

Female Genital System, Lecture2

Cervix

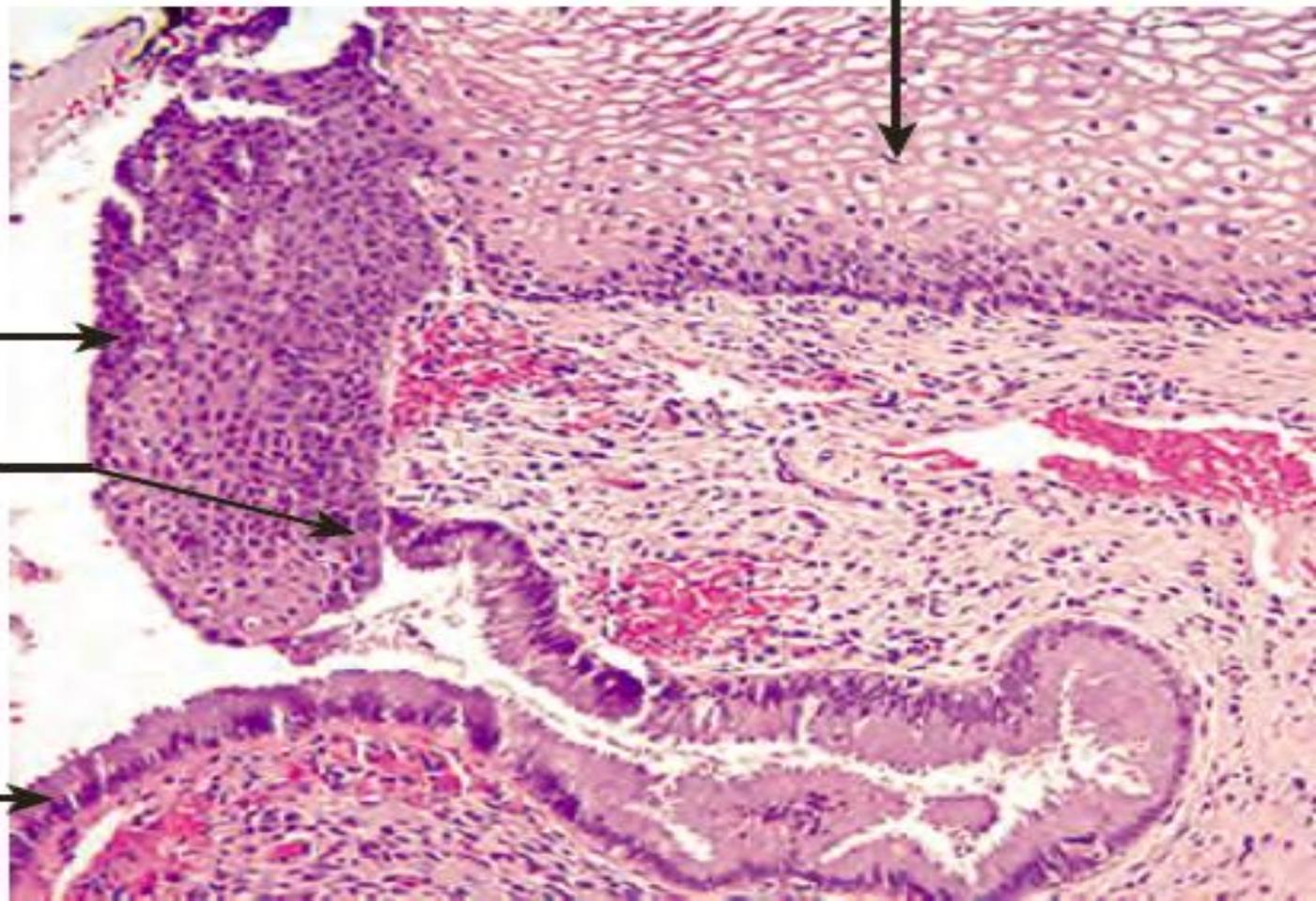
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UGS lectures May 8 2024

