Premalignant disease of the cervix

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Introduction:

Intraepithelial disease occurs in the cervix , vagina and vulva.It is rising in young women.

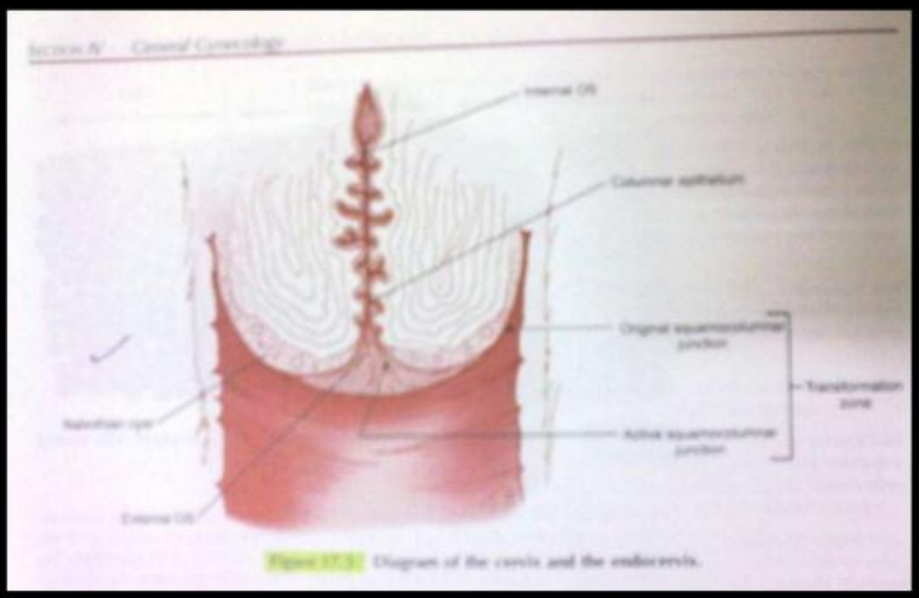
There are 450,000 cases of cervical cancer/year.

There are 300,000 death/year. It is the second most common cancer.

- It is a preventable disease (screening programmed-cervical smear).

Cervical anatomy: The cervix is composed of columnar epithelium, which lines the endocervical canal , and the sequamous epithelium, which covers the exocervix. The point at which they meet is called the squamocolumnar junction (SCJ).

CUT SECTION OF CERVIX



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CERVIX AND TRANSFORMATION ZONE

