Malignancy in the endometriosis

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- ***Endometriosis, defined as the presence of endometrial tissue in locations outside the uterine corpus, is an extremely common condition, particularly in women in the reproductive years.***

- It is estimated to affect approximately 10–15% of women in the reproductive years and an estimated 176 million women world-wide.
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- **The most common locations are the ovary, fallopian tube, pouch of Douglas, and pelvic peri-toneum, but a variety of other sites may be affected.**
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- The propensity of endometriosis to undergo neo-plastic transformation is well known, and, although it would be wrong to consider endometriosis as a pre-malignant lesion, given the relatively low incidence of malignant transformation, endometriosis can be considered to be a disease with the potential to develop malignancy.
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- Although most endometriosis remains benign, about **0.5%–1%** of these cases are complicated by malignancy. The most common endometriosis-associated histological types are **endometrioid adenocarcinoma(75%) and clear cell adenocarcinoma(15%).**

- **Int J Gynecol Pathol. 2011;30:553–68.**

- The site of these neoplasms **mostly originate in the ovaries** and compose 10% of all ovarian adenocarcinomas in developed countries.

- Pathology. 2018;50:190–204.

- Moreover, **seromucinous borderline tumor**, which is similar to endocervical-like mucinous borderline tumor or **mixed-epithelial papillary cystadenoma of borderline malignancy of Mullerian type**, is commonly found in an ovarian endometriotic cyst.

- Cancer 1988;61:340–8

- It should mentioned that **endometrioid carcinoma** arising from **colonic endometriosis** may be **resemble** ***primary colonic carcinoma*** **from clinical and pathologic perspective.**

- In a National Swedish review of **20,686** hospitalized patients with endometriosis, **738** patients developed malignancies and of which **29** were specific to ovarian malignancies.

- In a review of **76** patients who were diagnosed with **stage-I** ovarian carcinomas, **40 of these patients had associated findings of ovarian endometriosis,** and the majority had endometrioid and clear cell histology.

- **Fertil Steril. 2007;88:906–10**

- There was no such association for mucinous or high-grade serous subtypes.

- Endometriosis can also show malignant transformation into mixed stromal and epithelial or exclusively stromal neoplasms, including endometrial stromal sarcoma, clear-cell adenocarcinoma and adenosarcoma with heterologous components of rhabdomyosarcoma and ovarian adenosarcoma with rhabdomyosarcoma.

- Gynecol Reprod Biol. 2004;117:112–4

- Wilbur et al. reported that women with endometriosis ***have a two- to three-fold increase in the absolute risk of developing epithelial ovarian cancer .***

- **Semin Reprod Med. 2017;35(1):110–116**

Conclusion #1

- *Some cases of endometriosis are closely related to ovarian malignancy.*

Conclusion #2

- A. In 42% of endometriosis associated malignancies, Atypical Endometriosis has been found.
- B. Patients with endometriosis associated malignancies, are usually young and have history of unopposed estrogen exposure.
- C. 75% of endometriosis associated malignancies, are seen in the ovaries.
- D. The most common endometriosis associated malignancies, are ovaroan endometriod and clear cell carcinoma.

Conclusion #3

- ***Seromucinous neoplasms* mainly borderline but also malignant types**
- **are the third commonest tumours that arise in endometriosis. Other, more**
- **uncommon, neo-plasms that can arise in endometriosis are *adenosar-coma,***
- ***Endometrial stromal sarcoma, and***
- ***carcinosarcoma.***

Unopposed estrogen effect on the endometriosis

- **Endometriosis is an estrogen-dependent disease and estrogens stimulate the growth of endometriosis.**

Progesterone and tamoxifen effects on the endometriosis

- **Progesterone induces glandular inactivation, stromal decidualization and suppressing the anatomic extent of endometriosis.**

- **Tamoxifen may cause similar changes that induces in eutopic endometrium such as hyperplastic change and polypoid lesions.**

CD10 immunostaining

- In equivocal cases of endometriosis, **IHC staining for CD10 is very useful tool for recognition of endometrial stroma and confirmation of endometriosis.**

