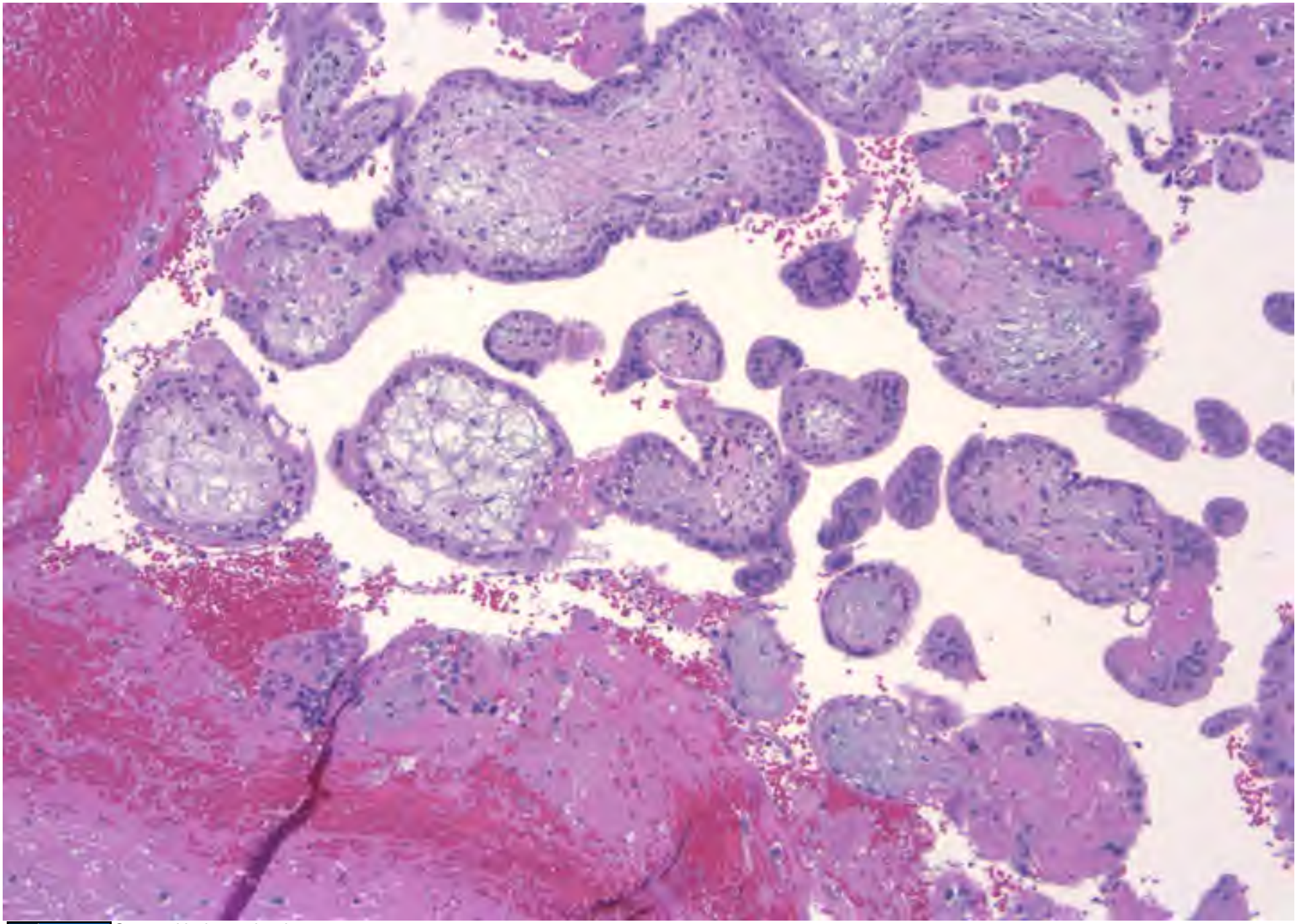
Ectopic Pregnancy
(laparoscopic photos)

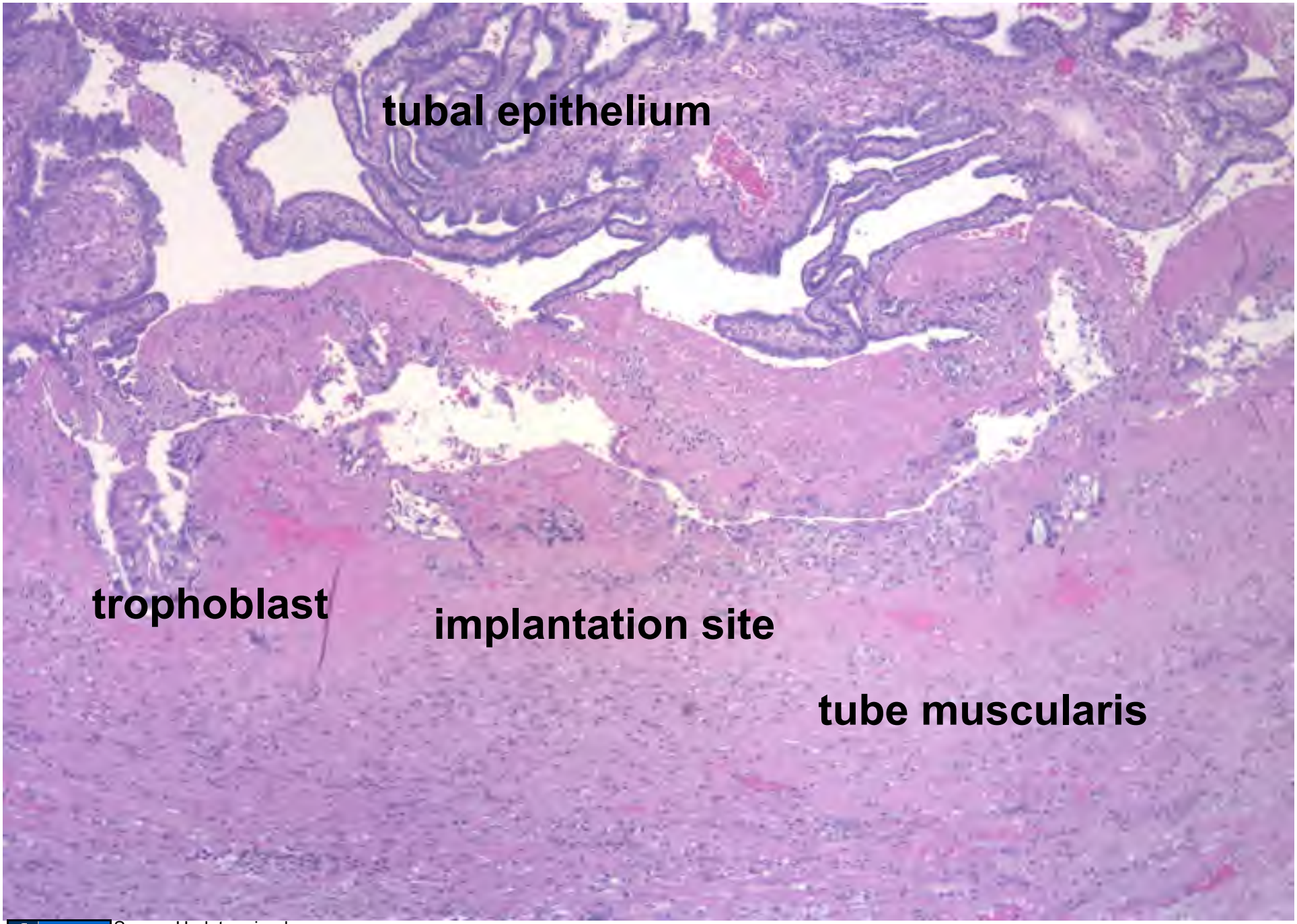


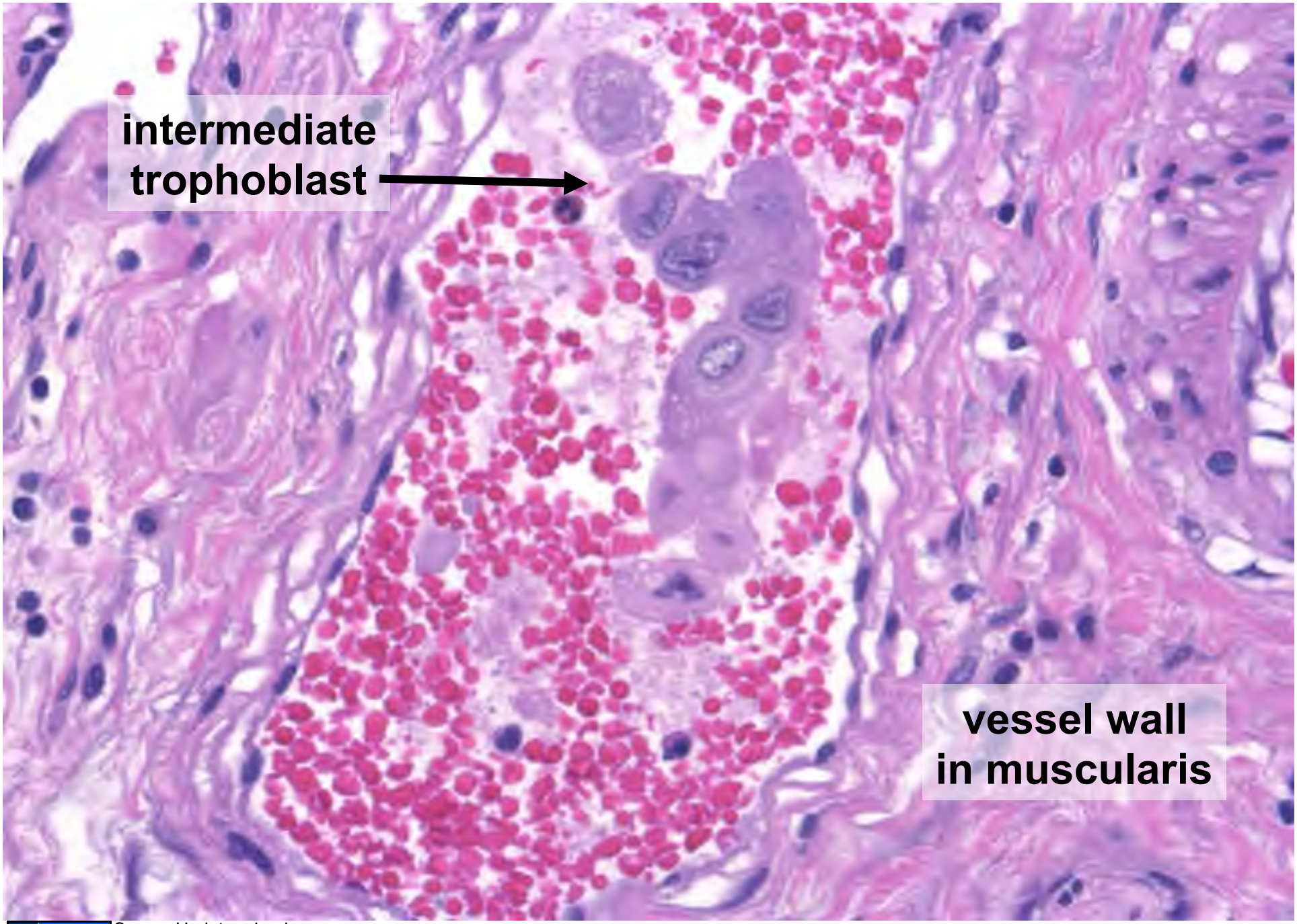












Ectopic (Tubal) Gestation: Key Histology

- Implantation of chorionic villi into muscularis
  - villous edema
  - Nucleated RBCs in villous (fetal) vessels
  - implantation site changes
    - decidual response
    - trophoblast
- Proximity of tubal vasculature
  - intermediate trophoblast infiltrating tubal vessels

Uterine Contents

30-year-old G2P1 initially presents to her obstetrician at around 8 weeks gestational age with vaginal bleeding. On exam, her cervical os is closed with a small amount of blood noted. Her uterus is “12 weeks size.” Ultrasound shows intrauterine contents without obvious evidence of a fetus. Serum β-hCG is 170,000 IU/ml. A suction curettage is performed. Weeks pass.

