The importance of screening in diagnosis of cervical precancerous lesions and role of HPV in cervical cancer

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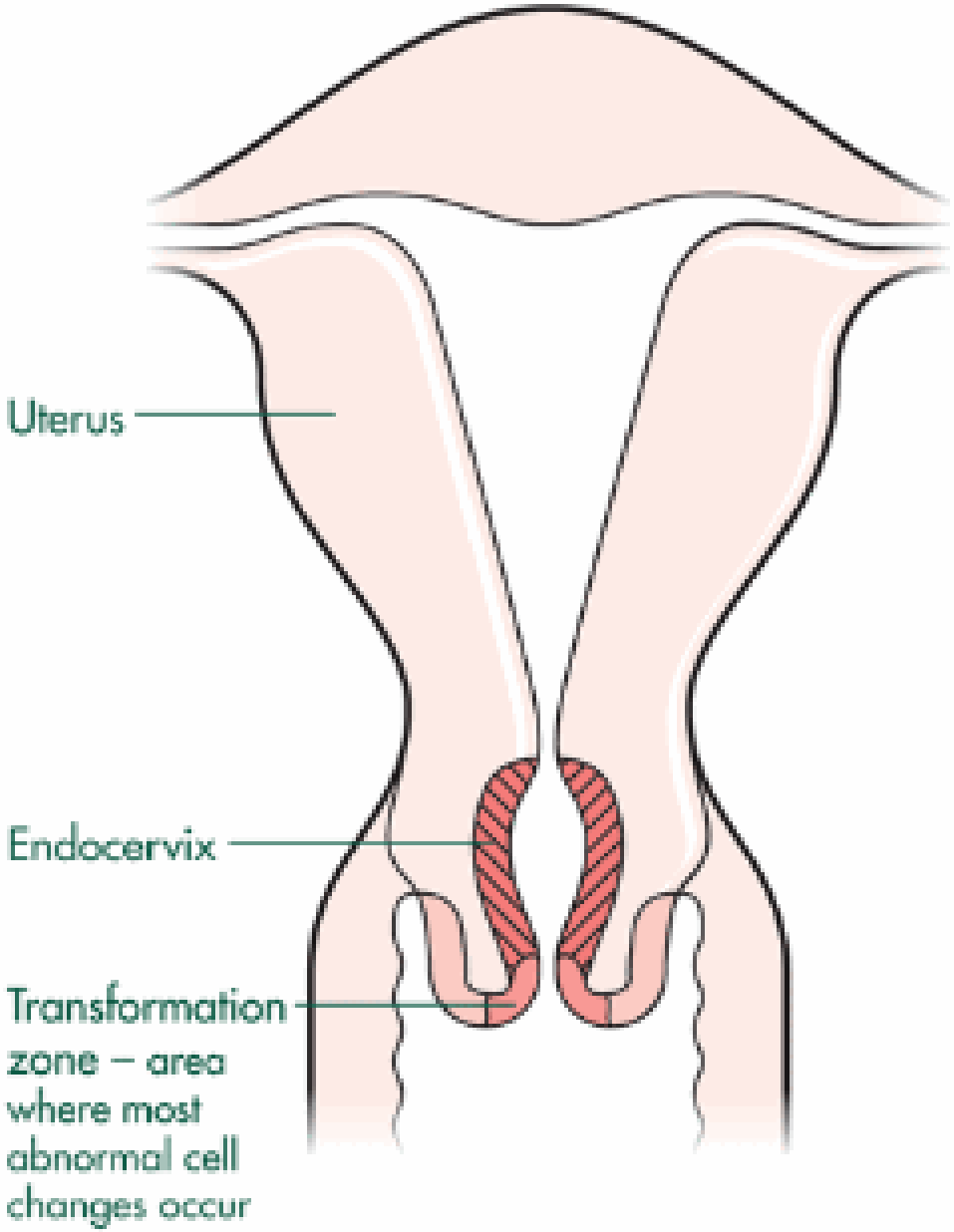
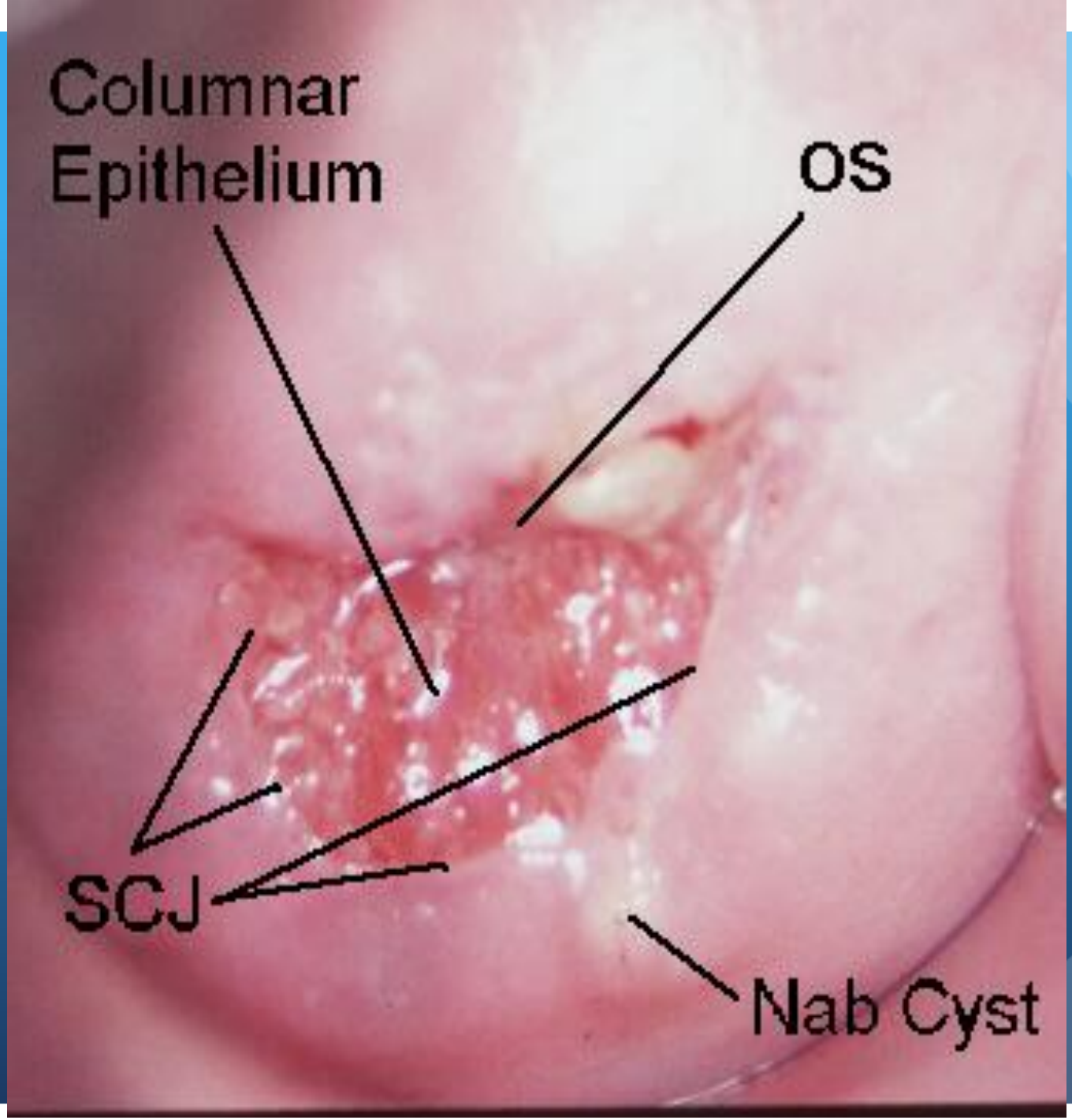
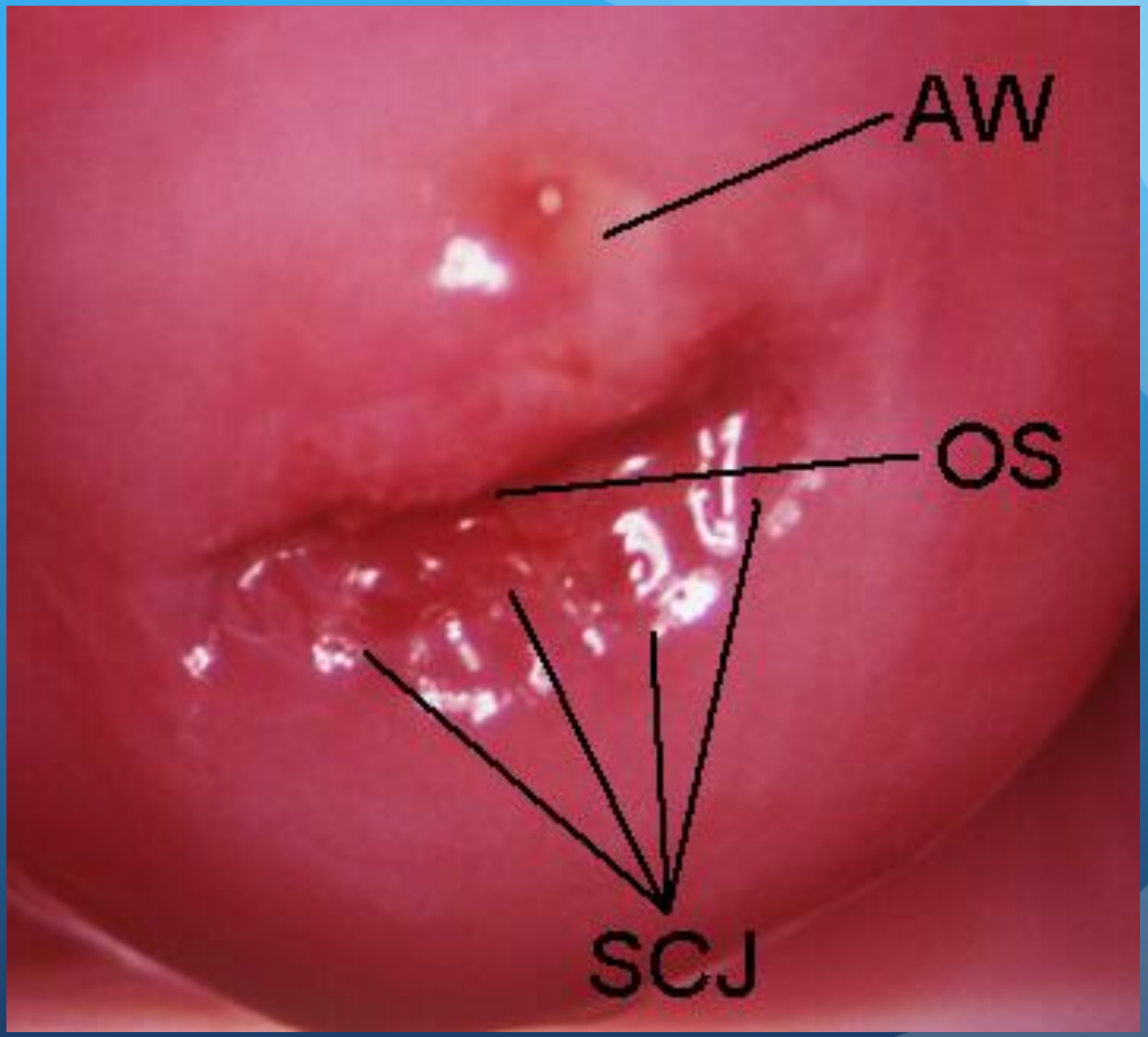
METRIC 1 2 3 4 5

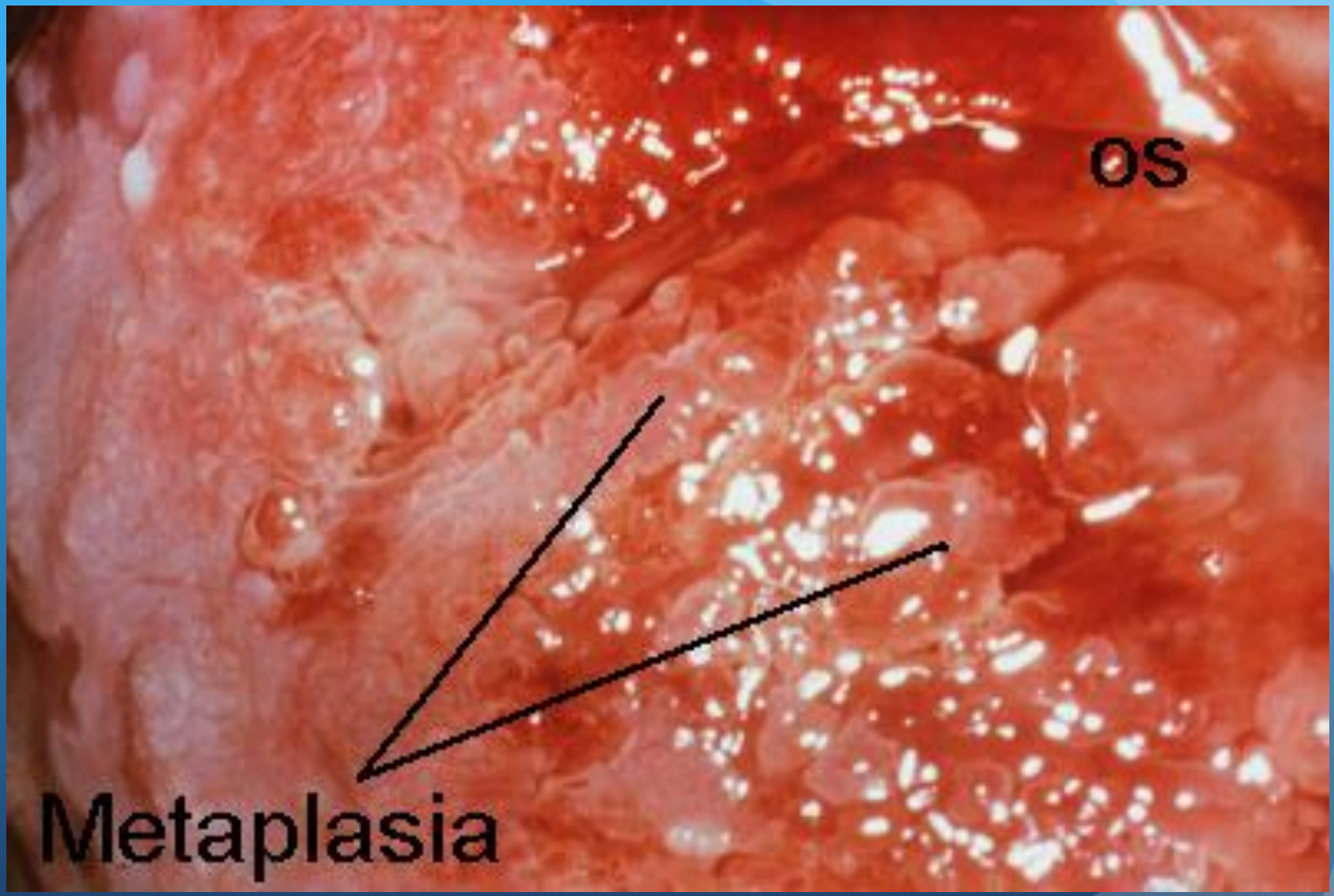

CM

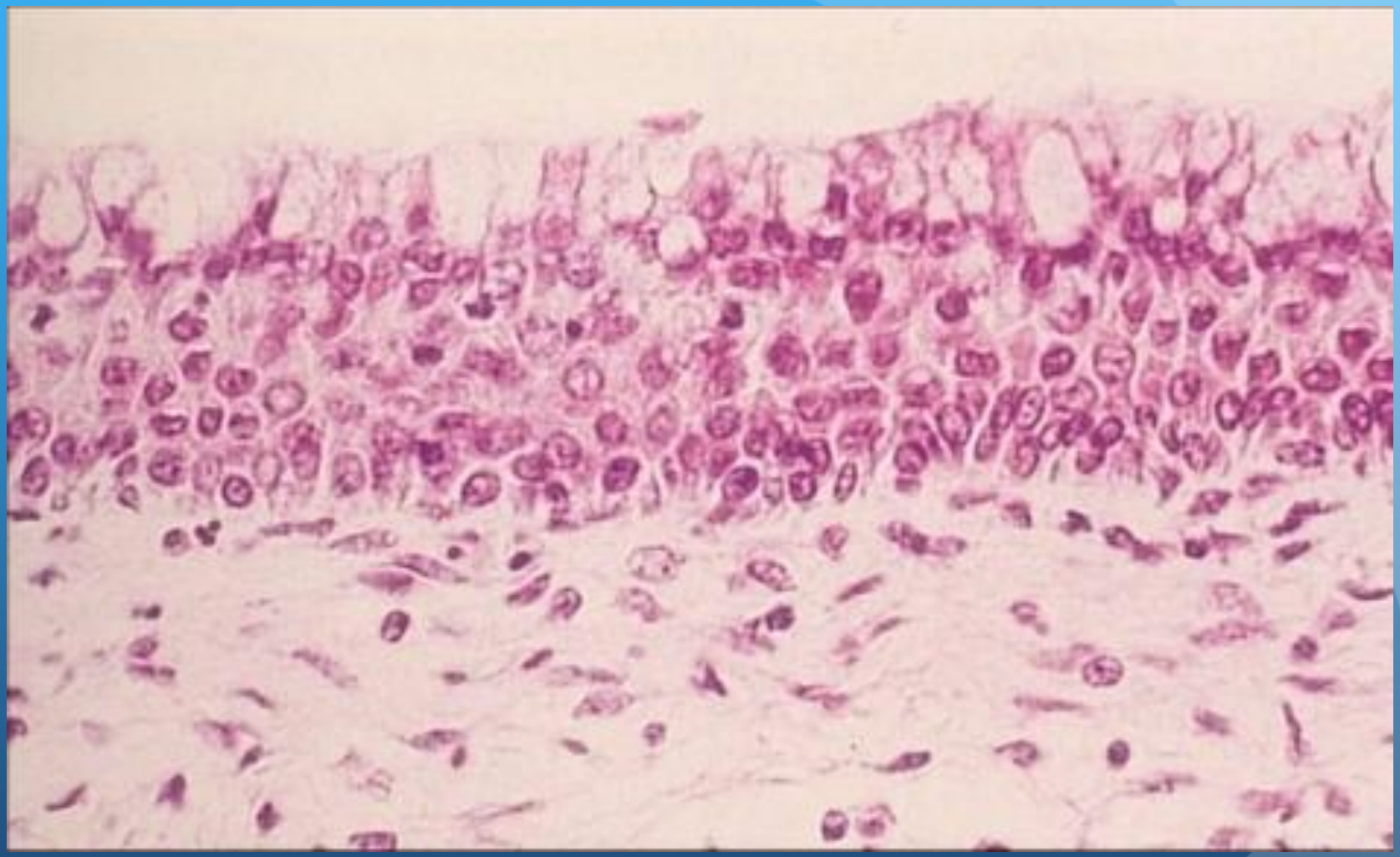

Os
Tzone

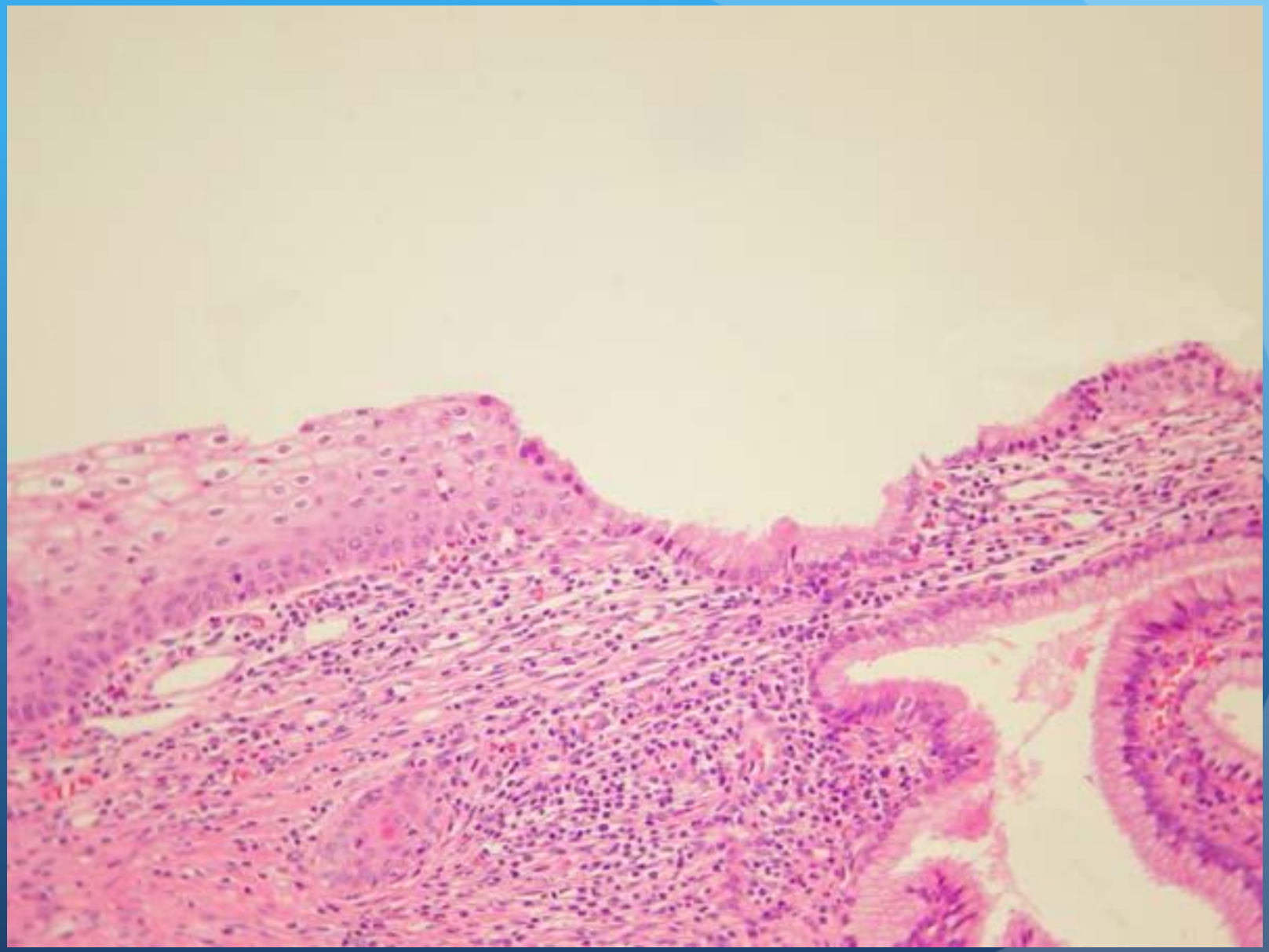

Uterus
Endocervix
Transformation zone – area where most abnormal cell changes occur