Atypical Endometriosis

- Among the histologic types of ovarian endometriosis, **atypical endometriosis** (AE) is known to be a precursor lesion of endometriosis-associated ovarian cancer (EAOC) **characterized by cytologic atypia and architectural atypia or hyperplasia.**

- **Tanase et al. emphasized the importance of considering the possibility of malignant change, and strongly recommended carefully following patients in cases when AE is observed.**

- Case Rep Oncol. 2013;6(3):480–484

- Our results indicate that AE displays a significantly higher cumulative recurrence rate than TE, along with higher CA125 level and multilocular cysts.

- Eur J Obstet Gynecol Reprod Biol. 2020 Nov;254:44-51

- When the arcithectural features resemble endometrial atypical
  hyperplasia, categorization of the lesion as a **borderline endometrioid tumour** is appropriate.
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- There is limited information in the literature regarding the significance of such lesions, although these features are sometimes seen adjacent to an endometrioid carcinoma.
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- Int. J. Gynecol. Pathol. 1996; 15; 1 –9

- when
  such features are identified, this should prompt addi-

  tional sampling to exclude an endometrioid carcinoma.

  we apply the same criteria to diagnose endometrioid car-

  cinoma as in the eutopic endometrium; in other words,
  a complex glandular, papillary or cribriform architec-
  ture with stromal exclusion warrants a diagnosis of

  endometrioid carcinoma.

Conclusion#4

- **Atypical Endometriosis** appears to be related to higher recurrence rates compared to TE. **Close surveillance is needed for patients with AE, given not only the possibility of malignant change but also of recurrence.**

Conclusion#5

- 1.Endometriosis associated malignancies usually show **better prognosis** in comparison with non-endometriosis associated lesions.
- 2. Endometriosis associated malignant tumors usually **present as low grade tumors and in lower stages.**

Distinguish endometriosis-related ovarian neoplasms from ovarian endometrioma

- **Age, tumor size, and the presence of mural nodule** were important factors in the preoperative prediction of endometriosis-related ovarian neoplasms.

- **Int J Gynecol Cancer. 2020 Jun;30(6):831-836**

- **Endometriosis-related ovarian neoplasms was more likely to have higher levels of CA19-9, CEA, SLX, and LDH when compared with CA125.**

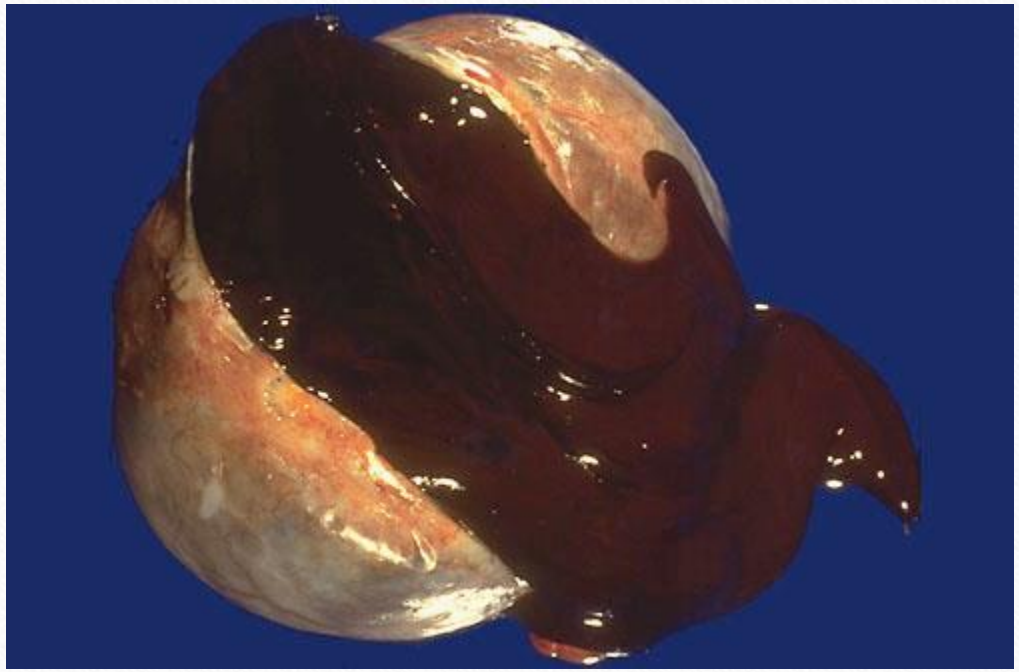
- **Int J Gynecol Cancer. 2020 Jun;30(6):831-836**