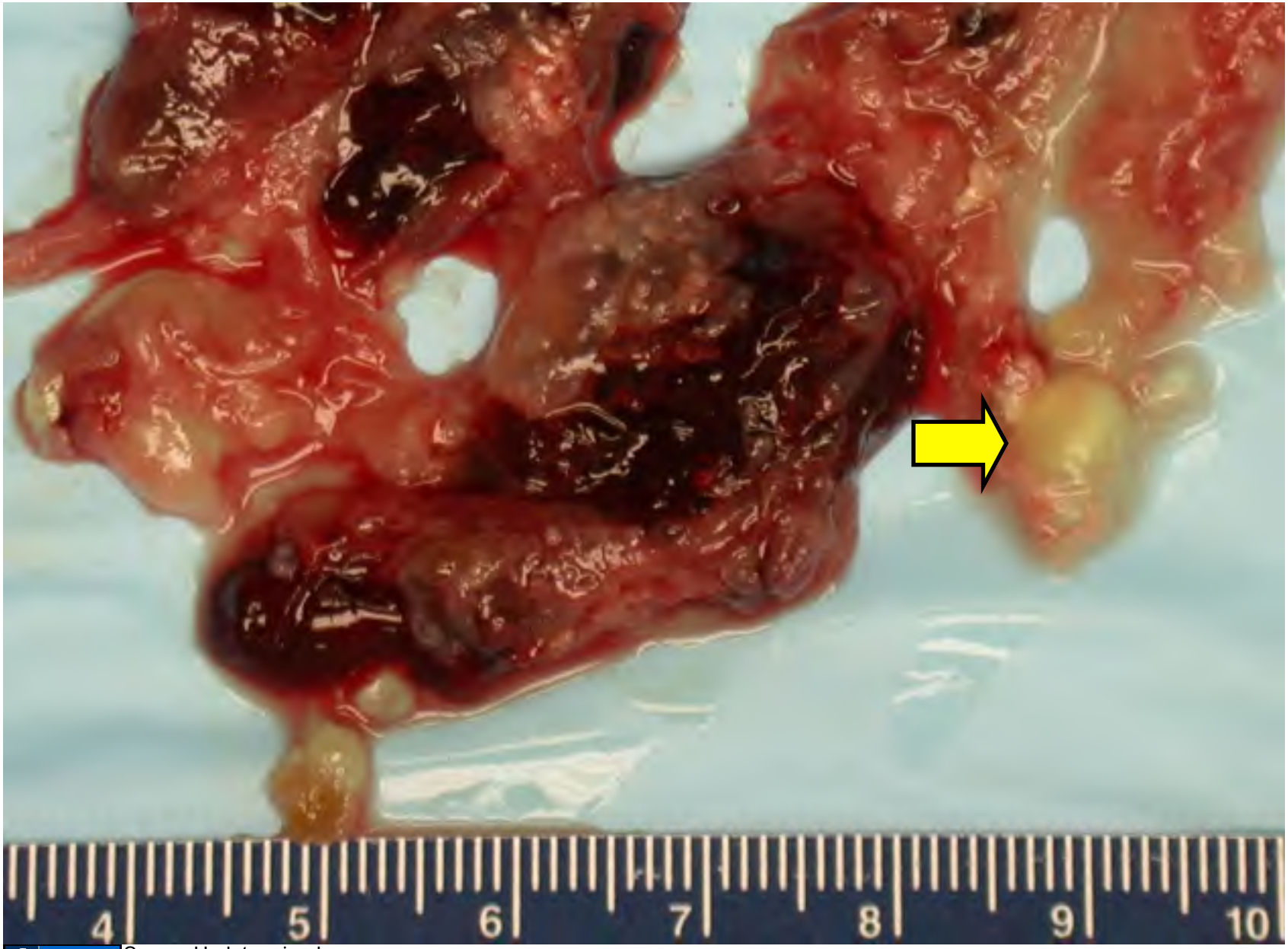
Histogenetic theories of hydatidiform moles
(molar pregnancy)

Complete hydatidiform mole

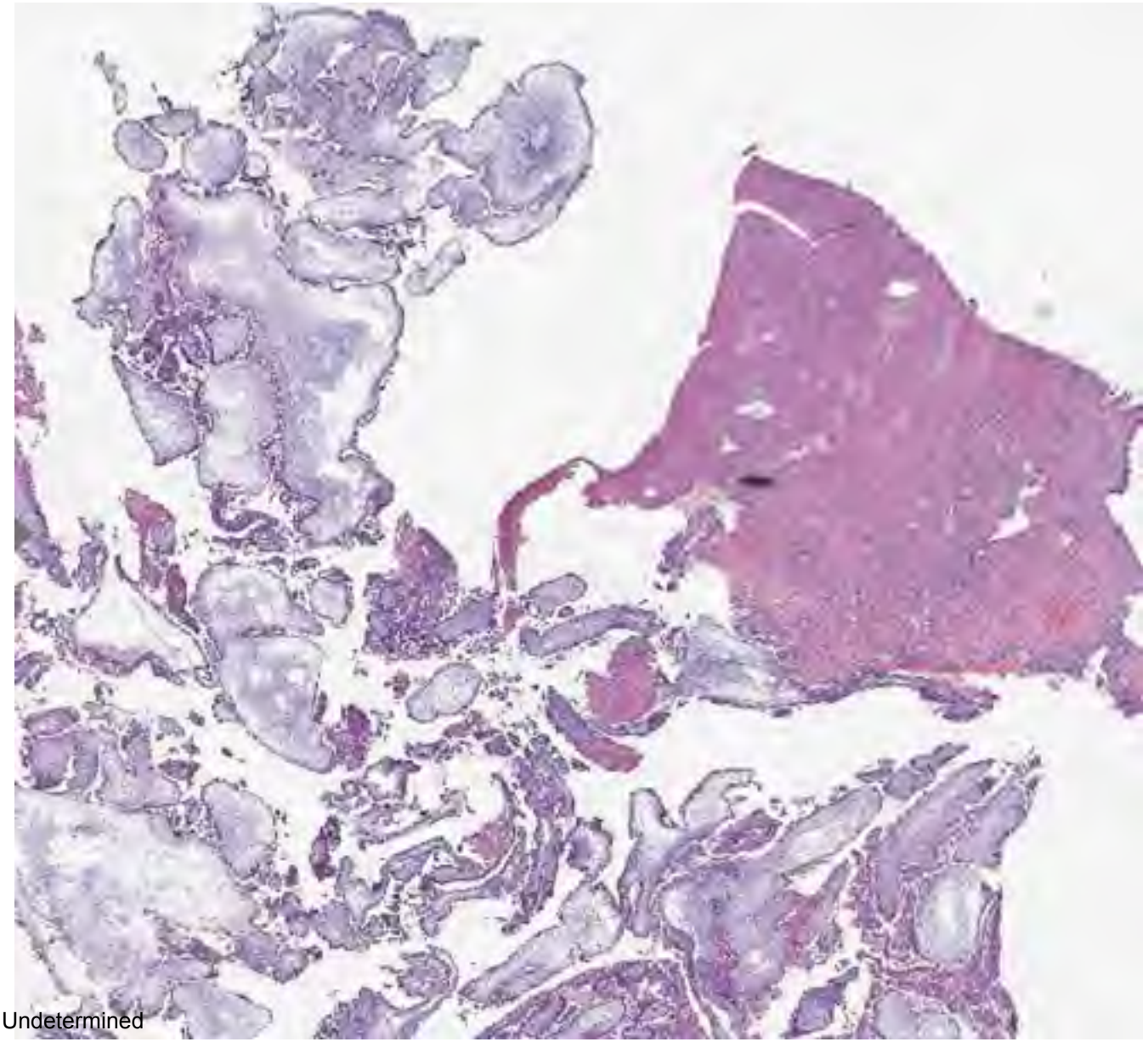
diandry - fertilization of empty egg by two paternal sperm - 46 XX

