Epithelial Ovarian Cancer

Home sweat home. This is the place to find happiness. If one doesn't find it here, one doesn't find it elsewhere.

I've learned....

- That life is like a roll of toilet paper. The closer it gets to the end, The faster it goes.

I've learned....

- That we should be glad God doesn't give us everything we ask for.

The beautiful thing about learning is that no one can take it away from you.

General Facts/1

- Accounts for 4% of all female cancers.
- Ranked the fifth most common in women; lung, breast, colon, uterus and ovary.
- 35% of cancers of the female genital tract.
- The fourth most common cause of death from malignancy.

General Facts/2

- A women's risk at birth of having ovarian cancer is nearly 1.5%.
- A women's risk of dying from ovarian cancer is almost 1%.

Classification

- About 90% are derived from cells of the coelomic epithelium.
- Arises from single layer of the cells that cover the ovary.

Malignant Lesions of the Ovaries

** Primary lesions arising from normal structures within the ovary.

** Secondary lesions from cancers arising elsewhere in the body.

Types

** Epithelial Ovarian Tumors

** Germ cell tumors, which arise from the eggs,

** Ovarian stromal tumors, which arise from supportive tissue.

Molecular Pathways

- **Type I tumors**; arise from ovarian surface epithelium and mullerian inclusions.
- relatively slow,
- multistep pathway
- accounts for early stage cancers as low grade-serous tumors
- **Type II tumors**; the more common high grade serous-tumors.
- develop rapidly,
- advanced stage in presentation.

Pathology of EOT

Represents 70% of all ovarian cancers

- 75% Serous type.
- 10% Mucinous type.
- 10% Endometroid.
- 05% Clear cell, Brenner, Undifferentiated

Each major type resembles epithelium in the lower genital tract. (→)

- 75% are serous. (→resembles glandular epithelium of the fallopian tube.)
- 10% are Endometroid. (→resembles proliferative endometrium.)
- 05% are mucinous. (→resembles endocervical glands.)
- 05% are clear cell. (→resembles secretory or gestational endometrium.)
- Transitional (Brenner), undifferentiated, others.

There is growing evidence to suggest that many, if not most, high grade serous carcinomas of the ovary arise from fimbrial end of fallopian tube rather than from the ovary.

Clinical Features

- The peak incidence is 50-60% years.
- Approximately 30% of ovarian neoplasm's in postmenopausal women are malignant.
- Approximately 05% of ovarian neoplasm's in premenopausal women are malignant.

Etiology

- √ Associated with low parity and infertility;
- √ Early menarche and late menopause
- √ BMI, height
- × Fertility drugs
- √ The highest risk is due to infertility, independent of fertility drug use.
- √ Estrogen replacement therapy.
- × Oral Contraceptive Pills

Symptoms

- Vague nonspecific; pelvic, abdominal, and menstrual symptoms.
- Ovarian Cancer Symptom Index:
  - pelvic or abdominal pain,
  - urinary frequency or urgency,
  - increased abdominal size,
  - bloating,
  - difficulty eating or feeling full.

Physical Examination

Findings suggestive of epithelial ovarian cancer include:

- Adnexal mass
- Abdominal ascites
- A mass in the mid to left upper abdomen, which may represent an omental cake
- Pleural effusion
- Groin or supraclavicular lymphadenopathy

Signs

- √ The most important sign is the presence of a pelvic mass on physical examination
- √ Upper abdominal mass, ascites

Diagnosis

- √ **Requires an exploratory laparotomy**
- √ **Ultrasound sonography; 'transvaginal have somewhat a better resolution**
- √ Adnexal mass with areas of complexity,
- √ Multiple echogenic pattern,
- √ Dense, multiple pattern,
- √ Size of the lesion (??)
- **CT scan, MRI, PET scans.**

Work Up

√ Blood tests,

√ Chest X-Ray,

√ Tumor Markers; CA125, HE4, CEA, CA19.9, ..

√ Bone Scan

√ **Risk of Malignancy Index by Jacobs in 1990; Incorporated the menopausal status, ultrasound score, and the serum level of CA 125.**

- Human epididymis protein 4 (HE4) measurements in serum have been proposed for improving the specificity of laboratory identification of ovarian cancer.
- HE4 measurement seems to be superior to CA-125 in terms of diagnostic performance for identification of OC in women with suspected gynaecological disease

Spread

- √ Transcoelomic,
- √ Lymphatic,
- √ Hematogenous

Prognostic Factors

- √ Pathologic features; * Stage, * Histologic type,

  With the exception of clear cell carcinoma (worst prognosis)

- √ Biologic Factors; patients with diploid tumors have a significantly longer median survival than those with aneuploid tumors.

- √ Clinical Factors;

  * The extent of residual disease, * The volume of ascites, * The patient age, * And performance status.

Staging

Stage I:

Tumor is confined to the ovary/ ovaries or fallopian tube(s);

- *Stage IA:*

  - Only one ovary or fallopian tube is affected by the tumor, the ovary capsule is intact.
  - No tumor is detected on the surface of the ovary or fallopian tube,
  - Malignant cells are not detected in ascites or peritoneal washings.