Characteristics of endometriosis associated Clear cell carcinoma

- **It can be raised from ovarian, pelvic and abdominal wall endometriosis.**
- **Endometriosis associated clear cell carcinoma often (in90% of cases) seen in 40- 70 years of old.**

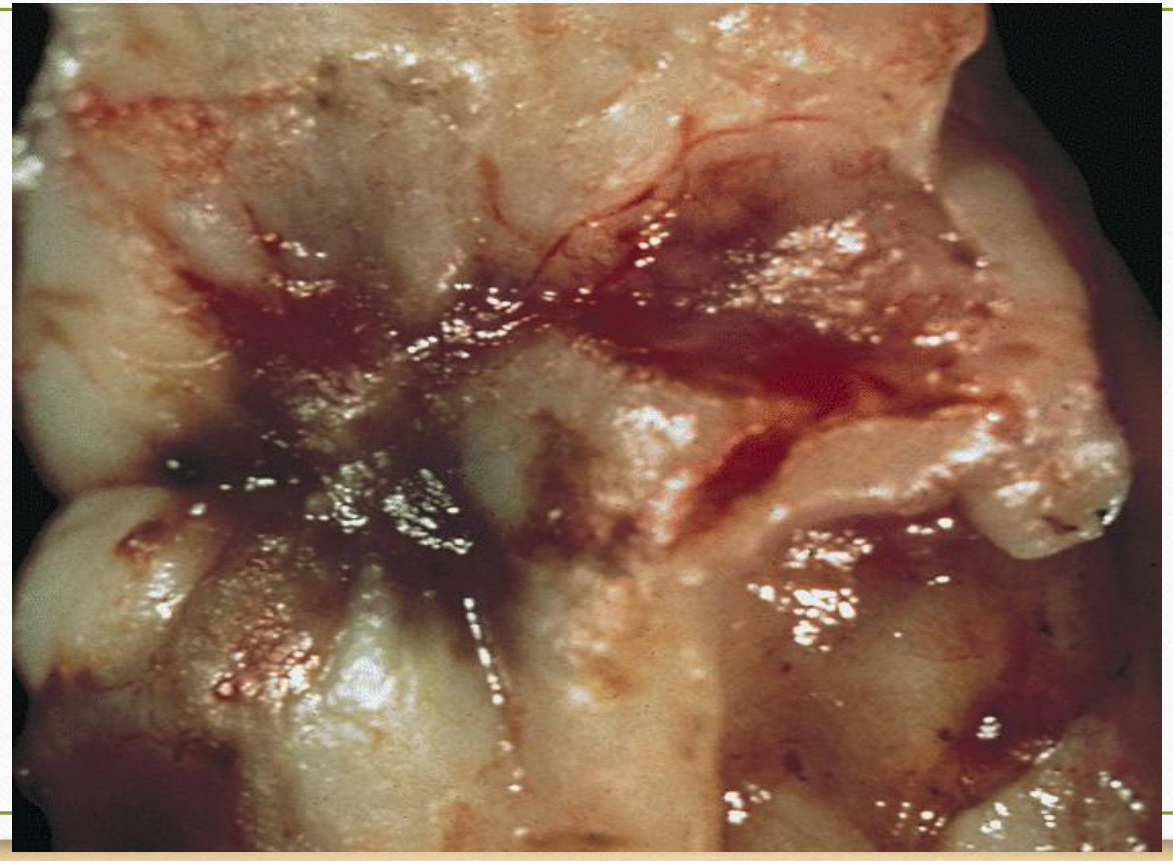
- **We must be careful in diagnosis of clear cell carcinoma because:**
- A. **Dysgerminoma can be erroneously diagnosed as Clear cell carcinoma**
- B. In patient with endomeriosis who treated by progetrone we should know that " **Arias-Stella reaction**" may mimic histologic appearance of clear cell carcinoma.