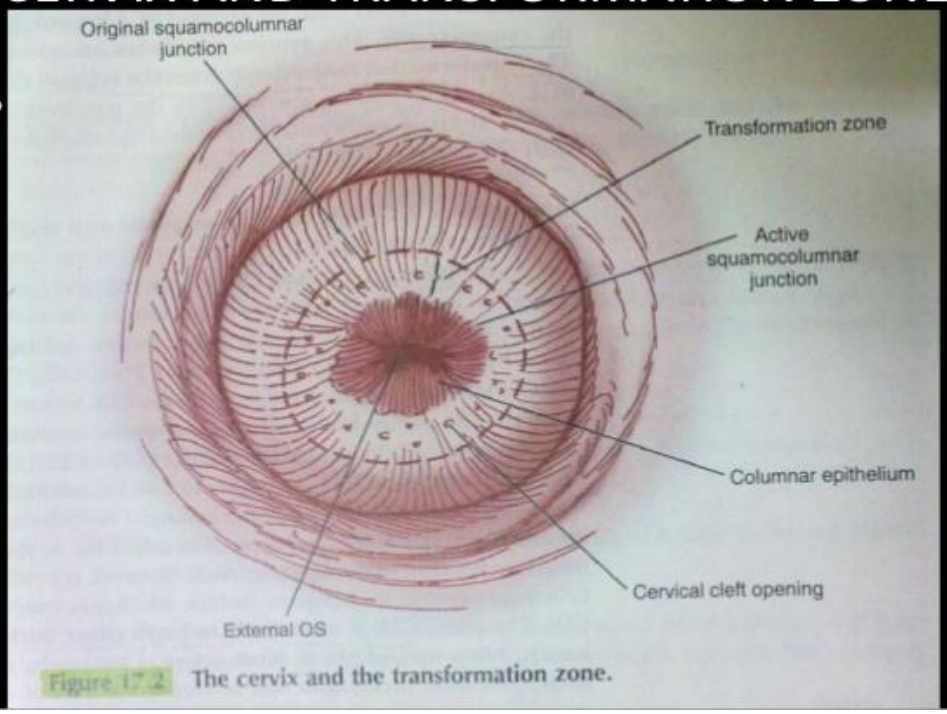


Figure 17.2 The cervix and the transformation zone.

Squamocolumnar Junction

- The SCJ rarely remains restricted to the external os. Instead, it is a dynamic point that changes in response to puberty. Pregnancy, menopause and hormonal stimulation.