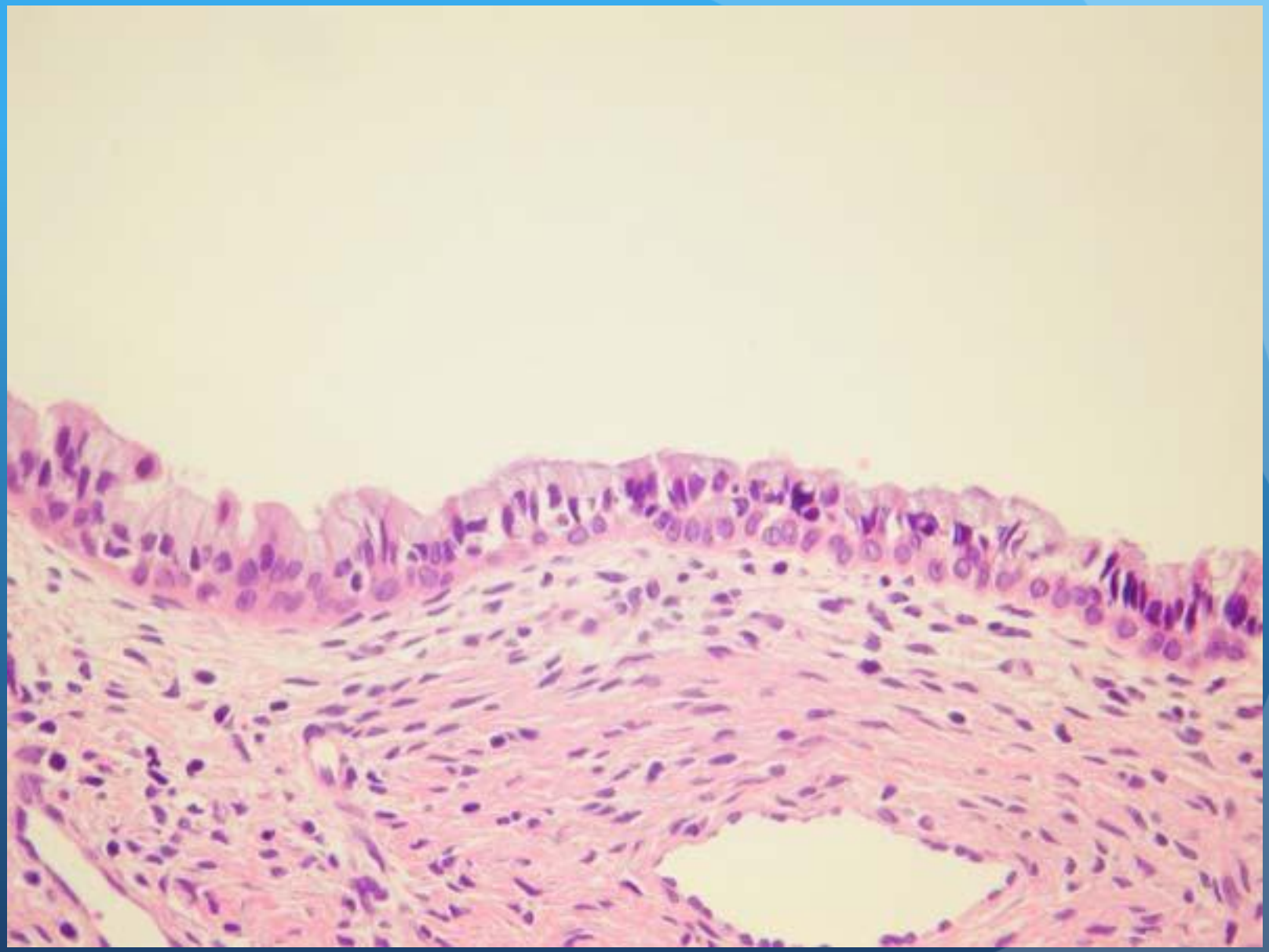

Columnar
Epithelium
OS
SCJ
Nab Cyst

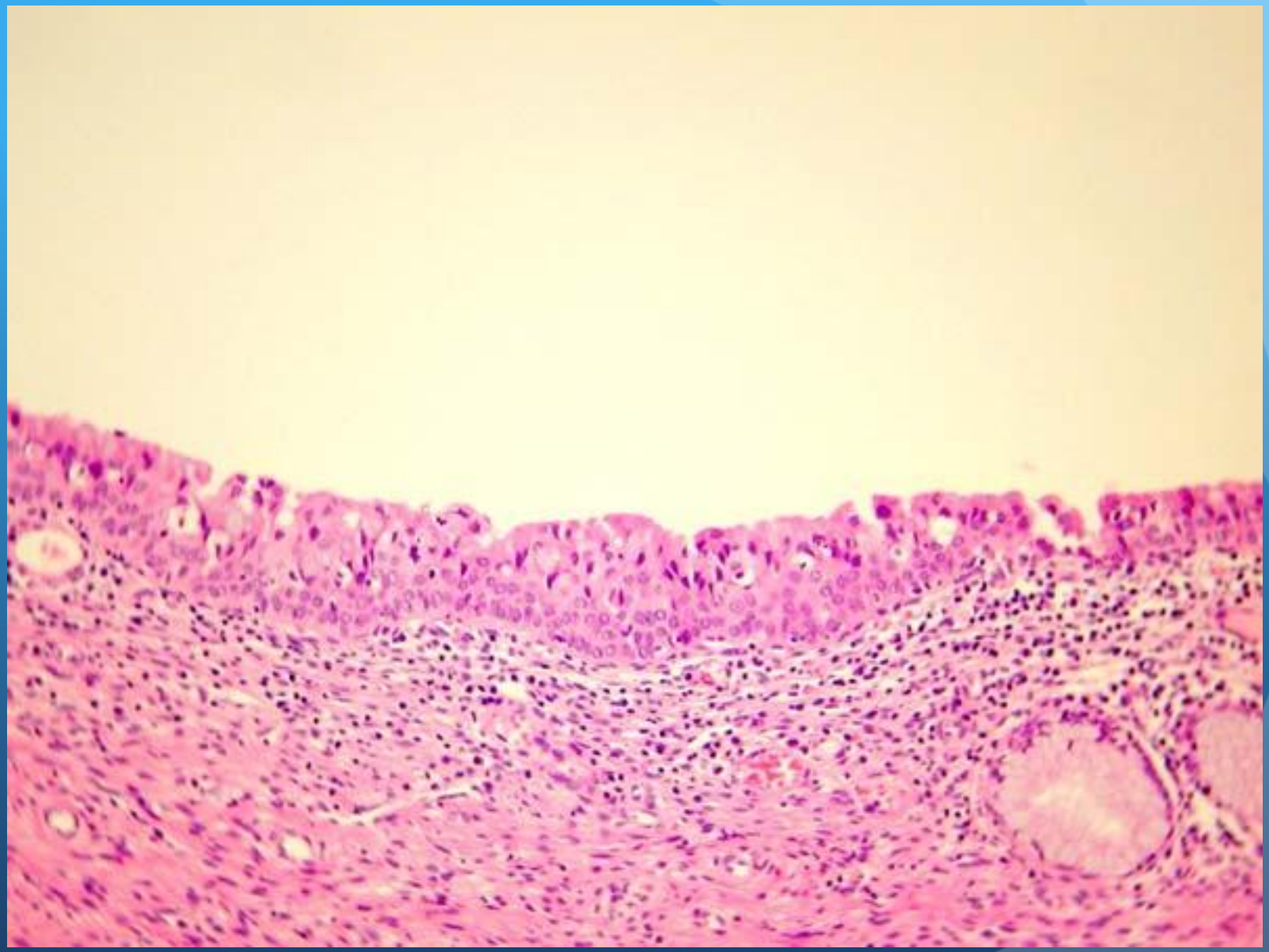

AW
OS
SCJ

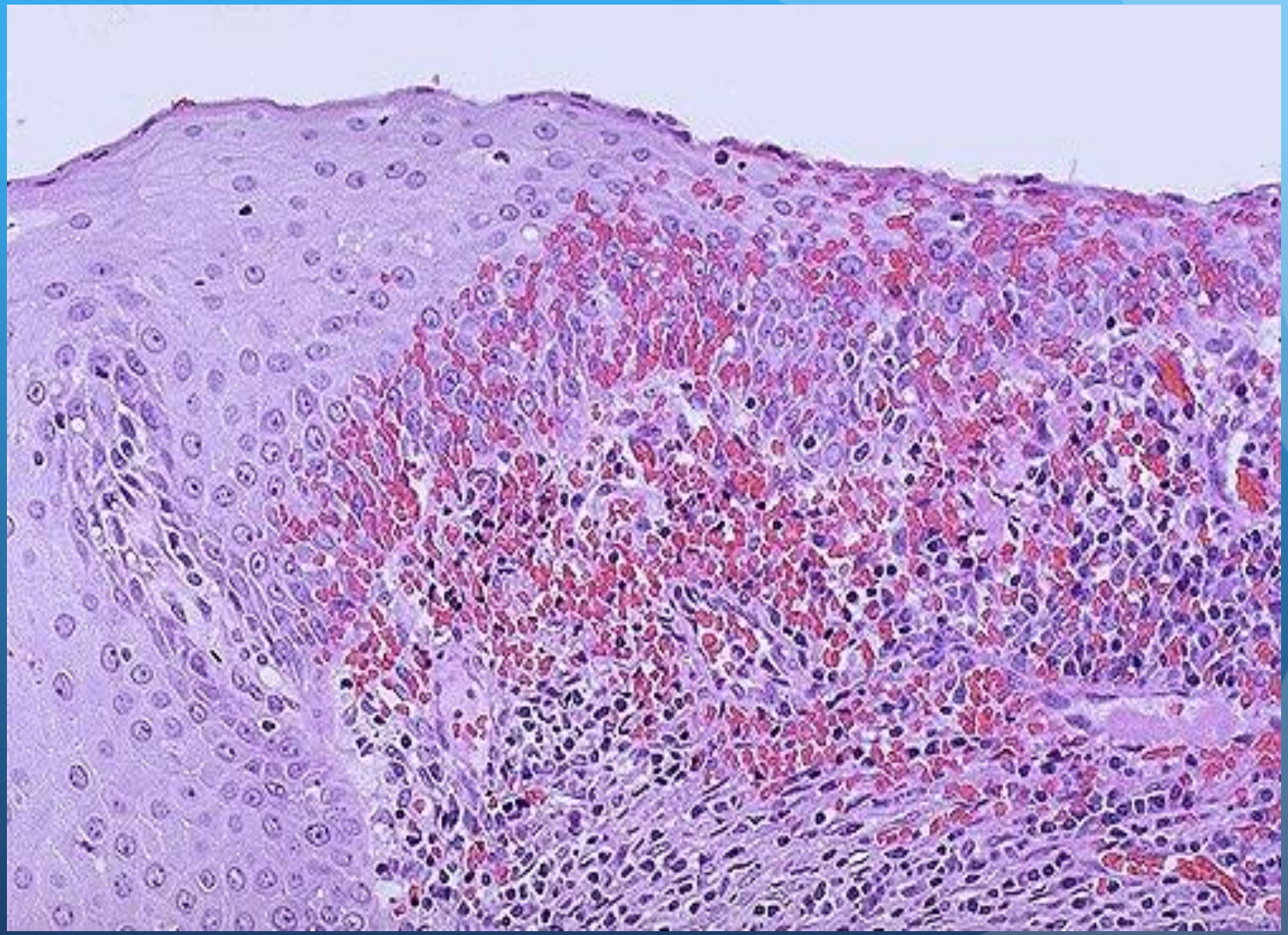

OS
Metaplasia

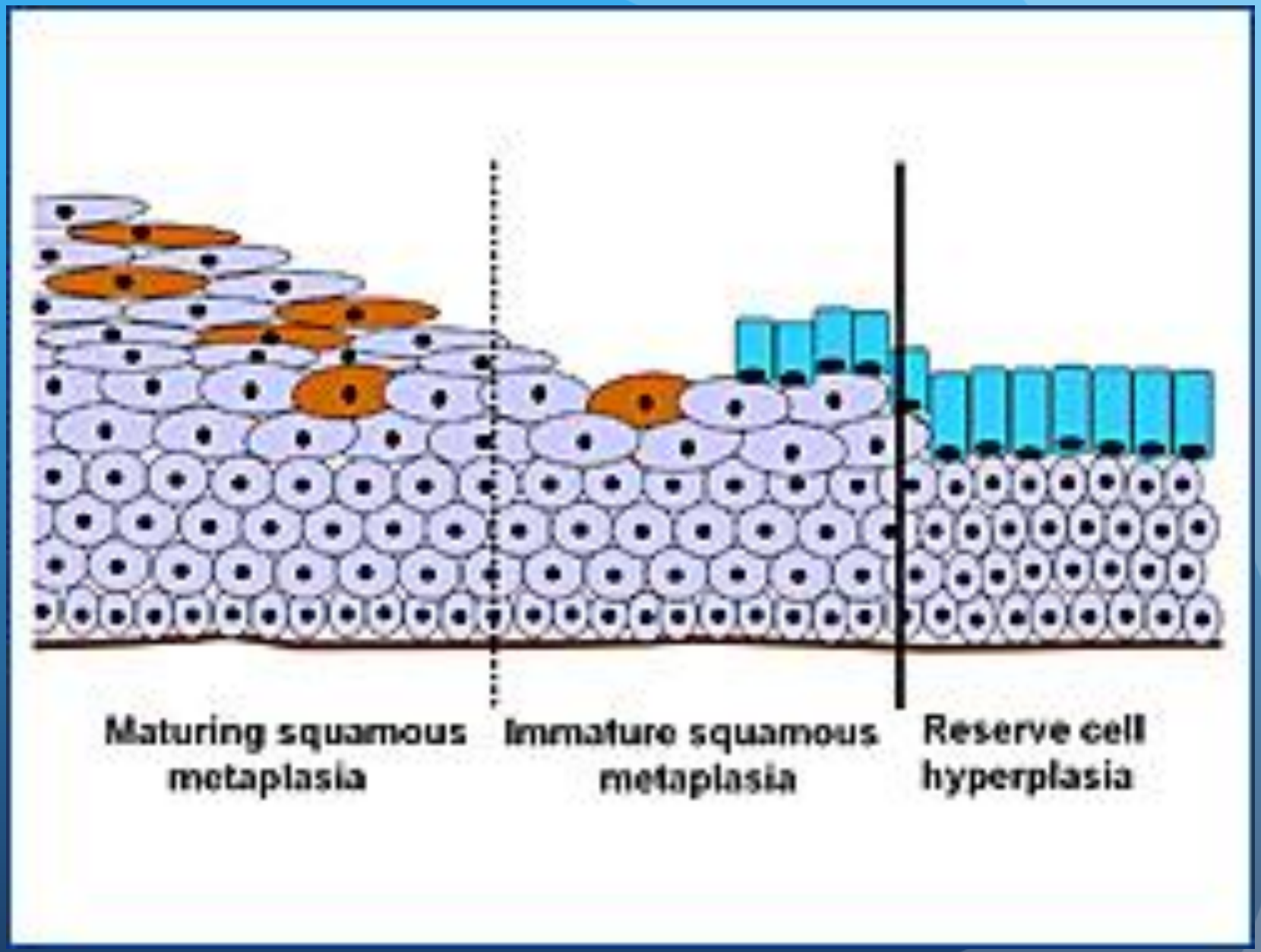










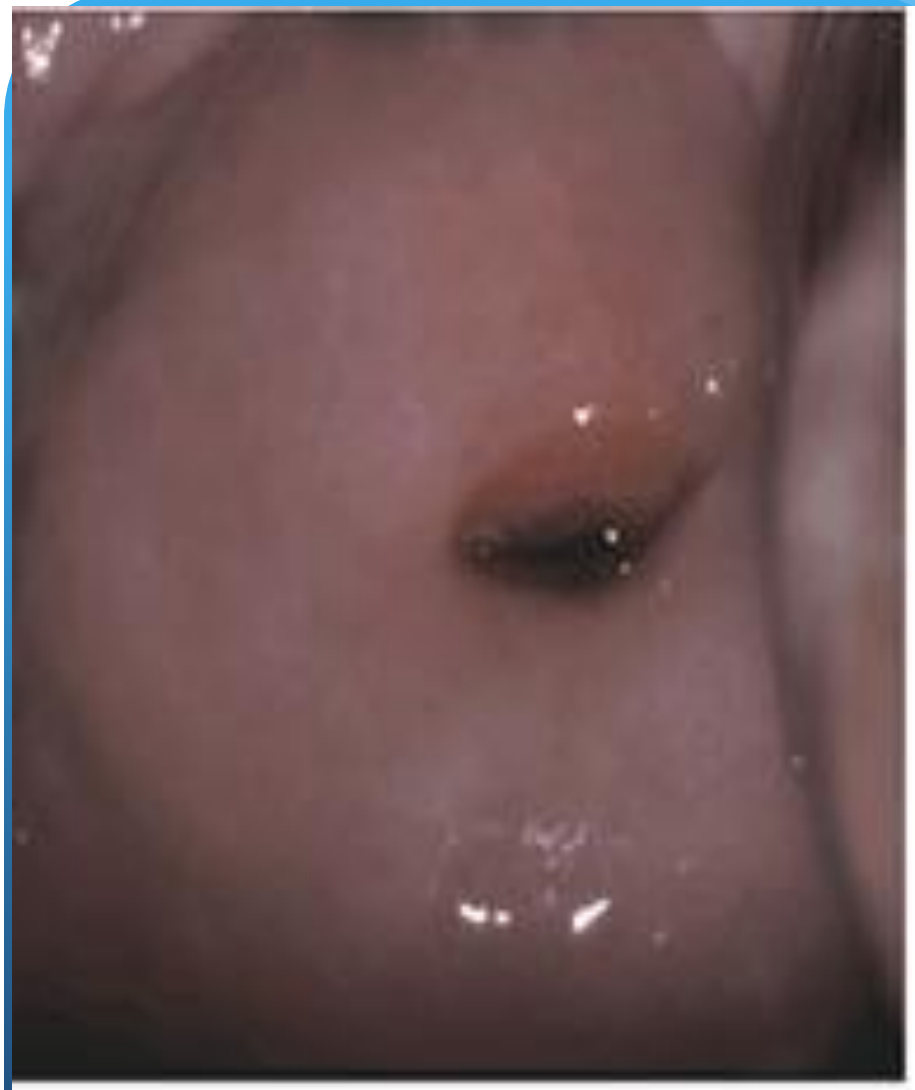

Maturing squamous metaplasia
Immature squamous metaplasia
Reserve cell hyperplasia

- *More than 30 to 40 types of HPV are typically transmitted through sexual contact and infect the anogenital region. Some sexually transmitted HPV types may cause genital warts. Persistent infection with "high-risk" HPV types — different from the ones that cause skin warts — may progress to precancerous lesions and invasive cancer.[4] HPV infection is a cause of nearly all cases of cervical cancer.[5] However, most infections with these types do not cause disease.*

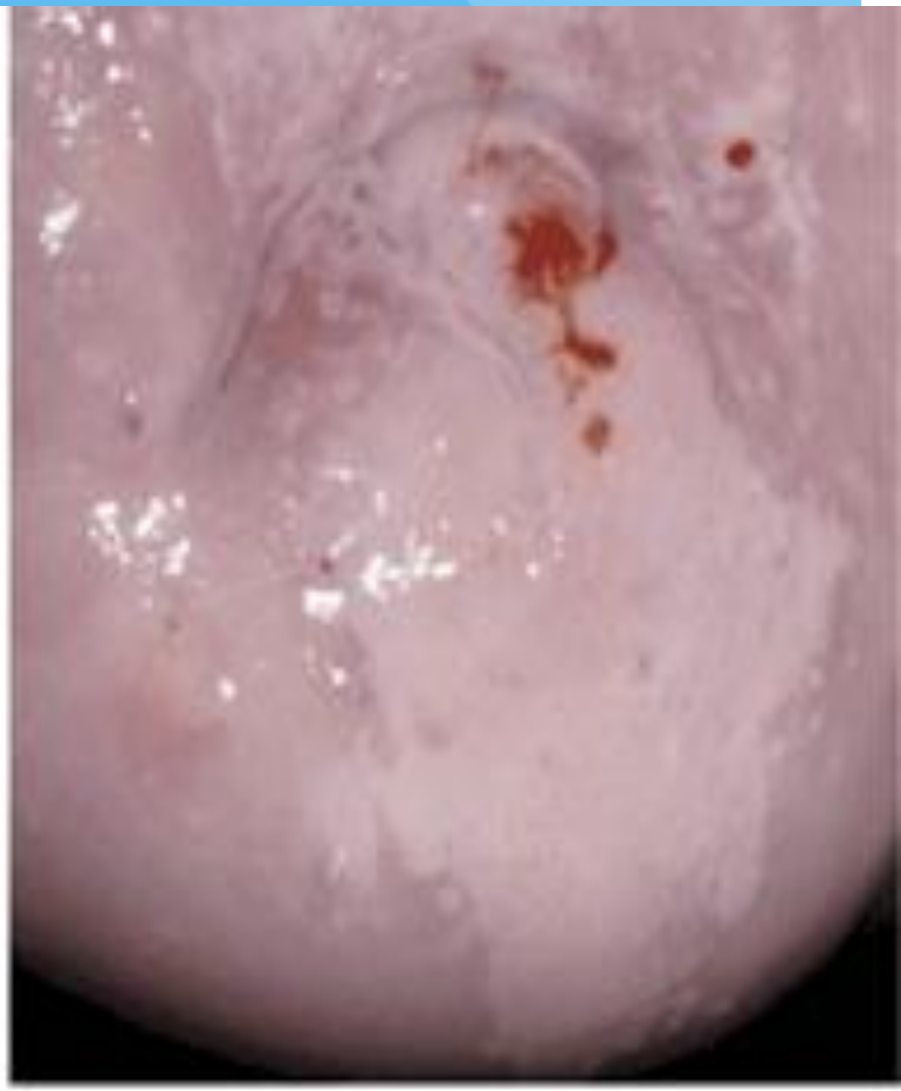
- *Most HPV infections in young females are temporary and have little long-term significance. Seventy percent of infections are gone in 1 year and ninety percent in 2 years.[6] However, when the infection persists — in 5% to 10% of infected women — there is high risk of developing precancerous lesions of the cervix, which can progress to invasive cervical cancer.*

- *This process usually takes 10–15 years, providing many opportunities for detection and treatment of the pre-cancerous lesion. Progression to invasive cancer can be almost always prevented when standard prevention strategies are applied, but the lesions still cause considerable burden necessitating preventive surgeries, which do in many cases involve loss of fertility.*

- HPV types and risk of cervical carcinogenesis
  - Most common types
  - 6, 11 Condyloma acuminatum, flat condyloma
  - 16 All grades CIN, squamous cell carcinoma
  - 18 All grades CIN, adenocarcinoma, squamous cell carcinoma
  - Less common types 30, 40, 58, 69 All grades CIN
  - 31, 33, 35, 39, 45, 51, 52, 56 All grades CIN, squamous cell carcinoma