Mature squamous cells

Immature
squamous
cells

Squamocolumnar
junction

Columnar
glandular
cells



Cervical carcinoma

- **Was** the most common cancers in women worldwide.
- **Was** → Papanicolaou (Pap) smear → **the most successful cancer-screening test ever developed.**
- Most common form is SCC 75%, adenoCa. & adenosquamous (mixed) Ca. 20%, & neuroendocrine Ca 5%.
- All are ass with HPV infection.
- Peak at 45 years, 10-15 years after detection of their precursors: cervical intraepithelial neoplasia (CIN).

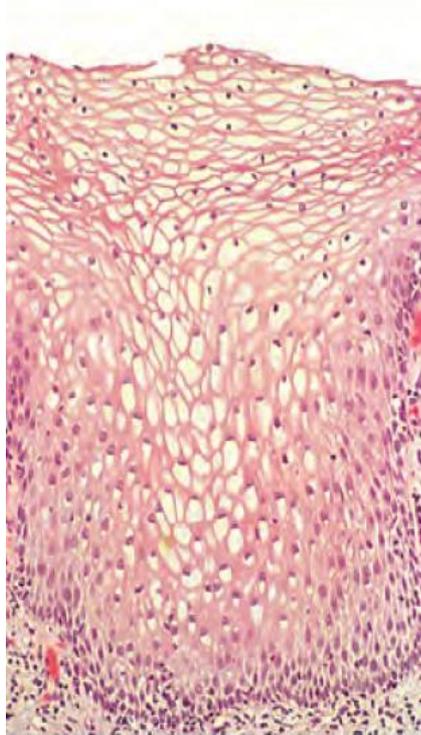
Cervical intraepithelial neoplasia (CIN)

4

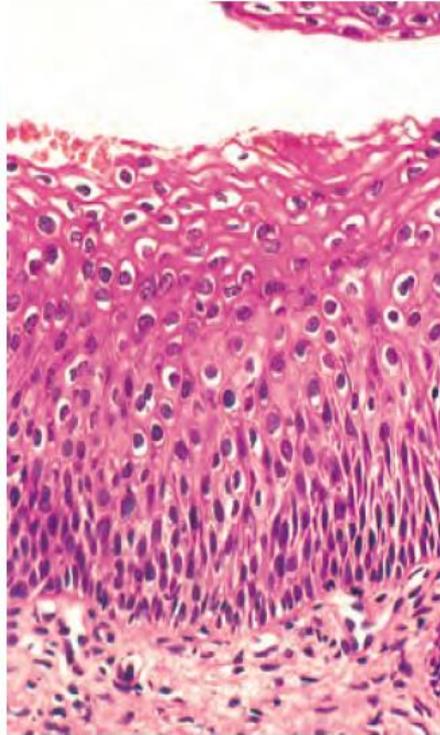
- ← Dysplasia in epithelial cells, graded depending on the extent of epithelial involvement:
 - CIN I: Mild dysplasia (involves a third or less of thickness)
 - CIN II: moderate dysplasia (involves 2/3 of thickness).
 - CIN III: severe dysplasia (involves full thickness) → carcinoma in situ

CIN → Dysplasia: nuclear enlargement, hyperchromasia (darker), coarse chromatin, & variation in nuclear size & shape

