

- 5th most common cancer in women
- 5th leading cause of cancer death in women
- High mortality rate due to Late presentation
- mostly affect **Menopausal women**

- Pathogenesis : * **Familial cases** * **Sporadic cases**

- risk factor →
 - ① nulliparity
 - ② family history
 - ③ mutation → 10% → **BRCA 1** + **BRCA 2** + **HNPCC**
chromosome 17 chromosome 13 Lynch syndrome

- predisposing factor →
 - ① repeated ovulation (early menarche & late menopause)
 - ② Infertility treatment
 - ③ Poly Cystic Ovarian Syndrome
 - ④ Unopposed Estrogen therapy

- protective factor →
 - ① Chronic AnOvulation
 - ② Multiparity
 - ③ Breast feeding
 - ④ Use of OCP

- ## - Screening :-
- ① Routine Pelvic Examination
 - ② US
 - ③ Tumor Markers → **CA-125**

- Signs & Symptoms :-

- ① Bloating, abdominal distention, discomfort
- ② Tiredness
- ③ Pressure effect on the bladder & rectum
- ④ Vaginal bleeding
- ⑤ Indigestion & Acid reflux
- ⑥ Constipation
- ⑦ Weight loss
- ⑧ Early Satiety
- ⑨ Shortness of breath
- ⑩ Ascites

- Clinical Presentation :-

* Early disease : usually **Asymptomatic**

- symptoms :- ① Dyspareunia ② Constipation ③ Urinary Frequency
④ Pelvic Fullness ⑤ Large → abdominal mass, pain from torsion or rupture

* Late disease : usually **Metastatic**

- symptoms :- ① Vague Abdominal Pain ② Abdominal swelling (mass, ascites)
③ Uterine Bleeding ④ Early Satiety ⑤ Anorexia ⑥ dyspepsia
⑦ Indigestion ⑧ Constipation ⑨ Nausea ⑩ Vomiting

* Advanced disease : usually with **Complications**

- symptoms :- ① Intestinal Obstruction ② Pleural Effusion ③ Respiratory Distress
④ Supra-clavicular or Inguinal Lymphadenopathy
⑤ Cachexia = Extreme Weight Loss

- Physical Examination :-

- Advanced disease → ① ovarian or pelvic or abdominal Mass
② Ascites ③ Pleural Effusion
④ Intestinal Obstruction

- Investigations :- ① CBC ② Serum Electrolytes ③ LFT ④ KFT
⑤ hCG ⑥ AFP ⑦ LDH ⑧ CA-125

- Radiographic Evaluation :- for Metastasis

- ① CT ② MRI ③ chest x-ray ④ Barium enema ⑤ Mammogram

- Pattern of Spread :- ① Direct extension ② Transcoelomic
③ Lymphatic ④ Hematogenous

- Staging :- FIGO staging

- 1 growth limited to the Ovaries
- 2 Extension to other Pelvic structures
- 3 Extension to Abdominal cavity (Lymph node involvement)
- 4 Distant Metastases

Procedure :-

- ① Laparotomy
- ② ascites or peritoneal washing Sampled
- ③ completed abdominal exploration
- ④ Total Hysterectomy + Bilateral Salpingectomy
- ⑤ Intra-Colic omentectomy
- ⑥ Biopsy of peritoneal implants
- ⑦ Biopsy of Pelvic & Para-Aortic lymph nodes
- ⑧ Cyto-reductive Surgery (to remove all visible tumor tissue)
- ⑨ Histology done to confirm tumor & type
- ⑩ Complete Staging (only after cytology/histology)

- Management :- Surgery

- surgical staging
- cytoreductive surgery
- adjuvant Chemotherapy

- Prognosis :-

related to → ① response to Chemotherapy

② Differentiation of tumor

③ Germ cell Better than Epithelial

④ Staging (epithelial → 5 year survival) → Stage 1 (75-93%)

Stage 2 (65-74%)

Stage 3 (23-41%)

Stage 4 (11%)

- Types :-

★ Surface Epithelial tumors :- 90% malignant (60s) most frequent

★ Germ Cell Tumors :- (3-5%) malignant (20s-30s) Better prognosis

★ Sex Cord Tumors :- (1-2%)

★ Neoplasm Metastatic to the Ovary :- (25%) most bilateral

★ **Surface Epithelial Tumors** :- (6th decade) ^{60%} of all ovarian neoplasms ^{>90%} of malignant ovarian tumors **CA-125**

1 Serous Tumor

4 Clear Cell Tumor

2 Mucinous Tumors

5 Transitional cell Tumors

3 Endometrioid

6 Undifferentiated

1 Serous Tumor

- **most common** (35-50%) of all epithelial tumors
- **Bilateral** (40-60%)
- (85%) with Extra ovarian spread at diagnosis
- (>50%) exceeds 15 cm, solid areas, hemorrhage, cyst wall invasion
- mostly **Poorly differentiated**

2 Mucinous Tumors

- **second most common** (10-20%) of all epithelial tumors
- **Unilateral** \rightsquigarrow Bilateral (<10%)
- **Large size** (16-17 cm in average)
- **mucin secreting cells**
- gross : **larger**, **multilocular**, **filled with mucinous fluid**

3 Clear Cell Tumor (Mesonephroid Carcinoma)

- (5%) of all epithelial tumors
- **Small size**
- **Aggressive**, Cystic & solid
- **paraneoplastic syndrome** \rightarrow hypercalcemia, hyperpyrexia



Germ Cell Tumors :-

(2nd & 3rd decade)

Better Prognosis

AFP
HCG
LDH

1 Dysgerminoma

2 Endometrial Sinus Tumor (Yolk Sac Tumor)

3 Immature Teratoma : (Malignant mature cystic teratoma)

1 Dysgerminoma :

- young females
- (30-40%) of germ cell tumors
- Unilateral (85-90%)
- Solid

2 Endometrial Sinus Tumor : (Yolk Sac Tumor)

- second most common (20%)
- Unilateral \rightsquigarrow Bilateral (<5%)
- produces AFP
- present with Acute Abdomen

3 Immature Teratoma : (Malignant mature cystic teratoma)

- (20%) of germ cell tumors
- Unilateral \rightsquigarrow Bilateral (<5%)
- produces AFP
- totipotential germ cells \rightarrow mature tissues \rightsquigarrow from All 3 germ cell layers
- gross : Cyst, filled with sebaceous secretion, hair, bone, cartilage, teeth, epithelium.

★ Sex Cord Stromal :- (1-2%)

- (1-2%) of all ovarian neoplasm
- Most common malignant tumor of sex cord stromal
- associated with **Hyper-Estrogenism**
- cause: **precocious puberty**, **adenomatous hyperplasia**, **postmenopausal vaginal bleeding**

1 Ovarian Thecoma

2 Ovarian Fibroma

3 Sertoli-Stromal Cell Tumors

1 Ovarian Thecoma :

- associated with **Hyper-Estrogenism**
- **Benign**

2 Ovarian Fibroma :

- associated with **Meig's Syndrome**
- **Benign**

3 Sertoli-Stromal Cell Tumors :

- Rare
- 3rd decade
- consist of **Testicular Structures**

★ Neoplasm Metastatic to the Ovary :-

- (25%) of all ovarian neoplasm
- **Bilateral** \rightsquigarrow **Unilateral (25%)**
- common primary cancers: **Breast (40%)**, **Endometrium**, **Stomach**, **Colon**