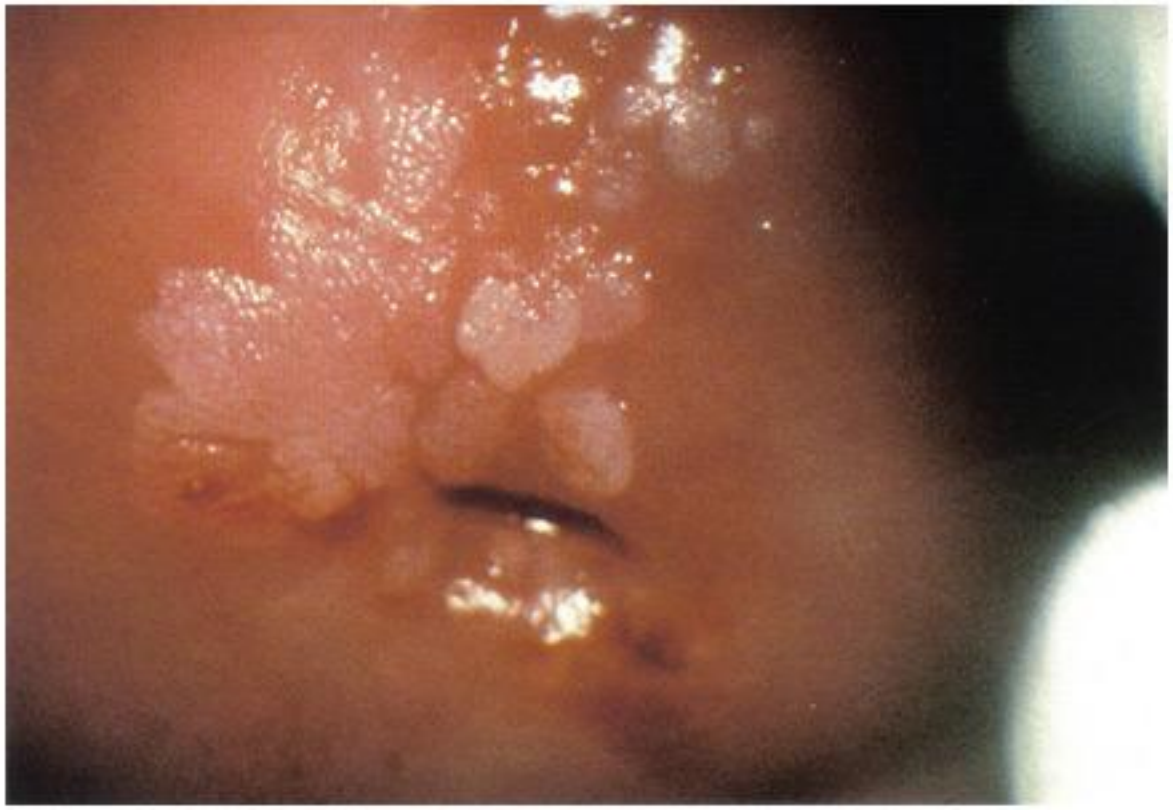


Healthy

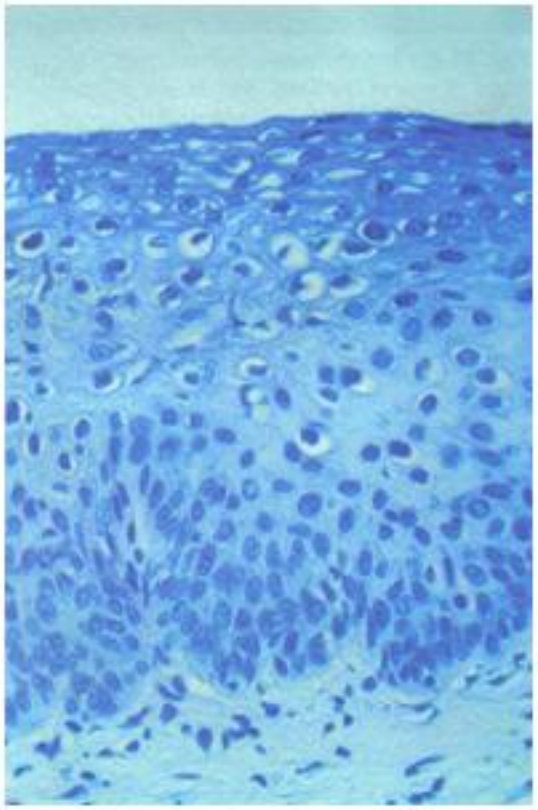


CIN I

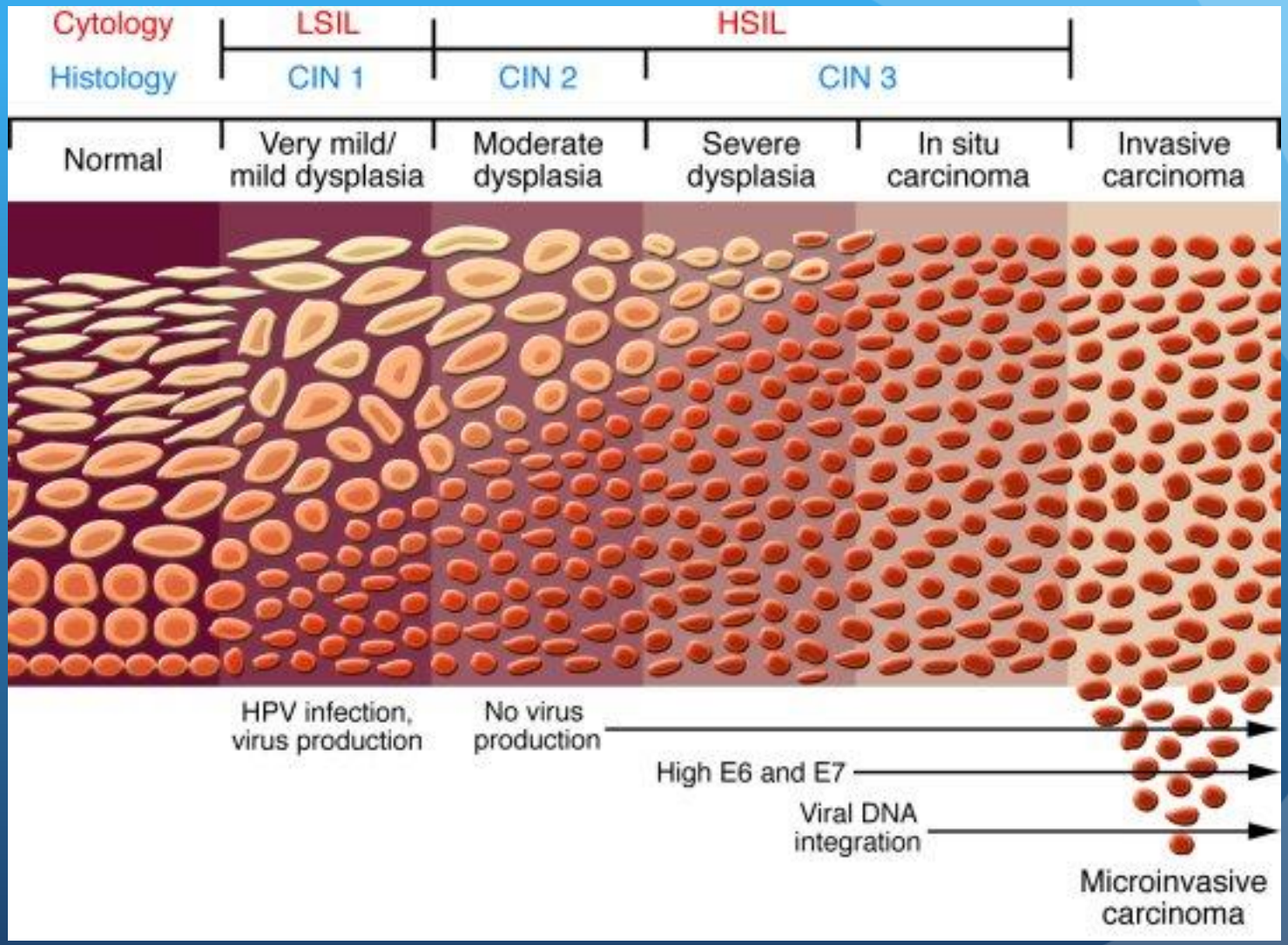
Normal cervix and CIN I cervix

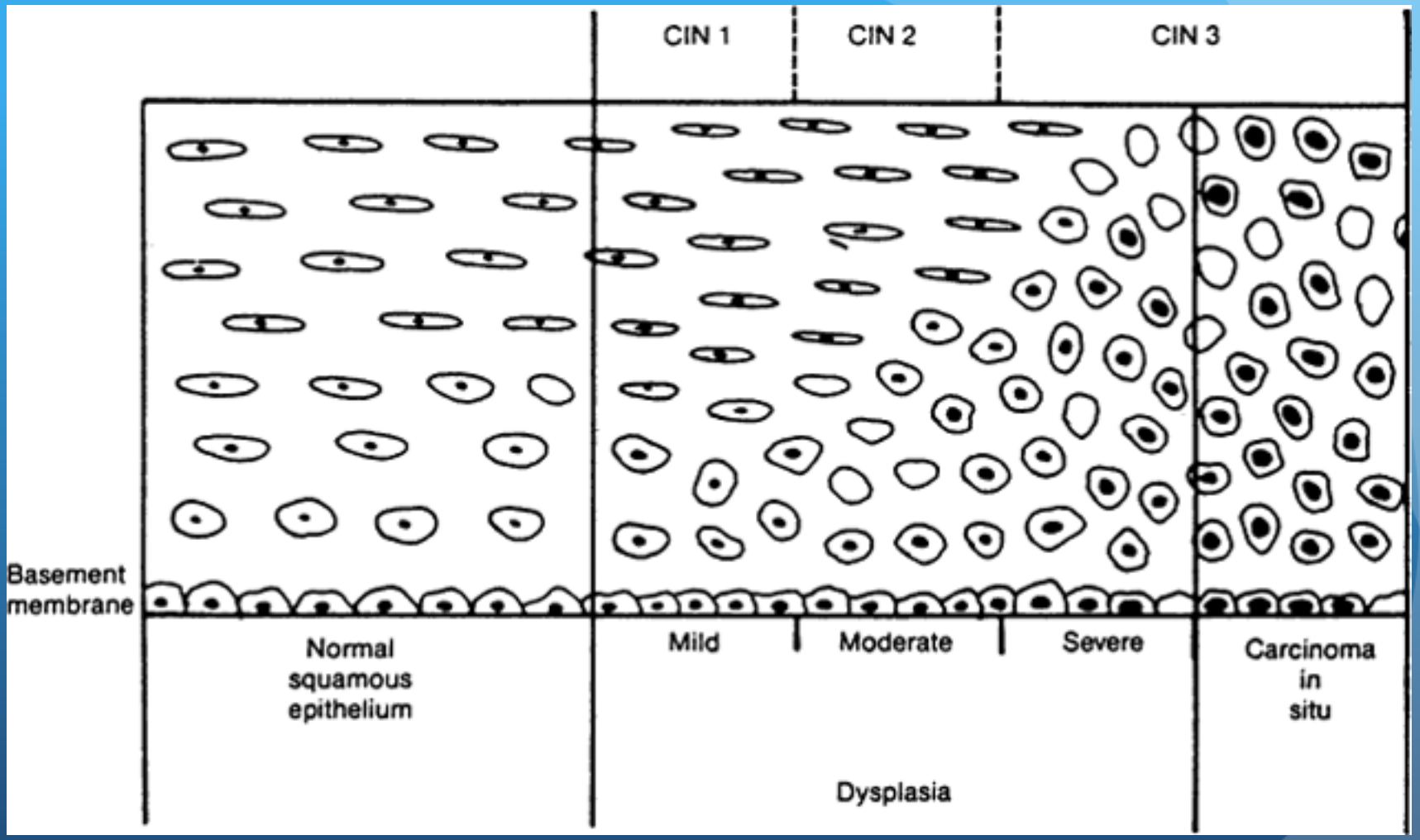


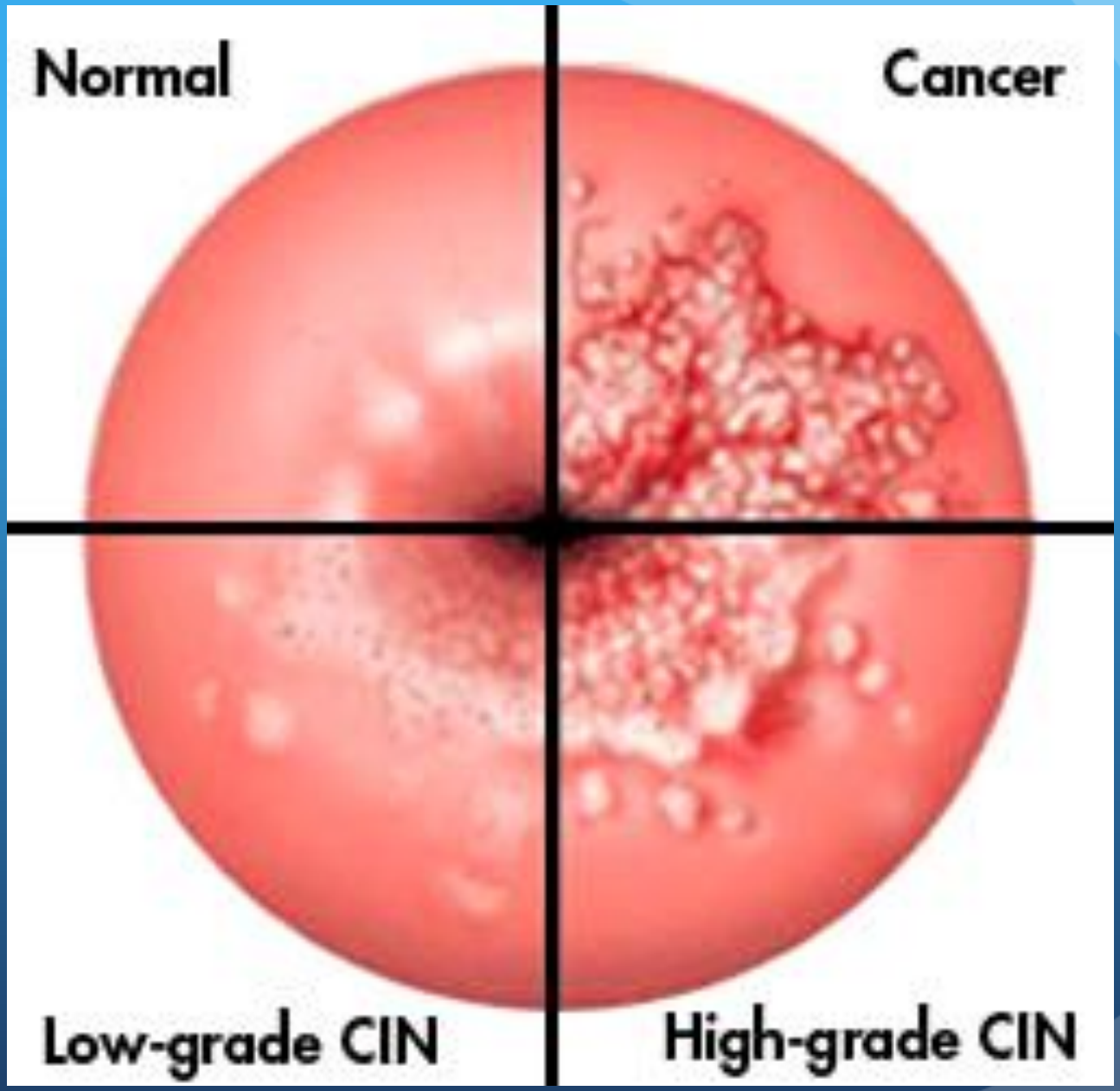
A

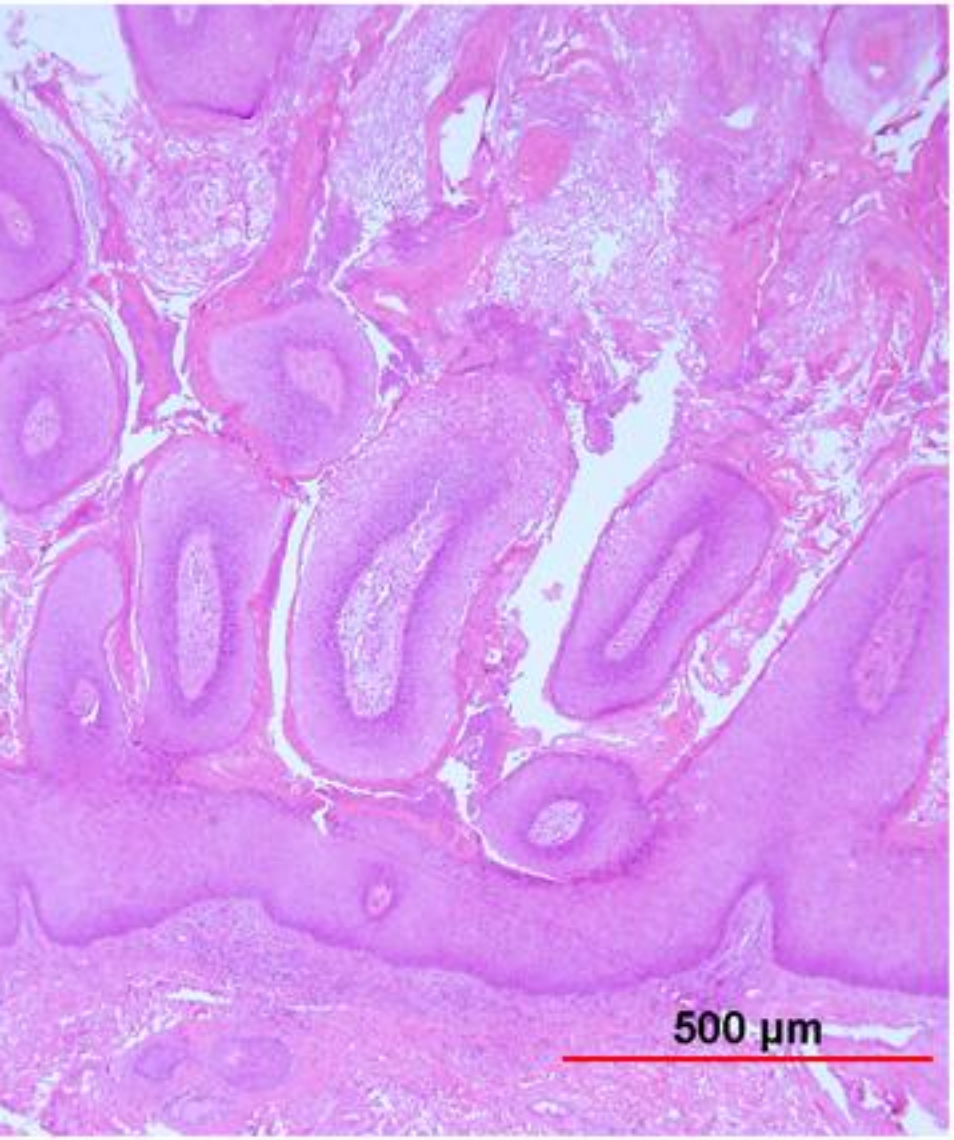


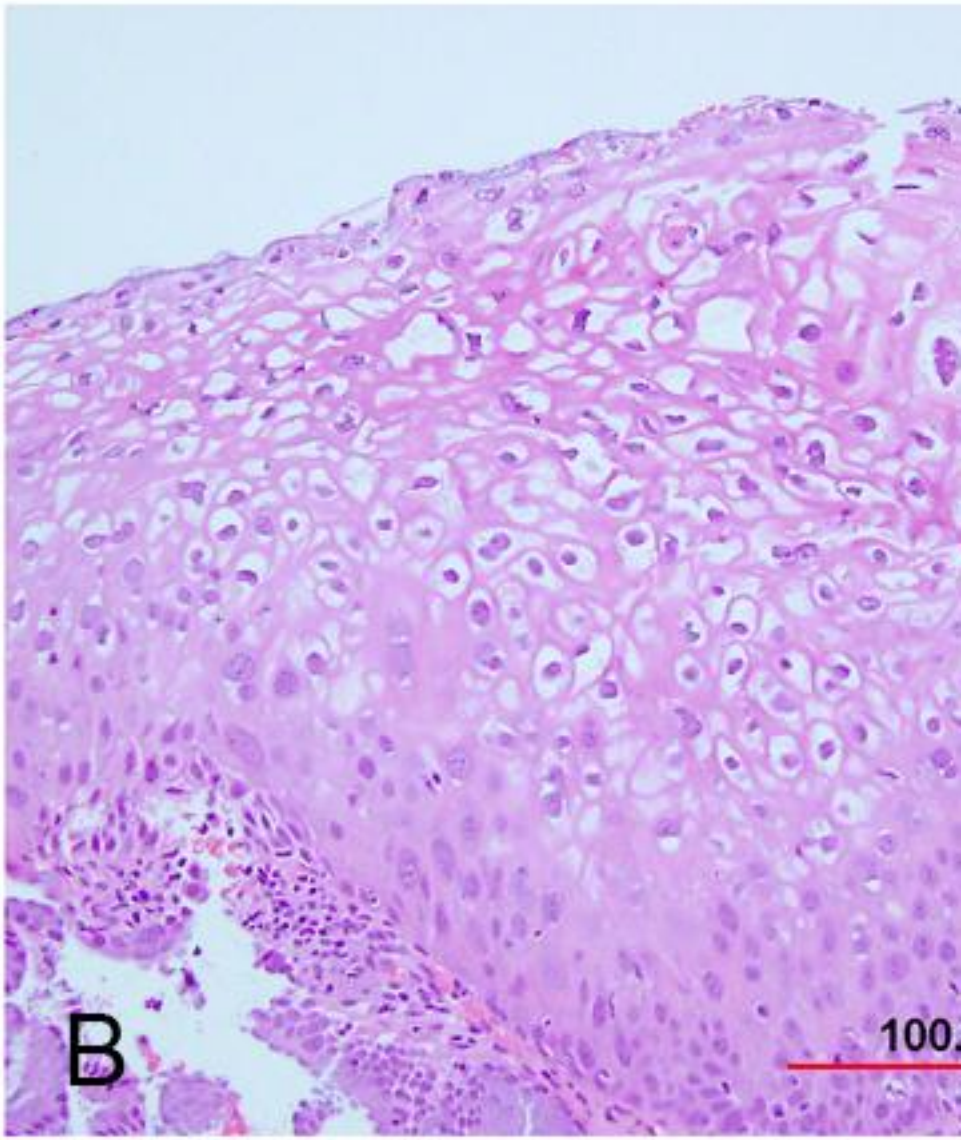
B

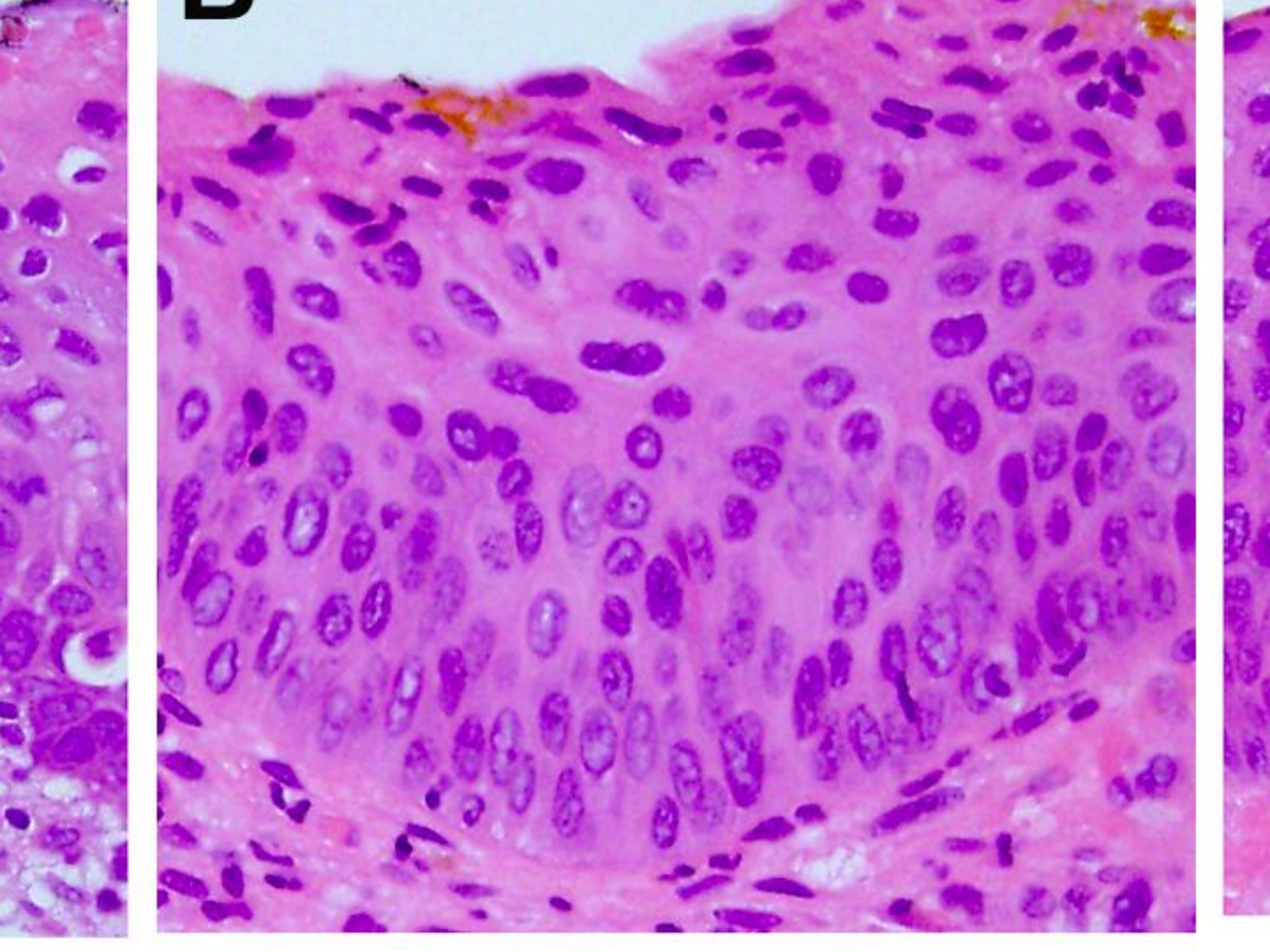

Cytology
LSIL
HSIL
Histology
CIN 1
CIN 2
CIN 3
Normal
Very mild/
mild dysplasia
Moderate
dysplasia
Severe
dysplasia
In situ
carcinoma
Invasive
carcinoma
HPV infection,
virus production
No virus
production
High E6 and E7
Viral DNA
integration
Microinvasive
carcinoma

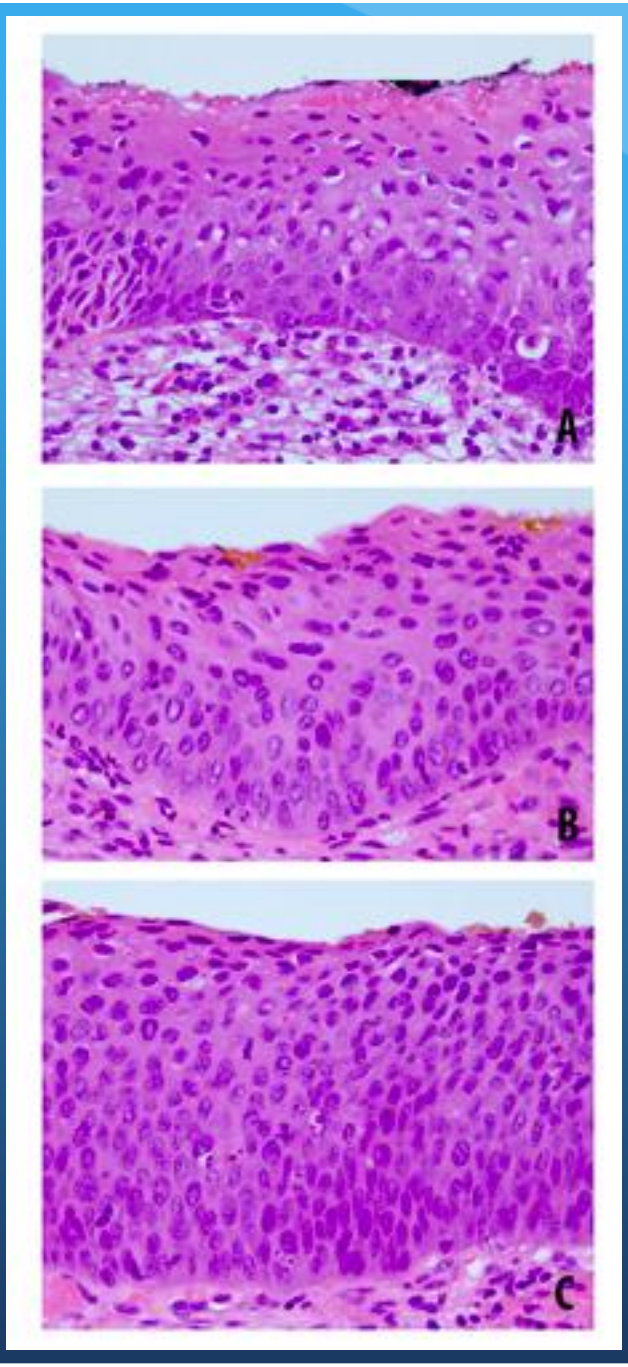

CIN 1
CIN 2
CIN 3
Basement membrane
Normal squamous epithelium
Mild
Moderate
Severe
Carcinoma in situ
Dysplasia