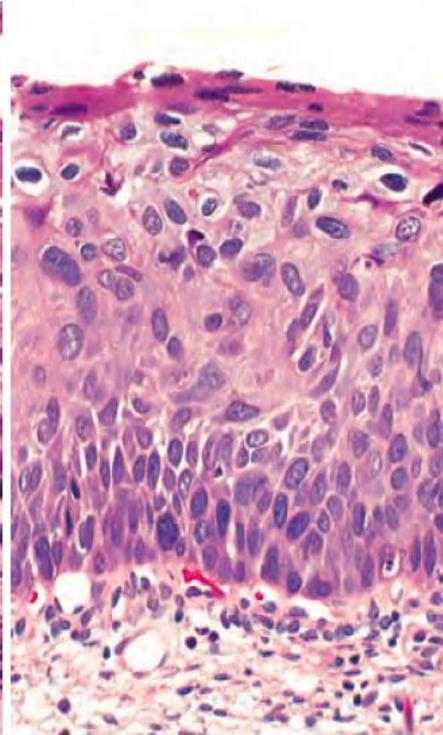
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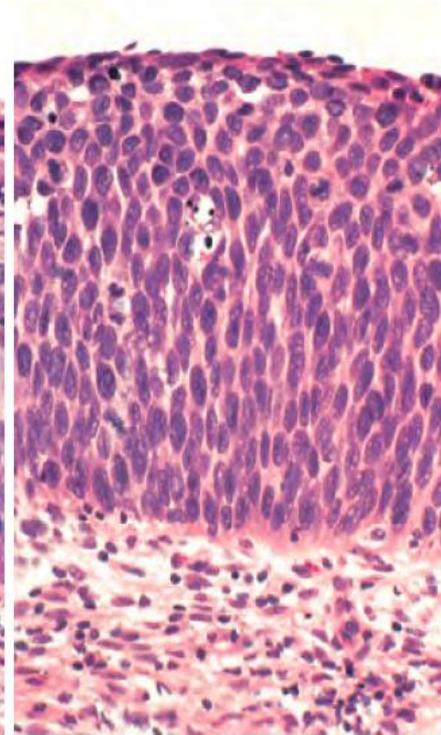
Normal



CIN I



CIN II

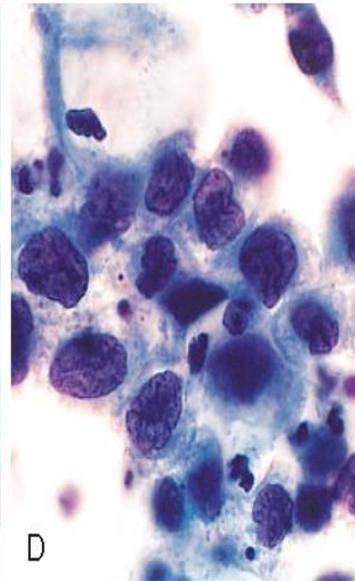
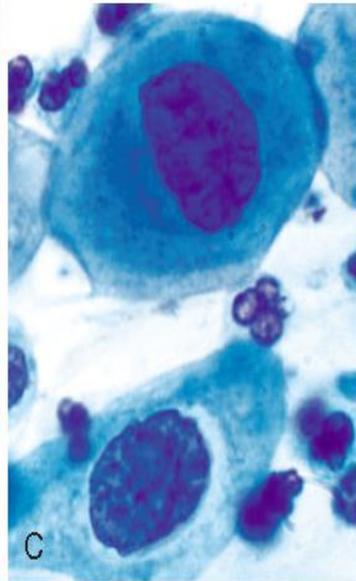
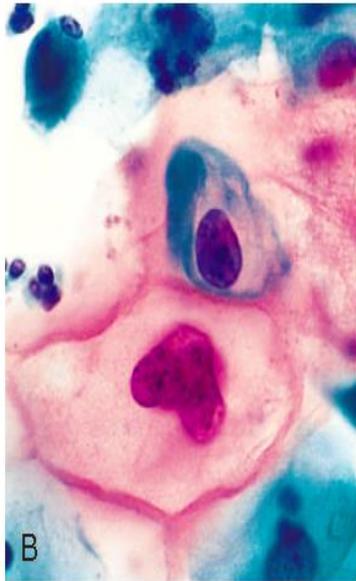
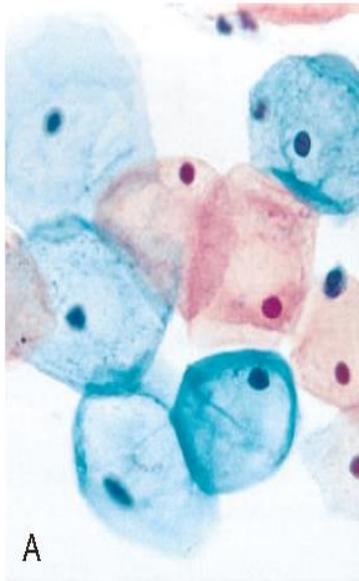


CIN III

CIN and Pap smear!

