COLPOSCOPY TRAINING
Module 4: ABNORMAL CYTOLOGY AND HISTOLOGY OF THE CERVIX

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CERVICAL CANCER SCREEN AND TREAT

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Abnormal Cytology And Histology of the Cervix

- Cytology: abnormalities are described in individual exfoliated cells. The cells are sampled from the transformation zone through a pap smear
- Histology: Extent of abnormal cell in relationship to the epithelial layers. This is done from biopsies taken from the cervix

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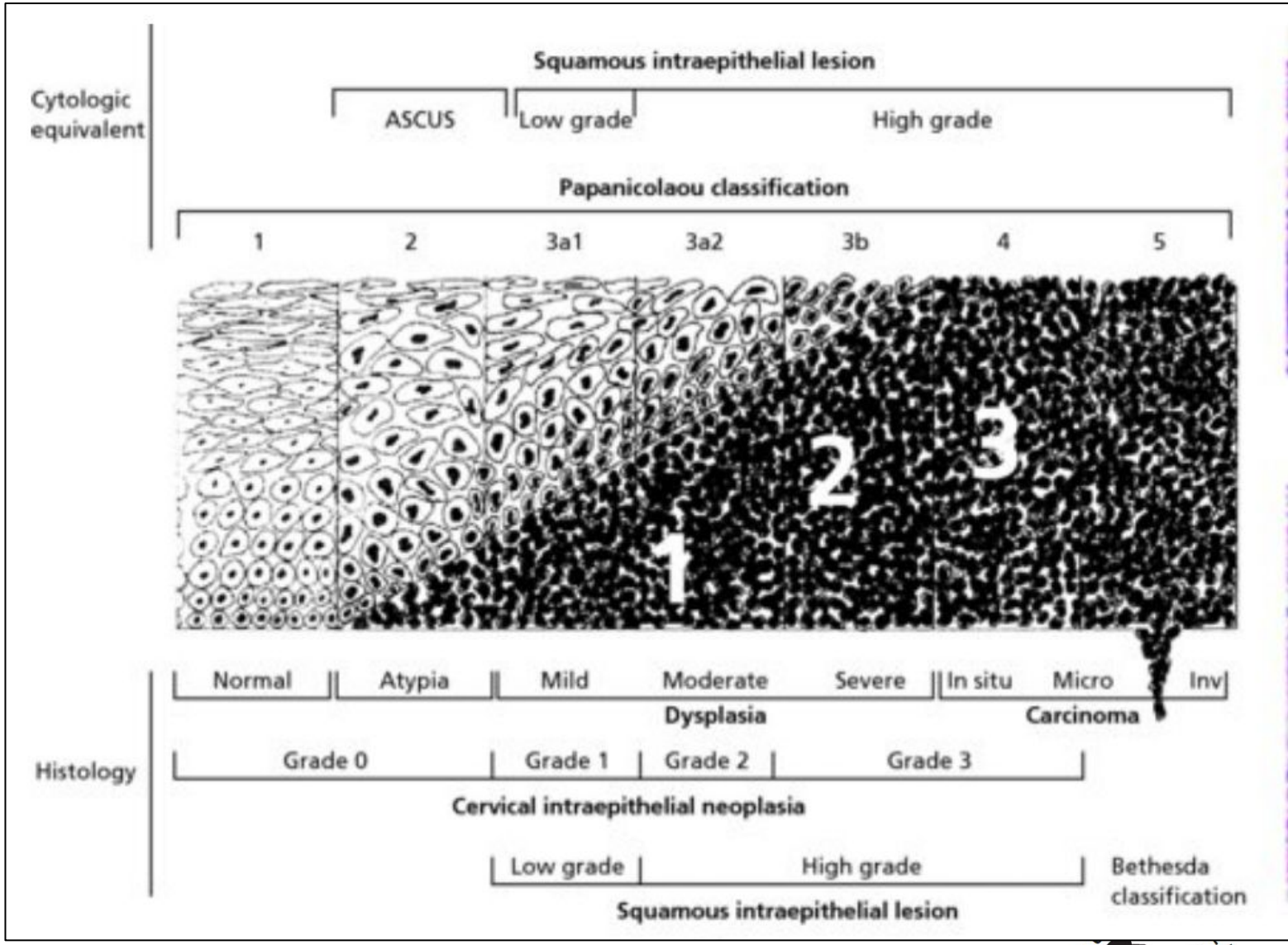
Cervical Intraepithelial Neoplasia - CIN

- Refers to a spectrum of epithelial changes in squamous epithelium as the precursors of invasive squamous cell carcinoma
- Three grades currently in use - reflect a continuum of changes
- Currently allows correlation with the 3 cytological grades of dyskaryosis – mild, moderate, severe



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Characteristics of CIN

- Nuclear enlargement
- Increase in nuclear-cytoplasmic ratio
- Nuclear pleomorphism
- Hyperchromasia
- Increased mitoses, including abnormal mitoses