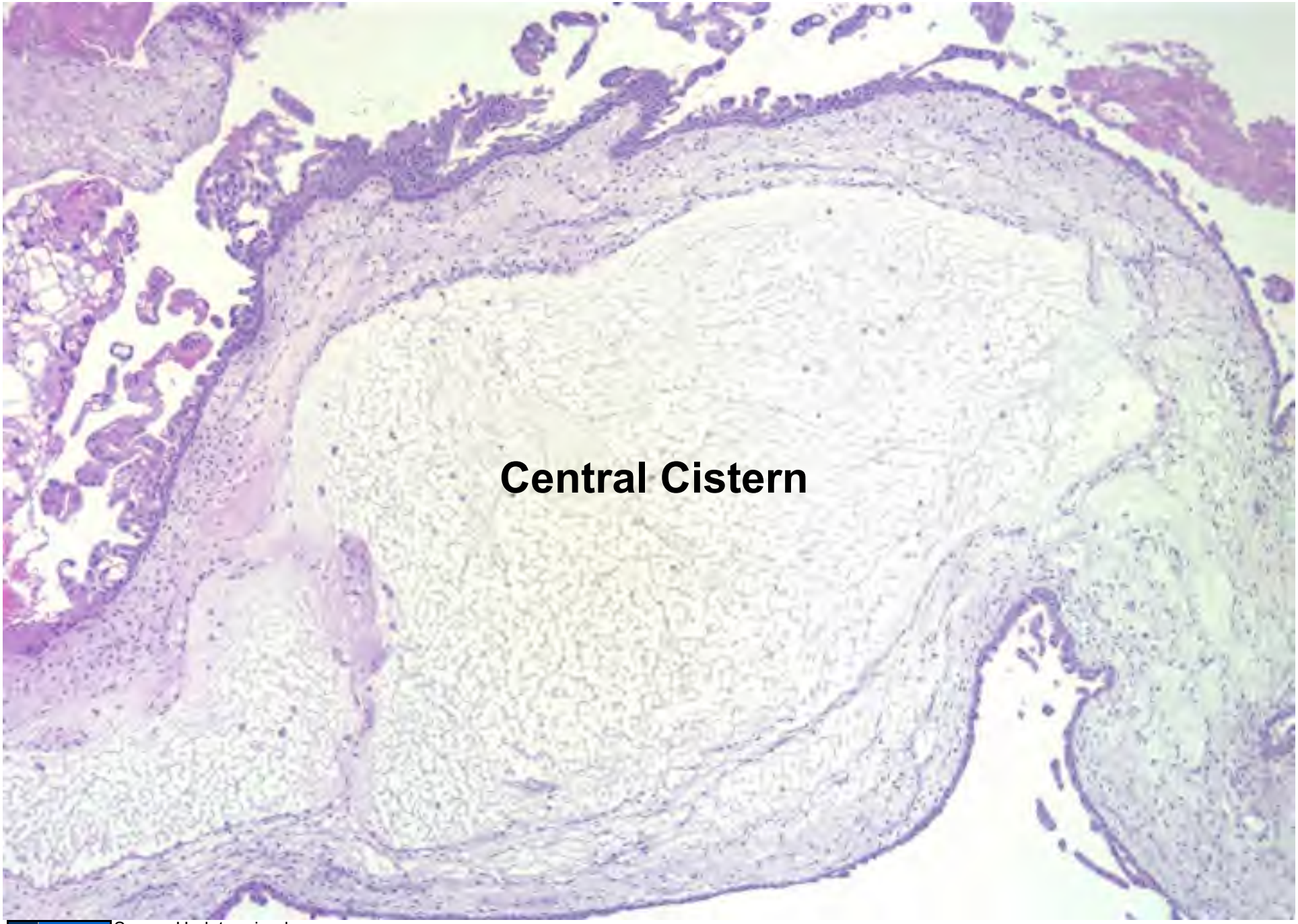
Partial hydatidiform mole

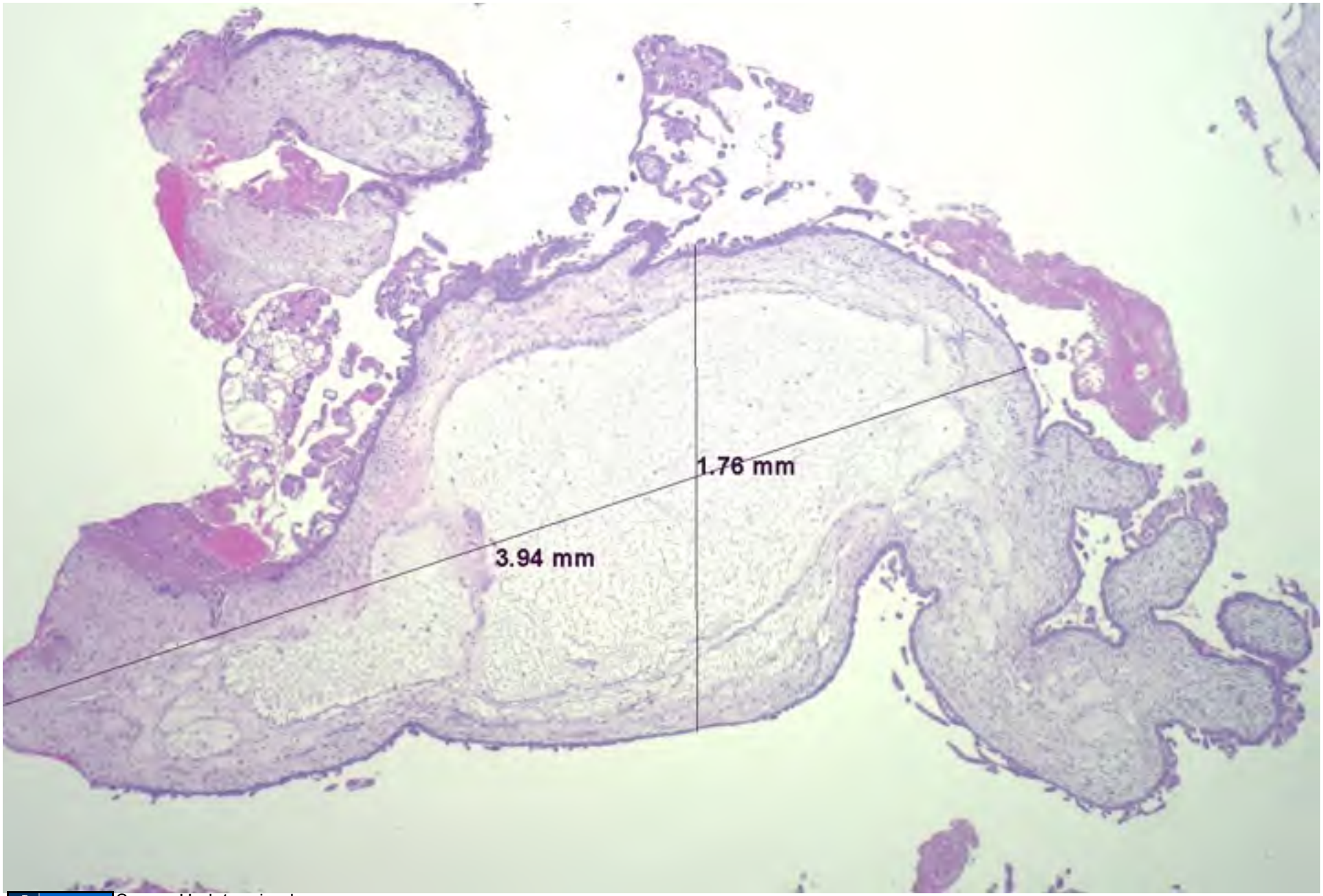
dispermy - dual fertilization of a chromosomally intact egg - triploid XXX or triploid XXY