- Cervical precancerous lesions are associated with abnormalities in cytologic preparations → Can be detected long before abnormality is visible on gross inspection.
- Cells are scraped from the transformation zone & examined microscopically
- Pap screening has dramatically lowered the incidence of invasive cervical tumors & it is no longer ranks among the top 10 causes of cancer deaths in U.S. women.

7 **CIN** → **Dysplasia**: nuclear enlargement,
hyperchromasia
(darker), coarse chromatin, & variation in
nuclear size & shape



CIN → SIL (squamous intraepithelial lesion)

The decision with regard to patient management is two-tiered (observation **versus** surgical treatment) → Three-tier classification system → recently simplified to a two-tiered system → Low grade squamous intraepithelial lesion (LSIL) & high grade squamous intraepithelial lesion (HSIL)

Dysplasia/Carcinoma in Situ	Cervical Intraepithelial Neoplasia (CIN)	Squamous Intraepithelial Lesion (SIL), Current Classification
Mild dysplasia	CIN I	Low-grade SIL (LSIL)
Moderate dysplasia	CIN II	High-grade SIL (HSIL)
Severe dysplasia	CIN III	High-grade SIL (HSIL)
Carcinoma in situ	CIN III	High-grade SIL (HSIL)

CIN, Cervical intraepithelial neoplasia; SIL, squamous intraepithelial lesion.

CIN - Pathogenesis & epidemiology

9

- Peak incidence at 30s (SCC at 45 years of age).
- HPV can be detected in nearly all CIN and invasive carcinoma. (mostly subtype **16** & **18**).
- These subtypes show a propensity to **integrate** into host genome, & express large amounts of **E6** & **E7** proteins → **inhibit** tumor suppressor genes p53 & RB, respectively.
- HPV vaccine is recently introduced → very effective in preventing HPV infections → expected to lower frequency of genital warts & cervical Ca.