- *Stage IB:*

  - Both ovaries or fallopian tubes are affected by the tumor, the ovary capsule is intact,
  - No tumor is detected on the surface of the ovaries or fallopian tube,
  - Malignant cells are not detected in ascites or peritoneal washings.

- *Stage IC:*
  - The tumor is limited to one or both ovaries or fallopian tubes, with any of the following:
  - Surgical spill,
  - The ovary capsule is ruptured before surgery,
  - The tumor is detected on the ovary or fallopian tube surface,
  - Malignant cells are detected in the ascites or peritoneal washings.

Stage II:

Tumor involves one or both ovaries or fallopian tubes with pelvic extension (below pelvic brim) or primary peritoneal cancer

- *Stage IIA:*

  The tumor has extended and/or implanted into the uterus and/or the fallopian tubes and/or ovaries

- *Stage IIB:*

  The tumor has extended to another organ in the pelvis

Stage III

Stage III:

The tumor involves one or both ovaries or fallopian tubes, or primary peritoneal cancer, with confirmed (cytologically or histologically) spread to the peritoneal surfaces involving both pelvic and abdominal peritoneum and/or metastasis to the retroperitoneal lymph nodes.

Stage III

- *Stage IIIA 1:*

  Positive retroperitoneal lymph nodes only (cytologically or histologically proven)
  - Metastasis up to 10mm in greatest dimension
  - Metastasis more than 10mm in greatest dimension

* *Stage IIIA 2:*

Microscopic extrapelvic peritoneal involvement with or without positive retroperitoneal lymph nodes

- *Stage IIIB:*

  Microscopic peritoneal metastasis beyond the pelvis 2 cm in greatest dimension, with or without metastasis to the retro-peritoneal lymph nodes.

- *Stage IIIC:*

  Microscopic peritoneal metastasis beyond the pelvis 2 cm in greatest dimension, with or without metastasis to the retro-peritoneal lymph nodes (includes extension of tumor to capsule of liver and spleen without parenchymal involvement of either organ)

Stage IV

Stage IV:

Distant metastasis beyond the peritoneal cavity (including parenchymal liver/splenic metastases and extra-abdominal metastases

- *Stage IV A:*

  Pleural effusion with positive cytology.

- *Stage IV B:*

  Parenchymal metastases and metastases to extra-abdominal organs (including inguinal lymph nodes and lymph nodes outside of the abdominal cavity)

* In order to evaluate the prognostic impact of the different criteria for allotting cases to stage IC or IIC, knowing if rupture of the capsule was spontaneous or caused by the surgeon is of value. It is valuable to know that the source of malignant cells detected was peritoneal washings or ascites.

Management/ Prognostic Factors

Low Risk Group

- Low-grade
- Non-clear cell type
- Intact capsule
- No surface excrescences
- No ascites
- Negative washing
- Unruptured or intraoperative rupture
- No dense adherence
- Diploid tumor

Management/ Prognostic Factors

- high-grade
- clear cell type
- Tumor growth through the capsule
- surface excrescences
- ascites
- positive washing
- preoperative rupture
- dense adherence
- aneuploid tumor

Treatment

Treatment of ovarian cancer is undertaken after consideration of many factors:

- ** **The extent of disease spread,**
- ** **Symptoms,**
- ** **Patients' wishes.**
- ** **Fitness of the patient to undergo treatment.**

Management

- √ Surgery:

  Early Stage Ovarian Cancer → Surgery.
- √ Borderline Tumors → Surgical resection of the tumor.
- √ Fertility Preservation → may be applied in stage IA-IC "**Fertility Sparing Surgery"**
- √ Advanced Stage Ovarian Cancer → Debulking or Cytoreductive Surgery; Optimal versus suboptimal

Management

- Early Stage;
- Low Risk Early Stage → No adjuvant chemotherapy
- High- Risk Early Stage → adjuvant chemotherapy; 3-6 cycles
- Advanced Stage; Systemic chemotherapy
- Neoadjuvant Chemotherapy

Management

√ Second-Look Operations; laparotomy versus laparoscopy.

Management

Radiation has not been widely accepted as a routine treatment modality in the initial treatment of patients with EOC, despite reports of efficacy for higher-risk stage I and II disease and in stage III disease where small-volume residual disease is present after surgery.

Management

- √ Tumor Markers.
- √ Survival
- Stage IA 90%
- Stage IB 85%
- Stage IC 80%
- Stage II 70%
- Stage III 40%
- Stage IV 20%

Management

√ Cause of Death

Treatment Assessment

* Tumor Markers; CA 125, HE4.
* Radiological Assessment;
    * CT scan,
    * PET,
    * MRI
* Second-Look Laparotomy vs Laparoscopy

By all means marry. If you get a good partner, you'll be happy. If you get a bad one, you'll become a philosopher.

Socrates

The secret of being successful and winner all the time, is the distinguished gained skills which irritate others and keeping them hangover

Kamil Fram