THE BETHSEDA SYSTEM

- Negative for intraepithelial lesion or malignancy

Squamous cells

- Atypical Squamous Cell (ASC)
  - of Undetermined Origin (ASC-US)`
  - cannot exclude HSIL (ASC-H)
- Low-grade Squamous Intraepithelial Lesion (LSIL)
- High-grade squamous intraepithelial lesion(HSIL)
- Squamous Cell Carcinoma

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THE BETHSEDA SYSTEM

Glandular

- Atypical Glandular Cells(AGC) (specify) (specify endocervical, endometrial, or not otherwise specified)
- Atypical glandular cells, favor neoplastic (specify endocervical, endometrial or not otherwise specified)
- Endocervical adenocarcinoma in situ(AIS)
- Adenocarcinoma
- Other list not comprehensive
- Endometrial cells in a woman over 40 years of age

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LATEST UPDATE ON TBS 2014

- Recommends more use of liquid based preparation
- Additional contesting (Pap plus HPV testing)
- Primary HPV testing as additional screening option
- Further insight into HPV biology
- Approval and implementation of HPV vaccine
- Updated guidelines for cervical screening and clinical management

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Borderline Nuclear Change

- Nuclear changes that cannot be described as normal, but are not sufficiently abnormal to be called dyskaryotic
- “Holding category” rather than a diagnosis
- Women with BNC can be found to have HG-CIN or even cancer

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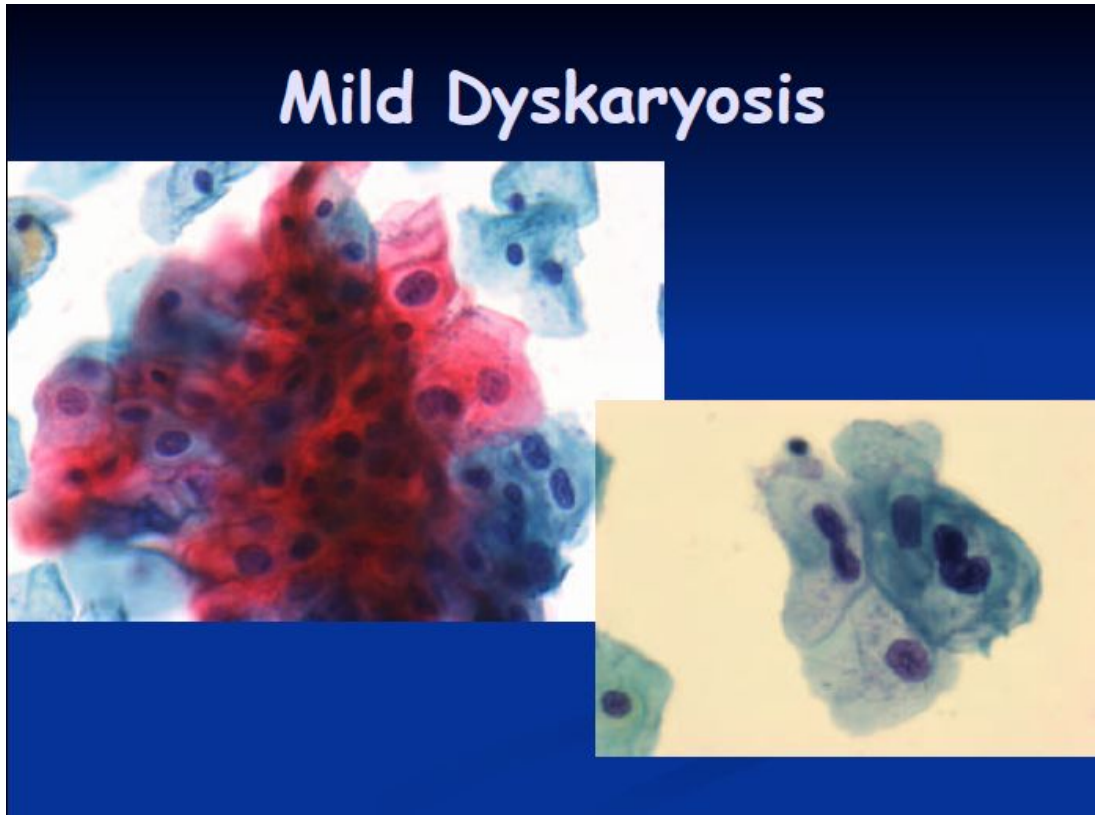
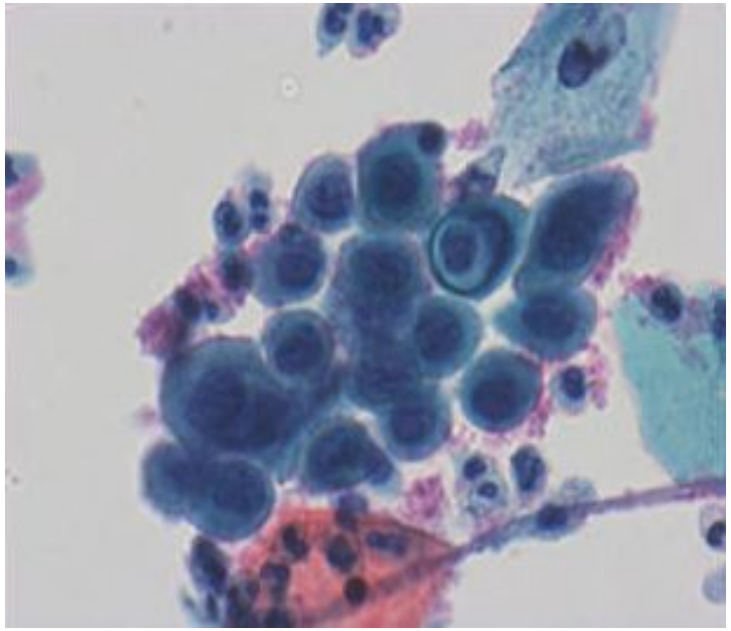
Reporting of BNC

