Cancer cervix

Predisposing Factors:

Age (45+10 years)
Marriage and parity (It is related to the practice of coitus than childbearing.)
Race
Social and economic factor
Coitus (It is accepted that spermatozoa are themselves carcinogenic to cervical cells Cervical irritation and infections (Herpes virus type II, operates like spermatozoa)
Human papilloma virus:

Pre-invasive lesions:

1. Squamous Metaplasia: It is a benign condition, which is extremely common especially in parous woman. There are no clinical symptoms or signs.

Etiology:
Hormonal imbalance: increased progesterone.
Local irritation: e.g. infections.
Alteration of the pH of vagina.

Dysplasia: Disordered growth or development i.e. restless epithelium

CIN

C.I.N (I): Mild dysplasia
Undifferentiated cell occupies the lower 1/3 of epithelium.

C.I.N (II): Moderate dysplasia
Undifferentiated cells occupies the lower 2/3 of epithelium

C.I.N (III): Sever dysplasia + CIS
Undifferentiated cells occupy the entire epithelium short to the area near the surface

C.I.S (Carcinoma in Situ):
Undifferentiated cells replace the entire epithelium, no invasion to the basement membrane, indistinguishable from invasive cancer
It involves the surface epithelium, crypts and glands

Site of origin:
1) Transformation zone
2) Native squamous epithelium:

Significance of CIS:
C.I.S and invasive cancer can be found in the same cervix.
Follow-up cases of C.I.S without treatment → invasive cancer later in life.

Micro-invasive Cancer:
As carcinoma in situ pulse finger like projections penetrate the stroma
The major controversy between micro-invasion and invasive cancer is the depth of invasion.
Stromal reaction: There is edema and cellular infiltration (lymphocytes, plasma cells and histocytes) denoting that the immune response still intact.

**Diagnosis of Pre-invasive cancer:**
1. Vaginal smear (drop of discharge is take from the posterior fornx ---- it is stained by Papanicola’s or Shorr’s stain to detect malignant cell.)

2. Cervical smear (Arye's wooden spatula is rotated 360 degrees to scrap the lower part of cervical canal and the portio-vaginal part at the external Os)

3. Schiller's iodine test (The cervix is stained with either Gram's stain or Logal's iodine solution)
   - Normal cell ---- brown
   - Unhealthy areas as erosion or cancer remain unstained due to absence of glycogen.
   - The test is used to select the biopsy sites.

4. Colposcopy : allow visualization of lesions not seen by naked eye. It helps to choose the sites for biopsy.
   - Schiller's iodine test is better done under colposcope.

5. **Biopsy:** It must done in every case to confirm diagnosis

   - **Wedge biopsy:** It is taken from suspected lesions; it must include healthy area for comparison

   - **Fractional biopsy:** Several curettes are taken from around the external Os, then from the cervical canal than the endometrium.

   - **Cone biopsy:** This includes half of the portio-vaginalis, its apex reaches below the internal Os, it is divided serially for microscopic examination

   - **Ring biopsy:** The whole epithelium around the external Os is removed and examined, as carcinoma usually starts at the squamo-columnar junction (Transformation zone).

**Papanicolous Classification**

   - **Class (I):** ---- Negative, only normal cells.

   - **Class (II):** ---- Negative, some atypical cells but no signs of malignancy.

   - **Class (III):** ---- Doubtful, some typical cells, only suggestive but not diagnostic of malignancy

   - **Class (IV):** ---- Positive isolated atypical cells

   - **Class (V):** ---- Positive, numerous atypical cells.
Invasive Cancer

Types of cancer

-Squamous cell carcinoma 92-95%
- Columnar cell carcinoma 5%.
- Mixed growth (Adeno-epithelioma) 1:2%

Sites

1 - Carcinoma of portio-vaginalis (Ectocervical) 95%: Arise from the squamous epithelium.
2 - Endocervical carcinoma 5-10%: Arise from the columnar epithelium lining the cervical canal

Broder's classifications:

It is a histological classification to detect prognosis:
Grade (II): ----0-25% undifferentiated cells
Grade (III):----- 25-50% undifferentiated cells.
Grade (VI):----- 50-75% undifferentiated cells
Grade (V):------ 75-100% undifferentiated cells.