CIN - Clinical

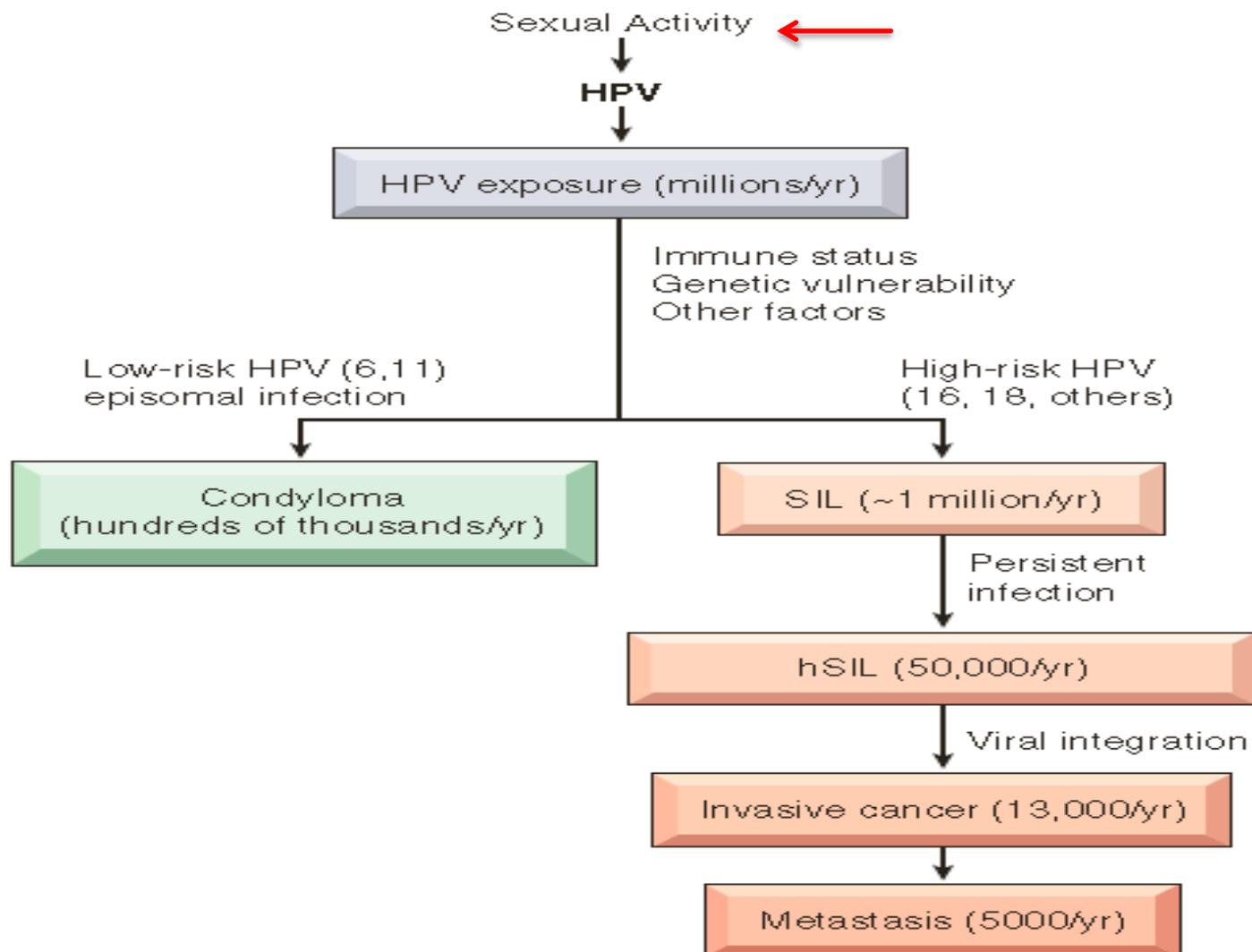
- ← SIL is asymptomatic and comes to clinical attention through an abnormal Pap smear result.
- ← Women with biopsy-documented LSIL are managed with careful observation
- ← HSILs & persistent LSIL are treated with surgical excision (laser or cone biopsy) & follow up.

Invasive Carcinoma of the Cervix -

Clinical

11

- Progression of SIL to invasive carcinoma is variable & unpredictable. (smoking is a risk factor).
- LSIL → 10% → HSIL → 10% in ~ 10 years → carcinomas.
- Most often is seen in women who have never had a Pap smear or who have not been screened for many years.
- Tx: **Hysterectomy** + radiotherapy and chemotherapy in advanced cases (high stage).
- 5-year survival: SIL: 100%; stage 1: 90%; stage 2 82%; stage3: 35%; & stage 4: 10%.



Endocervical Polyp

- ▶ Endocervical polyps are benign polypoid masses seen protruding from the endocervical mucosa (sometimes through the exocervix).
- ▶ They can be as large as a few centimeters, are soft and yielding to palpation, and have a smooth, glistening surface with underlying cystically dilated spaces filled with mucinous secretions.
- ▶ The surface epithelium and lining of the underlying cysts are composed of the same mucus-secreting columnar cells that line the endocervical canal. The stroma is edematous and may contain scattered mononuclear cells.
- ▶ Superimposed chronic inflammation may lead to squamous metaplasia of the overlying epithelium and ulcerations.
- ▶ These lesions may bleed, thereby arousing concern, but they have no malignant potential.

▶ **THANK YOU**

Good Luck