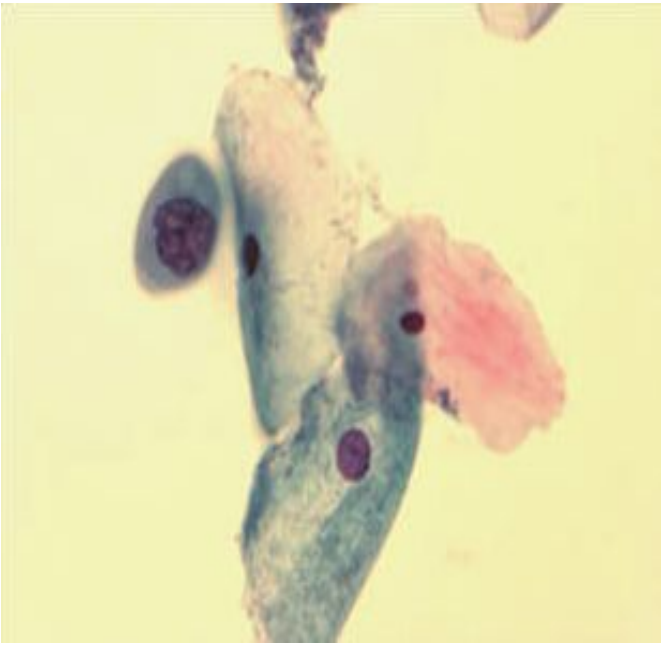
- In association with HPV infection
- May be associated with other infections (Candida)
- May be associated with reactive epithelial changes (with or without inflammation)
- May be associated with severe atrophic changes
- May be associated with an IUCD or polyp
- Where there is a suspicion that the changes could represent high grade squamous dyskaryosis