- In neonates, the SCJ is located on the exocervix. At menarche, the production of estrogen causes the vaginal epithelium to fill with glycogen.
- Lactobacilli act on the glycogen to lower the pH, stimulating the subcolumnar reserve cells to undergo *metaplasia*.

LOCATION OF-SCJ

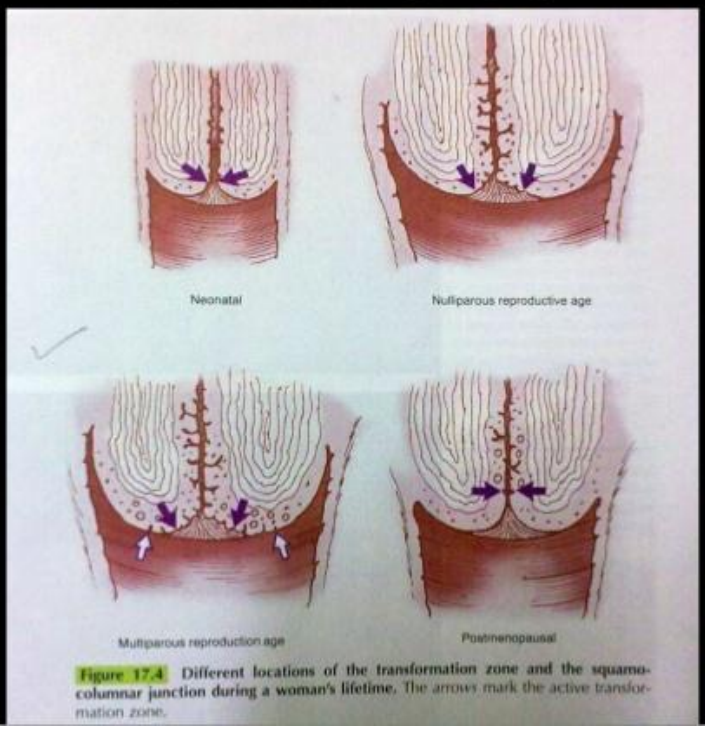
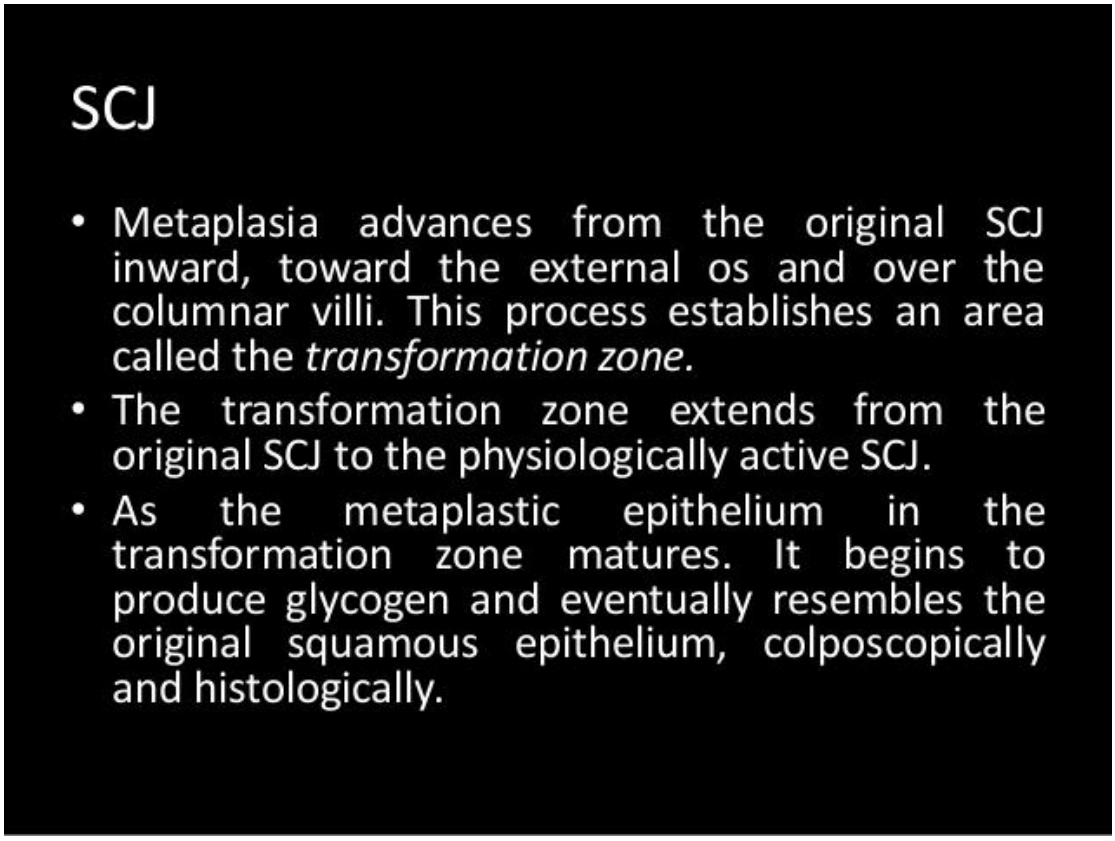