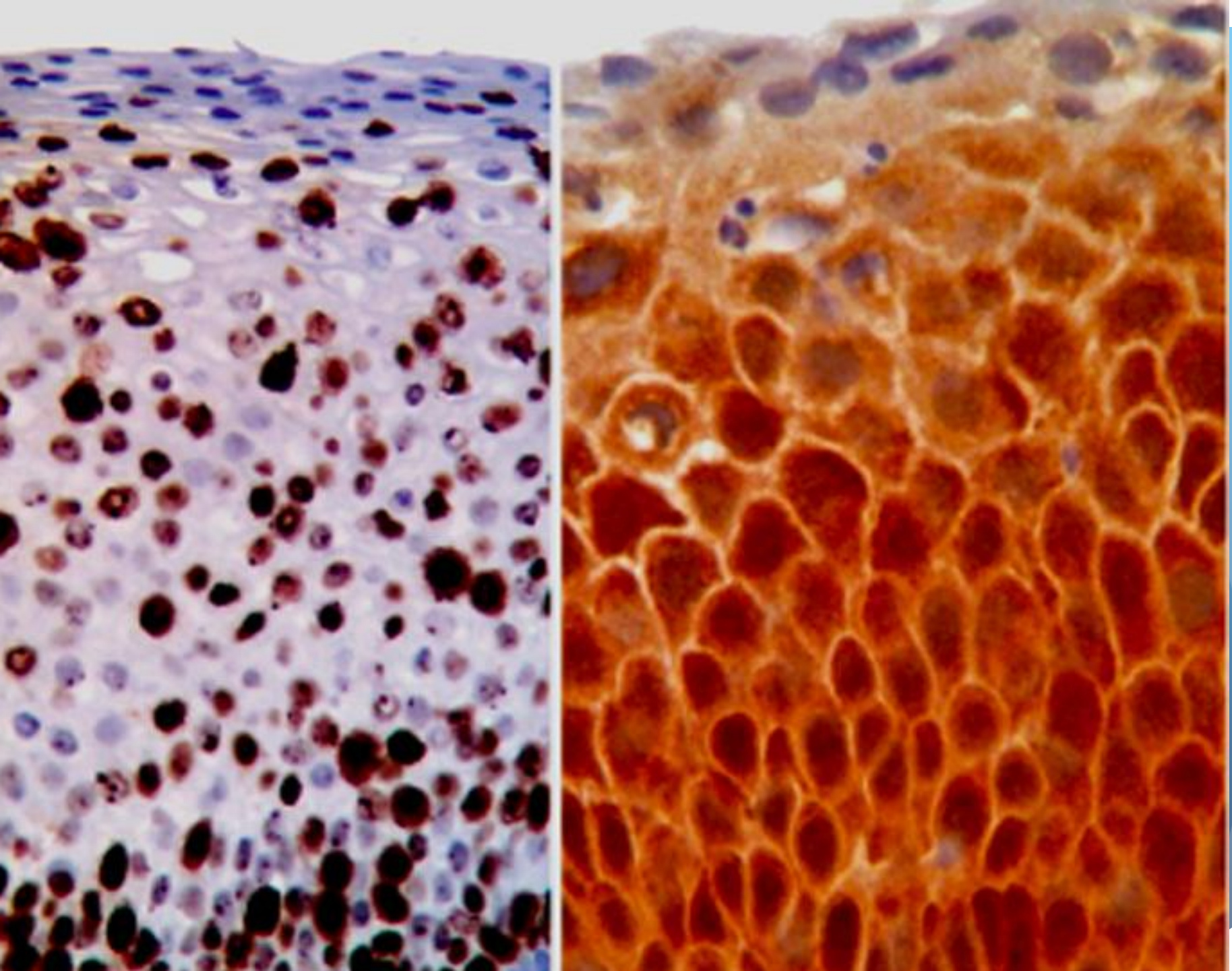

Normal
Cancer
Low-grade CIN
High-grade CIN

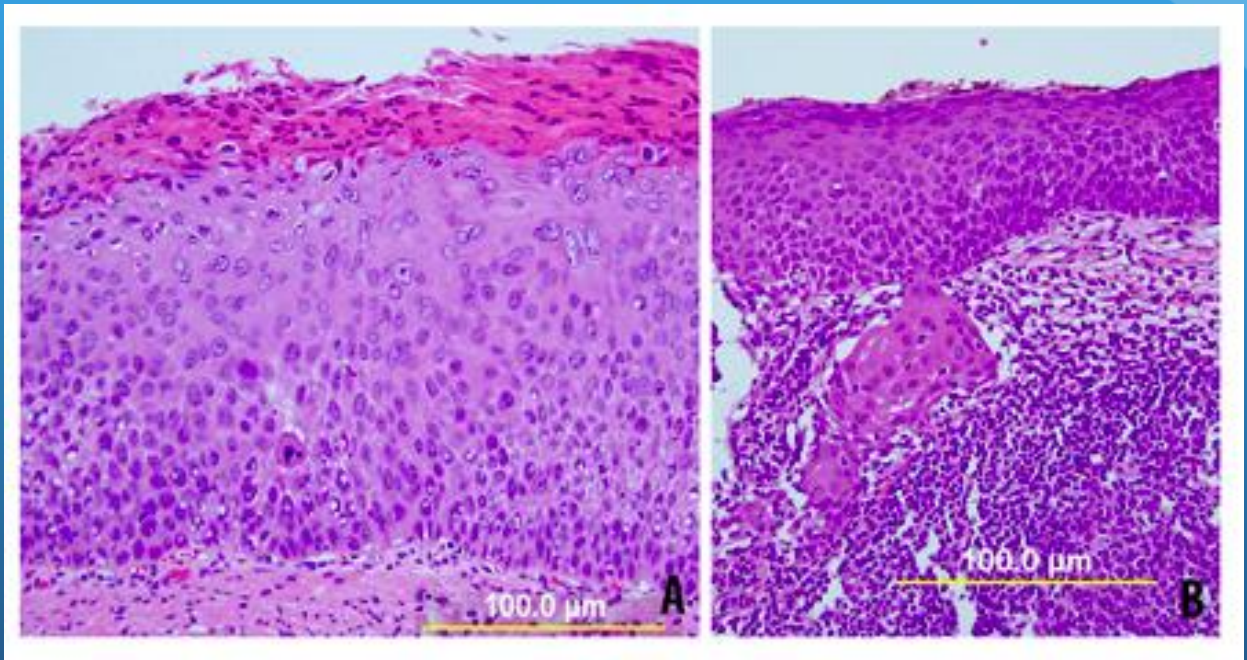

500 µm

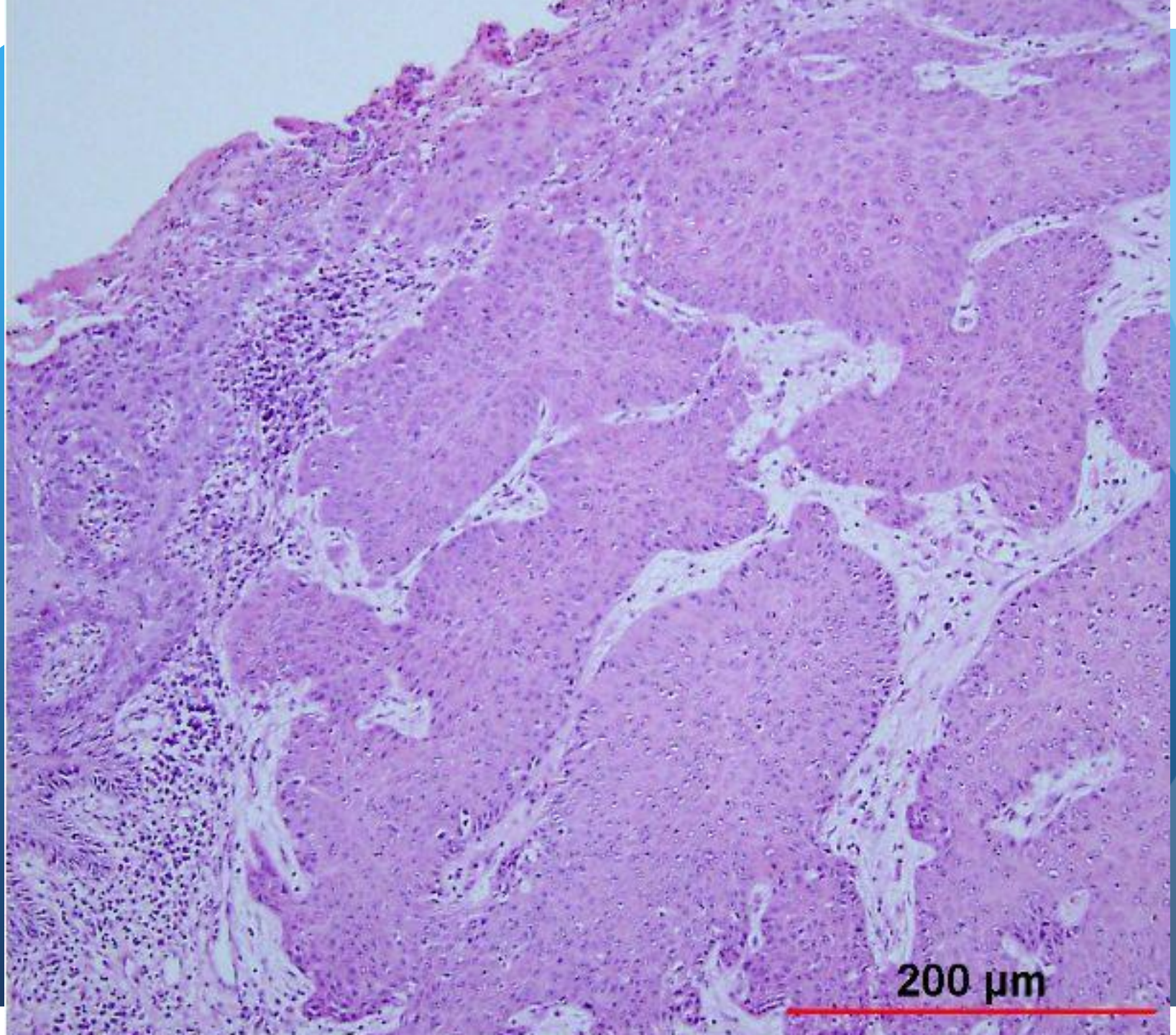

B


B


A
B
C




100.0 µm
A
100.0 µm
B


200 µm

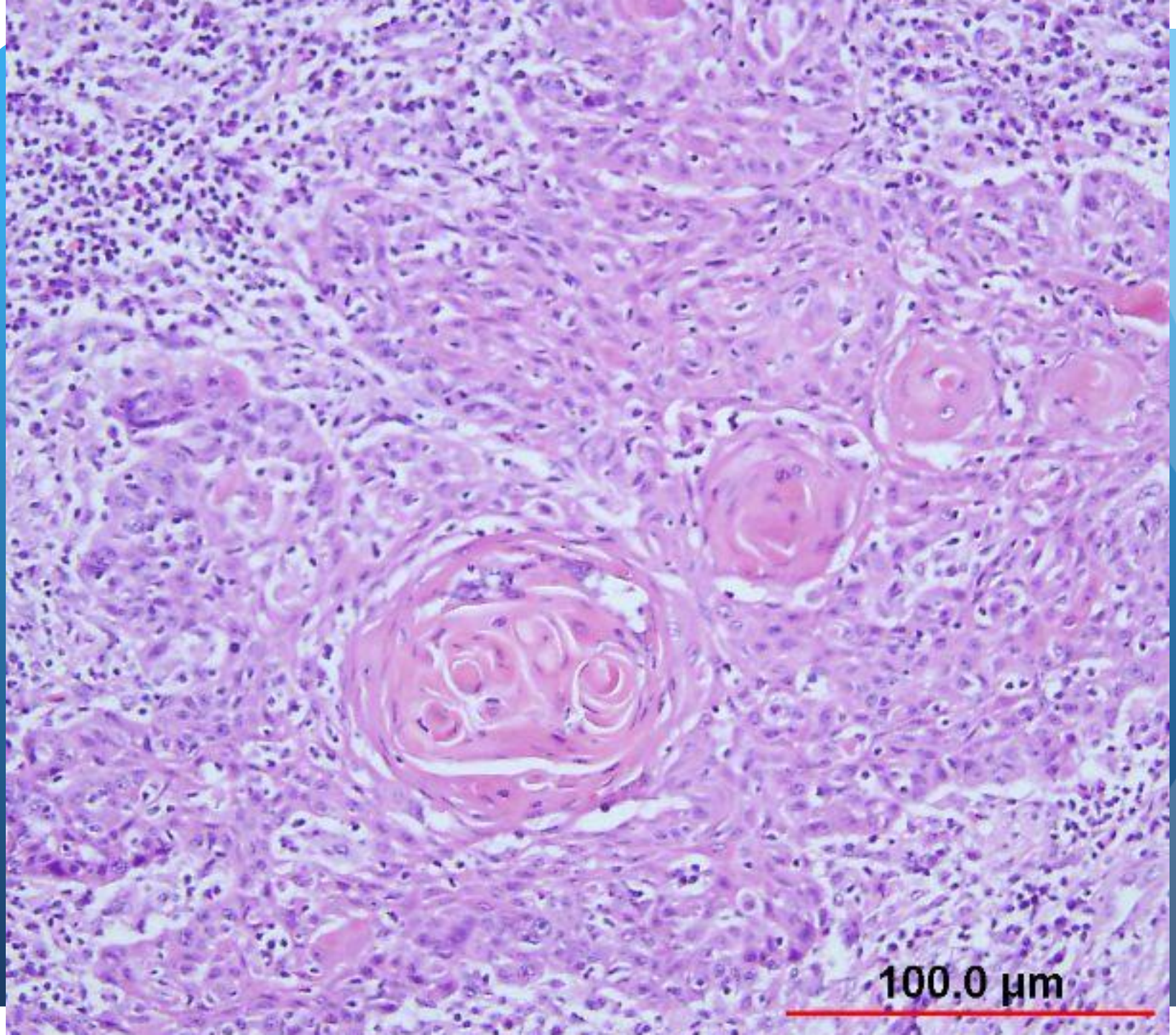
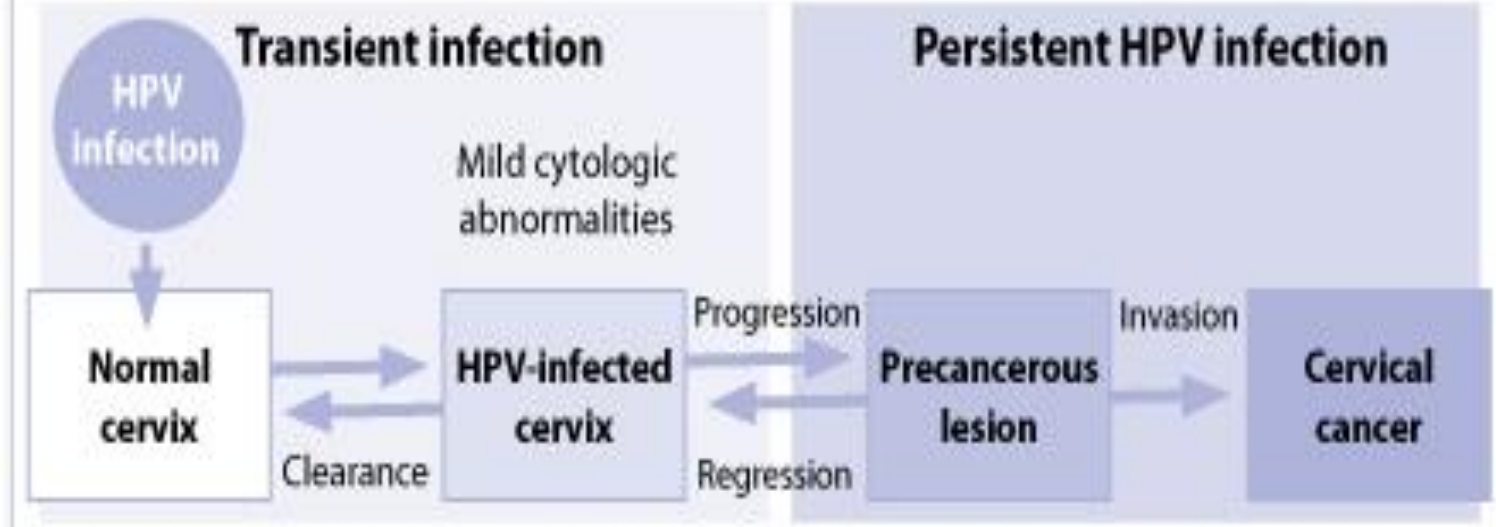

100.0 µm

Figure 4. How cervical cancer develops



Adapted from Wright TC, Schiffman M. Adding a Test for Human Papillomavirus DNA to Cervical-Cancer Screening. *The New England Journal of Medicine*. 2003;348:489-490.


Thank You

Correct method of smear taking, sending, interpretation and report

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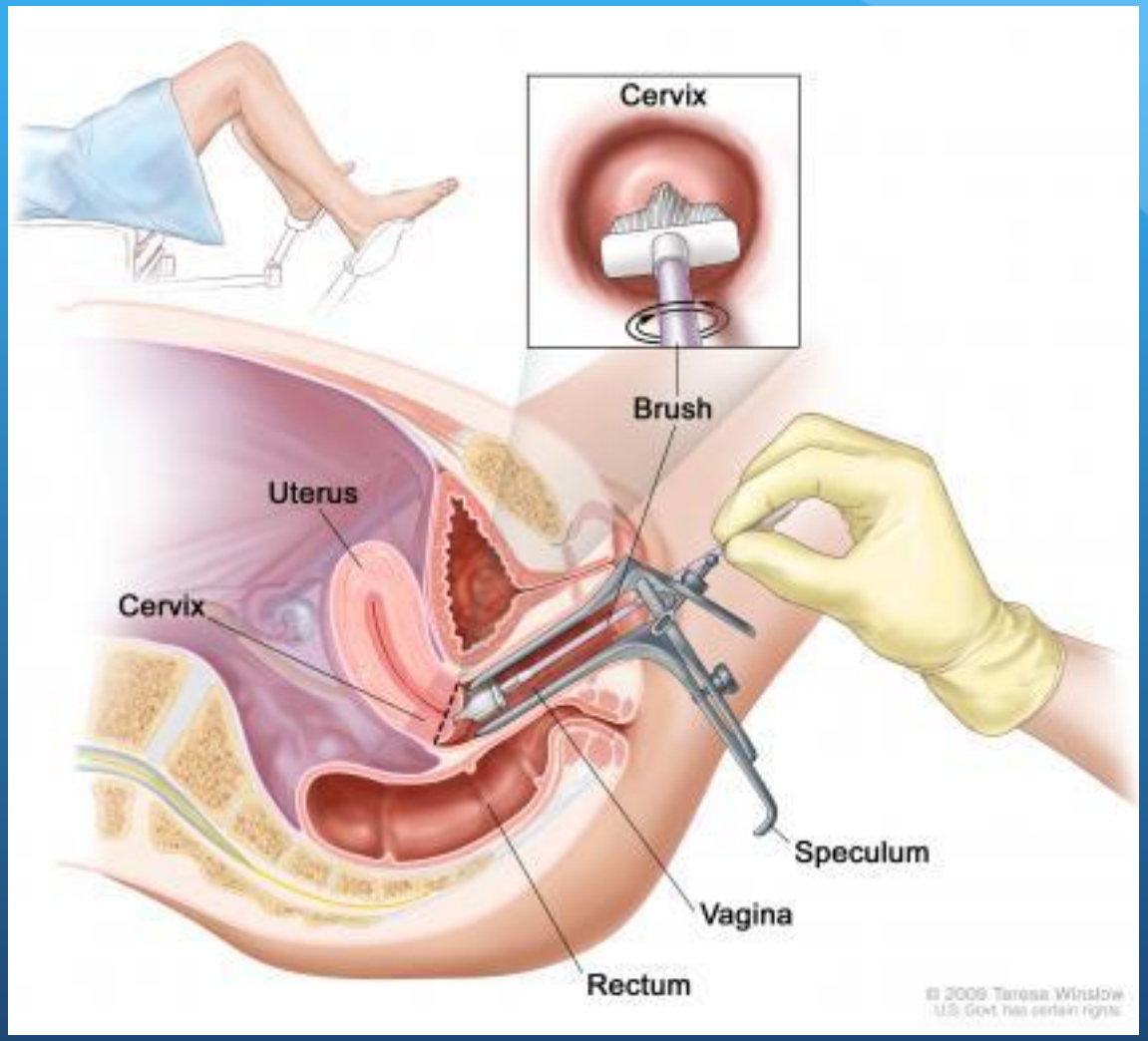
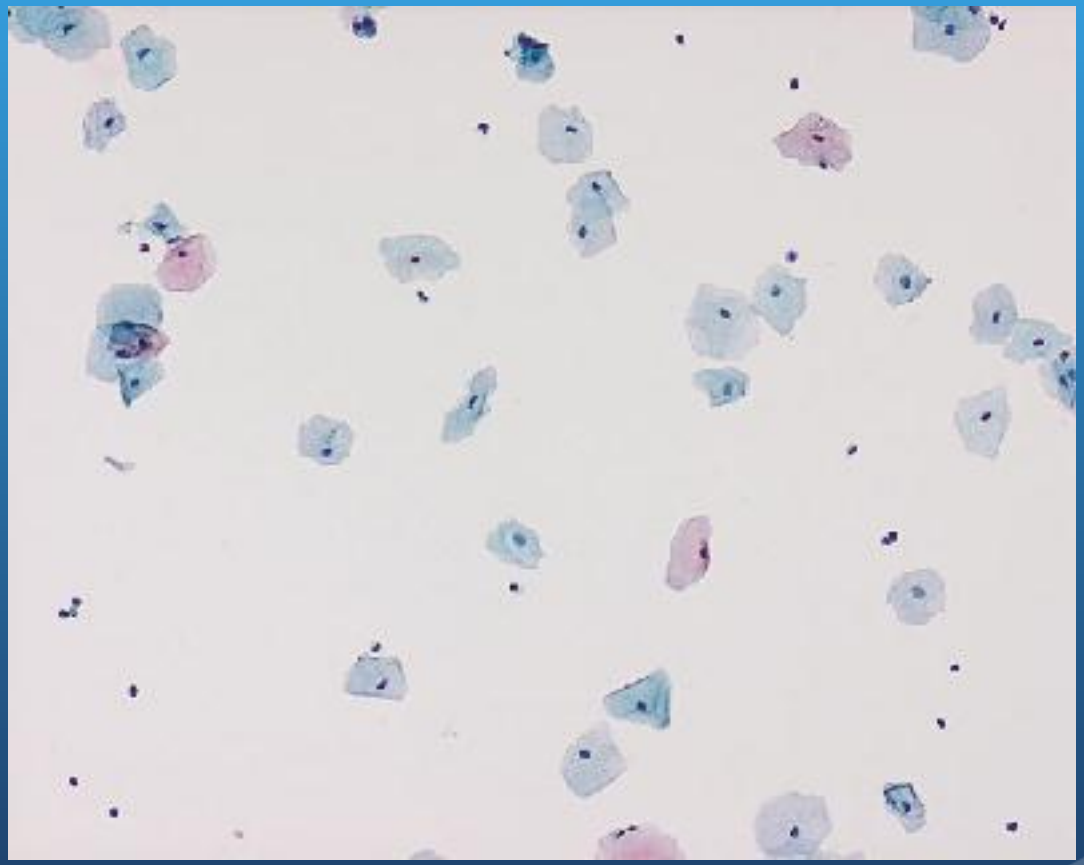
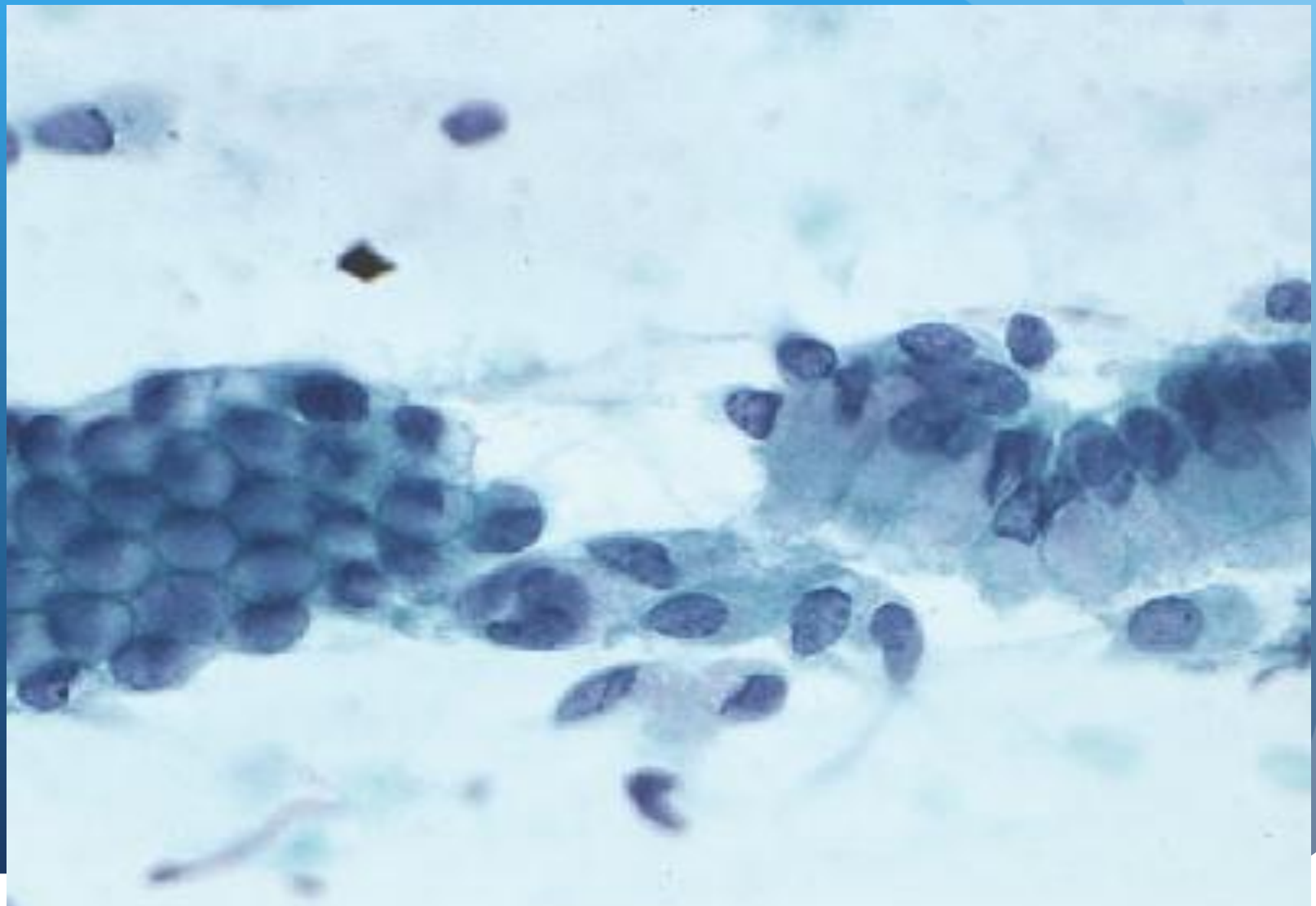