Dyskaryosis



Moderate Dyskariosis





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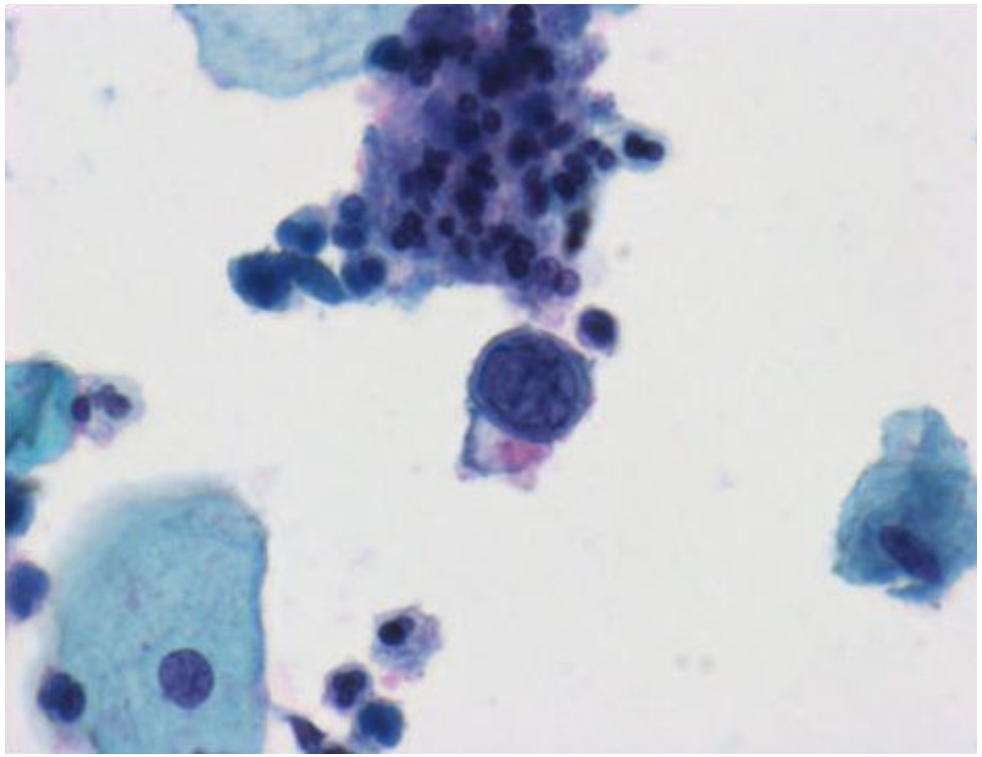
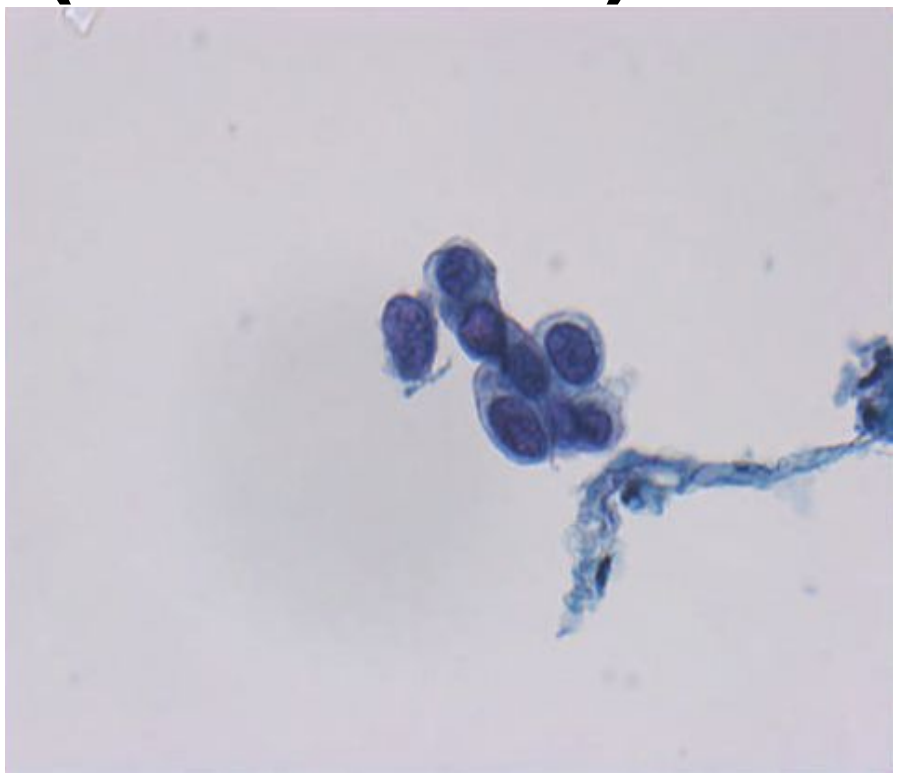
Severe Dyskaryosis (small cell)





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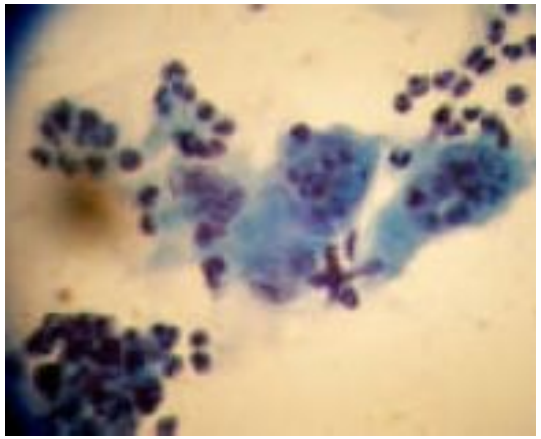
Limitations of Cytology

- Subjectivity
  - Inter-observer variability
  - Misclassification
  - Equivocal/borderline paps
- False negative rate
- Patient compliance
- Interval between pap tests