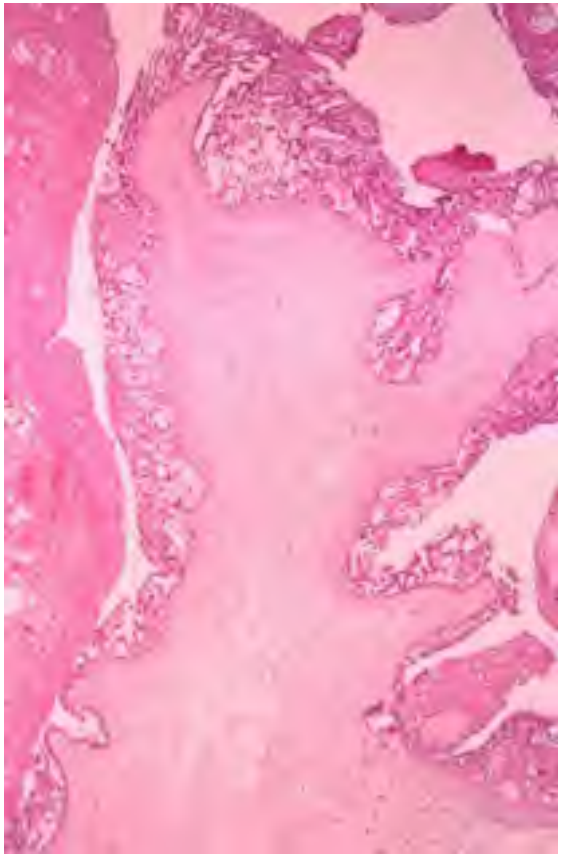
Uterine Contents







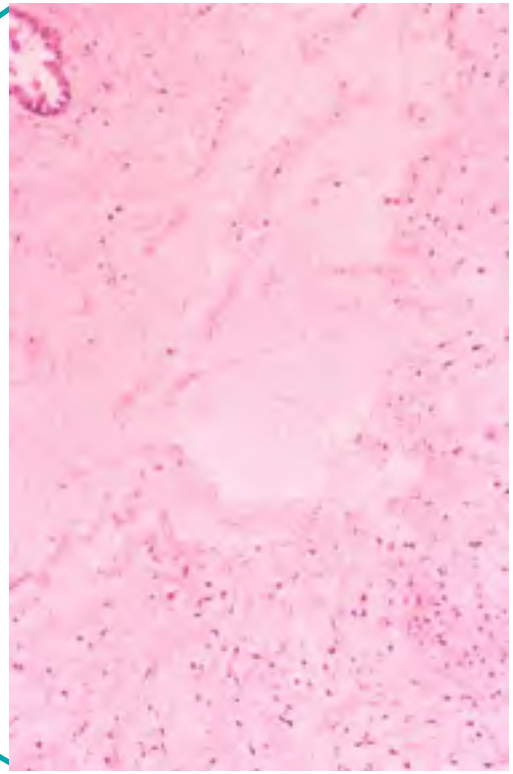
Complete Hydatidiform Mole

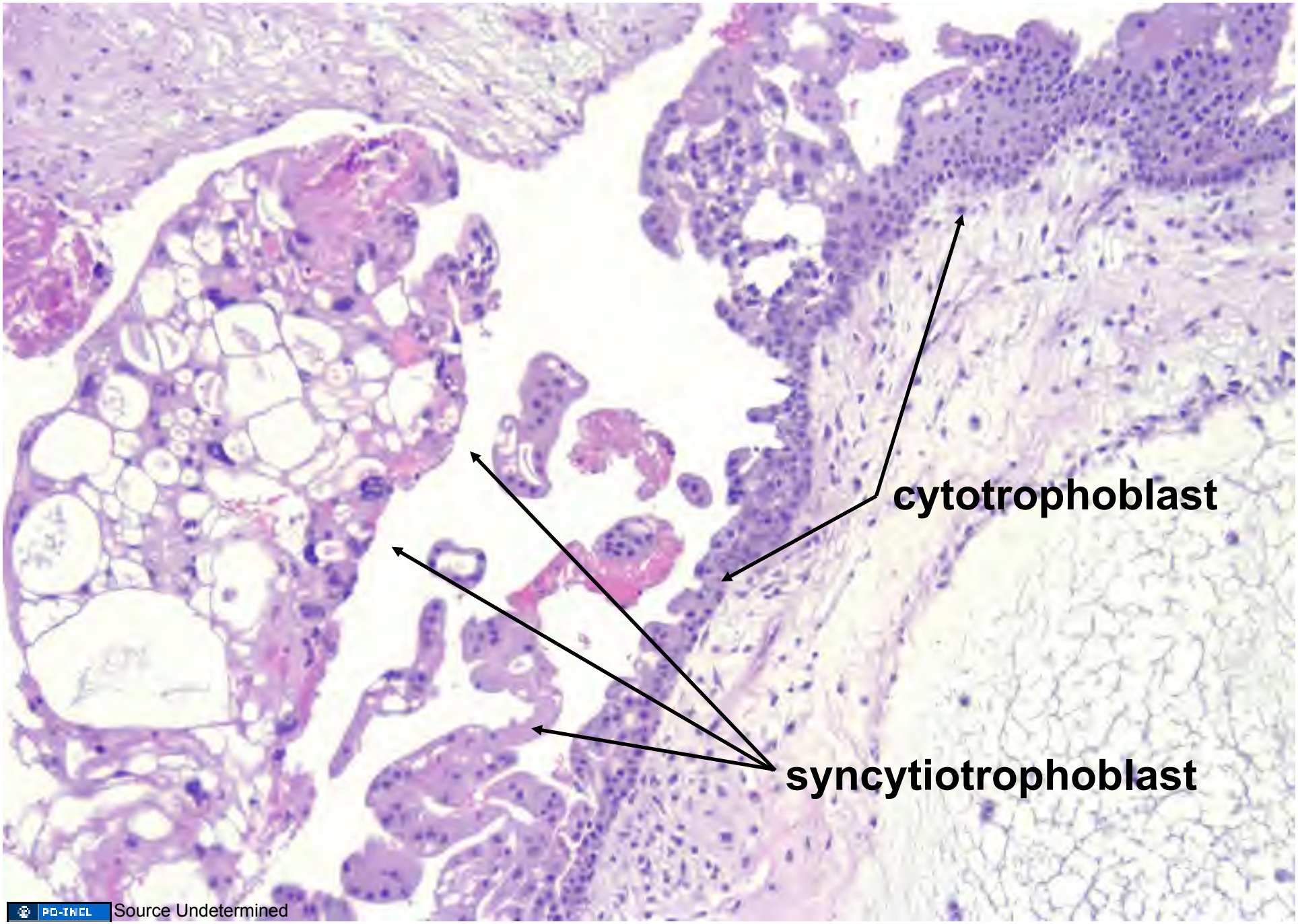


Trophoblastic proliferation

Hydropic, avascular villi

Central cistern





Complete Hydatiform Form
Key Histology

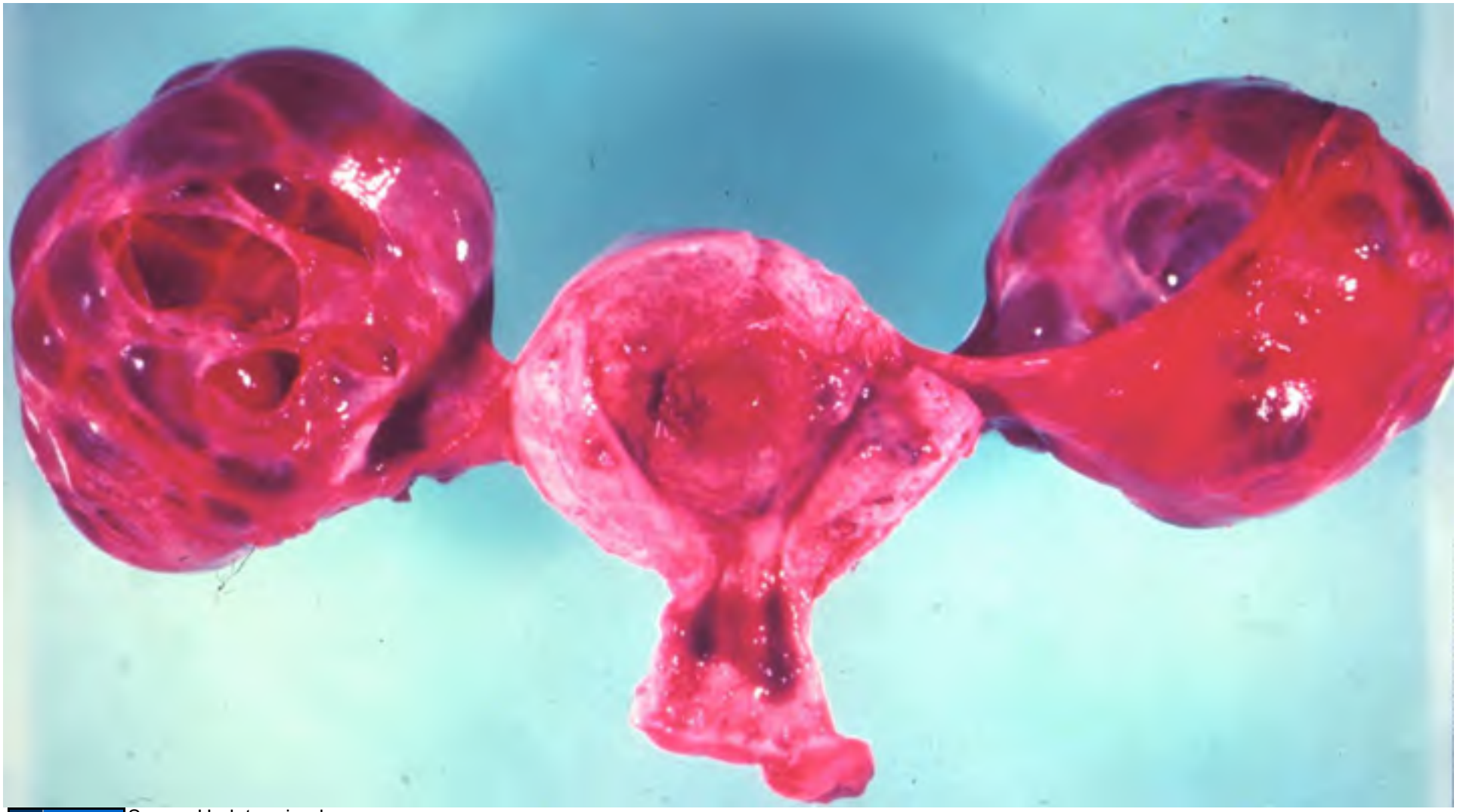
- large hydropic villi
- avascular villi
- circumferential trophoblastic proliferation
  - cytotrophoblast
  - syncitiotrophoblast

Uterus, Endometrial Curretage

Our patient in the previous case is followed carefully by her Ob/Gyn physician with serial serum ß-hCG tests. After a steady decline in her serum titers, the patient is lost to follow-up. She returns a year later with abnormal uterine bleeding and elevated ß-hCG. Ultrasound shows intrauterine echoes, and a curettage is performed followed by a hysterectomy.

Follow-up information:
Subsequent chest x-ray shows
multiple ill-defined lung masses.
A hysterectomy is performed.

Choriocarcinoma w/ bilateral theca lutein cysts*



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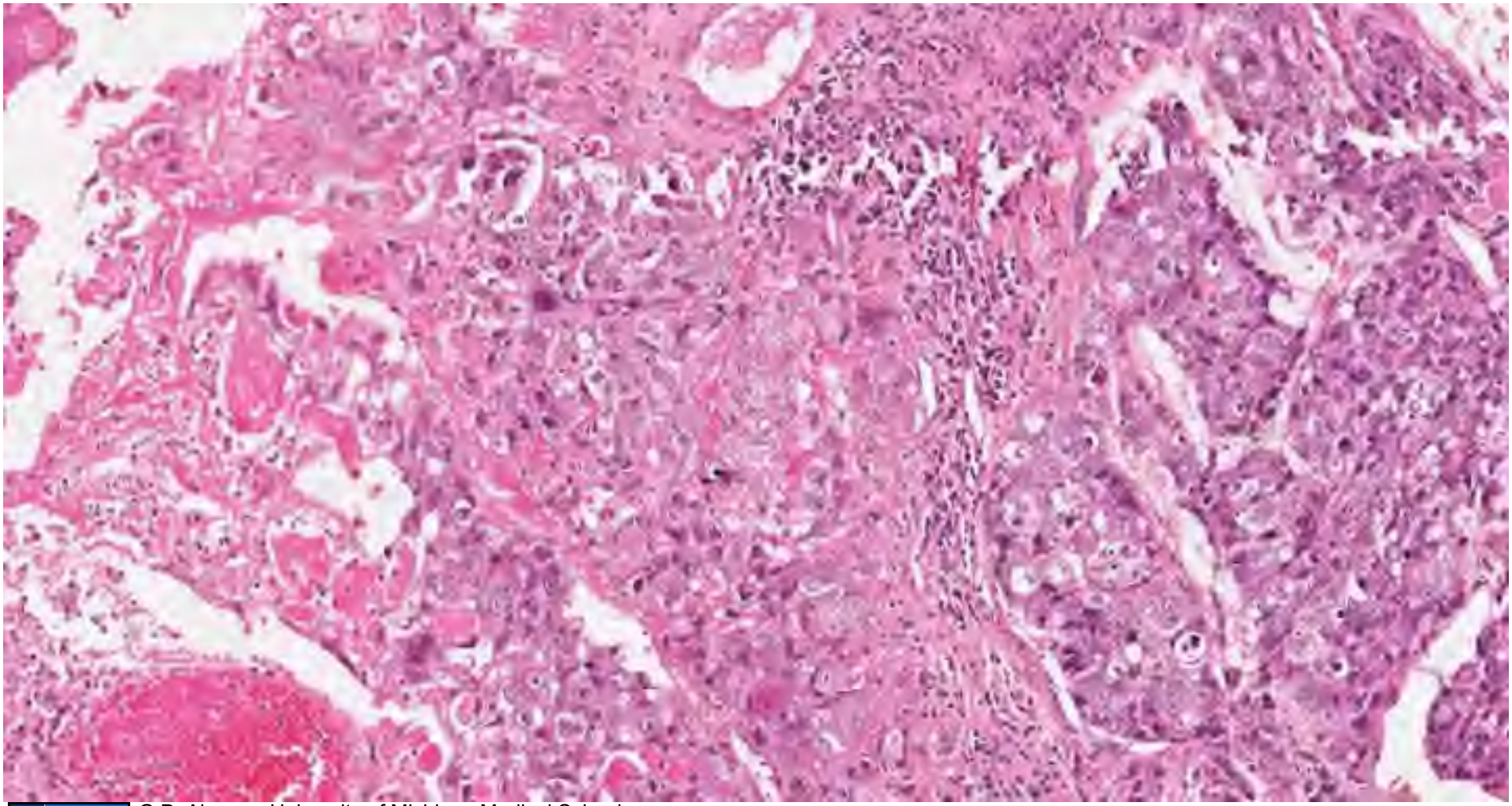
* High levels of hCG have a luteinizing hormone-like effect that stimulates multiple follicular development in both ovaries.

Choriocarcinoma



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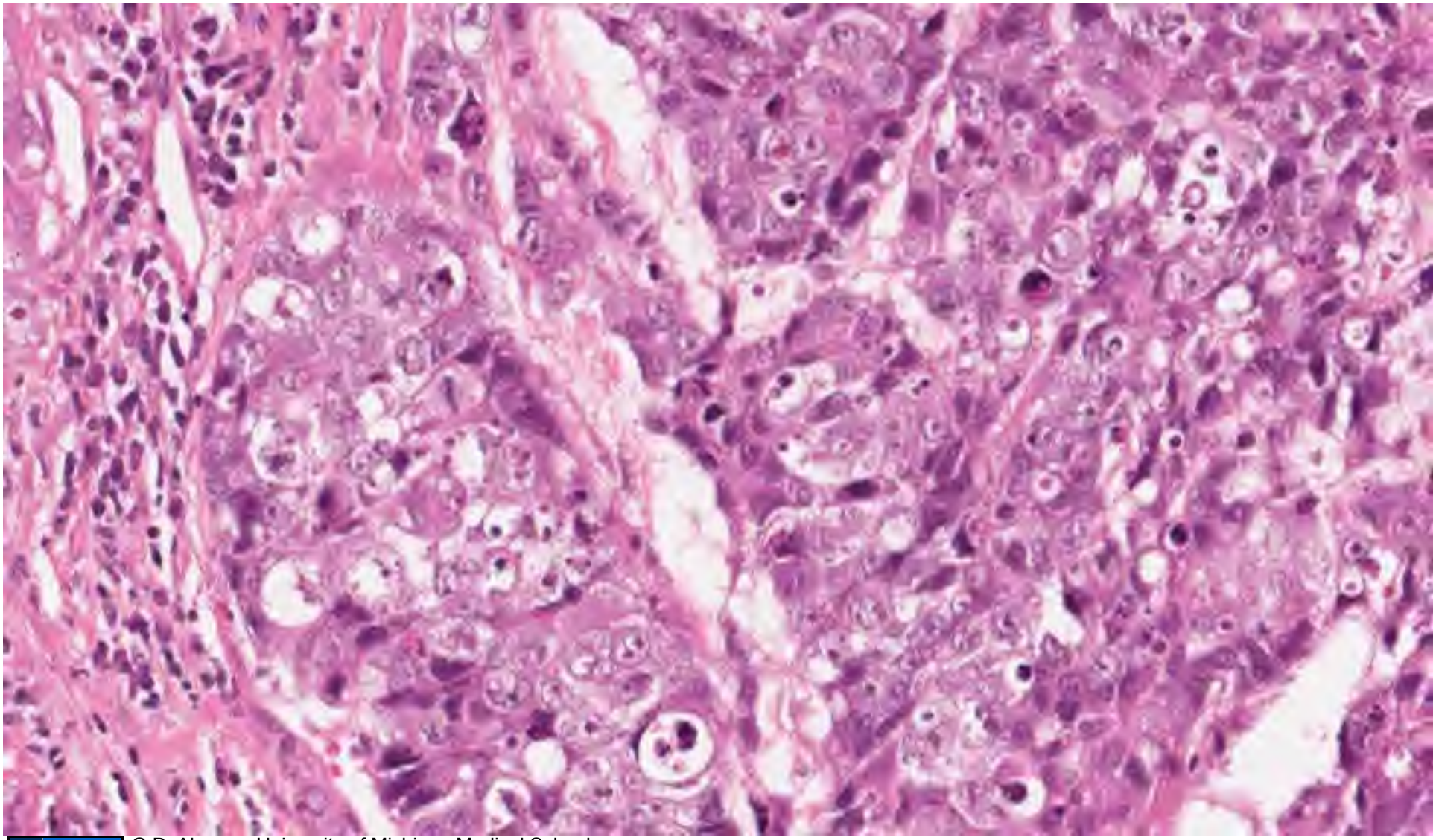