Cervix
Brush
Uterus
Cervix
Speculum
Vagina
Rectum

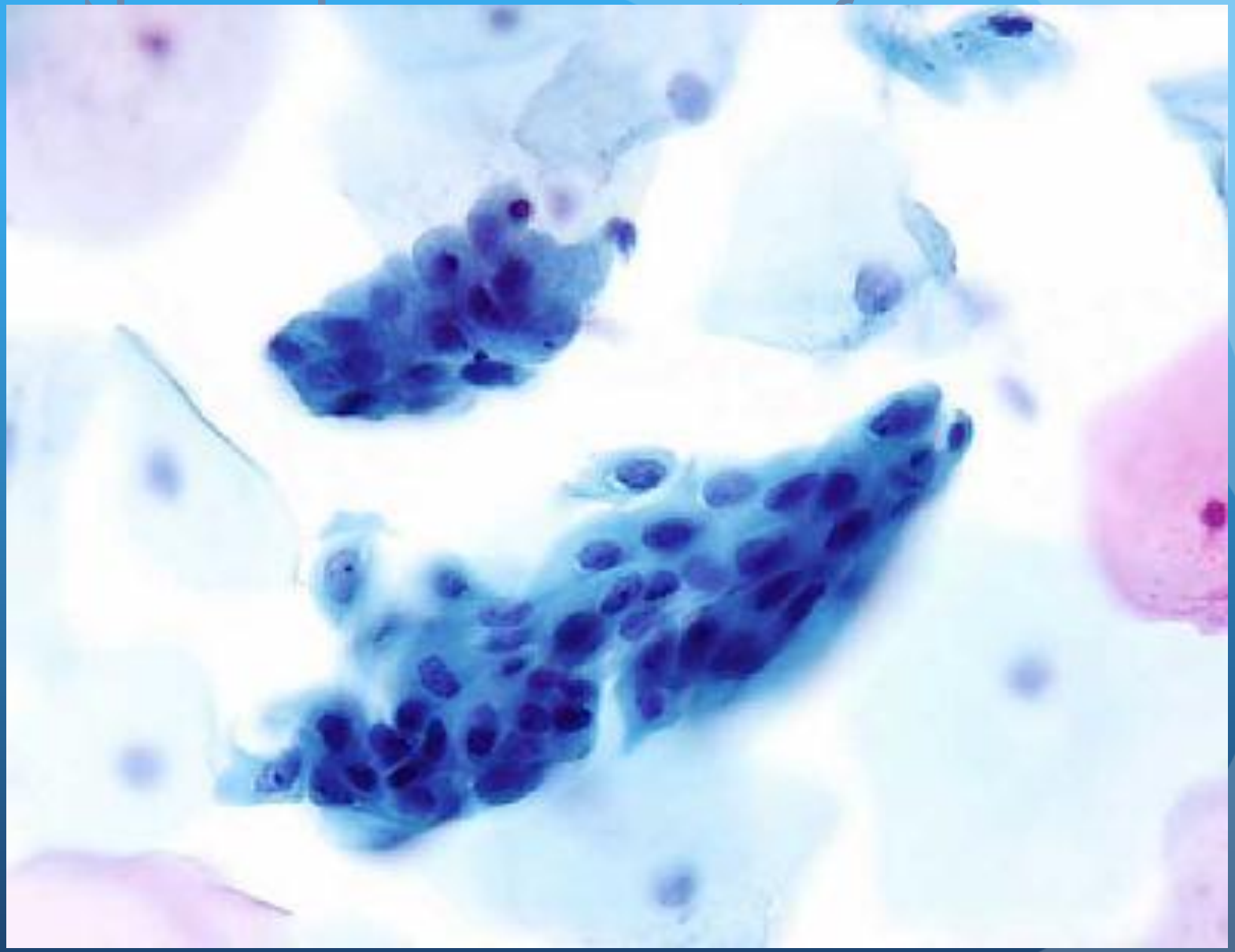

ThinPrep
CYTYC


Sanxinmed Group
Disposable Pap Smear Kit

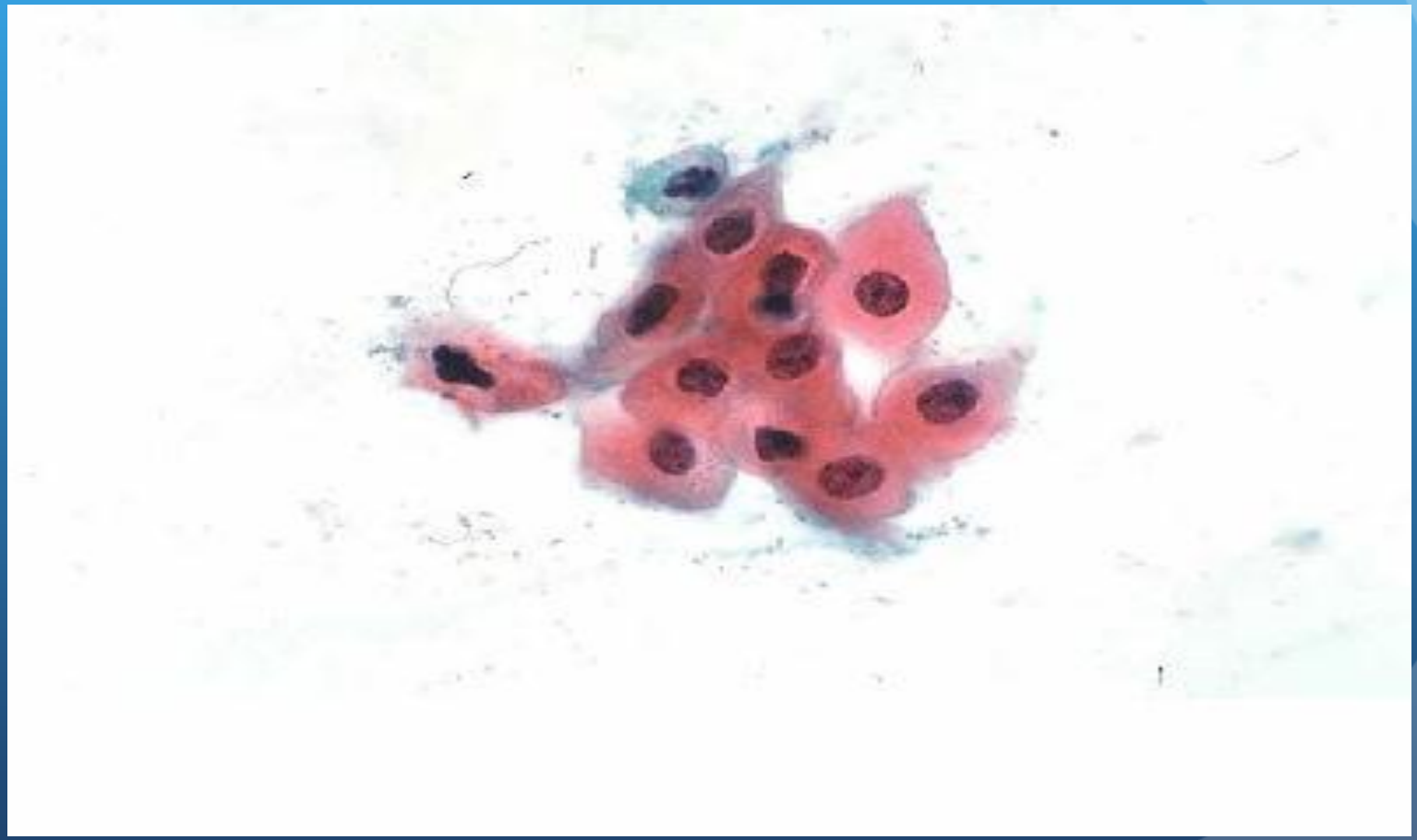


Normal component of cervicovaginal Smear





ASCUS



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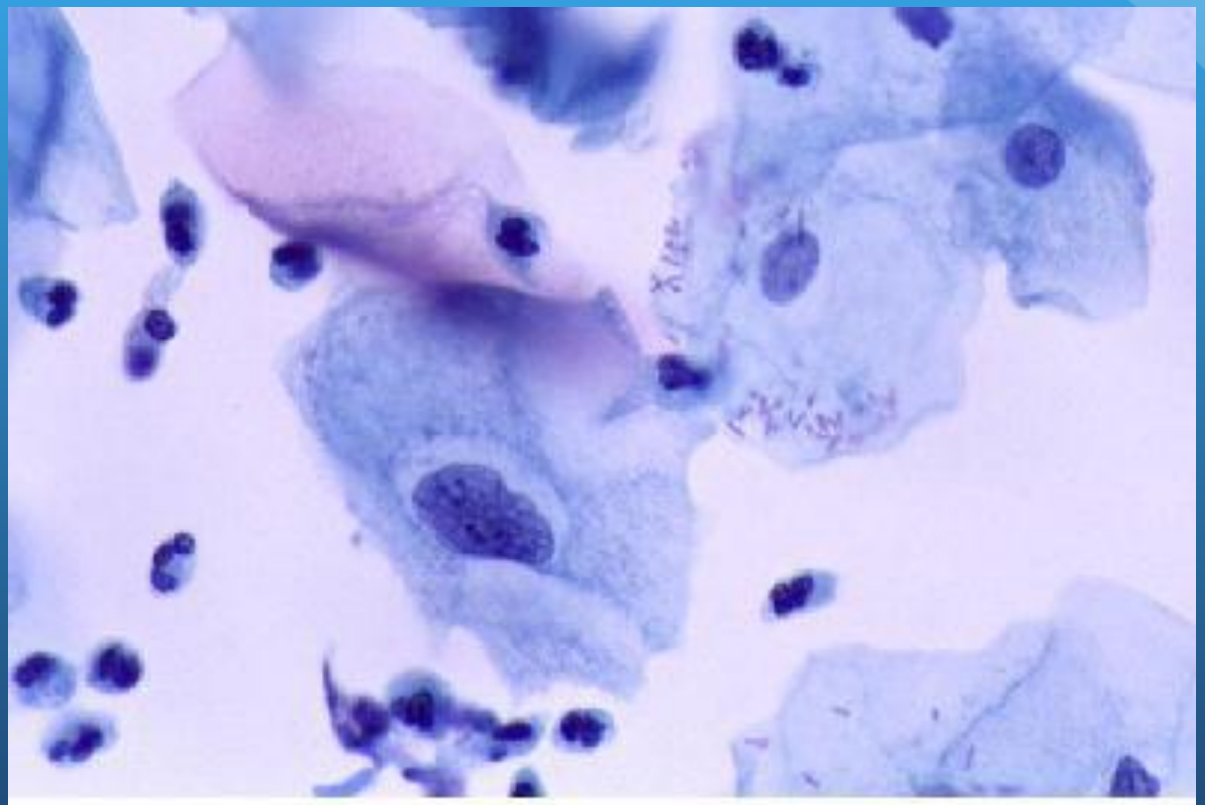

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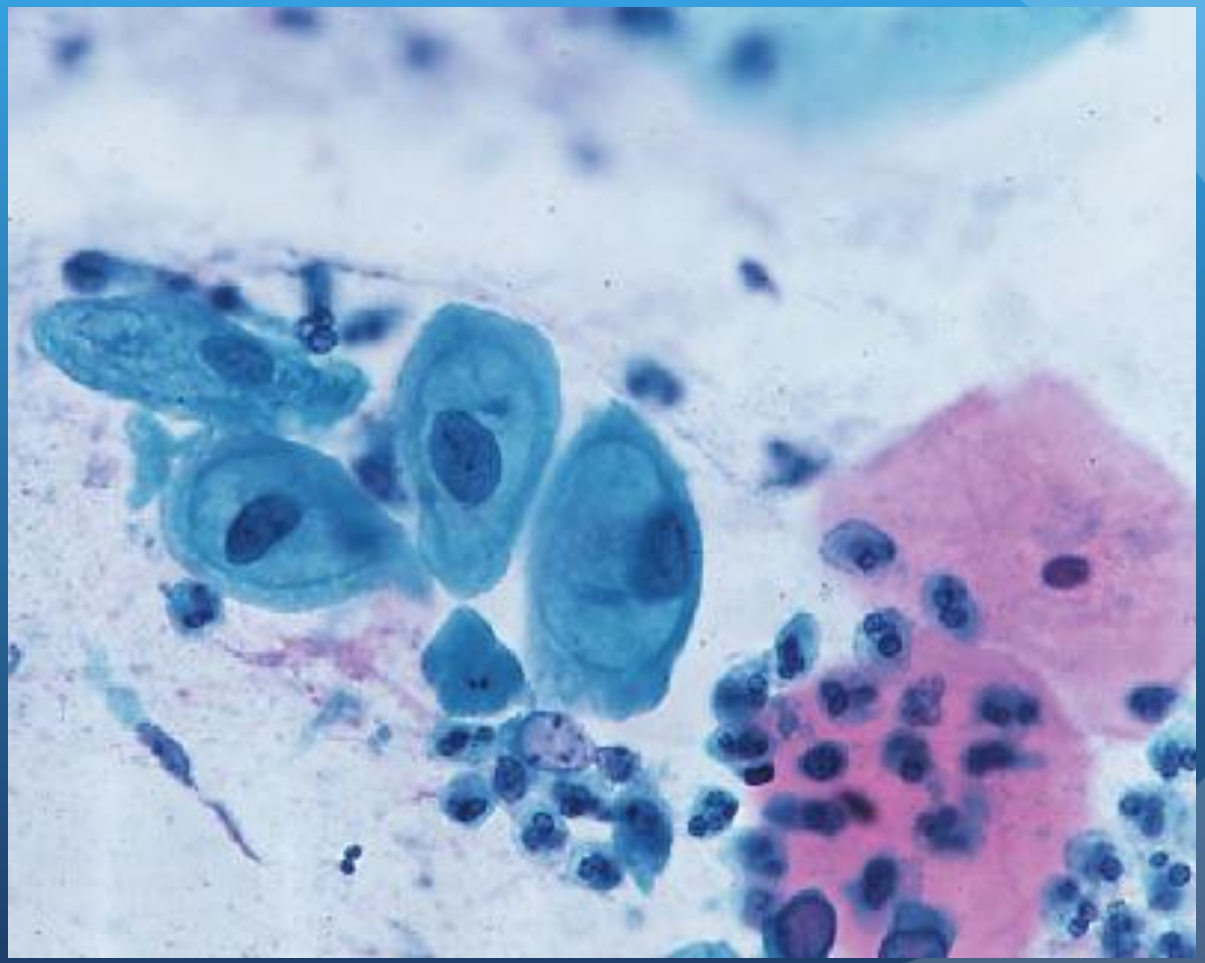
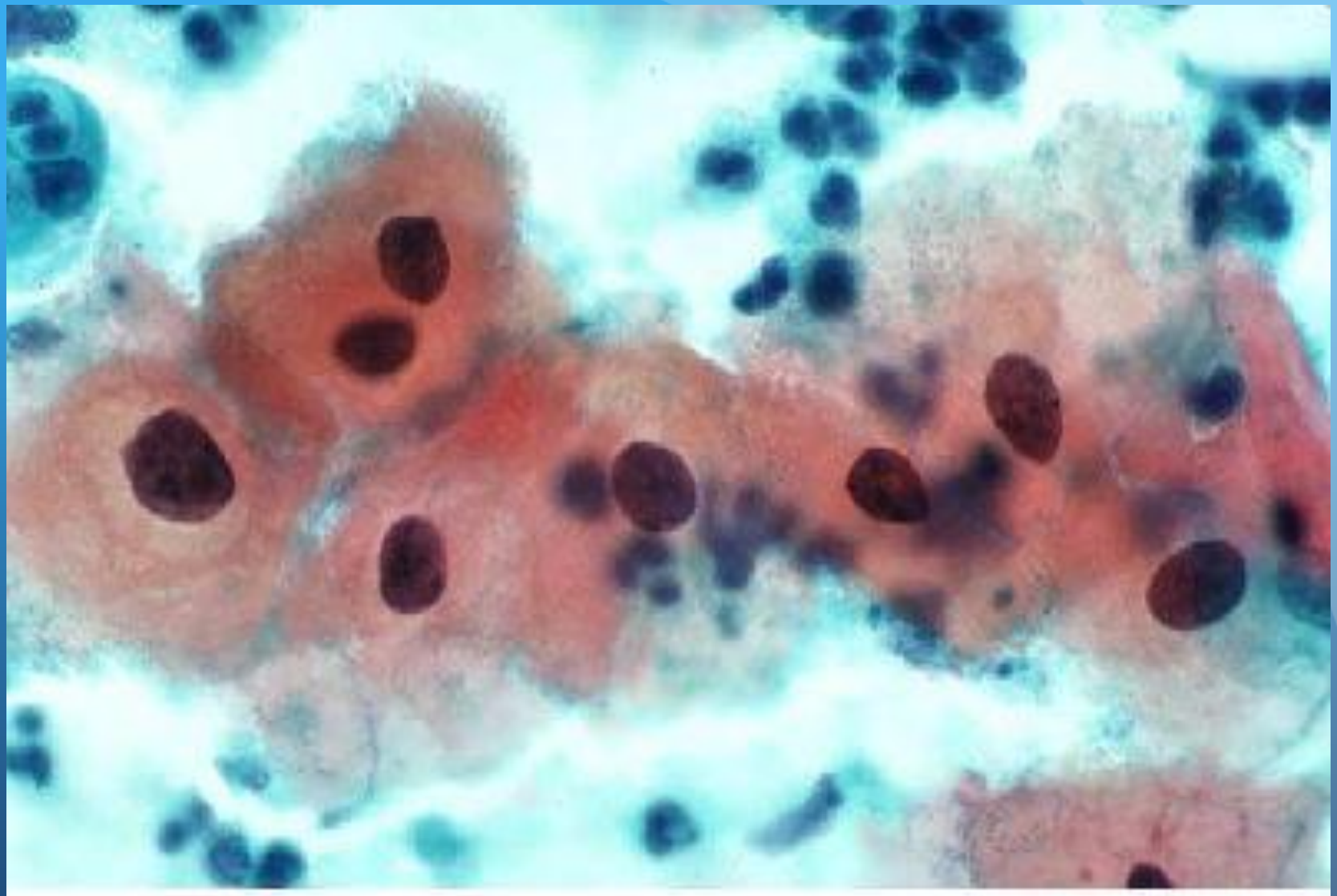
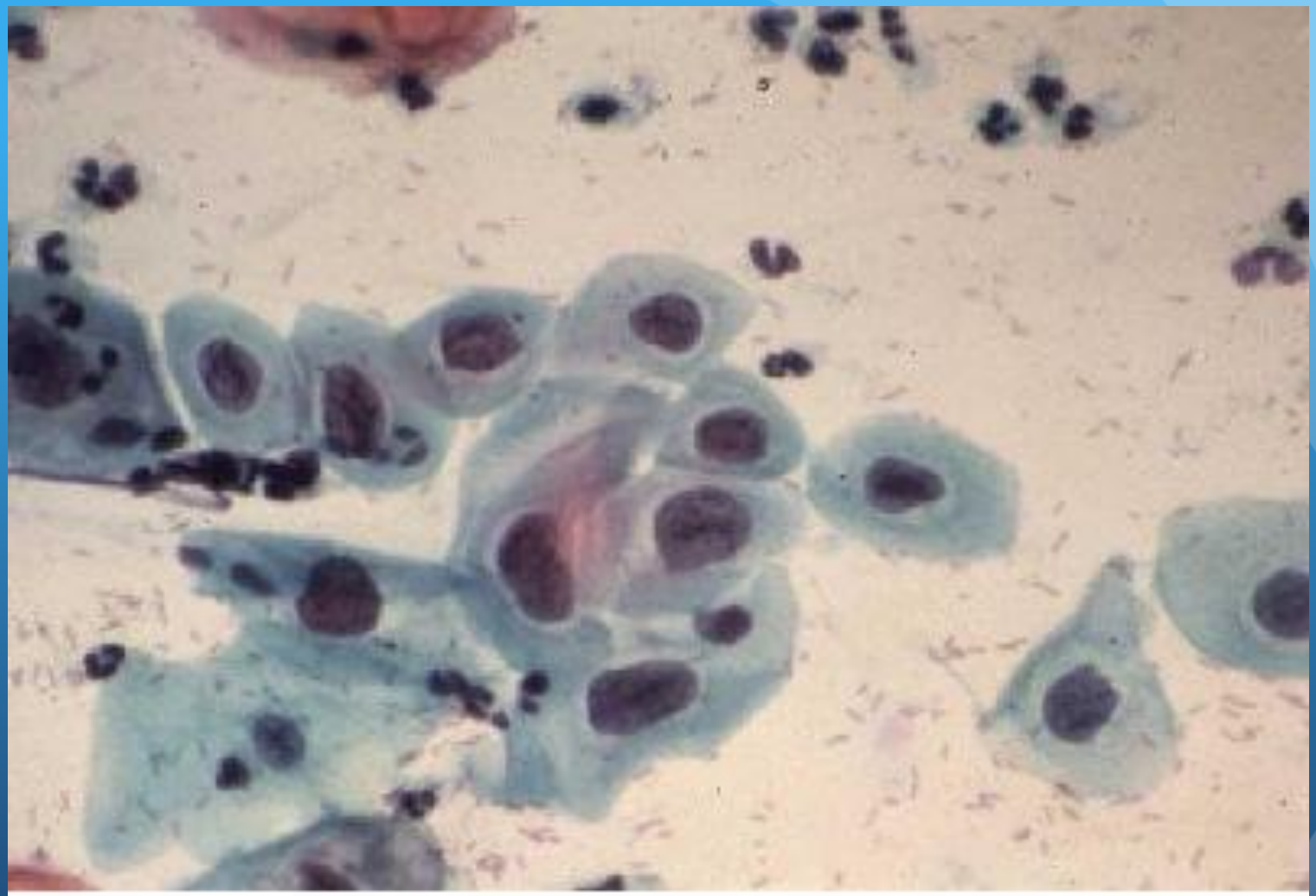
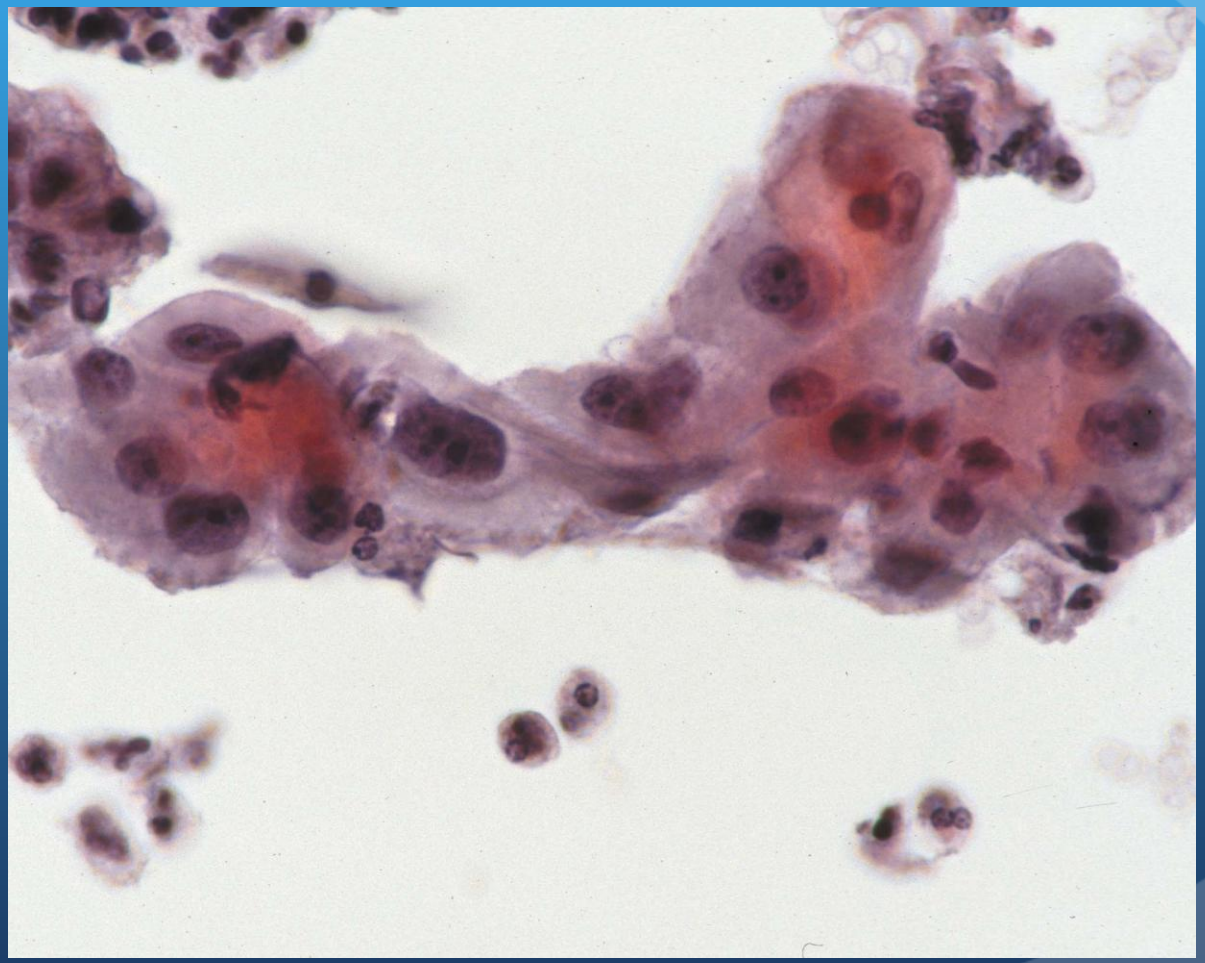


