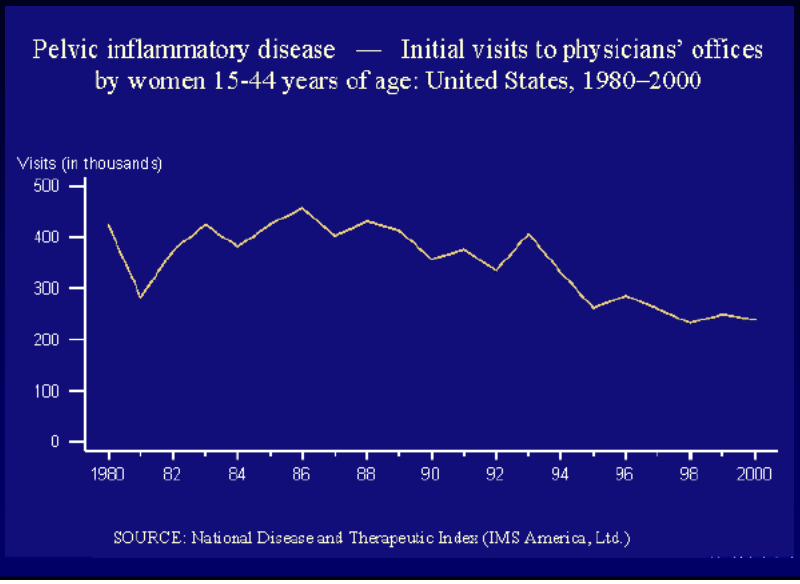
Fallopian Tube

Most common diseases:

- Inflammation - *as part of pelvic inflammatory disease*
- Ectopic pregnancy
- Endometriosis
- Primary tumors - *quite rare*

Pelvic Inflammatory Disease



Fallopian Tube

Most common causes of PID

Chlamydia trachomatis

Neisseria gonorrhea

Anaerobes - *bacteroides*

Mycoplasma

Fallopian Tube

Entry of organisms:

Organisms transit from cervix through uterus to tubes

Most commonly occurs during menses

- *loss of mucus plug at cervical os*
- *backflow of blood into the tubes from uterus*

Pelvic Infammatory Disease

Symptoms:

- *Lower abdominal pain and abnormal vaginal discharge*
- Can produce only minor symptoms - *esp. when caused by chlamydia*
- Uncommonly, fever, RUQ pain, irregular bleeding

Fallopian Tube

Possible outcomes of PID:

- Tuboovarian abcesses
- Infertility
- Ectopic pregnancy
- Hydrosalpinx

Ectopic Pregnancy

General features:

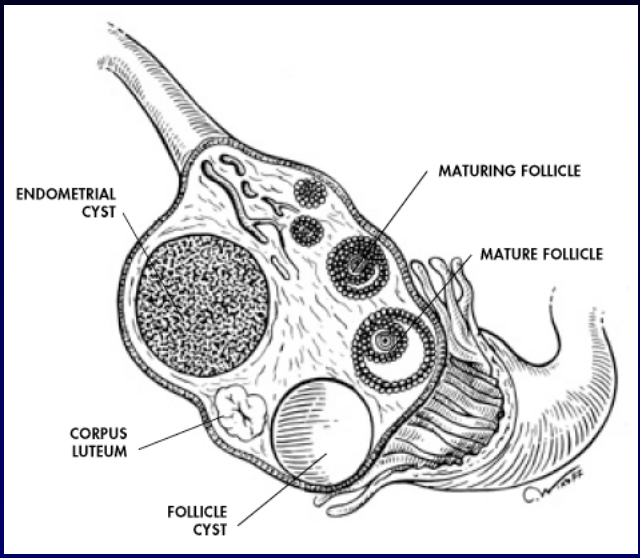
- *Pregnancy in which implantation is somewhere other than endometrium*
- 95% are in the fallopian tube
- Risk factors: PID, previous tubal surgery, IVF, IUDs, Progestin contraception

Ovaries

Most common diseases:

- Infrequently primary site of significant disease - *except neoplasms*
- Non-neoplastic cysts common, but rarely significant
- Primary inflammations are rarities