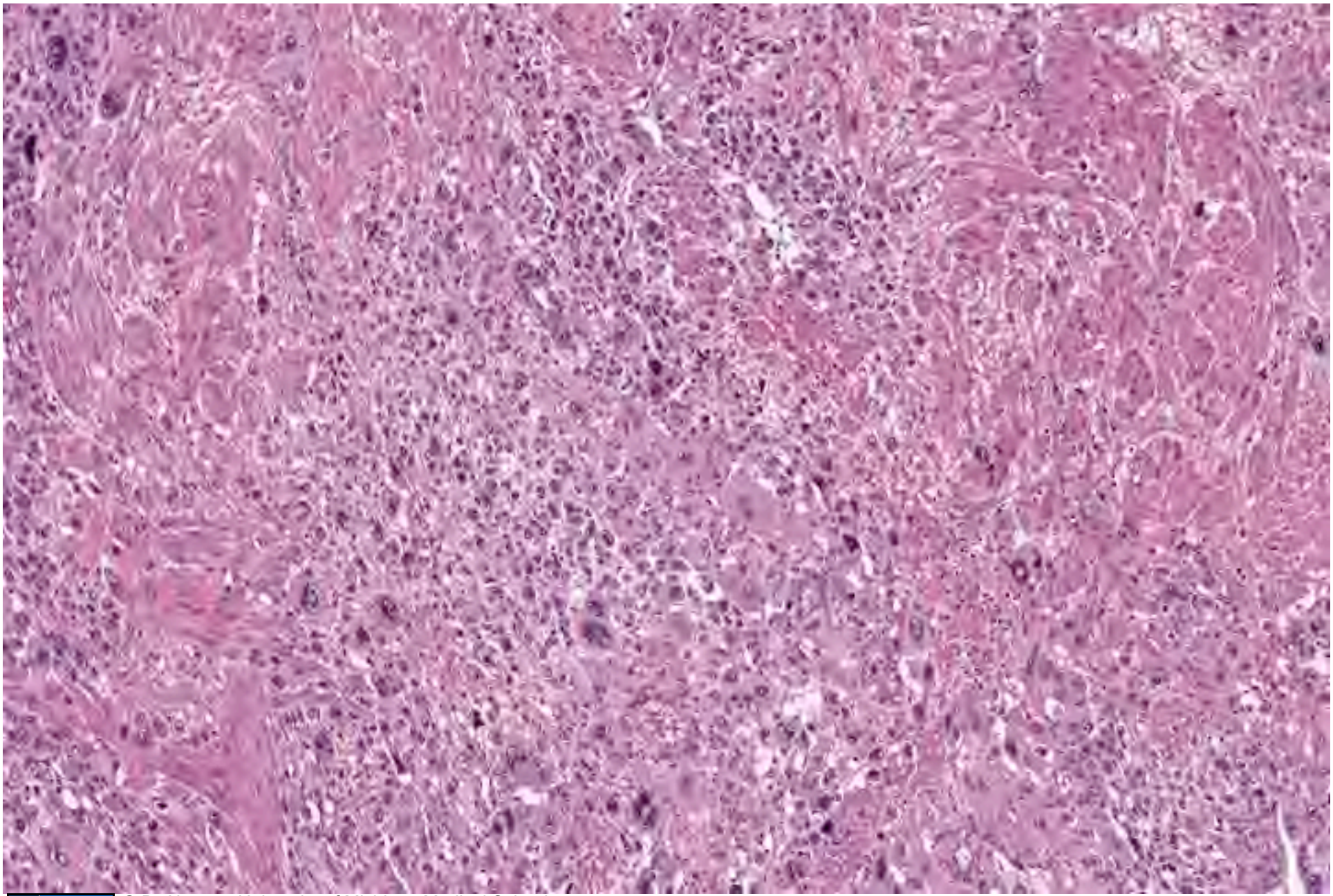

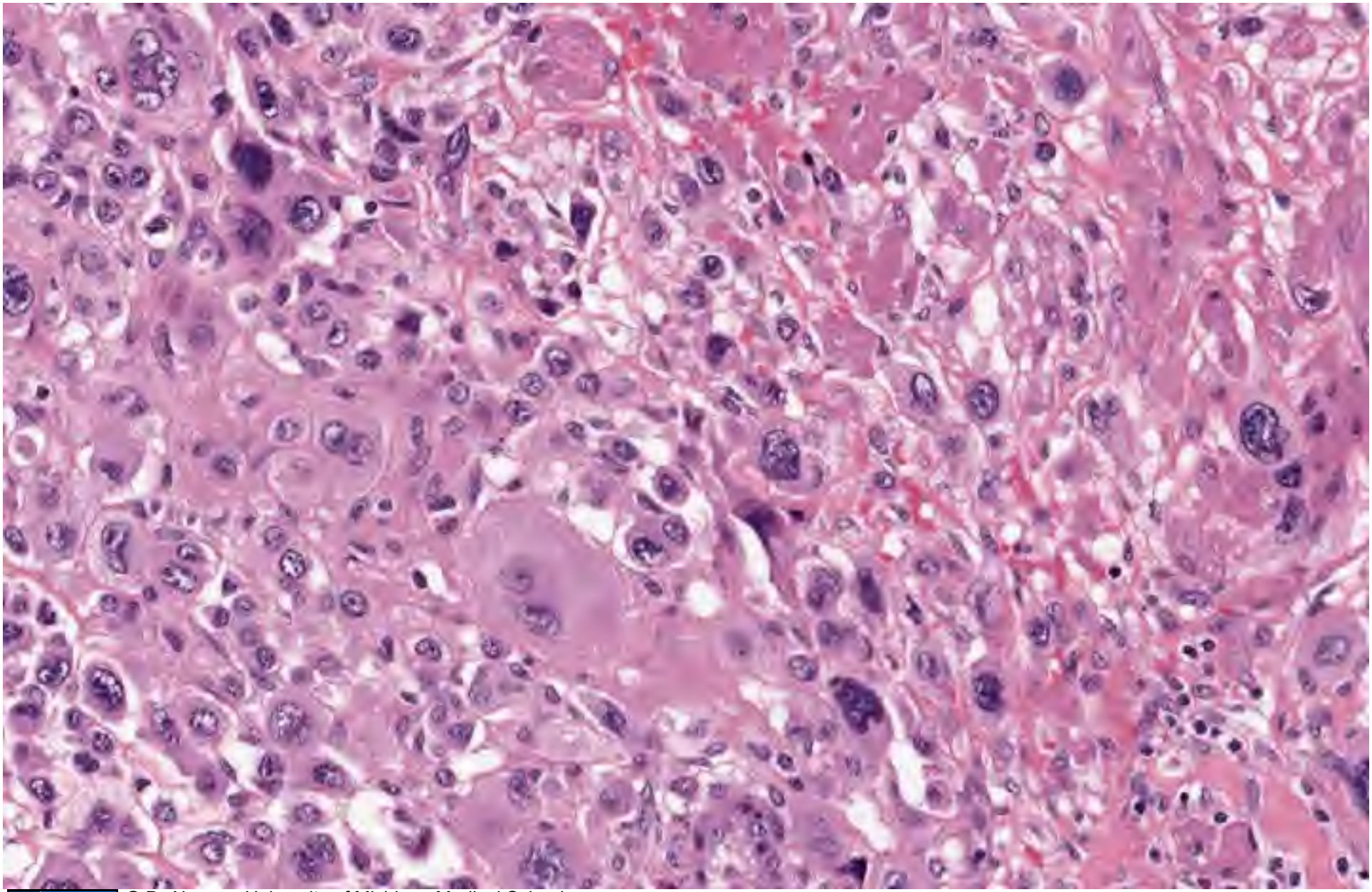

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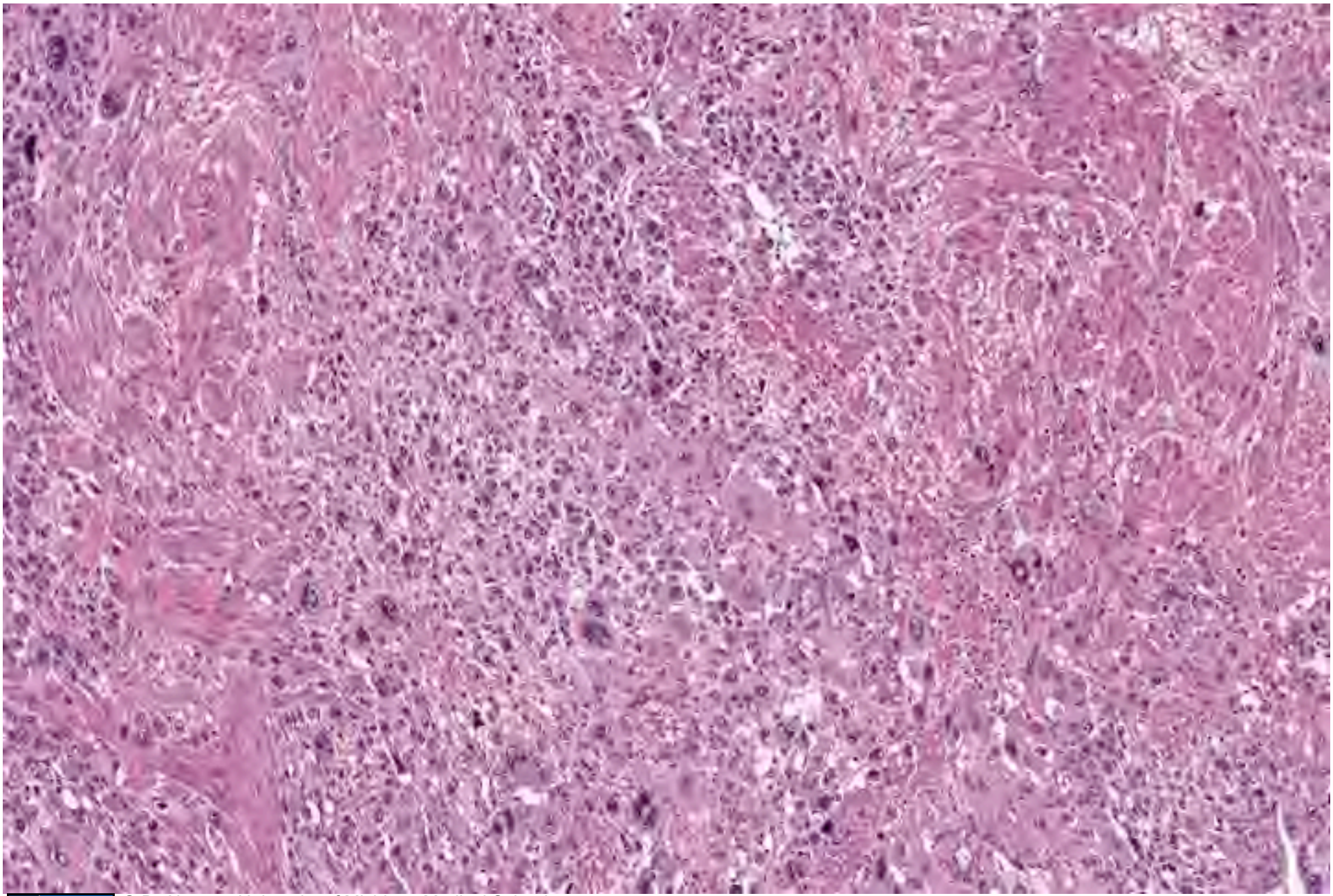
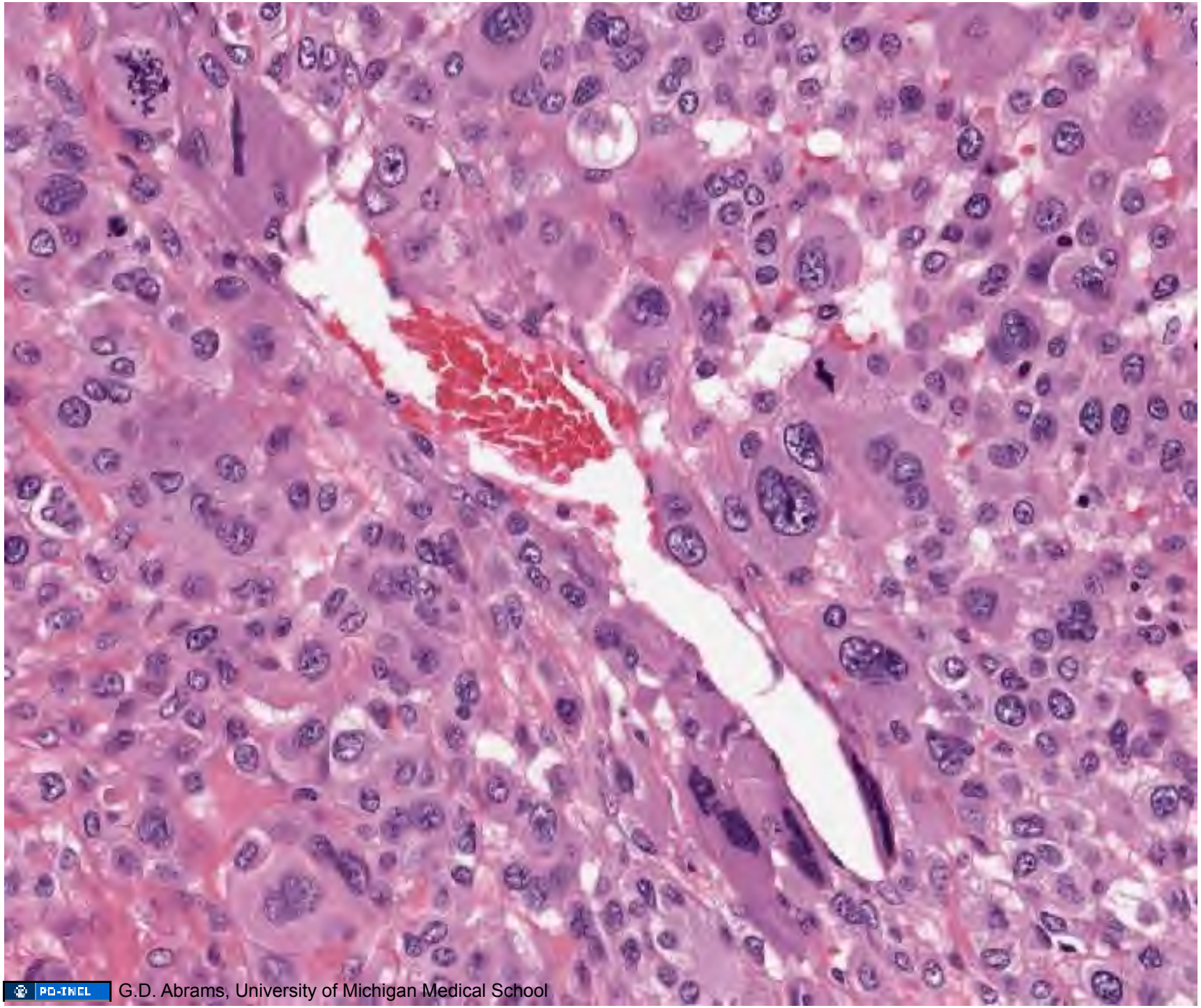
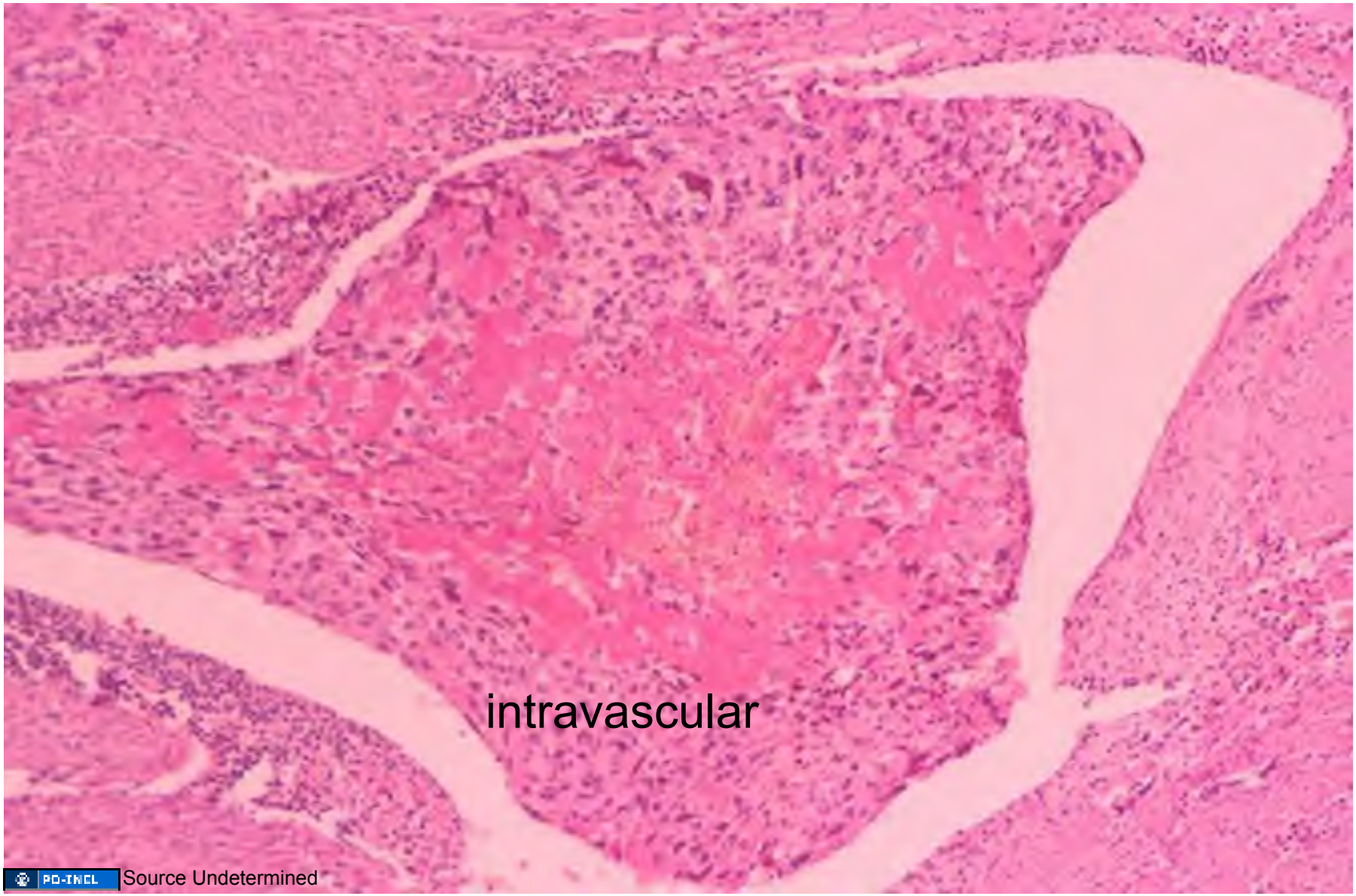




Choriocarcinoma



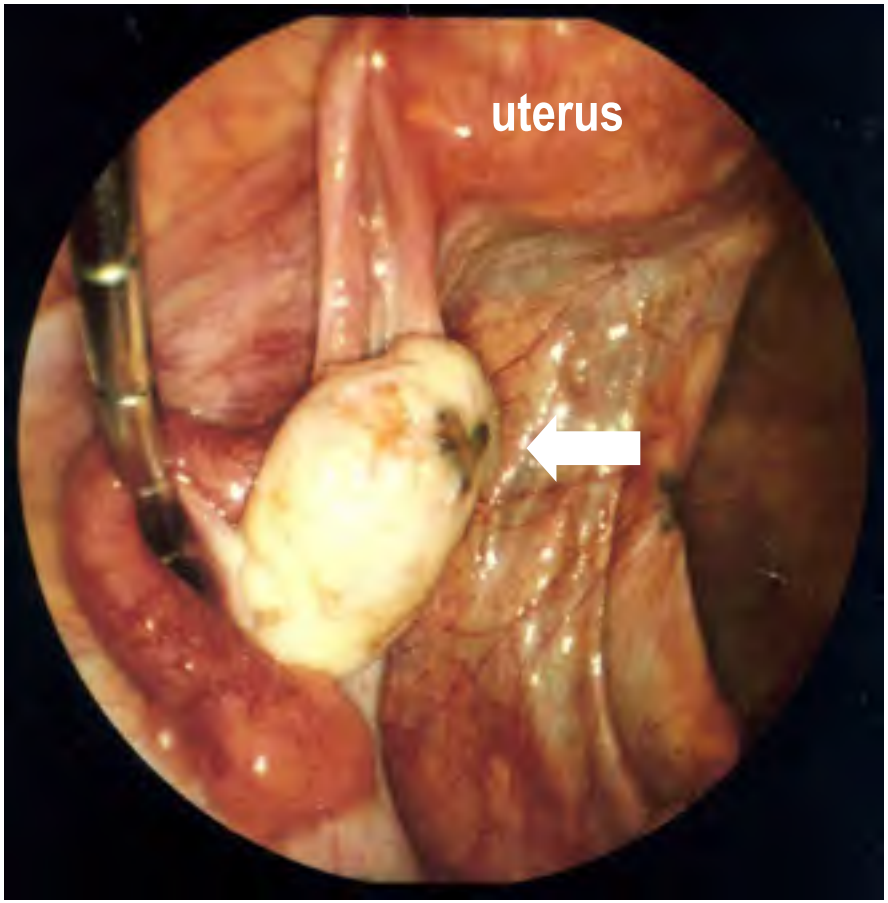
Gestational Choriocarcinoma: Key Histology

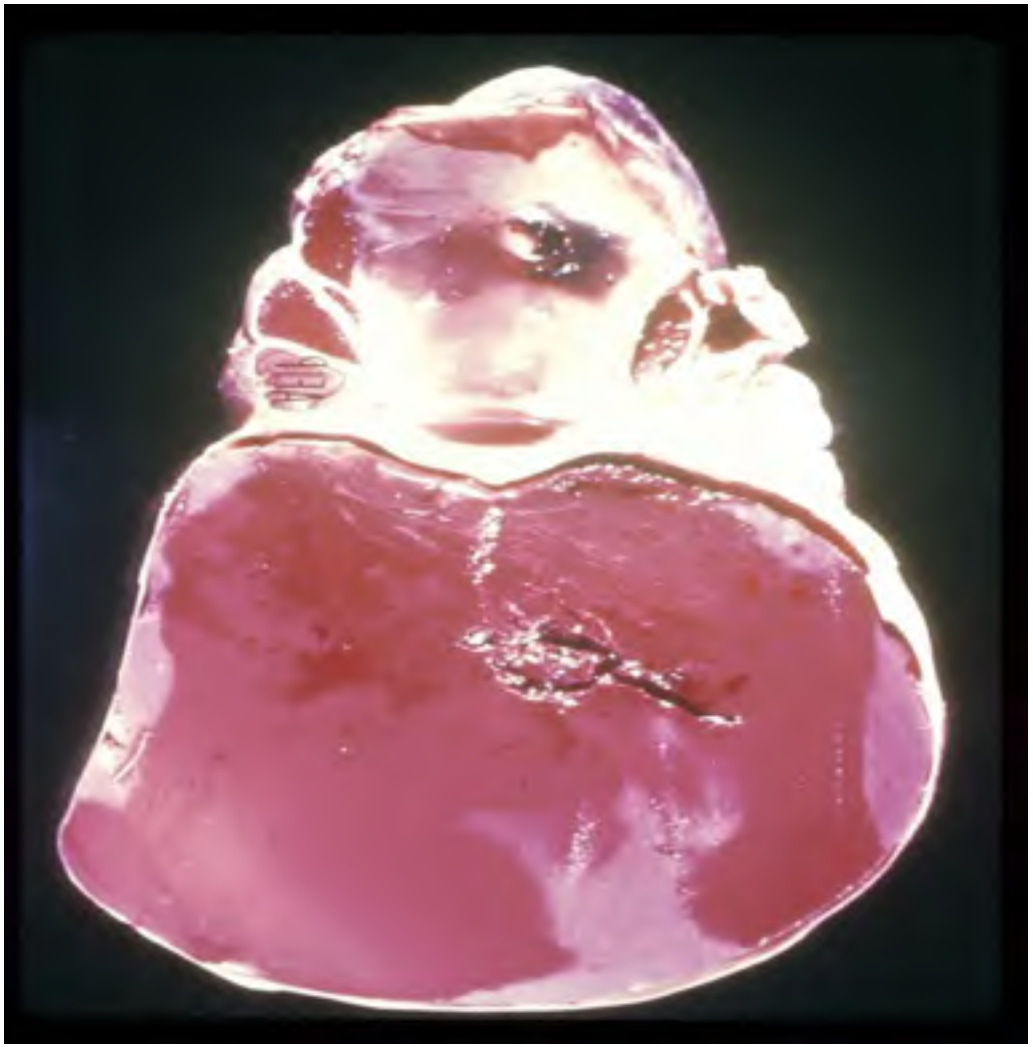
- **No** chorionic villi
  - compare to ectopic and molar pregnancy
- Biphasic admixture of trophoblast
  - syncytiotrophoblast & cytotrophoblast
  - syncytiotrophoblast & intermediate trophoblast
  - syncytiotrophoblast always present;
    cytotrophoblast or intermediate trophoblast variably present
- Hemorrhage and necrosis

Ovary

A 34-year-old nulligravida presents to the Reproductive Endocrinologist because she has been unable to conceive during the four years she has been married. She has no history of STD, but does relate severe dysmenorrhea and dyspareunia. On pelvic examination, a tender left adnexal mass is noted (~5cm) along with uterosacral nodularity.

