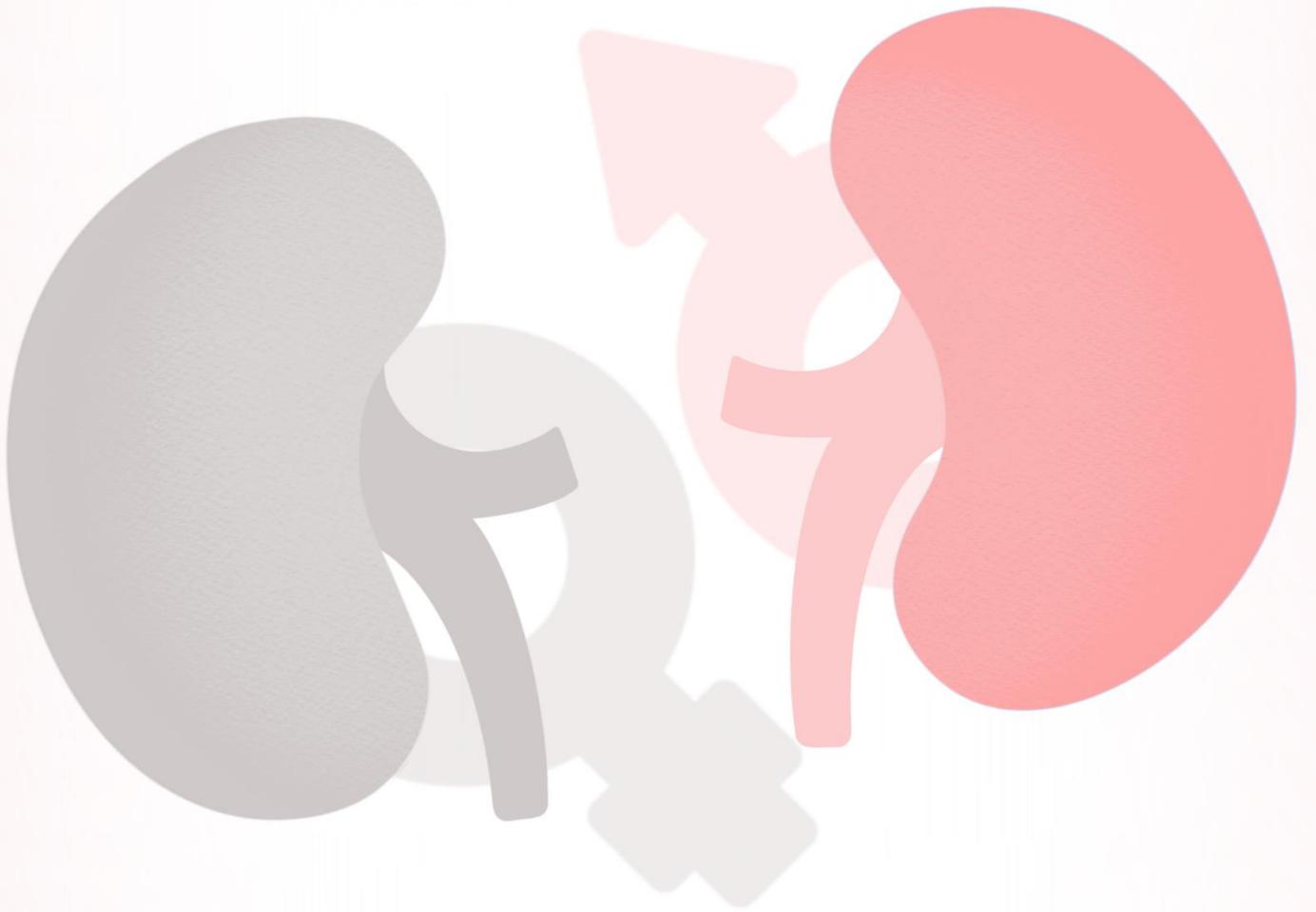


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11

Pathology



Sheet: Ovarian neoplastic diseases:

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Ovarian neoplastic diseases:

- 5th most common cancer in women.
- 5th leading cause of cancer death in women.

