

OVARY AND FALLOPIAN TUBE

JANICE M. LAGE, MD

Basic Pathology: 695-700

- What is the most common pathologic condition to affect the fallopian tube? (p 613)
- What histologic feature characterizes the immature ovarian teratoma? (p 617)
- How is pseudomyxoma peritonei formed? (p617)
- What is the most common malignant germ cell tumor in women? (Handout)
- What tumor makes alphafetoprotein? (Handout)

FALLOPIAN TUBE: Little tubular structure that serves in transporting items to and from the abdominal cavity and uterus. Most common pathologic condition-infection and resultant scarring. Rarely, develops primary cancer...presents at a late stage due to few symptoms.

OVARY

Involved in infections processes like the fallopian tube (tubo-ovarian abscess, TOA). May be involved with endometriosis. Ovulation at regular intervals, follicles of various stages, corpus luteum, corpus albicans. Normal ovary up to 5 cm in diameter during reproductive years. Ovarian cyst -> 2cm in diameter. Often functional, resolve on their own.

Polycystic Ovaries (PCO): Bilateral ovarian disease resulting in numerous ovarian cysts, abnormal thickness of ovarian capsule, luteinization of ovarian stroma. Secondary to excessive production of estrogens and androgens (high LH, low FSH levels). Unclear as to why there is an increase in ovarian androgens in the first place. Results in clinical symptoms of:

hirsutism
oligomenorrhea
infertility
obesity, occasionally

Benign Ovarian Stromal tumors: Fibroma and thecoma

Teratomatous Ovarian Tumors:

Mature cystic teratoma (dermoid cyst): Benign tumor that arises parthenogenetically in the ovary and is composed of ectoderm, mesoderm, and endoderm. The ectodermal components predominate: skin, hair, sebaceous material commonly found. May have bones, teeth (often), lung, trachea, gi tract, liver, etc. All components mature. Involves younger women. Usually unilateral, 90%. Undergo malignant transformation in 1%.

Immature teratoma: Malignant tumor that tends to involve younger children and women, mean age 18 yrs. Are large tumors, may differentiate along any of the embryonic lines. Are characterized by immature neural tissue, called neuroepithelial rosettes. The more immature tissues present, the worse the prognosis. Spreads within abdomen, may mature into glial tissues.

Malignant Ovarian Tumors: Ovarian cancers cause more deaths than cancers of cervix and uterine corpus together. This is because they are more likely to present at a more advanced stage than uterine tumors. 90% of ovarian malignancies arise from the ovarian surface epithelium. The germ cell and sex cord-stromal tumors account for 10% of ovarian cancers. Risk of developing ovary cancer is decreased with oral contraceptive use and pregnancy (note both decrease the number of times a woman ovulates).

Familial ovarian cancer syndromes:

Li-Fraumeni: p53 tumor suppressor gene alterations: breast, ovary, and other cancers

Lynch syndrome II: ovary, endometrium and colon cancer

BRCA-1: familial ovarian cancer, breast cancer at younger age than nonfamilial cancers affecting breast and ovary

Surface epithelial tumors are derived from the multipotential (müllerian) coelomic epithelium which differentiate along many lines:

serous
mucinous
endometrioid
clear cell

To those with a fibrous stromal component are affixed the term -.....adenofibroma

To those with a cystic component are affixed the term - cyst.....

Thus, the last name of a cystic tumor with a stromal component is - cystadenofibroma

Come in 3 types: benign-no malignant transformation
 borderline (tumors of low malignant potential)-potential to recur
 and kill
 malignant-greater potential to recur and kill patient

Serous tumors: benign - 60%; they are bilateral in about 1/4 of cases, one layer of cells

borderline - 15%, multilayered cells, no stromal invasion
malignant - 25%, multilayered cells with stromal invasion

Overall, serous tumors are big players in ovarian cancer with the borderline and malignant serous tumors accounting for 60% of all ovarian cancers.

Mucinous tumors: benign - 80%
 borderline - 10%
 malignant - 10%

Less frequently bilateral. Histologically, look like endocervix or colon. Rupture of these tumors is bad, esp the borderline and malignant ones, causing release of mucin-producing cells into the peritoneal cavity resulting in **pseudomyxoma peritonei**, which eventually strangles intestines and is often fatal following protracted unremarkable period of time. A primary appendiceal mucinous tumor can do the same thing. Are we still awake?

Endometrioid tumors: are usually malignant, are bilateral in 30% of cases, in 15-30% there is an endometrial cancer present as well.

Dysgerminoma (like seminoma in males): Most common malignant germ cell tumor in women. Tumor is made up of primordial germ cells. Most patients are between 20 and 30 years old. Human chorionic gonadotropin (hCG) may be elevated due to trophoblastic elements. Treated with surgery and radiation.

Granulosa cell tumor: Ovarian sex cord- stromal tumor derived from granulosa cells of a follicle. Forms Call-Exner bodies.

Endodermal sinus tumor (yolk sac tumor):

Second most common malignant germ cell tumor after dysgerminoma. May be a component of a mixed germ cell tumor. It is one of the most common malignant ovarian neoplasms of childhood, adolescence and early adult life. Tumor makes alphafetoprotein (AFP). Complete cure achieve in over 80% of patients with conservative surgery and combination chemotherapy. Schiller-Duval body, pathologic feature.