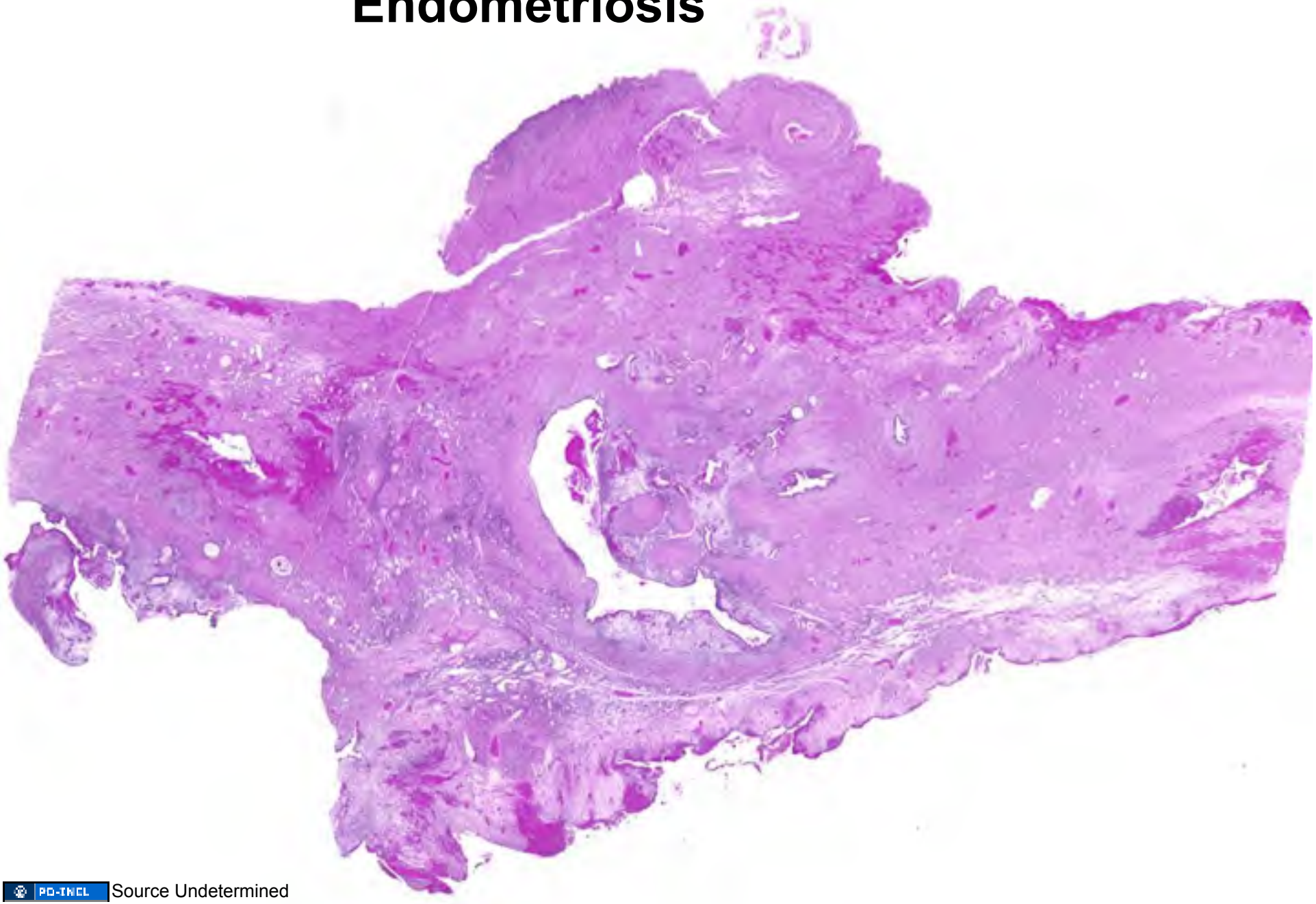
Ovarian Endometriosis

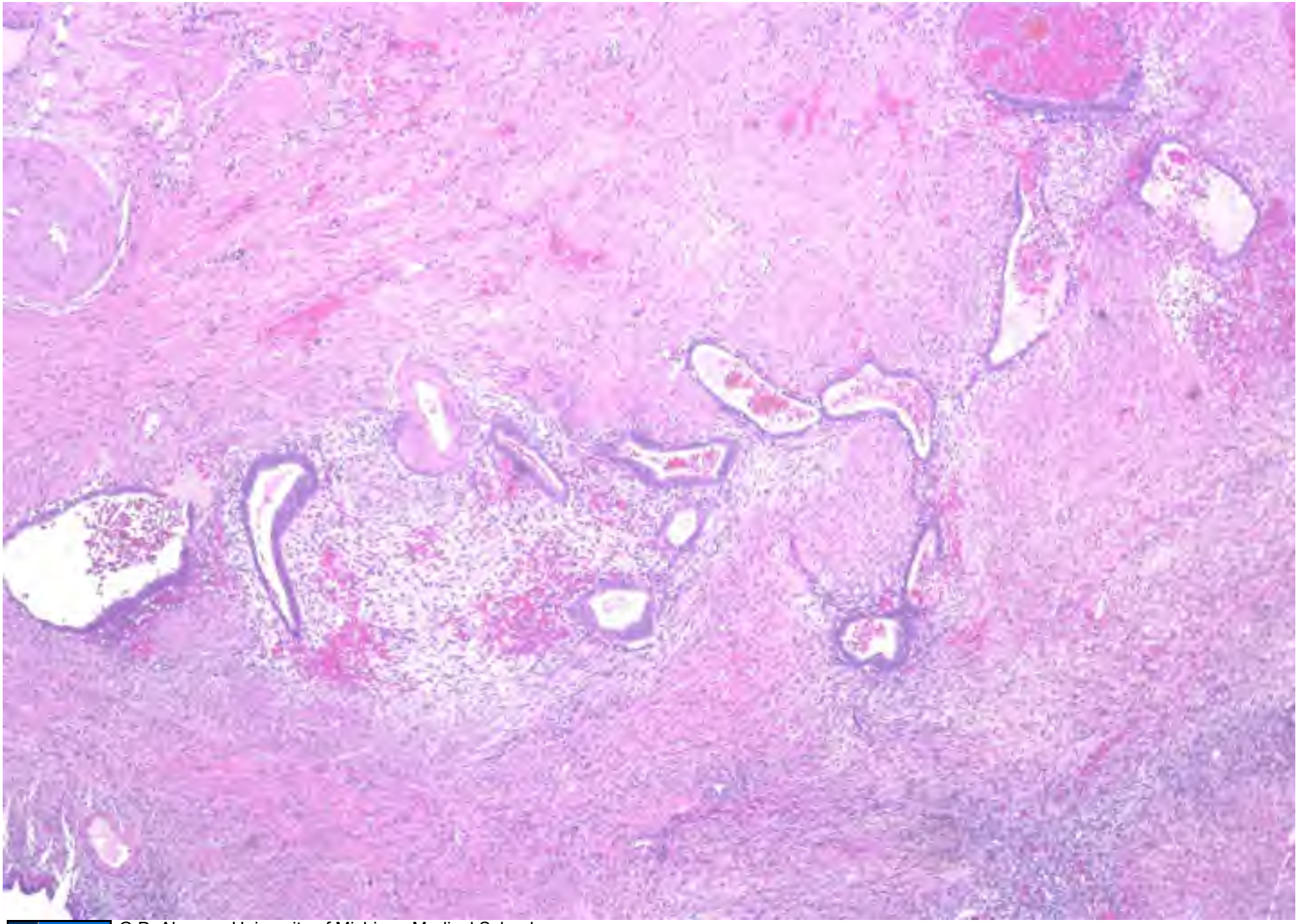


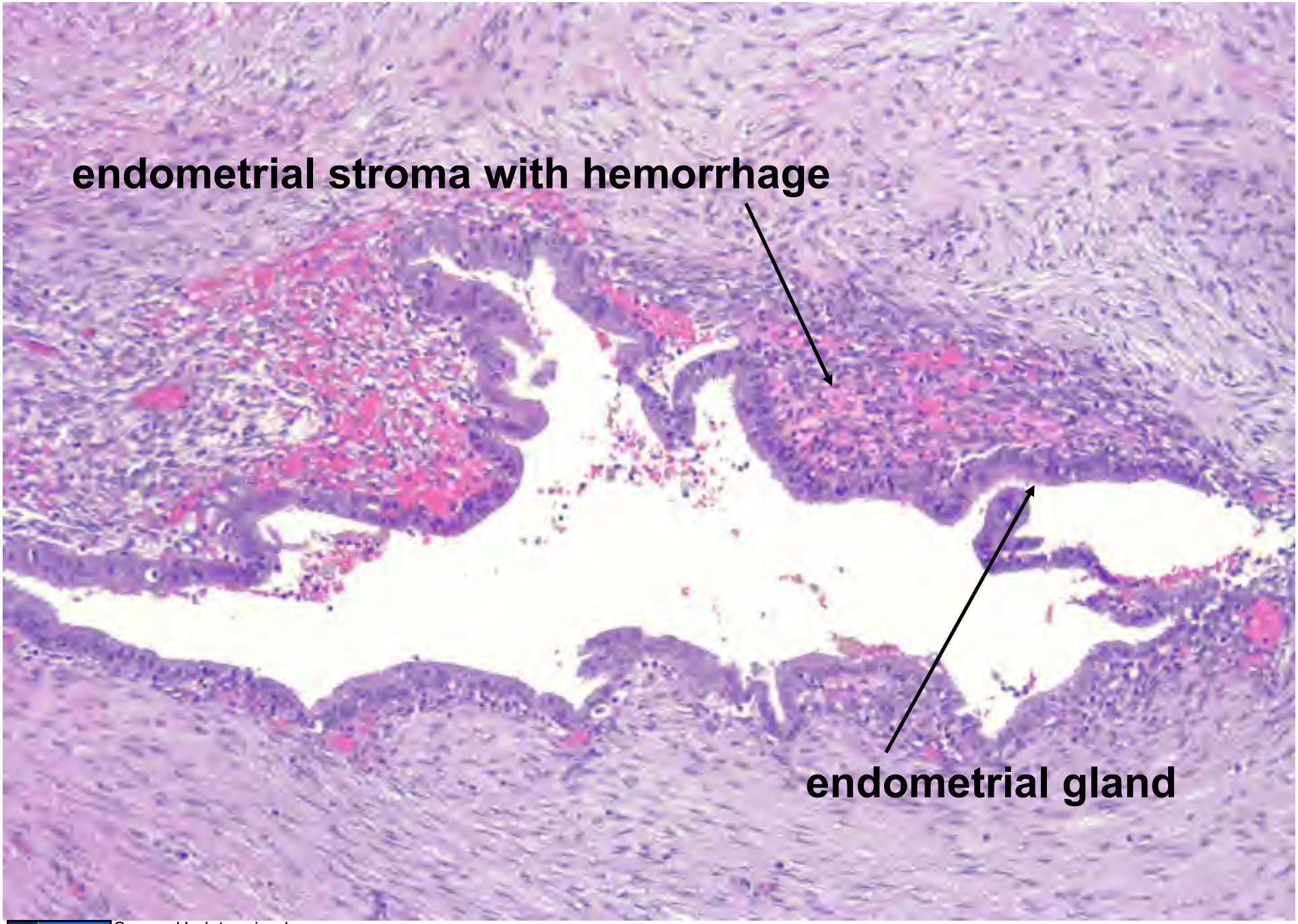


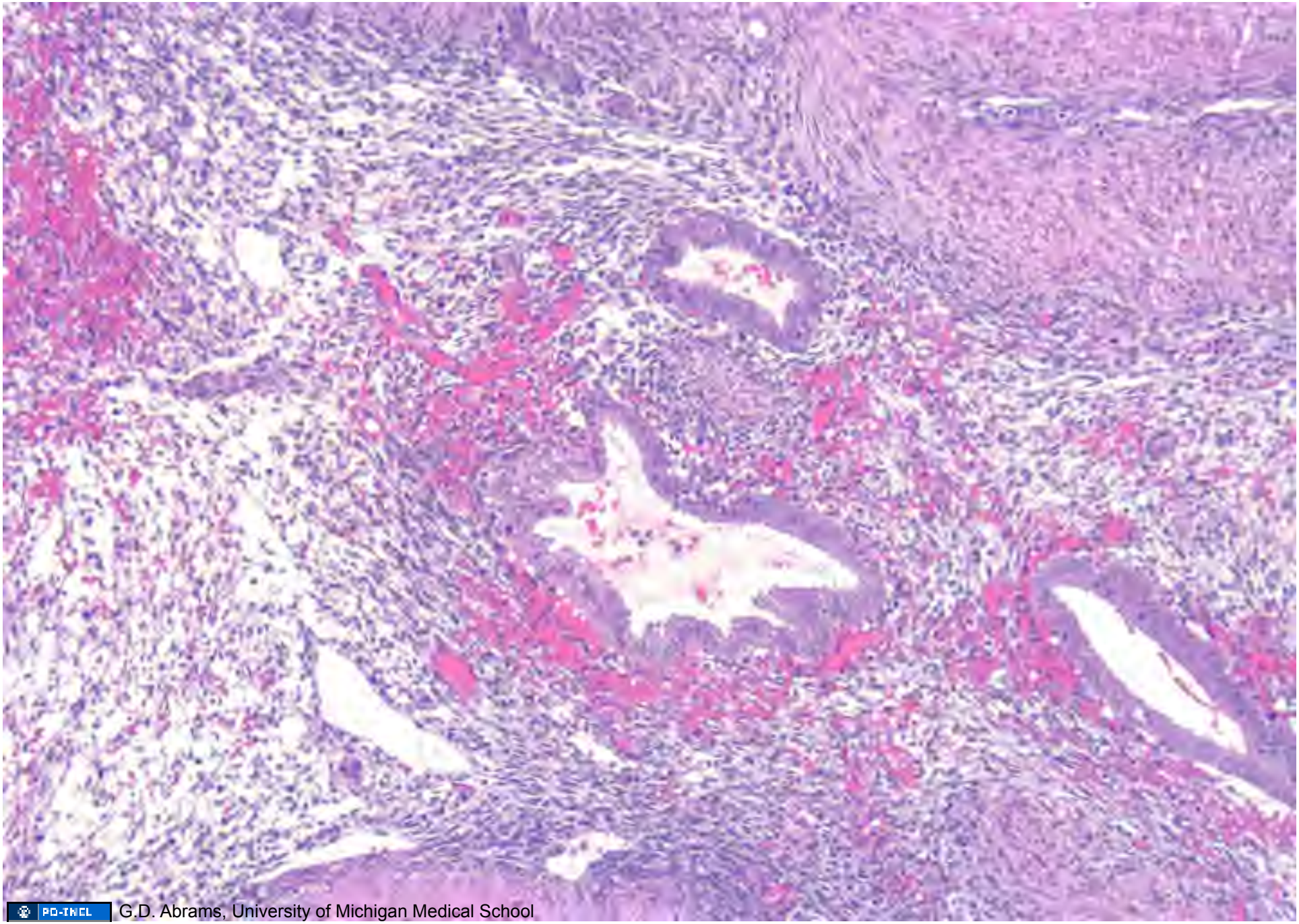