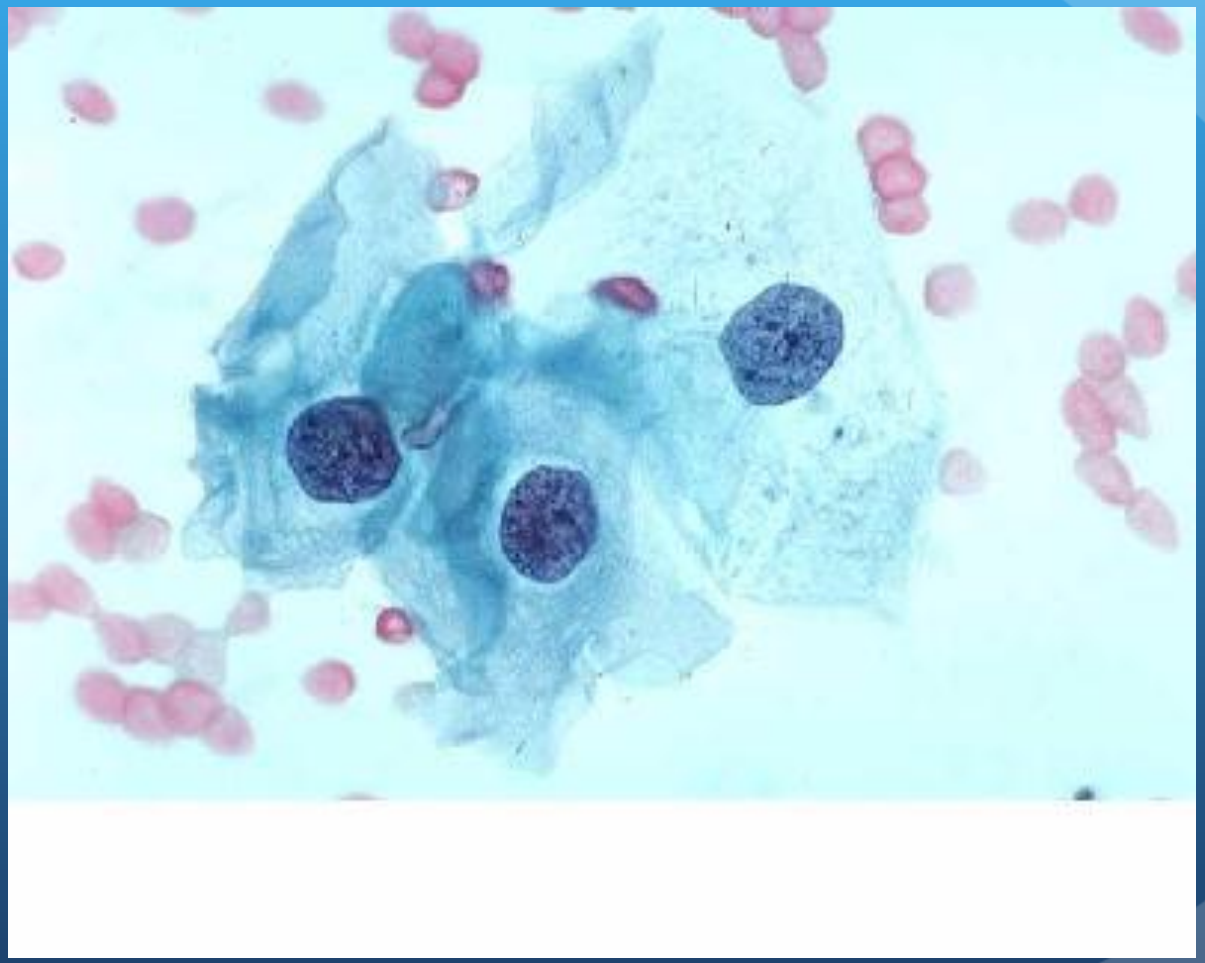




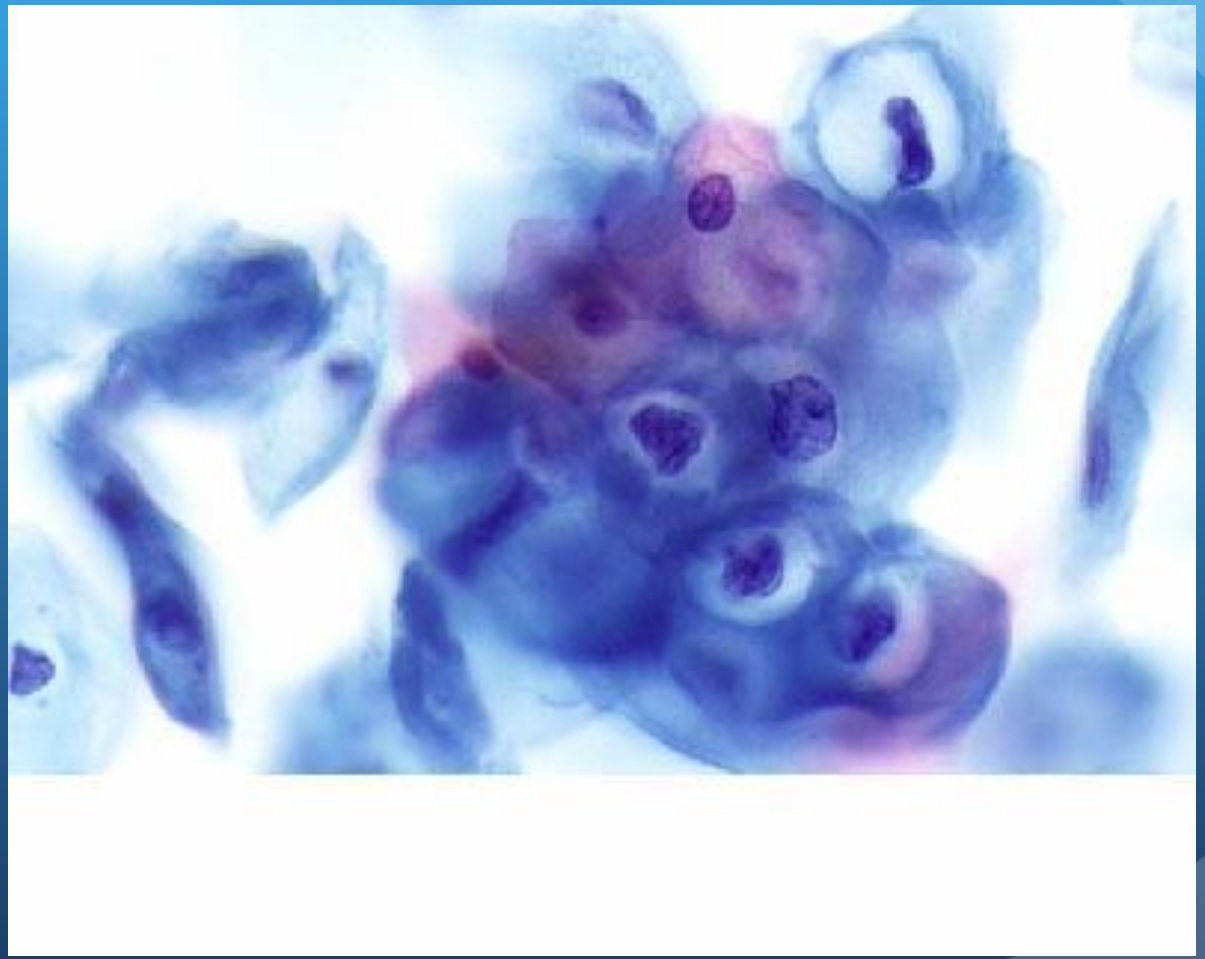
ASC-US vs LSIL (Borderline)