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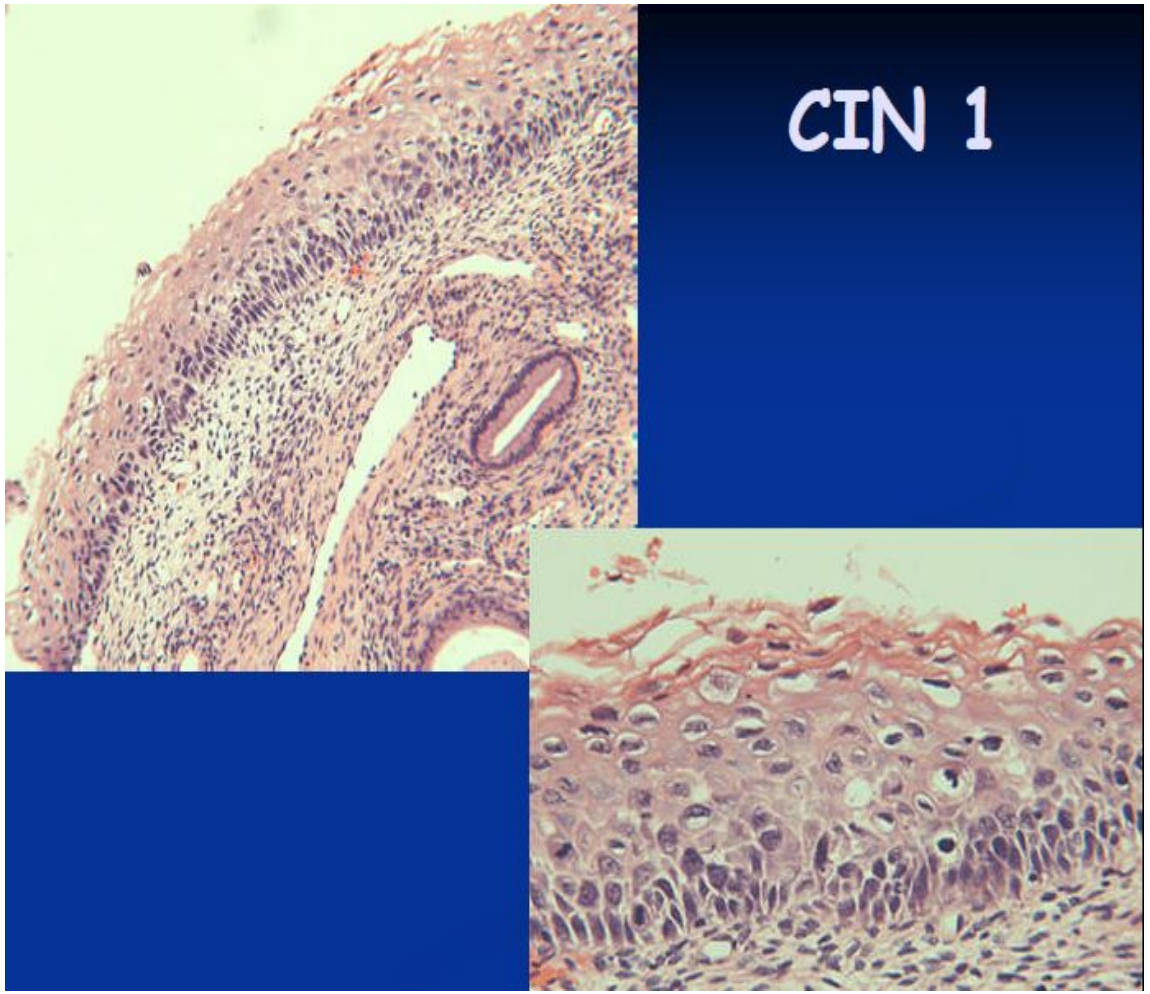
CIN 1

- Changes present throughout the full thickness of epithelium, but most apparent in the basal third of epithelium
- Usually associated with HPV changes
  - koilocytosis