This is a section through an enlarnged 12 cm ovary to demonstrate a cystic cavity filled with old blood typical for endometriosis with formation of an endometriotic, or "chocolate", cyst.

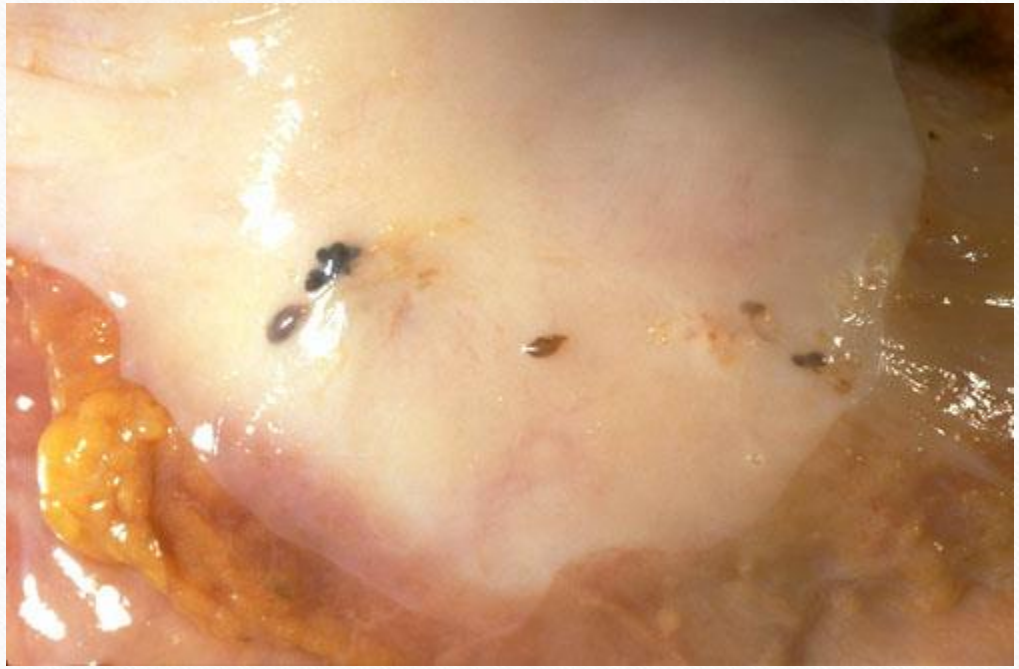


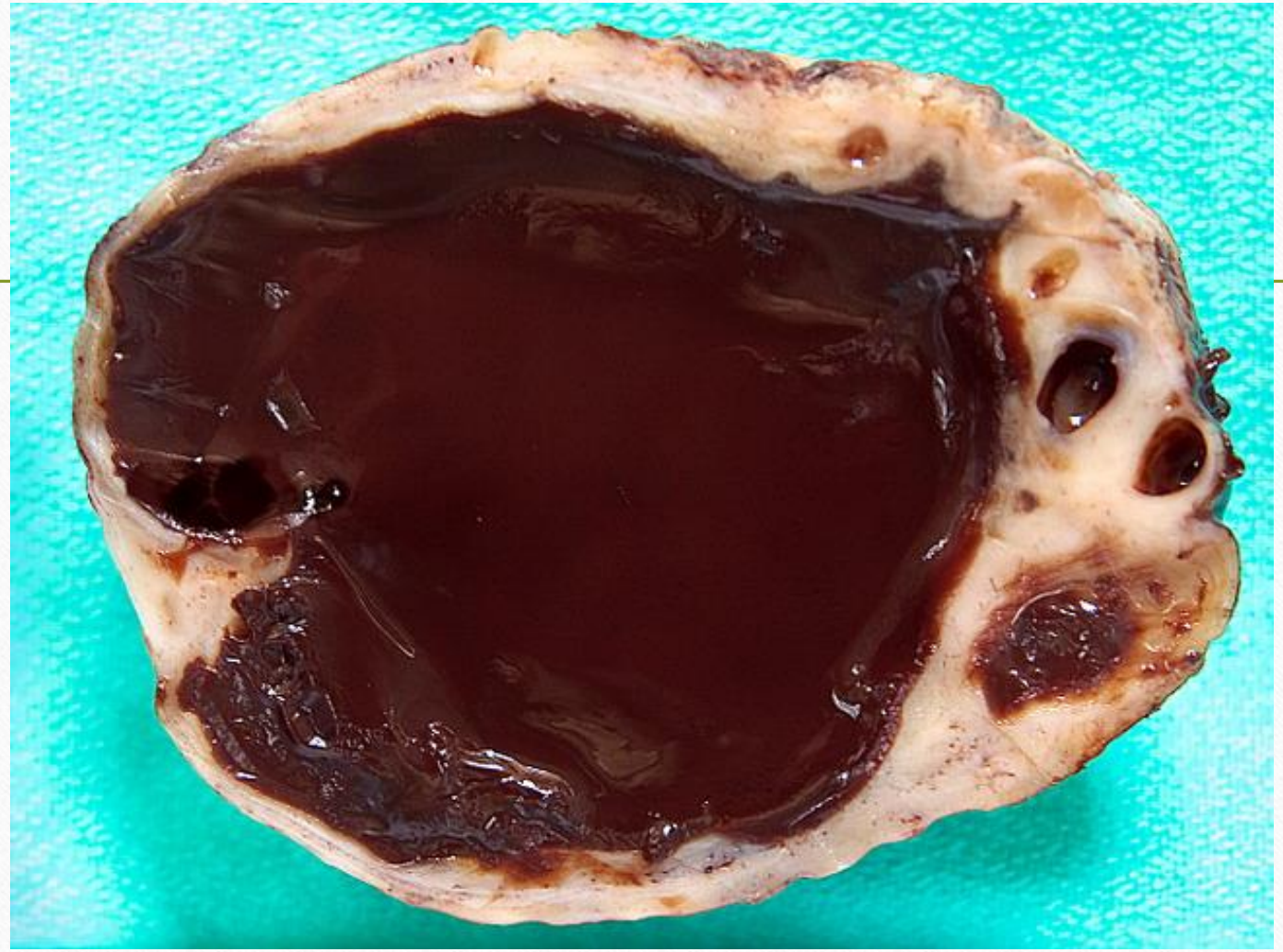
Cyst has predominantly pale and smooth lining plus several foci of dark brown discoloration consistent with endometriosis (AFIP)

External surfaces of the ovarian wedges show red, blue and brown areas, some associated with fibrotic puckering.



Upon closer view, these five small areas of endometriosis have a reddish-brown to bluish appearance. Typical locations for endometriosis may include: ovaries, uterine ligaments, rectovaginal septum, pelvic peritoneum, and laparotomy scars. Endometriosis may even be found at more distant locations such as appendix and vagina.