Figure 17.4 Different locations of the transformation zone and the squamocolumnar junction during a woman's lifetime. The arrows mark the active transformation zone.



❖ **Definition of cervical intraepithelial neoplasia(CIN)**:

- CIN is a pre-invasive change of the cervical epithelium where the epithelium thickness is replaced by abnormal cells in varying degree without breaching the cell membrane. Most of the cases are symptomless.

❖ Abnormal cytological changes of CIN (immature and disorganized cells) are:

- Increased Nuclear/Cytoplasm ratio.
- Prominence of nuclear chromatin.
- Multinucleate.

GRADES OF CIN

CIN is graded according the proportion of epithelium occupied by the abnormal cells.

- **CIN 1 (mild dysplasia):**

- *One-third or less is occupied by the abnormal cells.*

- Progress to (CIS) in 6%.

- Regressed or disappeared in 62%,

- **CIN 2(modrate dysplasia):**

- Between 1/3-2/3 of the epithelium is occupied by the abnormal cells.

- Become invasive in 13%.

- **CIN 3 (severe dysplasia):**

- **T**he whole thickness of the squamous epithelium is occupied by the abnormal cells.

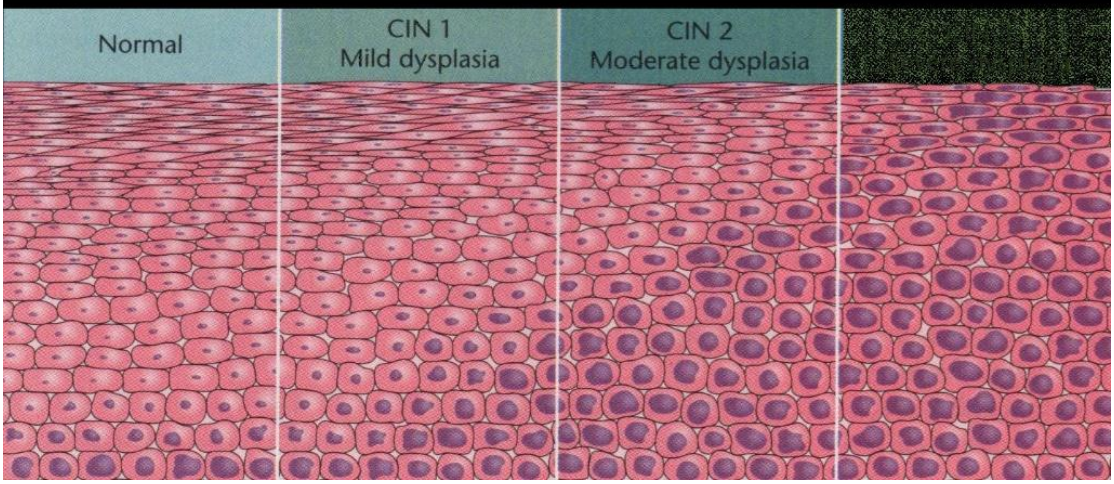
-It is regarded as carcinoma-in-situ (CIS).

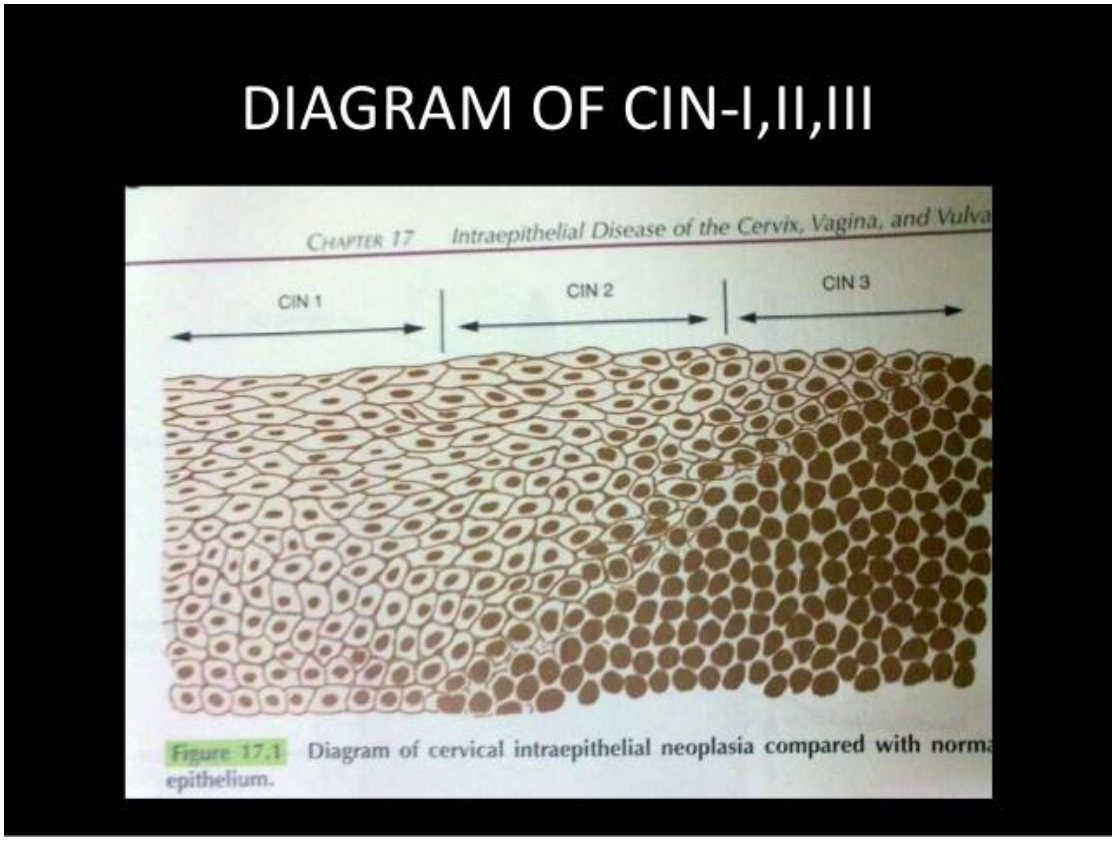
- It could arise as CIN 3 or progress from CIN 1or CIN 2.