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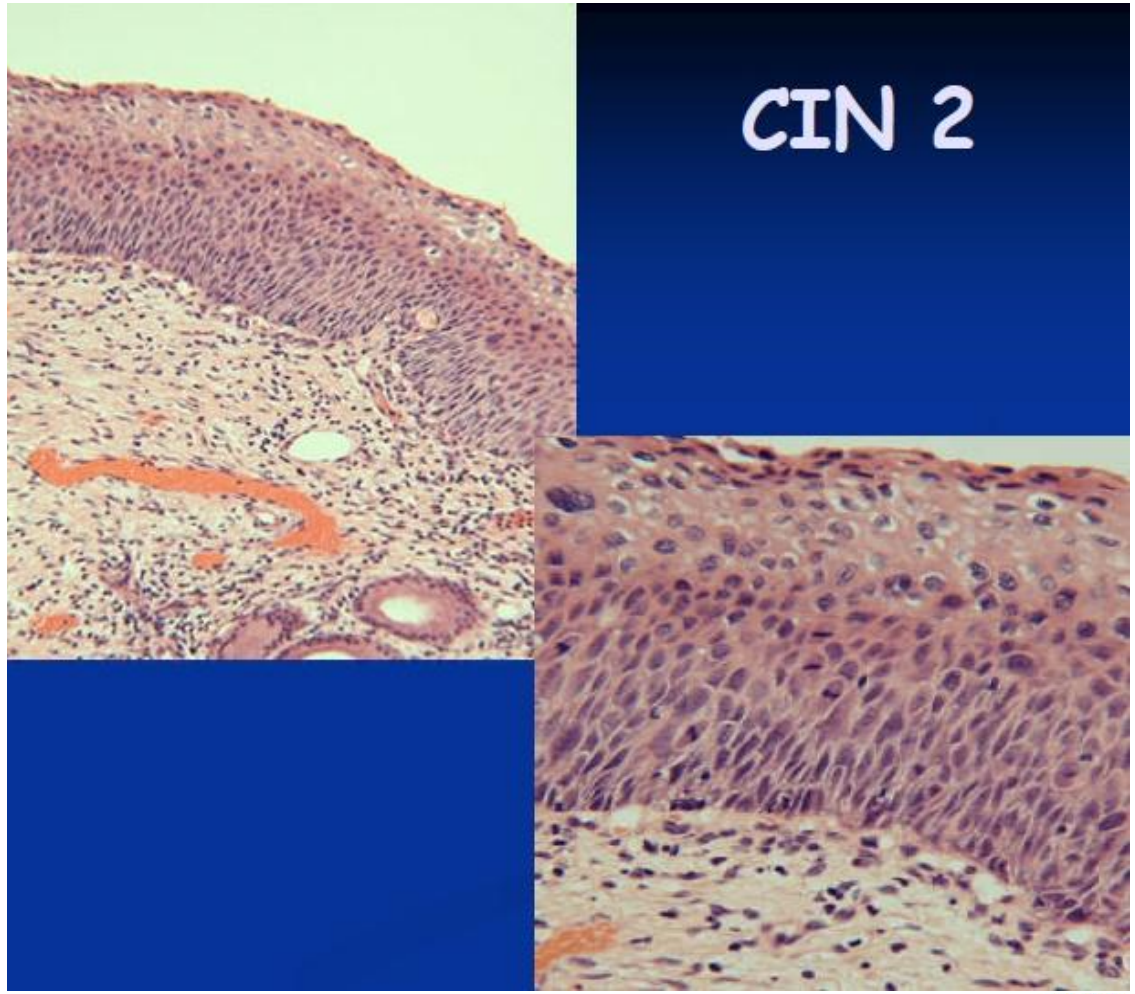
CIN 2

- Changes extend up to middle third of epithelium
- Cytoplasmic maturation seen above this to the surface
- Nuclear pleomorphism again extends throughout the full thickness of epithelium and is more severe than that seen in CIN 1, but less than that of CIN 3



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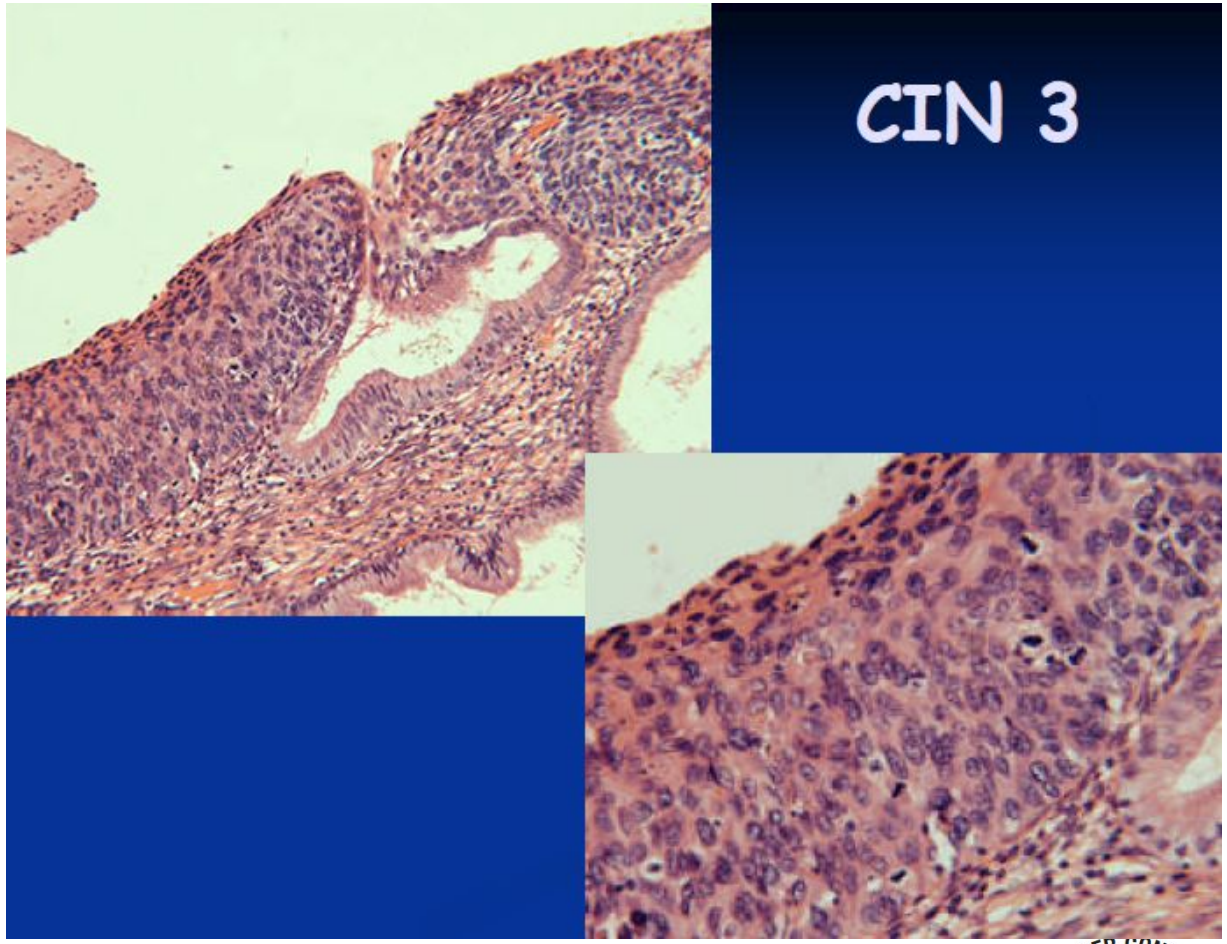
CIN 3