Gross features of endometrioid adenocarcinoma associated with endometriosis of the ovary. A unilocular cyst contain inner nodules (carcinoma) is seen. The inner flat areas are also recognized (endometriosis).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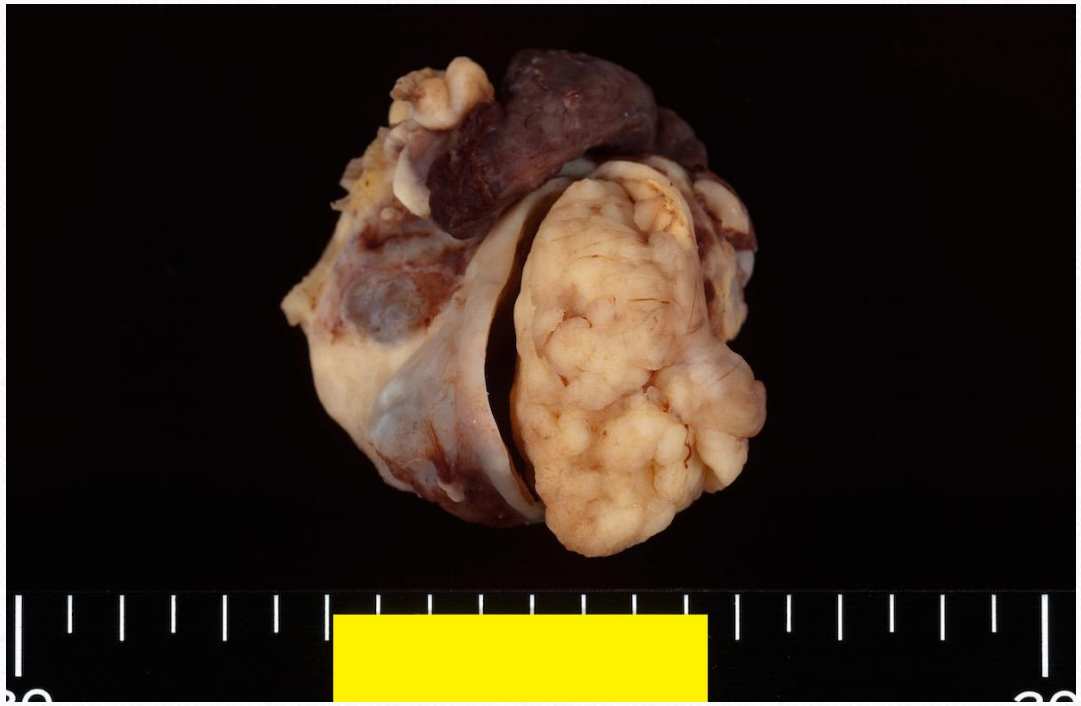