***Origins of primary ovarian tumors:** Each of these cell types gives rise to a variety of tumors.

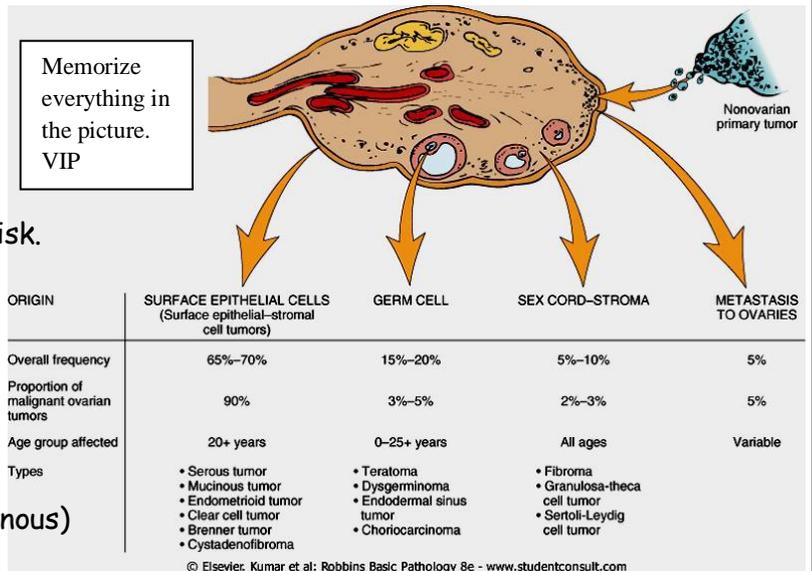
- 1-surface (coelomic) epithelium (most frequent)
- 2-germ cells (affects children and young adults)
- 3-sex cord/stromal cells.

familial cases: Only 5%-10%

- Risk factors: nulliparity and family history.
- Use of oral contraceptive pills may reduce risk.
- Mutations in **BRCA1&2** genes

Pathogenesis sporadic cases:

- **BRCA** mutations: 10% (rare)
- **p53** (50%)
- **HER2/NEU** over-expression (35%)
- **K-RAS** protein over-expression (30%) (mucinous)



1-surface (coelomic) epithelium. Serous, mucinous, endometrioid, clear cell, brenner

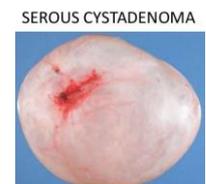
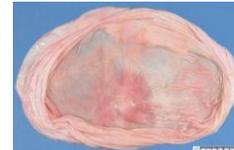
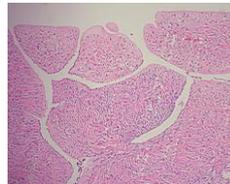
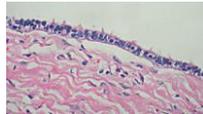
- All types include benign, borderline, and malignant tumors.

A-Serous

- the most frequent ovarian tumors.
- Include: 60% benign, 15% borderline, and 25% malignant.
- the most common malignant ovarian tumors (60%)
- Genetics:
- BRAF & K-RAS mutations → borderline & low-grade cancers.
- p53 & BRCA1 mutations → High-grade serous carcinomas.

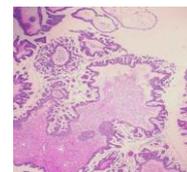
A1-Benign serous tumors:

- large cystic, (30 cm).
- May be bilateral.
- filled with a clear serous fluid.
- Thick **single layer** of columnar or cuboidal epithelium. Some cells are ciliated.
- **Psammoma bodies** (laminated calcified concretions) common in tips of papillae of **all** serous tumors



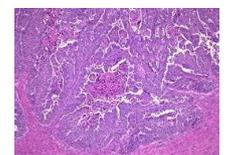
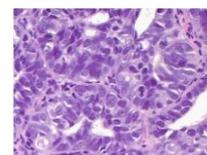
A2-Borderline serous tumors:

- more complex architecture papillary in histology so called papillary serous tumors.
- mild cytologic atypia.
- **no** stromal invasion.
- might be associated with peritoneal implants.
- Prognosis intermediate between benign and malignant types (survival with peritoneal metastases 75%)



A3-Malignant serous carcinoma:

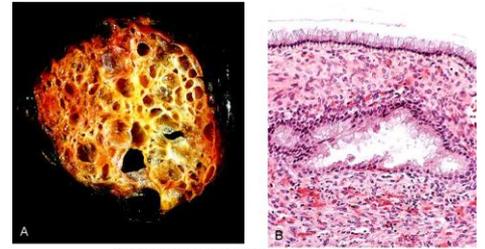
- Anaplasia of cells and invasion of the stroma.
- Has necrosis and mitosis.
- prognosis poor, depends on stage at the time of diagnosis.



B-Mucinous ovarian tumors

- mucin-secreting cells.
- Depending on the architectural complexity:
 - 80% benign; 10% borderline; 10% malignant (cystadenocarcinoma).
- Usually large (even if benign) and multilocular (cysts within the large cyst).
- no psammoma bodies.
- Stage is major determinant of prognosis.

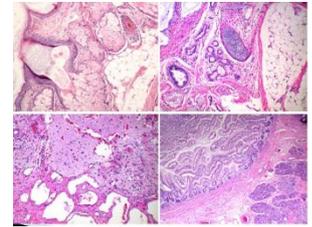
Histology: similar to GIT mucin producing cells (large bluish (due to mucin) cytoplasm)



2-Germ cell tumor

A-Benign (Mature) Cystic Teratomas:

- totipotential germ cells into mature tissues of all three germ cell layers
- Most discovered incidentally.
- 90% unilateral.
- Grossly: cyst filled with sebaceous secretion and hair; bone and cartilage; epithelium, or teeth. Because germ cells can differentiate to many tissues.
- 1% malignant transformation
- torsion (10% to 15% of cases)



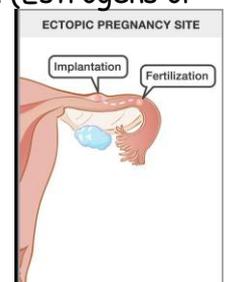
Clinical correlation of all ovarian tumors: appear when the case is advanced or very large.

- clinical presentation of all is similar:
 - pain, GI complaints (constipations, diarrhea, vomiting, feeling of satiety and fullness), urinary frequency; rarely torsion (twisting of massing pressing on vascular supply causing necrosis) producing severe abdominal pain mimicking an "acute abdomen."
 - Ascites (accumulation of fluid in peritoneal cavity) could be in benign tumors like fibromas but mostly related to malignant serous tumors.
 - Functioning ovarian tumors often come to attention because of hormonal production (Estrogens or androgens).

Pathology of the fallopian tubes:

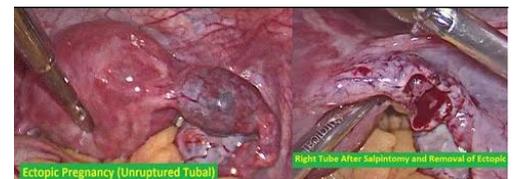
ectopic pregnancy: implantation of the fertilized ovum outside uterus, Incidence:

- 1%, 90% of them in fallopian tubes, other sites: ovaries, abdominal cavity
- Predisposing factors: tubal obstruction (50%) PID; tumors; endometriosis; IUCD.
- In 50%: no anatomic cause can be demonstrated.
- Early: development of the embryo and placental tissue Later: the placenta burrows through tubal wall causing intratubal hematoma (hematosalpinx) and intraperitoneal hemorrhage.
- Rupture: intense abdominal pain (acute abdomen), often followed by shock, surgical intervention is necessary.



Tubal malignancies (considered rare).

- most common histo. type is serous carcinoma.
- increased in women with BRCA mutations (In studies of prophylactic oophorectomies:10% -> occult foci of malignancy in fimbria).
- Because of access to peritoneal cavity, fallopian tube carcinomas frequently spread to omentum and peritoneal cavity at time of presentation (advanced).



Good luck