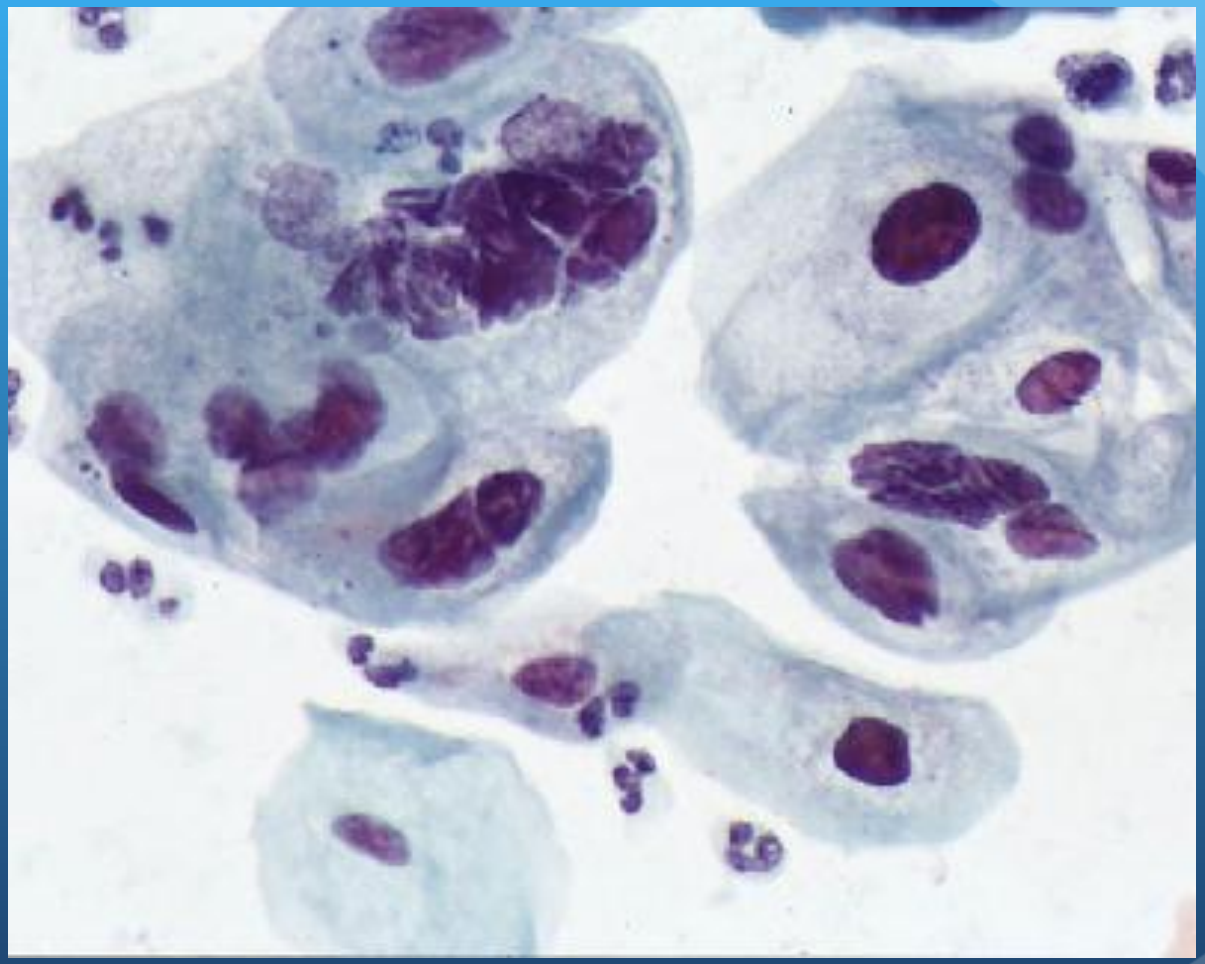
LSIL

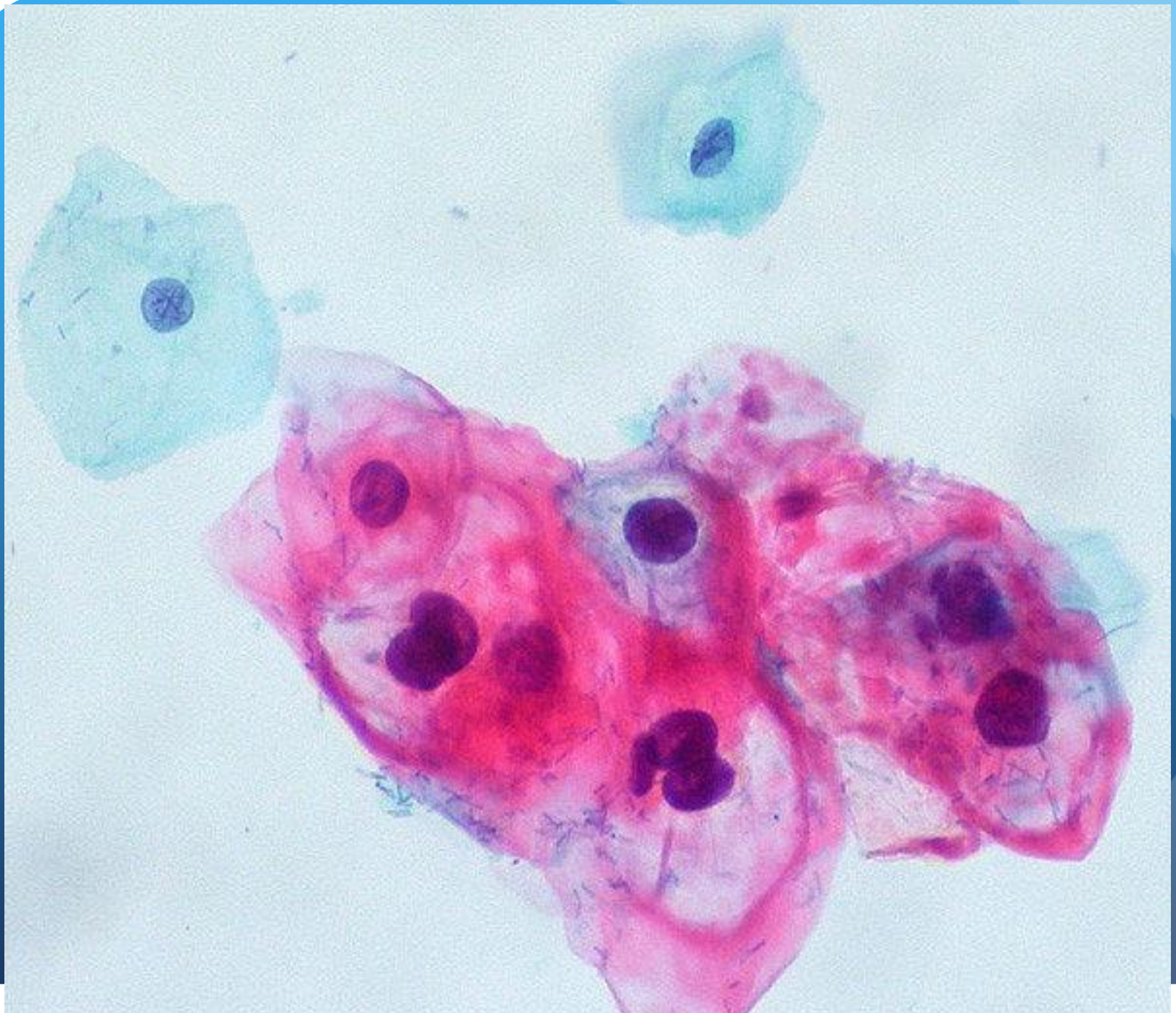


LSIL

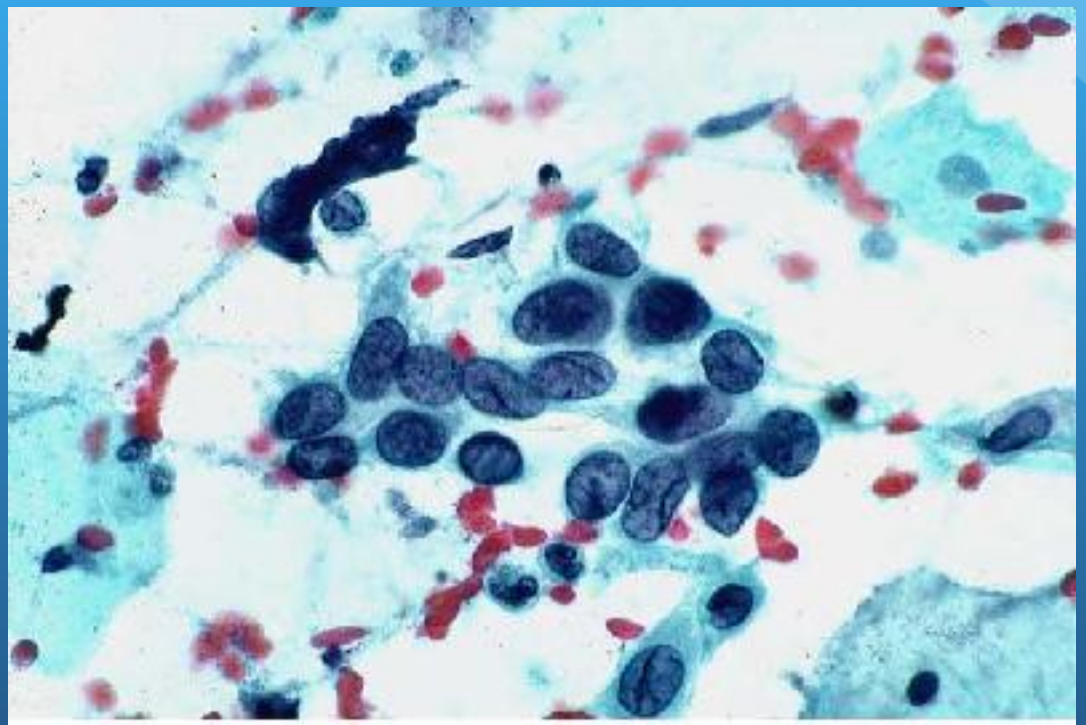


LSIL

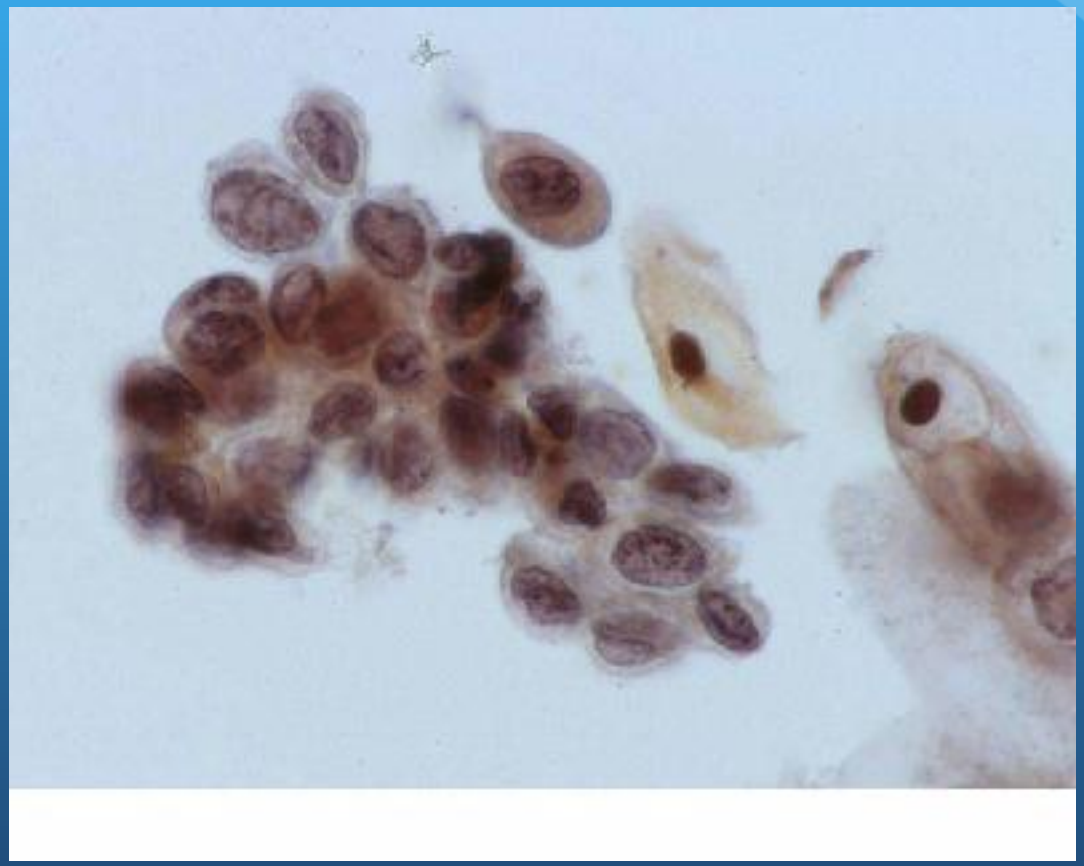


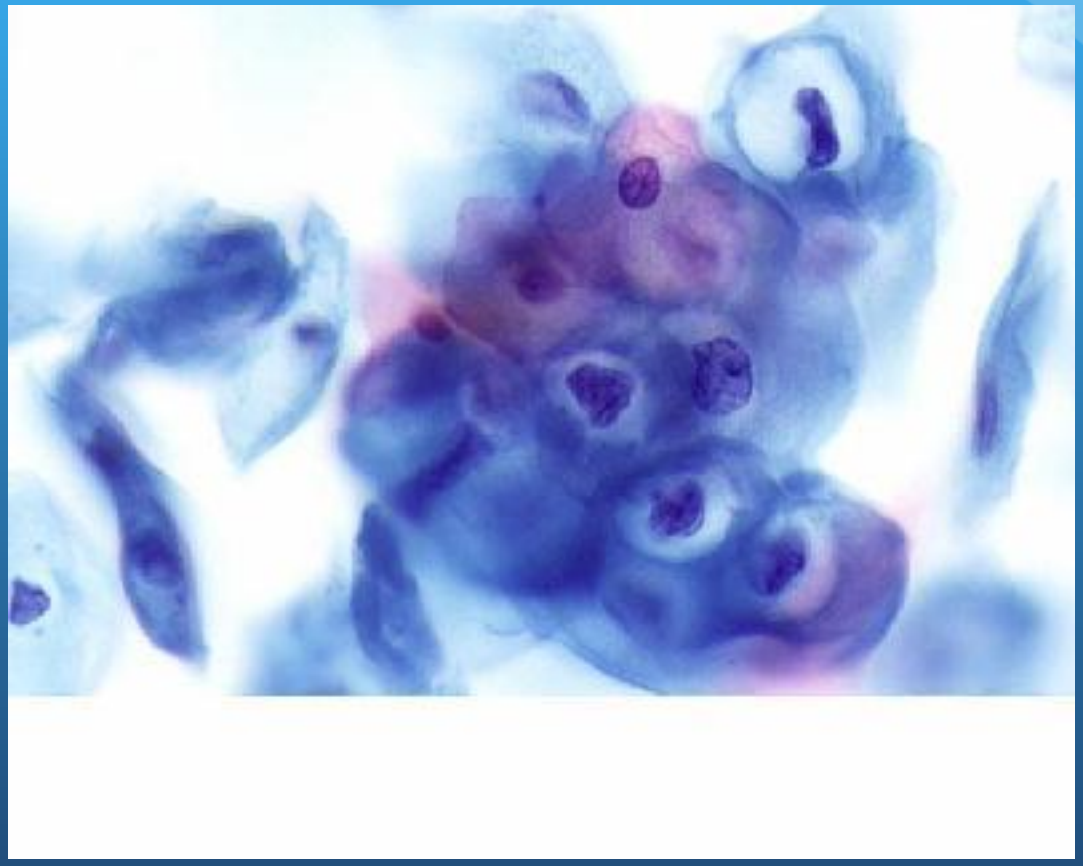


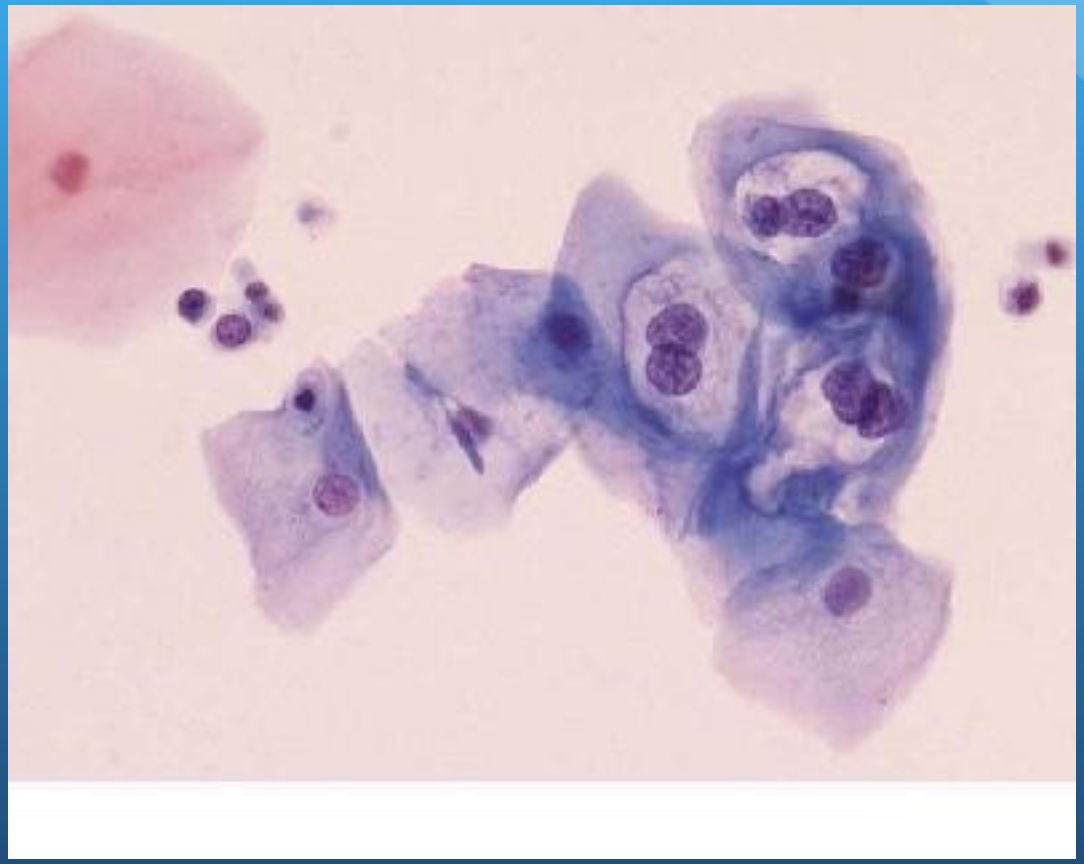
HSIL

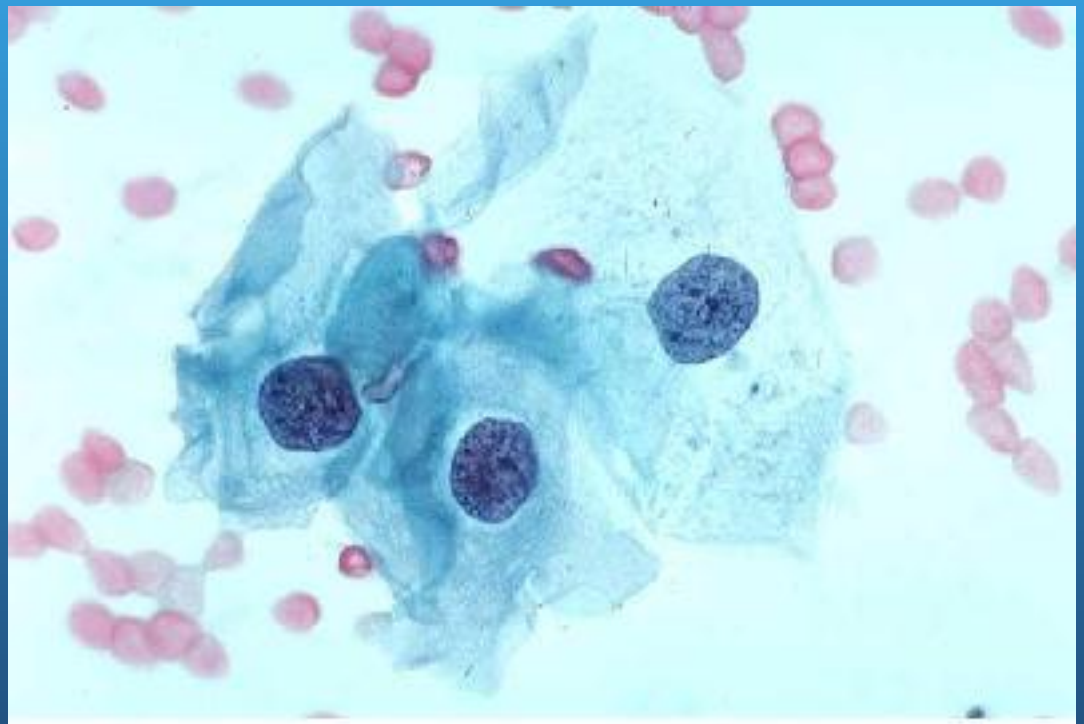


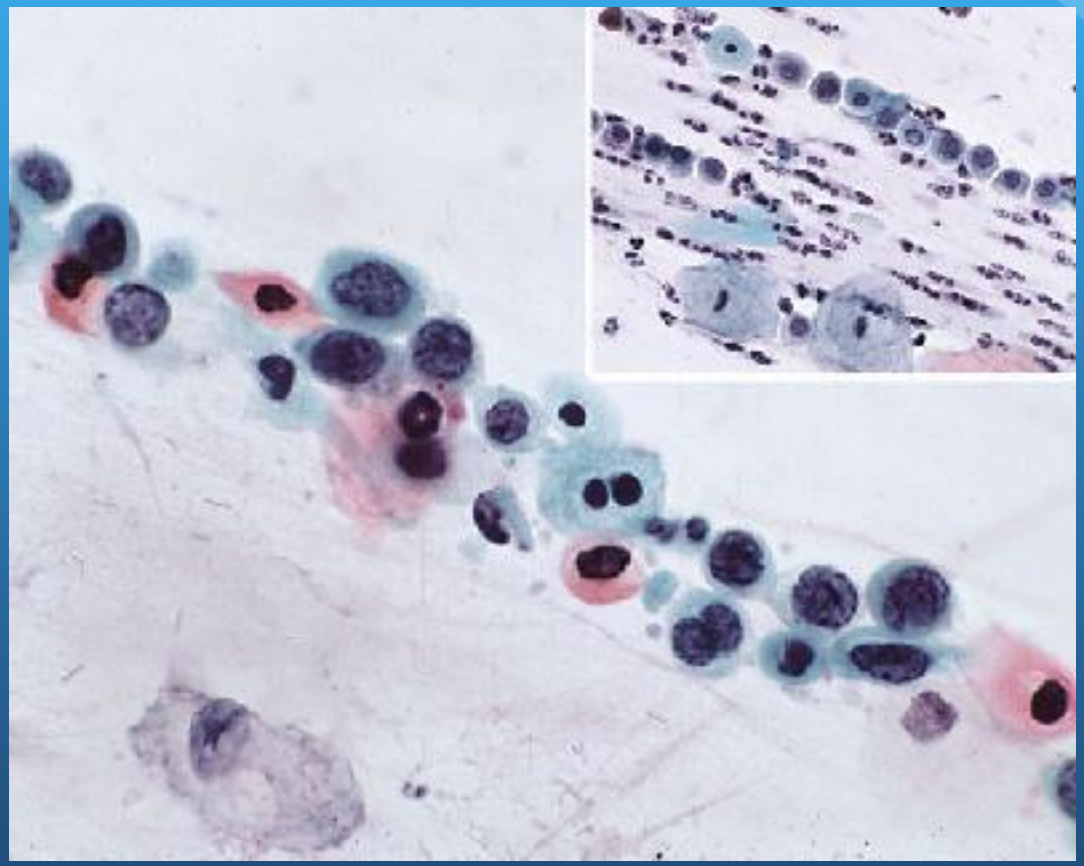
HSIL

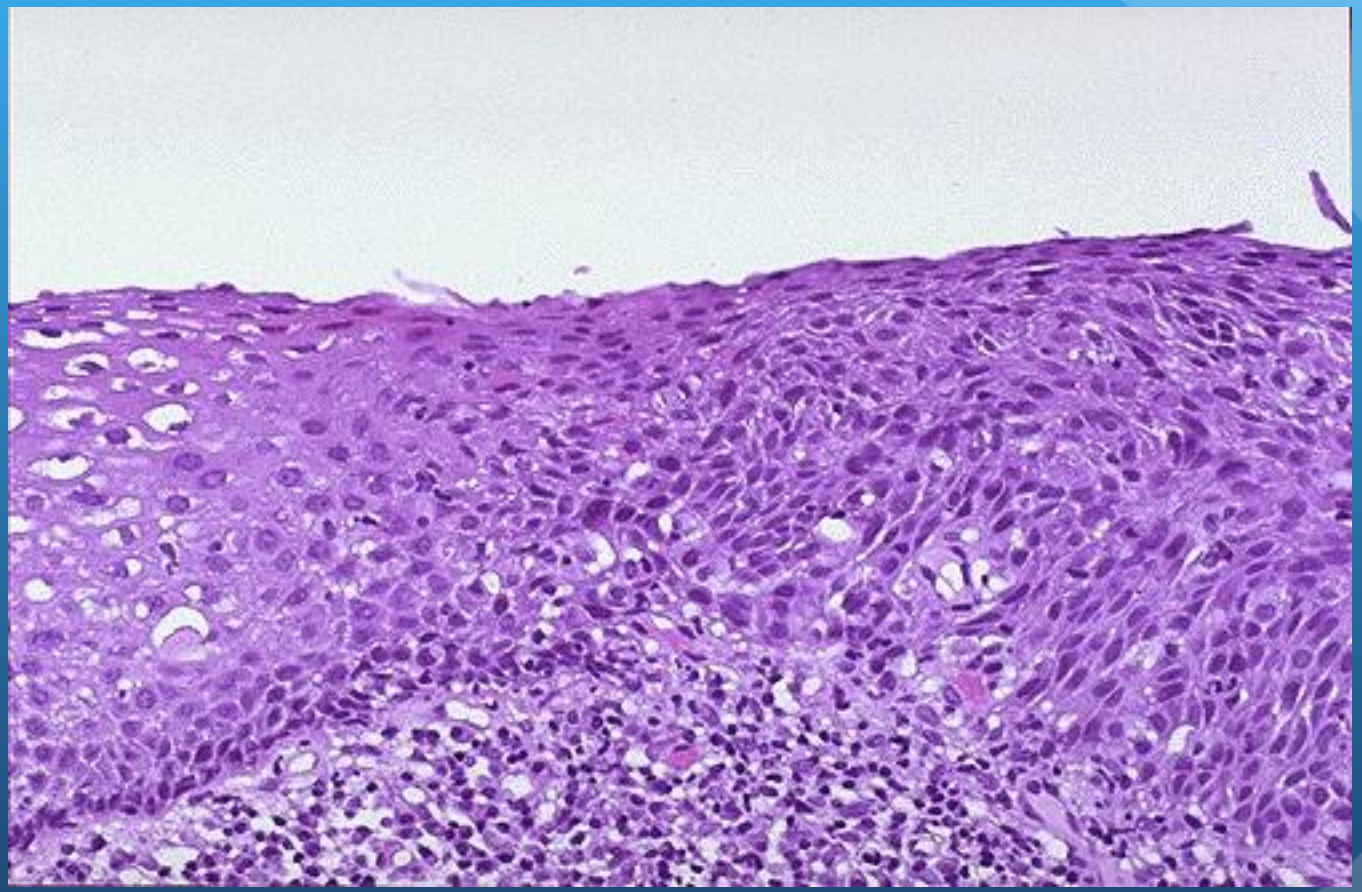


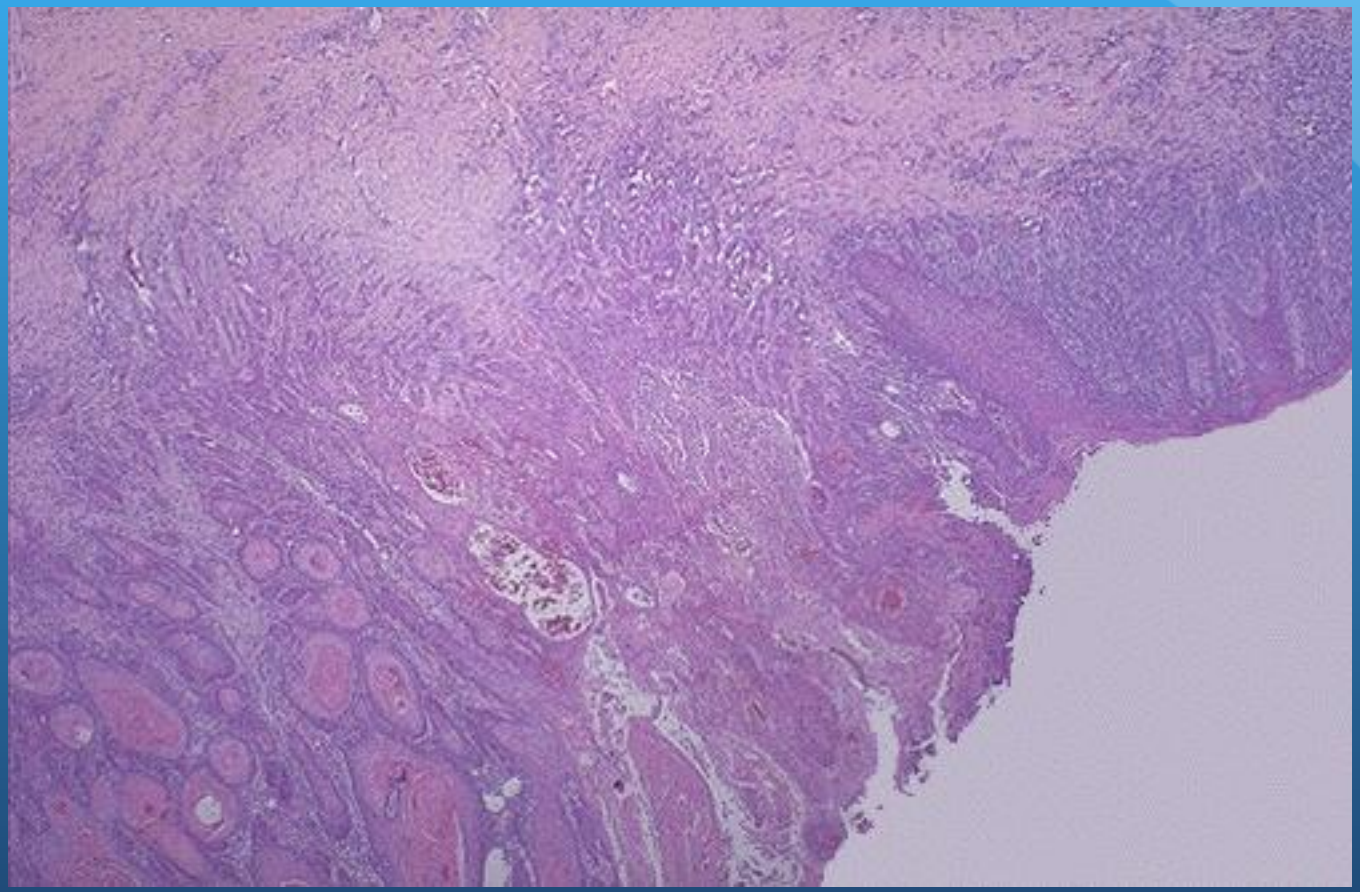


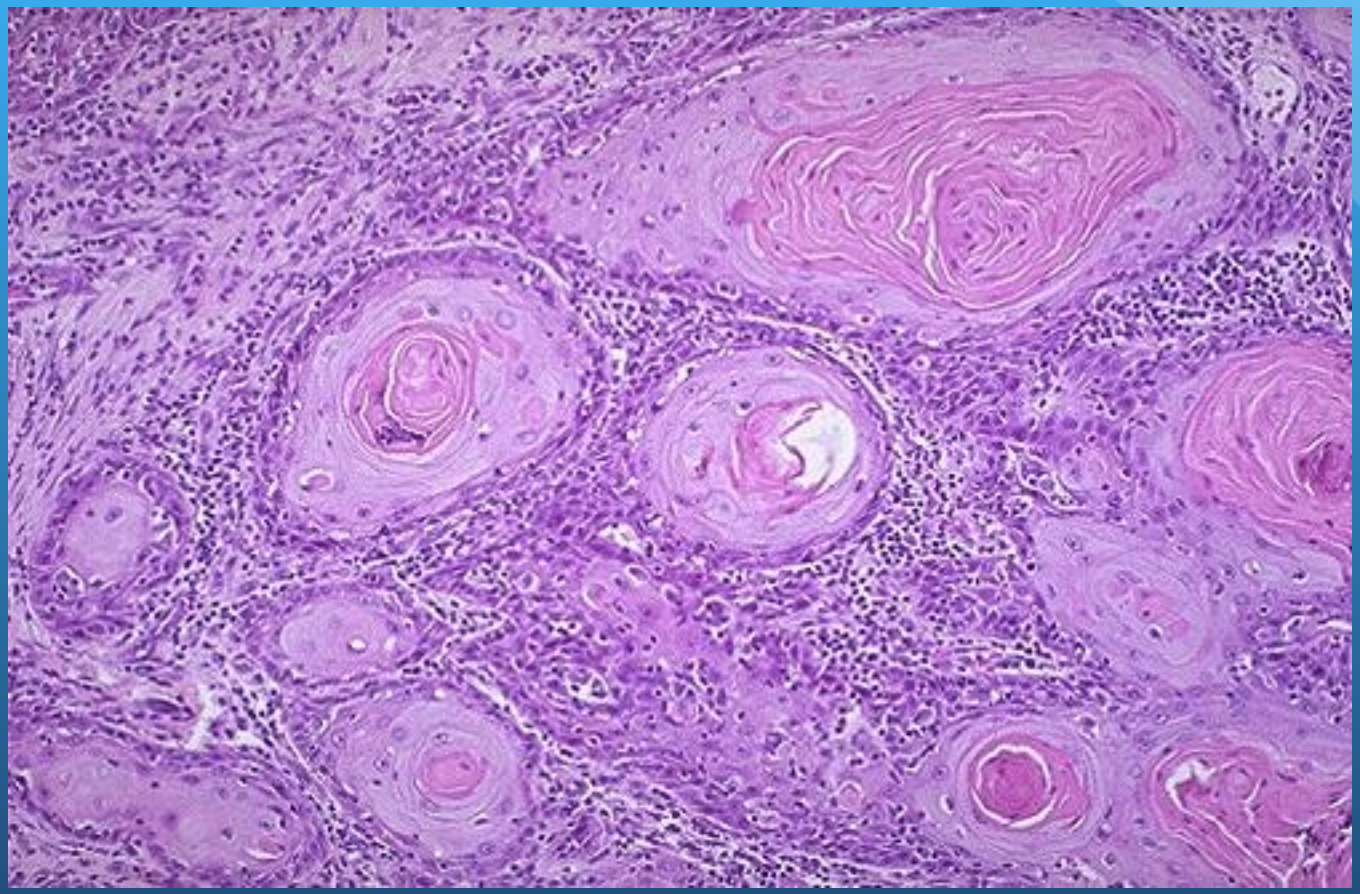












HSIL site and topography

- HSIL lesions are usually within the transformation zone; the most severe disease is found at the most proximal (cephalad) extent of lesion.
- May extend into endocervical canal
- Usually single lesions
- May be located alongside or within low-grade lesions
- Size of lesions variable but tends to correlate with severity of disease and risk of occult invasion
- Size of lesion correlates with risk of treatment failure

- **Acetic Acid and Lugol's Iodine:** The next step is the application of 3 to 5% acetic acid to the cervix. This should be done in a manner without abrading the surface epithelium, as HSIL lesions can detach from the underlying stroma relatively easily and peel away. Lesion margins, color, and vascular patterns are then assessed and graded, with biopsies taken from the areas that are judges as the most severe. The application of Lugol's iodine is optional. It may help determine the most abnormal area if there is extensive disease, or assist in locating a lesion when none is apparent after the application of acetic acid.

- *The following descriptions refer to the colposcopic appearance of HSIL lesions after the application of acetic acid.*

Margines

- Sharply demarcated lesion edges, often with very straight contours; lack the geographic, feathered, or indistinct margins of LSIL.
- HSIL often coincides with and may be difficult to distinguish from a larger LSIL lesion. Internal margins (borders) describe abrupt change in the nature of a lesion(s) as the examining eye moves radially from outer to inner (proximal) transformation zone. A so-called “lesion within a lesion” or “border within a border” is a feature of high-grade neoplasia, with the inner, more proximal lesion being more severe.
- Severe lesions have raised, rolled, or peeling margins (avoid trauma to epithelium during exam).