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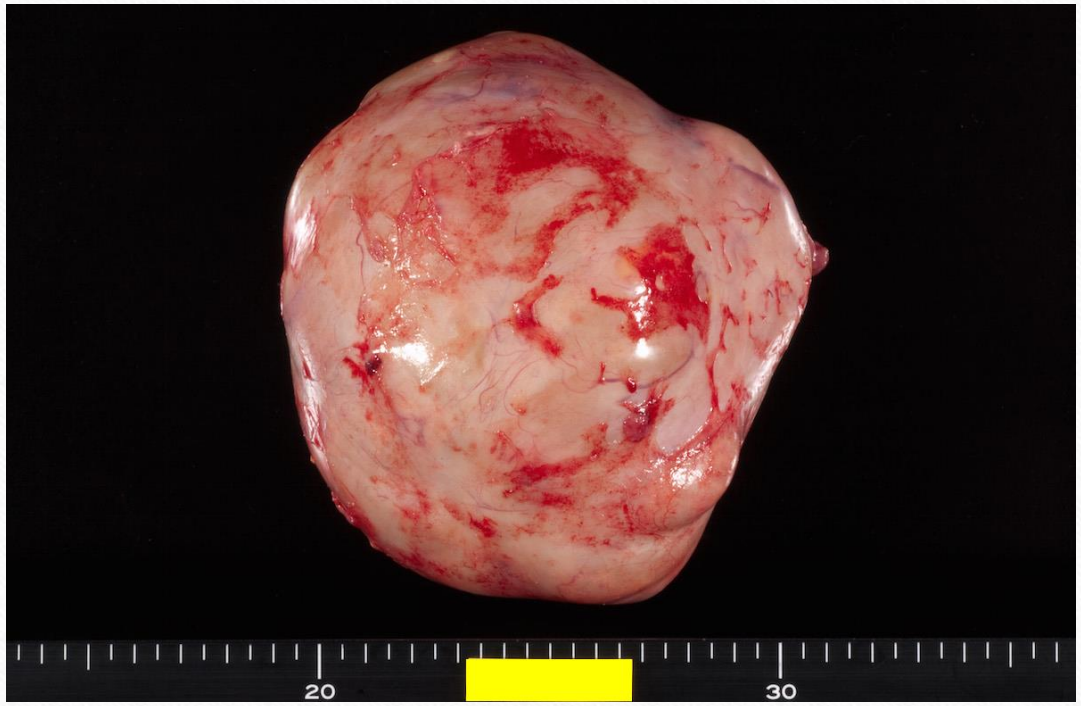
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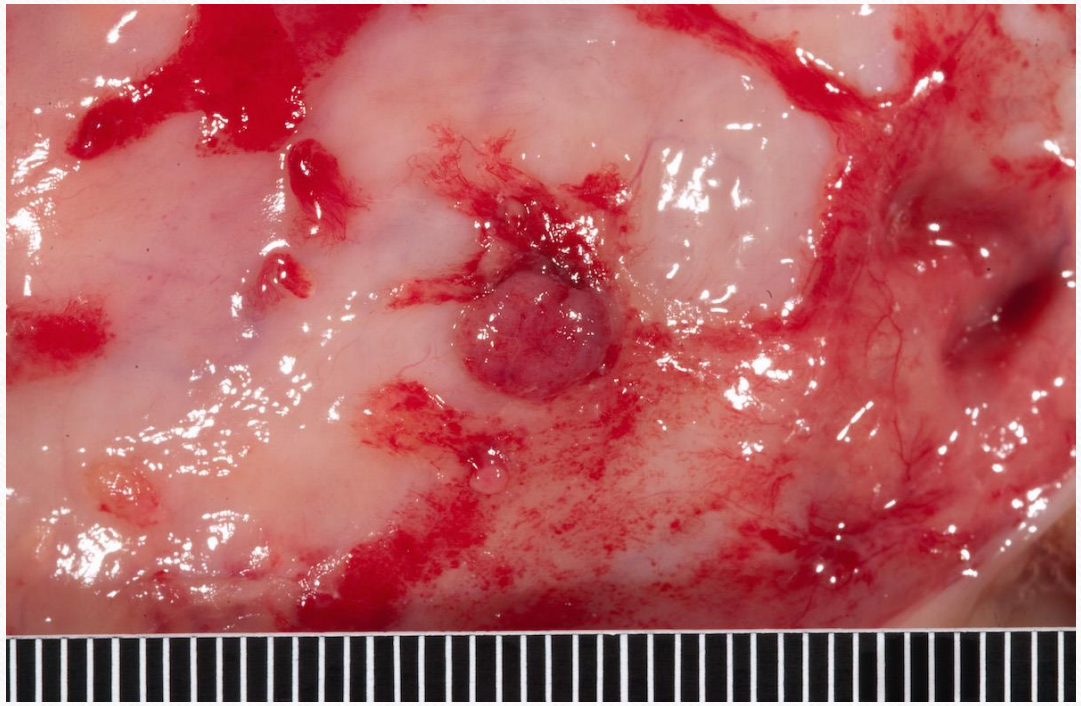