Endometrioma (Chocolate Cyst)

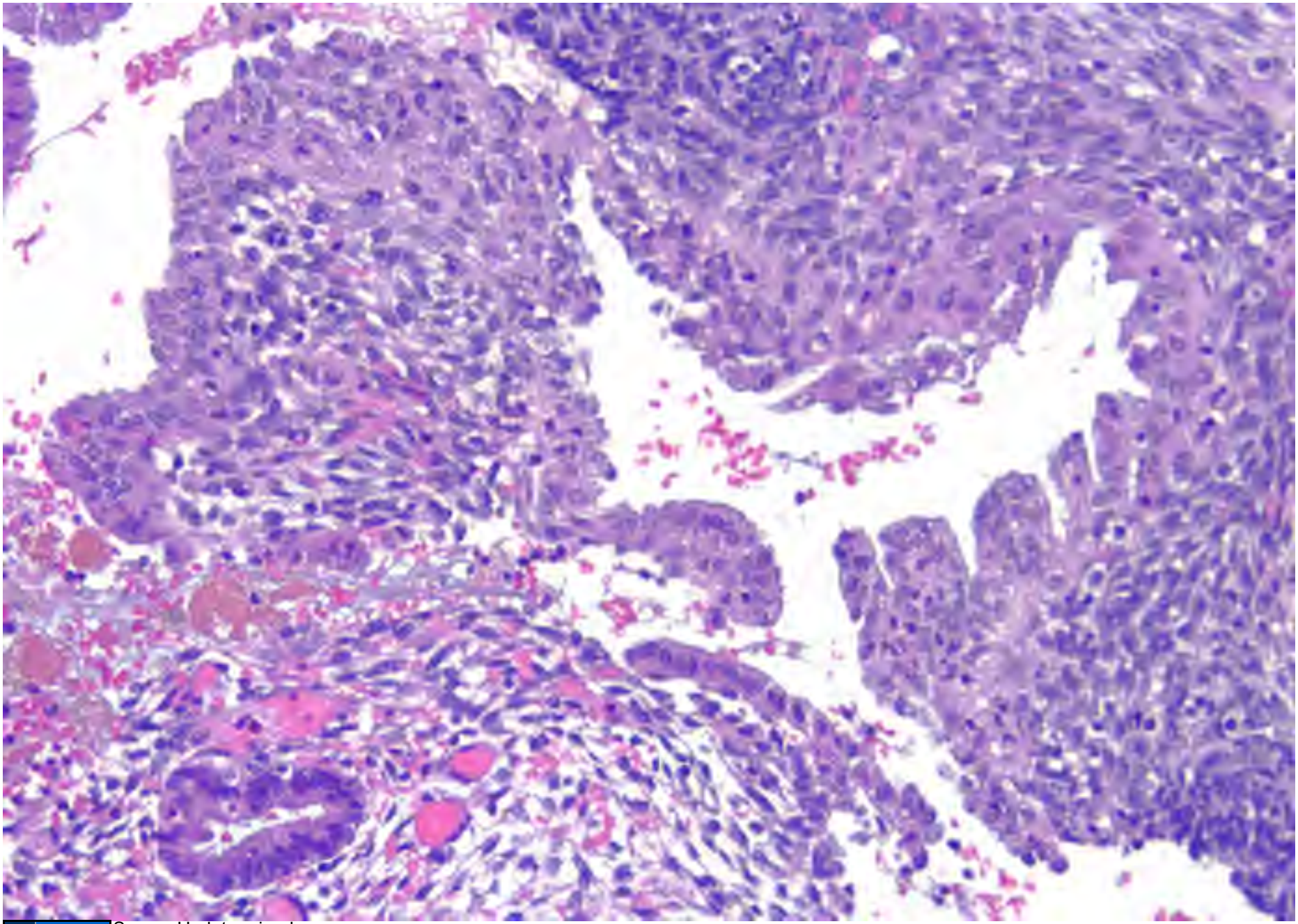
Endometriosis

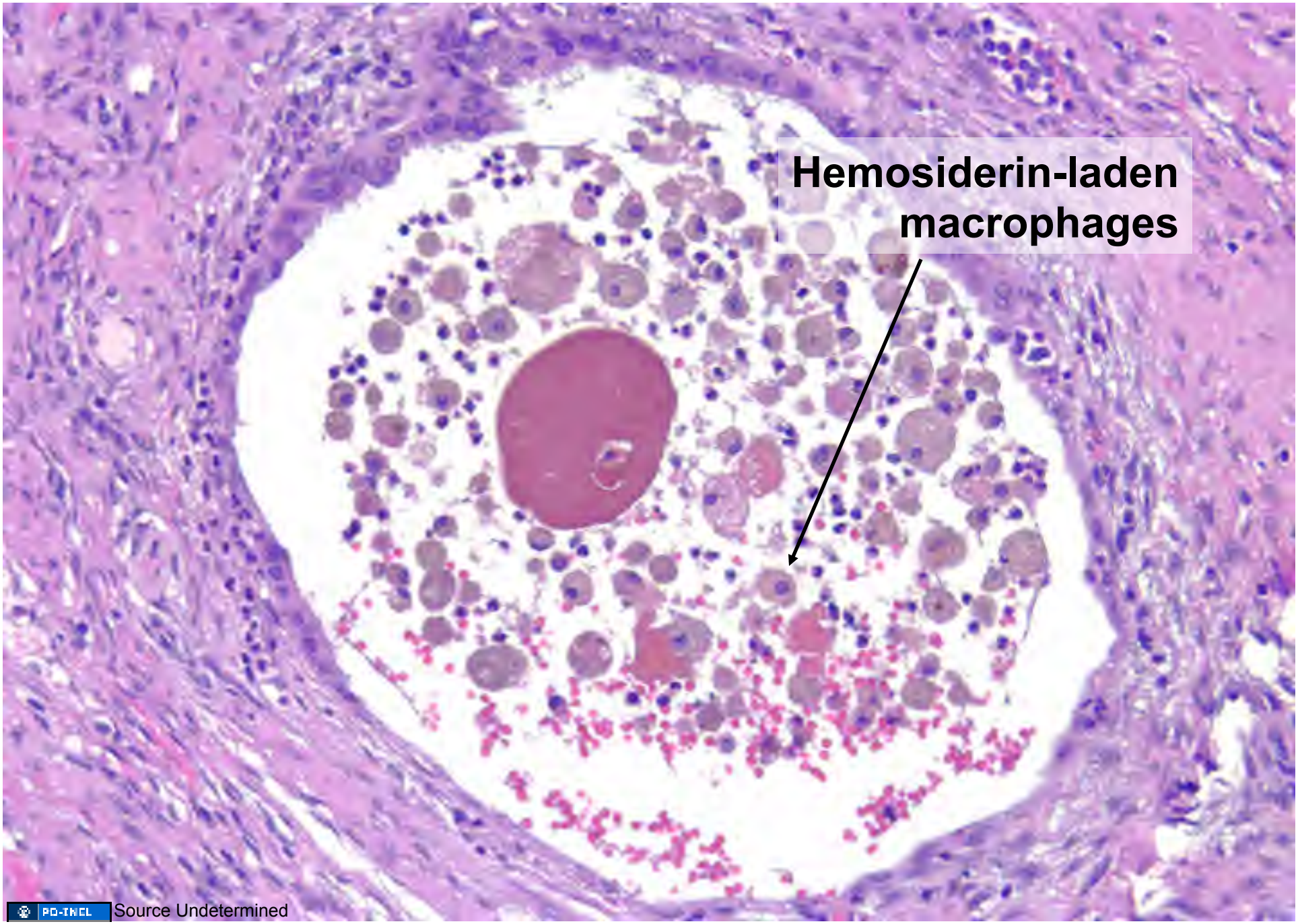












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