Color

- Distinct, denser acetowhitening than LSIL lesions
- Dull surface due to increased nuclear density and less reflection of incident light
- Dull or gray-white to oyster gray color
- More prompt and persistent aceticowhite change

New Methods In Cervical Lesions Screening

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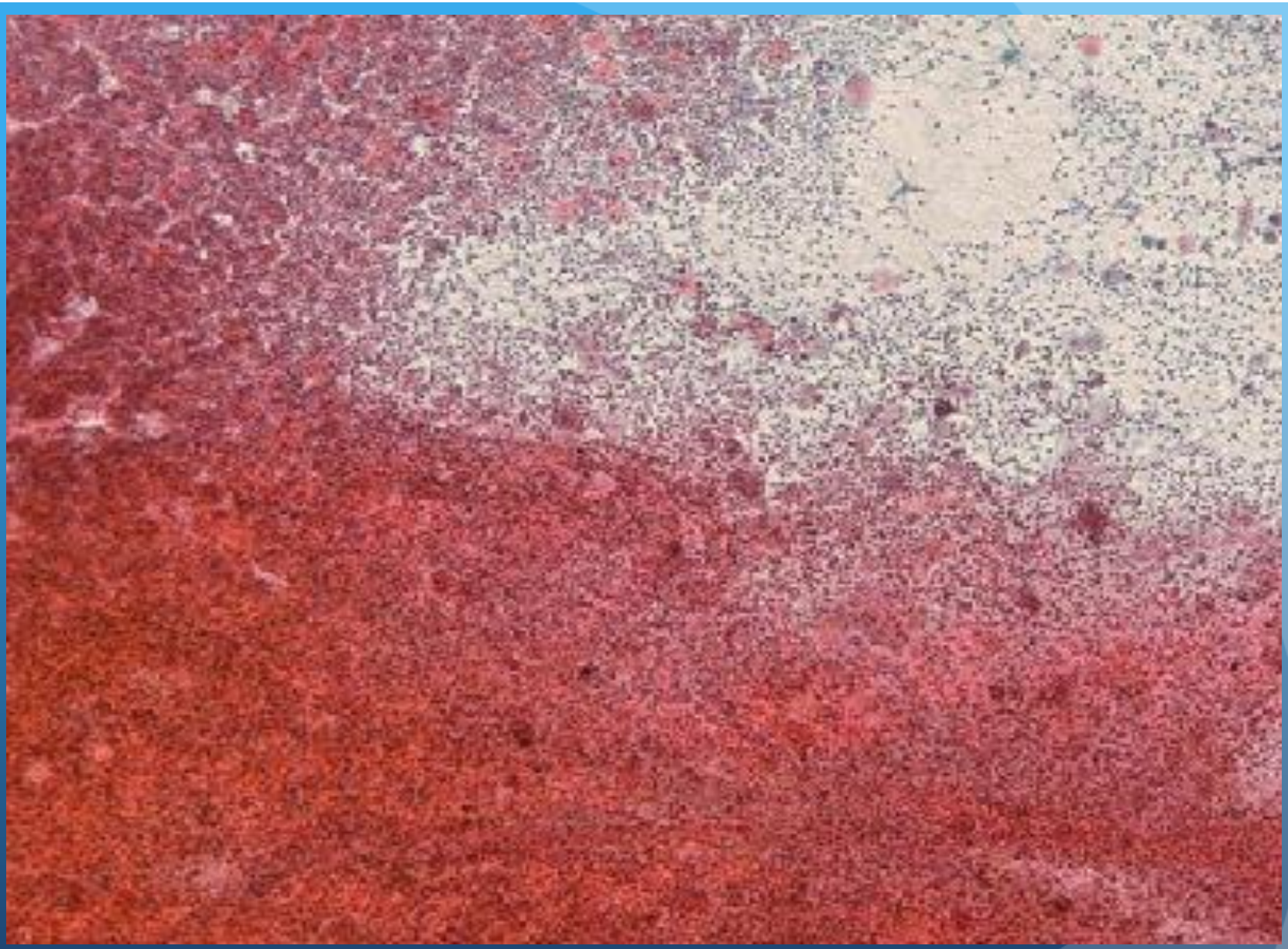
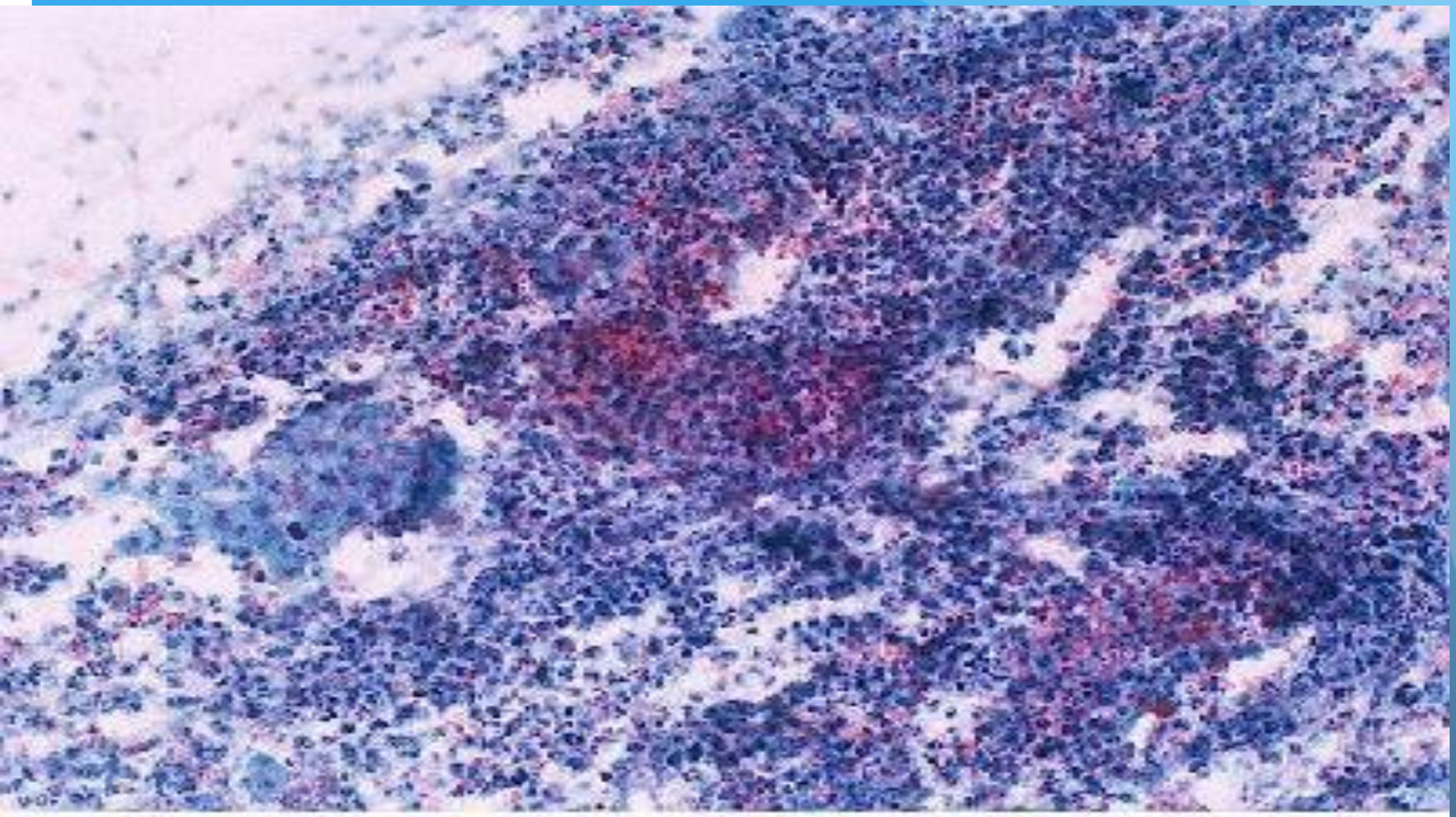
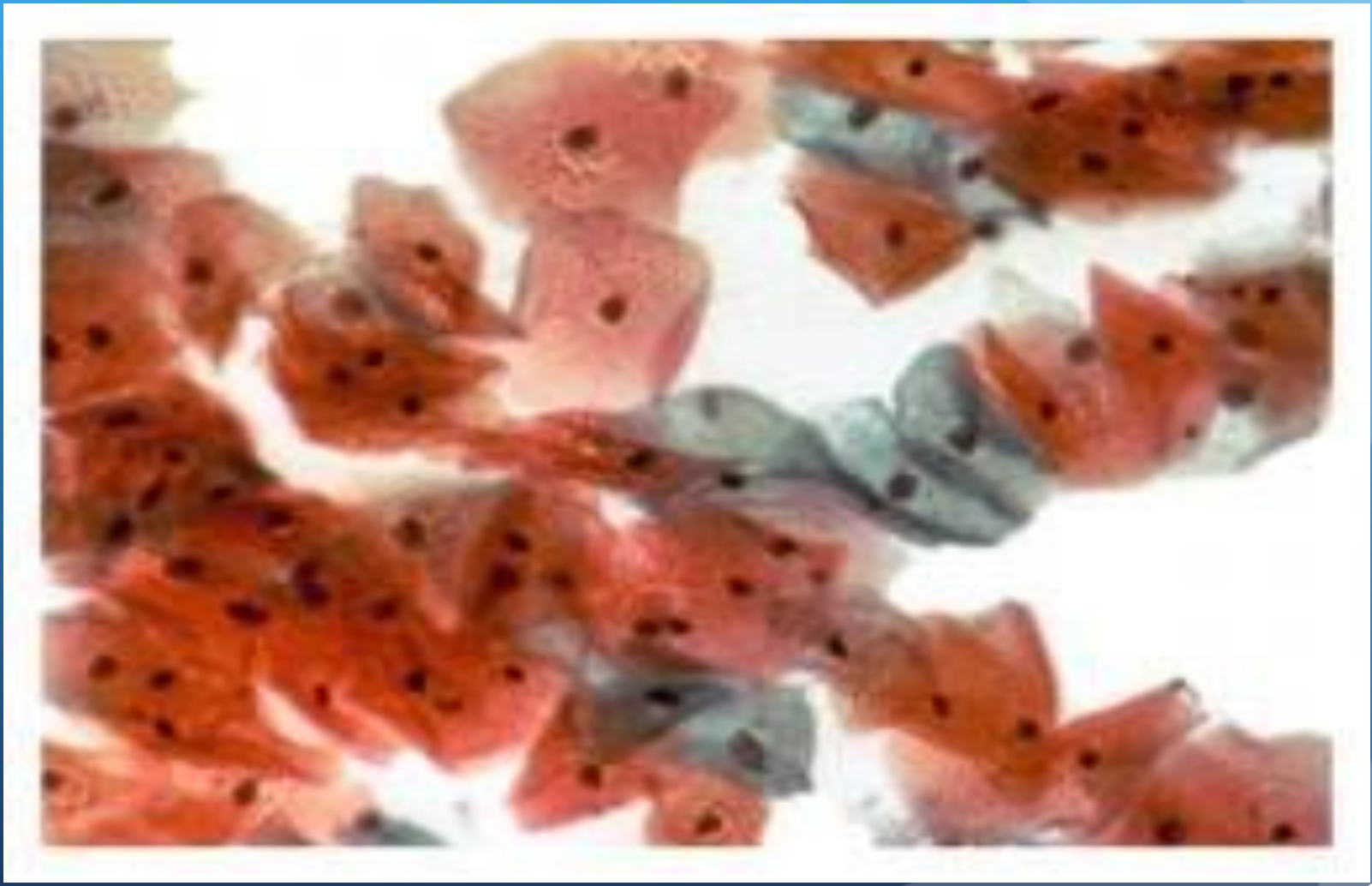


2-Unsatisfactory- obscuring

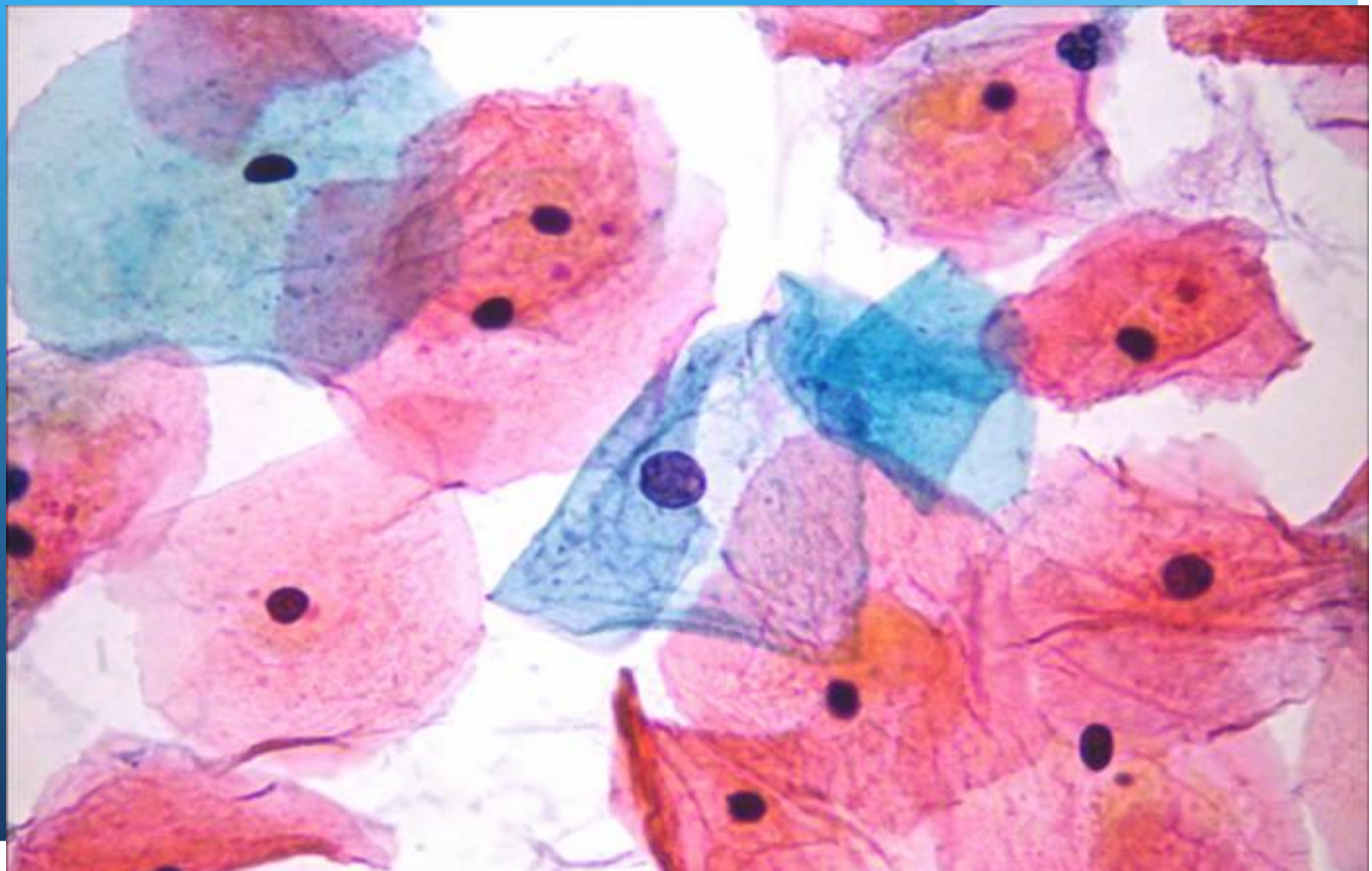


liquid Based Cytology

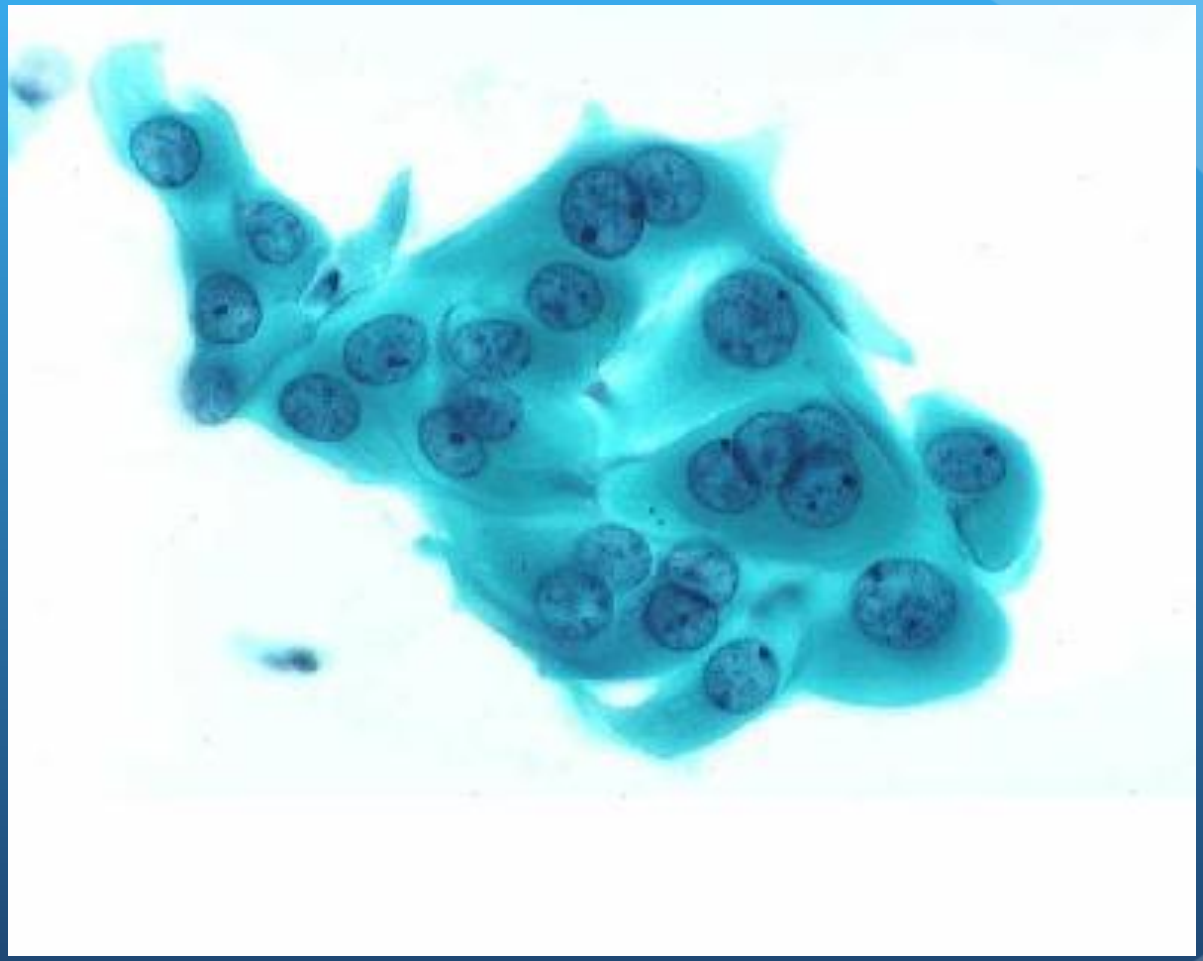
Normal component of cervicovaginal Smear



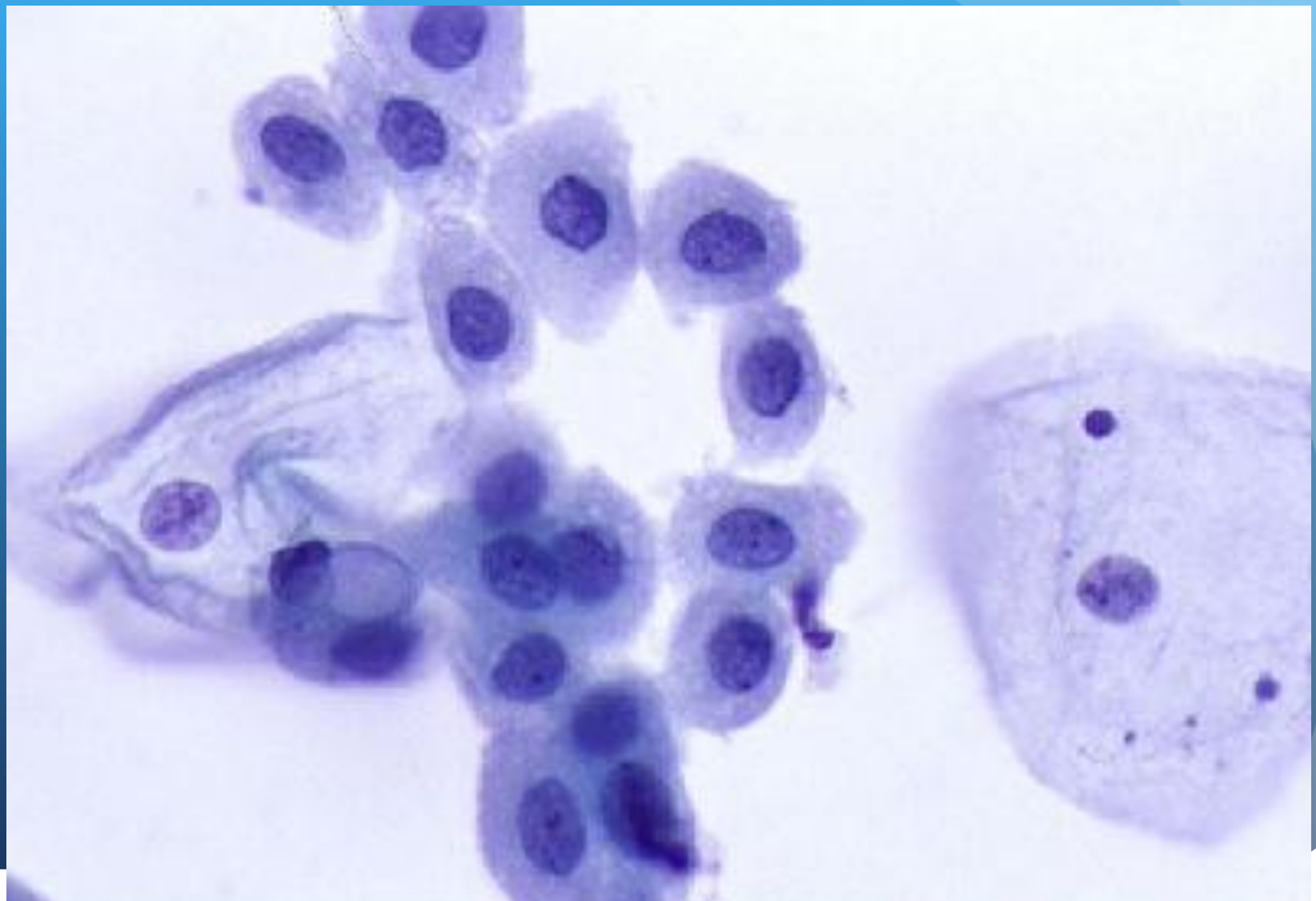
Normal component of cervicovaginal Smear

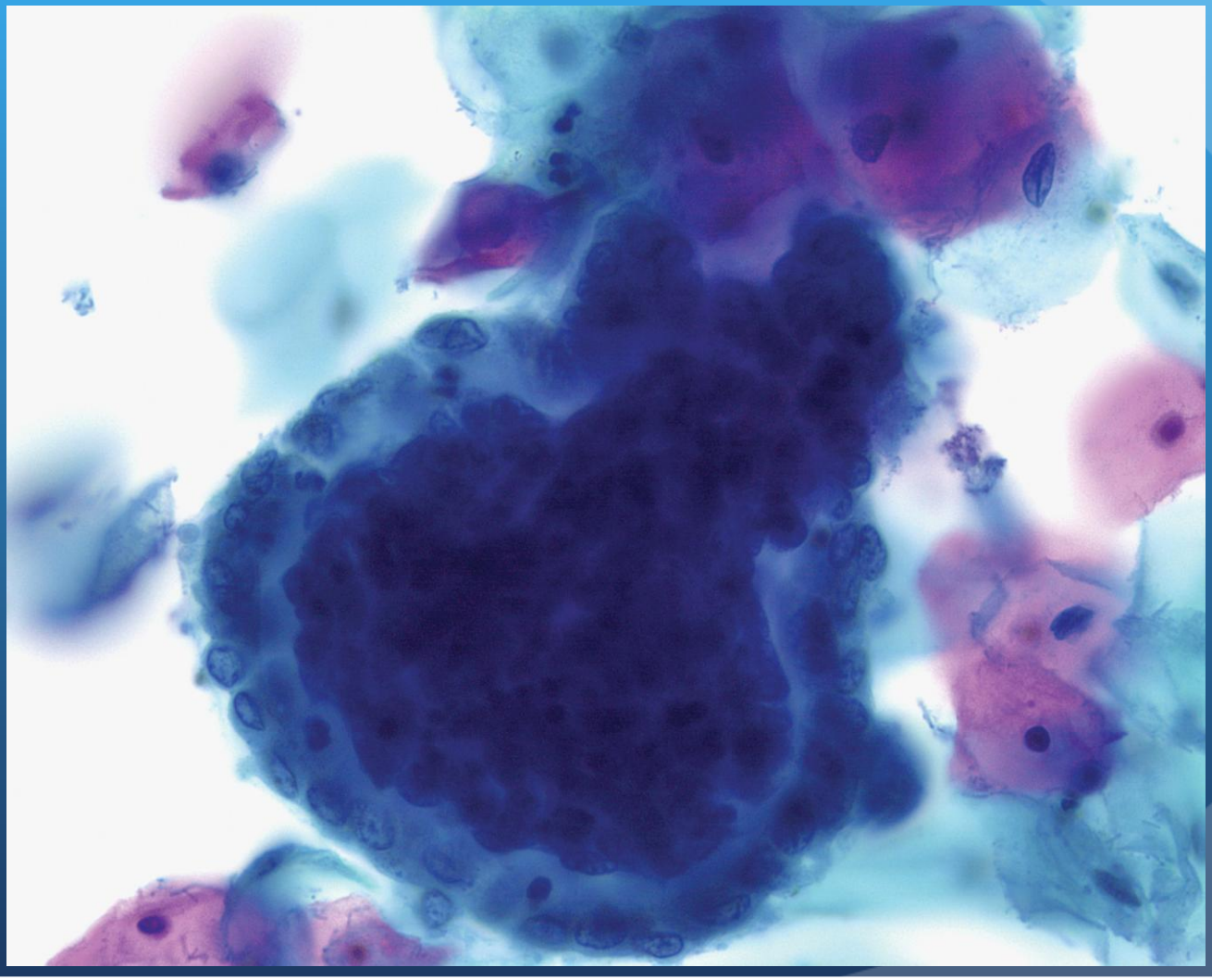


Normal component of cervicovaginal Smear



Normal component of cervicovaginal Smear





HPV DNA Typing

- Polymerase Chain Reaction (PCR)

Colposcopy