- Degree of nuclear pleomorphism is most severe compared to two lower grades
- Larger number of mitoses at all levels
- Changes are seen extending to surface
- Very little, if any, cytoplasmic maturation present



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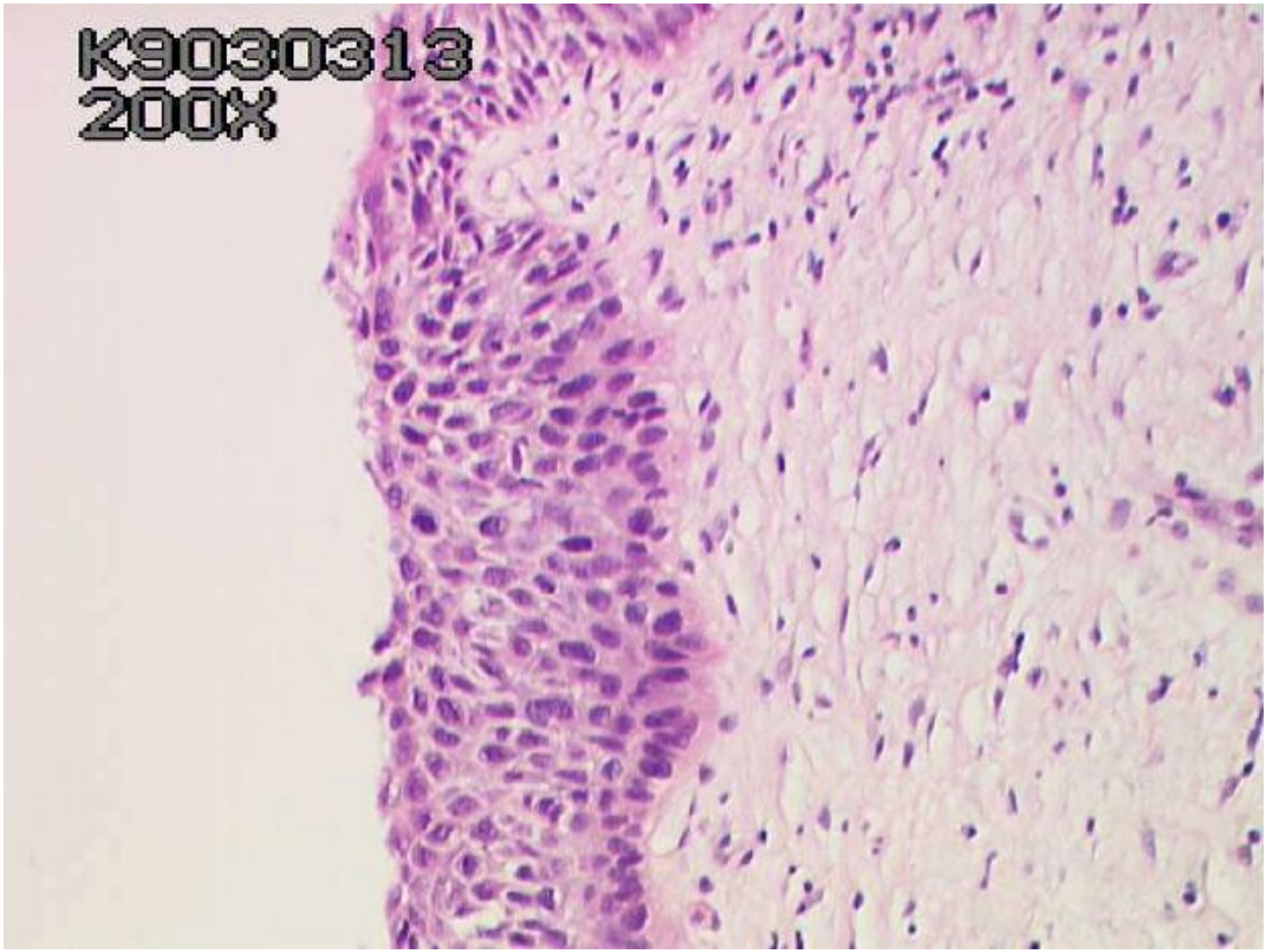