Spread

A. Direct spread:

Downward: to vagina
Upward: to body of uterus
Forwards: to bladder
Backwards: along the utero sacral ligament to rectum
Laterally: late to the parametrium where it may cause obstruction of ureters by compression leading to hydroureters and hydronephrosis and finally uremia, which is the commonest cause of death.

B. Lymphatic spread

It occurs early in the disease, the glands involved are:
Paracervical glands: at the crossing of ureters.
The external iliac glands.
The internal iliac glands.
The obturator glands: 1:3 in number near the obturator foramen.
Lateral sacral gland: in the sacral cavity and promontary.
Internal and external iliac glands $\rightarrow$ the common iliac glands $\rightarrow$ lower aortic glands.

C. Blood stream: late in the disease

D. Surface implantation:

Malignant calls may be implanted in the vagina, vulva, pelvic cavity, or abdominal wound after Wertheim’s operation.
Complications

- Pyometra: The malignant tissues obstruct the cervical gland and the endometrial secretions act nidus for infection.
- Vesico-vaginal fistula.
- Rect-vaginal fistula.
- Hydroureter and hydronephrosis.
- Uremia.

Cause of Death

- Uremia: the commonest cause of death (50%), due to ureteric obstruction and ascending infection.
- Malignant cachexia
- Infections: Parametritis and peritonitis.
- Sever bleeding from eroding big blood vessels.
- Pulmonary embolism.
- Metastasis to vital organs.
- Complications of treatment.

Clinical picture

1. Sx: 1) Bleeding: The bleeding is usually the first symptoms, it starts as contact bleeding after coitus, douching, or vaginal examination; later on the bleeding becomes irregular and variable in amount

2) Vaginal discharge: At first it is watery or serous discharge due to epithelial hyperactivity, then with ulceration and infection, it becomes blood stained discharge and offensive with may necrotic debris

3) Pains: It is late symptom indicating involving of tissues outside the cervix by cancer tissues or infection:

- Cachexia

2. Signs: In late cases, the lesion appears in the form of nodule, polyp, cauliflower mass, ulcer or barrel shaped cervix.
Lesions are characterized by: Bleeding on touch – Induration – Friability - Necrosis and infection. Rectal examination should be done in very case to detect rectal involvement.

Investigations

Cervical biopsy
Cystoscopy: to diagnose bladder involvement.
Proctoscopy: to diagnose rectal involvement.
Plain X-ray Chest, spines and pelvic bones
Examination under anesthesia

Prognosis

Depends upon:
-Extent of growth at the time of treatment.
-Site: Endocervical growth is more dangerous (late diagnosis)
-Naked eye appearance: Hypertrophic type has a bad prognosis.
-Histological type: Adenocarcinoma is the worst not only due to its radio-resistance but also due to its higher malignancy power to infiltrate.
-Age: The younger the more fulminating growth.
-Ureteric obstruction has a bad prognosis
Clinical Staging (FIGO)

Stage (0): Carcinoma in situ or intra-epithelial carcinoma. Cases of stage (0) should not be included in any therapeutic statistics.

Stage (I): Carcinoma confined to the cervix, extension to the corpus should be disregarded:

- Stage Ia: Microinvasive carcinoma.
- Stage Ib: All other cases of stage I.

Stage (II): Carcinoma extends beyond the cervix, but not reached the lateral pelvic wall:

- Stage IIa: Infiltration of the upper 2/3 of the vagina
- Stage IIb: Infiltration of one or both parametrium, but not reaches the lateral pelvic wall.

Stage (III):
- Carcinoma extends to the lateral pelvic wall
- Carcinoma infiltrates the lower 1/3 of the vagina.

- Stage IIIa: No infiltration to the lateral pelvic wall
- Stage IIIa: Infiltration and fixation to the lateral pelvic wall

Stage (IV):

- Stage IVa: Extension to bladder or rectal mucosa
- Stage IVb: distant metastasis

Treatment Scheme


Stage (II): Surgery followed by radiotherapy.
Radiotherapy followed by surgery.
Taussing operation

Stage (III) and (IV):
Palliative surgery.
Palliative radiotherapy.
Relive of pain in advanced cancer.