Non-neoplastic Ovarian Cysts



Ovaries

Follicle and luteal cysts:

- Extremely common
- Result from *unruptured graafian follicles* or ruptured follicles that reseal
- Often multiple and under serosal surface
- Usually small (1-2 cm) - *rarely 2-5 cm*

Ovaries

Polycystic ovarian syndrome (PCO):

Multiple cystic follicles and follicle cysts

Hormonal abnormalities - excessive androgen, high LH, low FSH

Stein-Leventhal syndrome - PCO, oligo-menorrhea, persistent anovulation, obesity (40%), hirsutism (50%)

Polycystic Ovaries

Pathology:

Ovaries are twice normal size

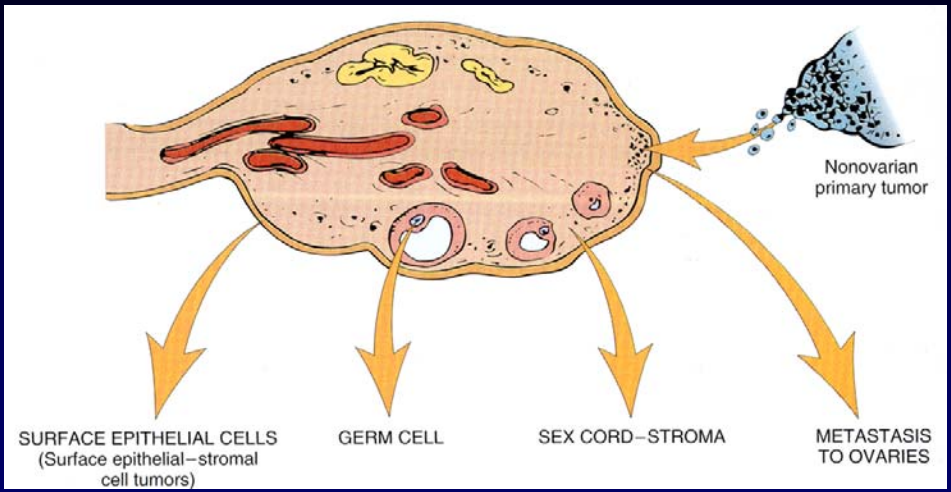
Grey white - smooth surface with cysts

Thicken outer tunica - *cortical fibrosis*

Cysts have granulosa layer and *hyperplastic luteinized theca interna*

Absence of corpora lutea

Ovarian Neoplasms



Ovarian Neoplasms

	Surface Epithelium	*Germ Cell*	*Sex Cord - Stroma*	*Mets to ovary*
Frequency	65 - 70%	15 - 20%	5 - 10%	5%
% of CA	90%	3 - 5%	2 - 3%	5%
Age group	20+ yrs	0 -25+ yrs	All ages	Variable

Surface Epithelial Neoplasms

General considerations:

- Can be benign, of uncertain malignant potential *("borderline")*, or malignant
- Benign frequently mixed with stromal components *(adenofibroma)*
- Usually cystic *(cystadenoma or cystadenocarcinoma)* but can be solid

Surface Epithelial Neoplasms

Histologic types:

- Serous tumors - *fallopian tube*
- Mucinous tumors - *endocervical / intestinal*
- Endometrioid tumors - *endometrium*
- Clear cell tumors - *endometrium*
- Transitional cell tumors (Brenner tumors)

Serous Tumors

General considerations:

Characteristic feature - *ciliated cells*

Most frequent ovarian tumors - *30% of all*

60% benign, 15% "borderline, 25% malignant

60% of malignant ovarian tumors

Serous Neoplasms

	Benign	*"Borderline"*	*Malignant*
Epithelial only			
solid	Adenoma	Serous tumor uncertain malignant potential	Papillary serous carcinoma
cystic	Cystadenoma		
Epithelial / stromal			
solid	Adenofibroma		Carcino-sarcoma
cystic	Cystadenofibroma		

Serous Tumors

Low malignant potential:

- Also known as "borderline" or "LMP"
- Prognosis determined by whether peritoneal implants present and type
- 100% 5 yr survival if confined to ovary
- *If penetrated capsule 80% 10 yr survival*

Serous Tumors

Low malignant potential:

- Show epithelial proliferation - budding of epithelium - *detached cell clusters*
- Mitotically active - *but not florid*
- Nuclear atypia
- *Absence of destructive stromal invasion*

Serous Tumors

Papillary serous carcinoma:

Significant nuclear atypia

Are usually papillary - unless poorly diff

Demonstrate frank stromal invasion

Psammoma bodies are typically seen

Surface Epithelial Neoplasms

Histologic types:

Serous tumors - *fallopian tube*

Mucinous tumors - *endocervical / intestinal*

Endometrioid tumors - *endometrium*

Clear cell tumors - *endometrium*

Transitional cell tumors (Brenner tumors)

Mucinous Tumors

General considerations:

- Characteristic feature - *mucinous cells, can be intestinal or endocervical type*
- Much less common than serous tumors
- Can be associated with tumors at other sites - appendix and cervix
- Must rule out metastatic tumors

Mucinous Tumors

Carcinoma:

- 10% of ovarian carcinomas
- *Important to rule-out metastatic GI cancers*
- May be show either endocervical or intestinal type differentiation - often both or "in between"

Endometrioid Tumors

Carcinoma:

10-20% of ovarian carcinomas

Closely resemble endometrial carcinomas

Often arise in association with endometriosis

40-50% have squamous differentiation

Clear Cell Tumors

General considerations:

Benign and borderline quite uncommon;

< benign tumors

are exceptional

< 1% of borderline tumors

Account for 6% ovarian carcinomas

25% of carcinomas have pelvic endometriosis

Grading of Ovarian Common Epithelial Carcinomas
Shimuz et al.

Architecture	
Glandular	**1**
Papillary	**2**
Solid	**3**
Mitotic Activity	
< 10 / 10 HPF	**1**
10-24 / 10 HPF	**2**
≥ 25 / 10 HPV	**3**
Nuclear Features	
Uniform, no nucleoli	**1**
Intermediate variation, small nucleoli	**2**
Highly variable, bizarre cells, nucleoli	**3**

GRADE	
Grade 1	**3 - 5 pts**
Grade 2	**6 - 7 pts**
Grade 3	**8 - 9 pts**

GP06-5892

Germ Cell Tumors

General considerations:

Neoplasms of germ cell origin

About 30% of ovarian neoplasms

Both malignant and benign forms

Usually occur in children / young women

Over 95% are *benign cystic teratomas*

Germ Cell Tumors

Three general groups:

- Immature germ cell tumors
- Mature germ cell tumors (BCT)
- Benign cystic teratoma giving rise to malignant neoplasm

Germ Cell Tumors

Immature germ cell tumors:

- *Immature teratoma* (immature somatic tissues)
- *Endodermal sinus tumor* (extraembryonic differentiation)
- *Dysgerminoma* (immature germ cells)
- Embryonal carcinoma (early embryonic development)

Benign Cystic Teratoma

Clinical features:

- Most common benign tumor in women of reproductive age
- Most common tumor in pregnancy
- 5 times more likely in children than a malignant germ cell tumor
- 2/3rds asymptomatic when diagnosed

Benign Cystic Teratoma

Key features:

- Ectodermal differentiation of totipotential germ cells
- Usually a cystic structure lined by epidermis with adnexal structures
- All elements are mature
- Ovarian masses in young women

Sex cord / Stromal Tumors

General considerations:

Tumors composed of *granulosa cells, theca cells, Sertoli cells, Leydig cells, and fibroblasts of stromal origin*

About 8% of ovarian neoplasms

Sex Cord / Stromal Neoplasms

Histologic types:

Granulosa cell tumors

Sertoli - Leydig cell tumors

Fibroma / thecomas

Unclassified forms

Granulosa Cell Tumors

General considerations:

- Two types - *adult and juvenile forms*
- Unilateral 95% of the time
- Average age mid-50's for adult form
- Slow growing - act in a benign fashion
- Often estrogenic - *endometrial cancer*

Fibroma / Thecomas

General considerations:

- Benign tumors derived from ovarian stromal fibroblasts
- Can differentiate towards theca interna - thecoma *(usually postmenopausal)*
- If differentiate towards stroma - fibroma *(avg age 48 yrs)*