Tumors of Ovary

★ **Surface Epithelial tumors** :- 90% (>20 years)

- risk factor → ① nulliparity
  ② family history
  ③ mutation → BRCA 1 + BRCA2 → (5-10%) famelial & (8-10%) sporadic

1 Serous Tumor :-

- most common ovarian tumors
- most common malignant ovarian tumors 60%
- mutations → ① K-RAS → borderline + low grade cancer
  ② P53 + BRCA 1 → high grade cancer

* Psammoma bodies : calcified concentration in All serous tumors

1-SEROUS TUMORS

2 decades
Mostly Bilateral
Psammoma bodies

	benign	Borderline	Malignant
	Benign serous cyst /adenoma (bilateral cystic)	- **borderline** serous tumors	- **serous** carcinoma
Gross	Large & cystic (up to 30 cm), filled with a **clear serous fluid**	**complex architecture.** (**Protruding papillary projections**)	▪papillary formations more complex ▪tumor has **invaded the serosal surface**
microscope	**Single layer** of **columnar epithelium**. Some cells are ciliated.	▪**complex architecture.** ▪**mild** cytologic **atypia**, but no stromal invasion.	▪complex papillary formations (multilayered) ▪markedly cytological atypia ▪invade the stroma

2 Mucinous Tumors :-

- most common is benign
- mucin secreating cells
- benign 80% , borderline 10% , malignant 10%
- mutations → K-RAS
- gross : Larger , multicystic , filled with mucinous fluid
- malignant features : Solid area of growth , cytologic Atypia, stromal invasion

3 Endometrioid :-

- usually **malignant**
- associated with **Endometriosis**
- (15–30%) have **Endometrial Carcinoma** in uterus.

4 Brenner :-

- mostly **Benign**
- **transitional type epithelial**

5 Clear Cell Tumor

★ Germ Cell Tumors :- (3–5%) (0–25+) years

☐ Teratoma :

- most common
- 90% unilateral
- Mature cystic teratoma → benign ⇝ from All 3 germ cell layers
- Immature teratoma → malignant ⇝ minimally differentiated
- gross : **Cyst**, filled with **sebaceous secretion, hair, bone, cartilage, teeth, epithelium.**

* Teratoma cysts lined by Epidermis (squamous epithelium) → Dermoid cyst

* Teratoma cysts compored of Mature Thyroid Tissue → Struma Ovarii

* Teratoma with Carcinoid Syndrome → Ovarian Carcinoid

★ Sex Cord Tumors :- (2-3%) (All ages)

- hormone releasing tumors
  - clinically → sign & symptoms ⇝ well advanced tumors
    - pain, GI complaints, urinary frequency, torsin → sever abdominal pain
  - marker : ↑↑ protein CA-125

amenorrhea,/ hirsutism,/ infertility/bleeding

Neoplasm	Peak Incidence	Usual Location	Morphologic Features	Behavior
Sex Cord Tumors				
Granulosa-theca cell Coffee-bean nuclei call exner bodies	Most postmenopausal, but may occur at any age	Unilateral	May be tiny or large, gray to yellow (with cystic spaces) Composed of mixture of cuboidal granulosa cells in cords, sheets, or strands and spindled or plump lipid-laden theca cells Granulosa elements may recapitulate ovarian follicle as Call-Exner bodies	يفرز May elaborate large amounts of estrogen (from thecal elements) and so may promote endometrial or breast carcinoma Granulosa element may be malignant (5% to 25%) HIGH recurrence after 10—20 y Need long follow up by estrogen level
Thecoma-fibroma	Any age	Unilateral	Solid gray fibrous cells to yellow (lipid-laden) plump thecal cells	Most hormonally inactive A few elaborate estrogens About 40%, for obscure reasons, produce ascites and hydrothorax (Meigs syndrome) → ① ovarian tumors (thecoma / fibroma) ② Ascites ③ Hydrothorax Rarely malignant
Sertoli-Leydig cell	All ages	Unilateral	Usually small, gray to yellow-brown, and solid Recapitulates development of testis with tubules or cords and plump pink Sertoli cells	Many masculinizing or defeminizing Rarely malignant

★ Metastases to Ovary :- (5%) variable age

- old age
- mostly bilateral
- size < 10 cm
- multible small nodules on surface
- Intra-abdominal / Hematogenous spread
- microscope → similar to primary tumor → GIT → Krukenberg Tumors
  - breast
  - lung

★★ Gestational Trophoblastic Disease :-

- abnormal proliferation of fetal trophoblast cells
- ↑↑↑ hCG
- Hydatidiform Mole → Abnormal fertilization with excess of paternal genetic material
  - Complet / partial

Feature	Complete Mole (empty egg + diploid sperm)	Partial Mole (normal egg + diploid sperm)
Karyotype	46,XX (46,XY) diploid Karyotype (only paternal)	Triploid (69,XXY) (dominance of paternal)
Villous edema	All villi	Some villi
Trophoblast proliferation	Diffuse; circumferential	Focal; slight
Atypia	Often present	Absent
Serum hCG	Elevated	Less elevated
hCG in tissue	++++	+
Behavior	2% choriocarcinoma	Rare choriocarcinoma