- Become invasive in 29%.

Grades of Dysplasia

Normal
CIN 1 = Mild dysplasia
CIN 2 = Moderate dysplasia
CIN 3 = Severe dysplasia





Incidence of CIN

- The incidence of CIN is 4 to 5% of Pap tests.
- The incidence of CIN vary according to the: (1) population studied, as the peak incidence being between 25 and 29 years of age, (2)socioeconomic factors, and (3) risk-related behaviours.
- The true incidence and prevalence can only be estimated, as screening cytology and colposcopy lack complete sensitivity.

Risk factors (Epidemiology):

1- Early age of first intercourse is the most important factor.

2- Multiple partners

3- Smoking

4- Race, studies reported that low incidence in women with their partners had been circumcised.

5- Hereditary factor may play a role.

6- Low social class and poverty may have a role.

7- High incidence among prostitutes.

8- More common in women with herpes simplex virus type 2 , and human papilloma virus.

9- Immunosuppression.

Cervical Cytology (The Pap test):

Initiation of screening: 3 years after onset of vaginal intercourse; no later than age 21.

Screening intervals: (1) age < 30 years: annually

(2) age > 30 years: : every 2 to 3 years after 3 consecutive negative tests.

(3) Patients with HIV or other immunocompromised state: 2 tests during the first year, then annually.

Discontinuation of screening: Women with age 65 to 70 years, women not at high risk (history of cervical cancer, HPV, HIV, & immunocompromised state).

Management of women with abnormal cervical smear:

If smear changes resulting from infection are recognized then the specific infection should be treated and further smear should be taken.

- Atrophic smear: give estrogen then repeat the smear.

- All women with abnormal smears should have a colposcopic examination.

Colposcopy:

- The patient is examined in the lithotomy position for exposure of the cervix using bivalve speculum. The coloposcope which is binocular microscope view the cervix telescopically at magnification range of 6 to 40 times.

4% of acetic acid is applied to the cervix which coagulates proteins of the epithelial cells and abnormal epithelium appears white; biopsies should be taken from that area.

Schiller test which is done by adding iodine solution(Lugols iodine) applied ,it had observed that squamous carcinoma of the cervix were lacking in glycogen and as a result failed to take up an iodine solution, biopsies should be taken from that area. Squamo-columnar junction should be seen entirely.

CIN Management

If the examination has been incomplete, if microinvasion or invasion is suspected, or if the colposcopic examination revealed no abnormality in spite of further positive smears being obtained then a cone biopsy.

Cone biopsies:

- **<u>indications</u>:**

- squamo-columnar junction is not seen by coloposcopy.

- negative colposcopic examination with positive repeated cervical smear.

- microinvasion or invasion is suspected.

Size of the cone should be kept to a minimum with normal tissue, tailored & cut with a knife. D/C is should be done.

- Complication: 1- Primary and secondary bleeding is achieved by using Dexon at 3 & 9 0'clock of the cervix.
- 2- Scarring of the cervix which lead to stenosis and impaired fertility, cryptomenorrhoea, abortion, preterm labour & cervical dystocia.

Types of management

1- Excisional therapy:

1- Cone excision(laser and diathermy loop excision)

2-Total hysterectomy

Indications:

- Persistent lesion after conization.
- Lesion extends to the upper vagina (colposcopy).
- Coexisting indication (menorrhagia or prolapse).

2- Local destruction (ablation):

(for young, unmarried or wanting children):

- Cryocautery: freezing the tissue.
- Electrocautery: burning the transformation zone.

- Large loop excision of the transformation zone: using electrodiathermy.
- Cold coagulation: destruction of the transformation zone with a probe heated to 100 to 120Ċ.