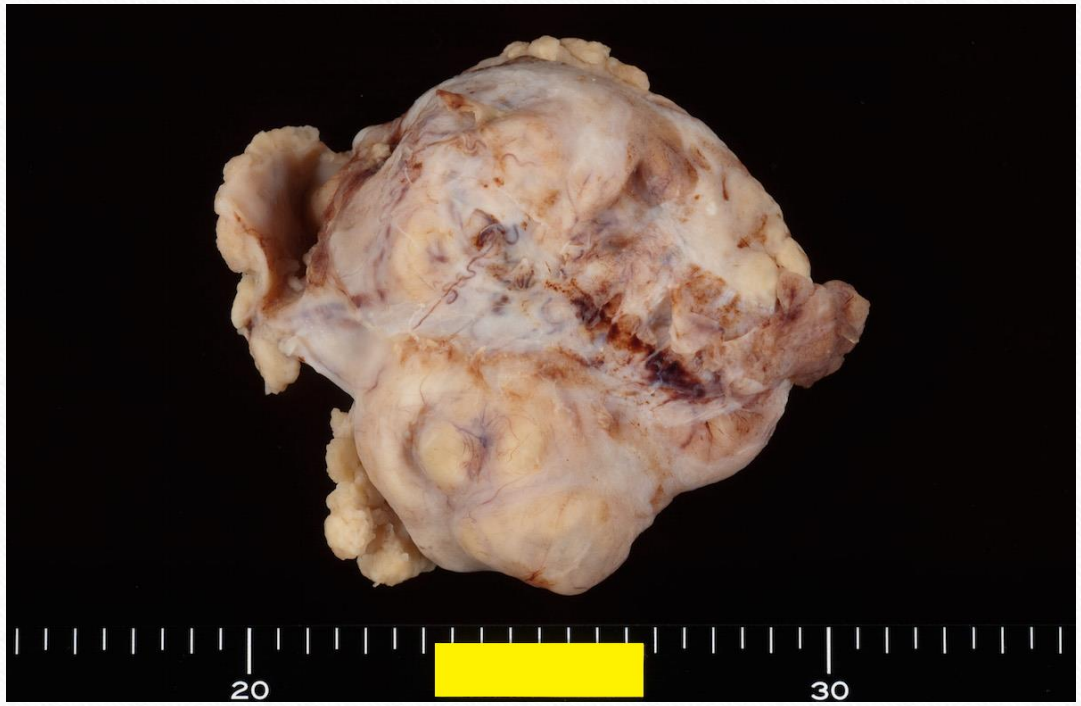
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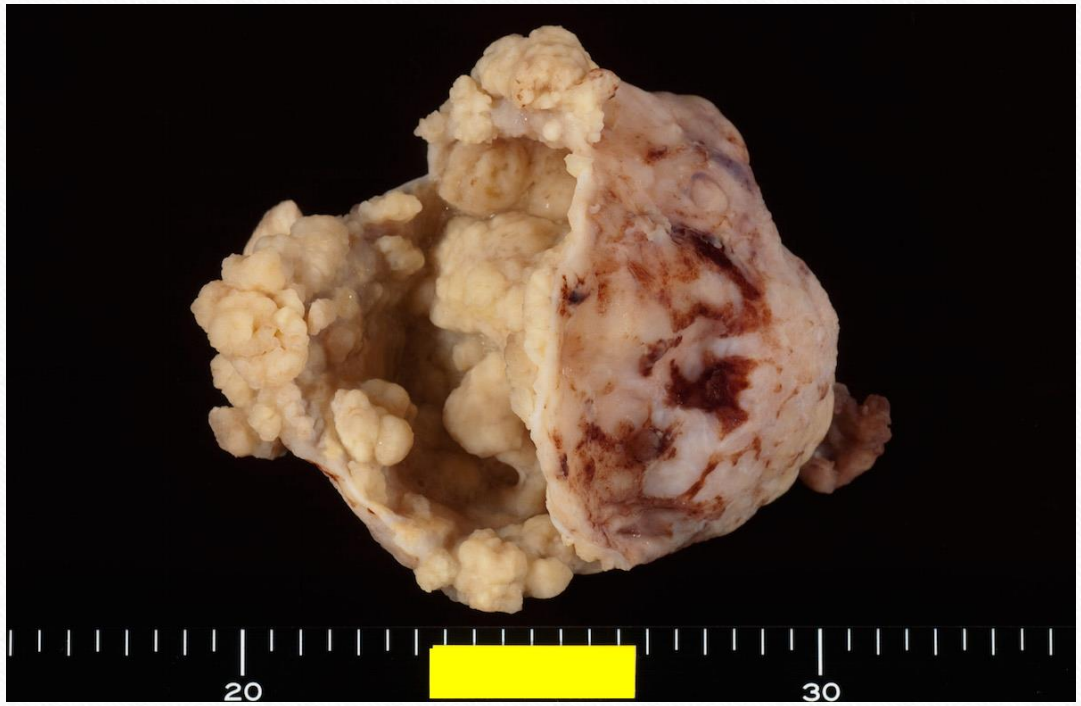
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