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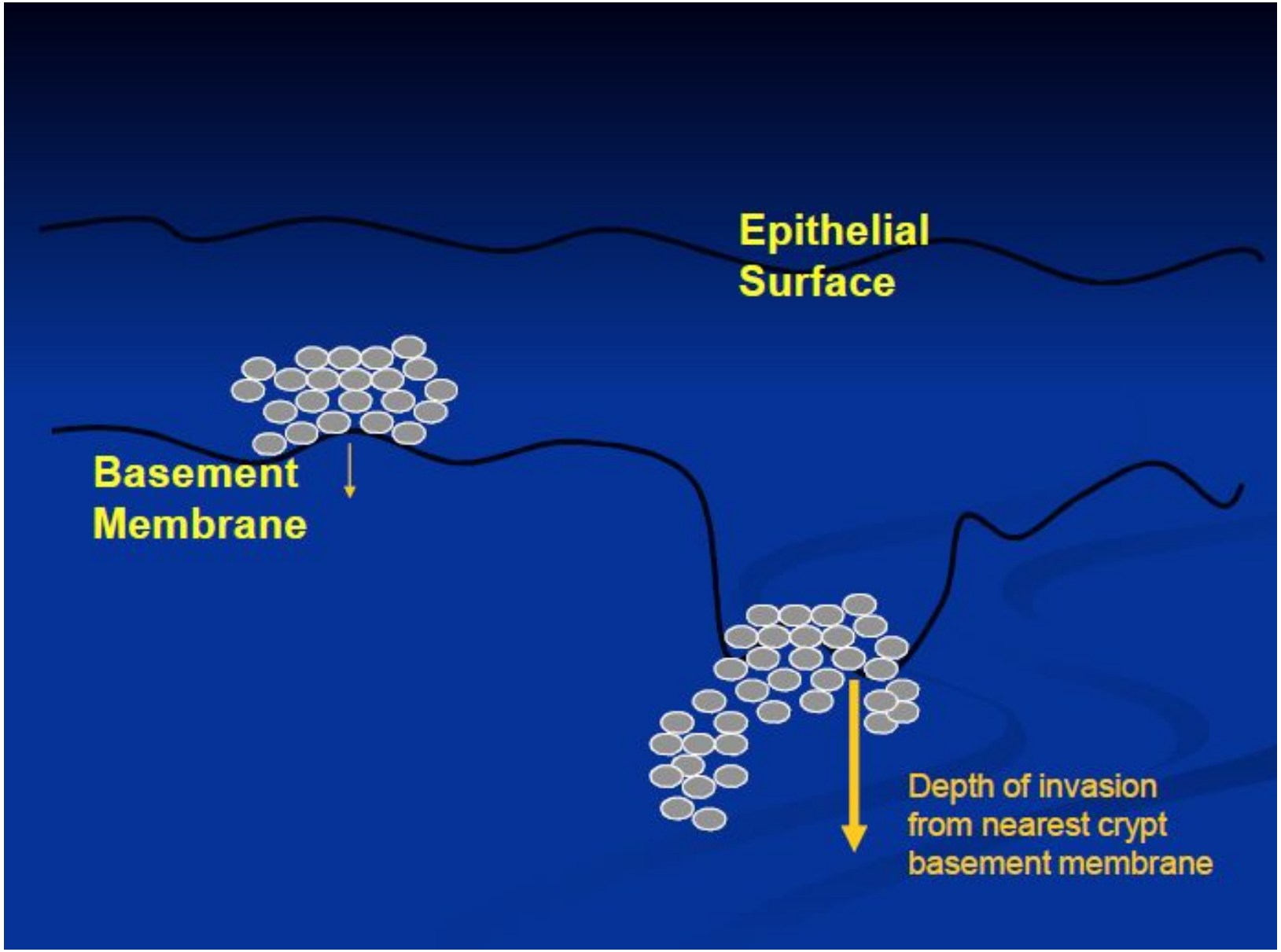
CIN & HPV

- All grades of CIN may be associated with HPV infection, but HPV changes are less readily identified in CIN 3
- Grading of CIN can be difficult in presence of florid HPV-related changes



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Cervical Glandular Intraepithelial Neoplasia (CGIN)

- Premalignant glandular cervical lesions
- 'Pure' disease is rare. Usually coexists with squamous disease (CIN)

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Incidence of CGIN

- Ratio of CGIN: CIN = 1:50
- ~ 50% associated with HG SIL
- Incidence of smears showing glandular neoplasia: 0.5-0.8% (1 in 2000)

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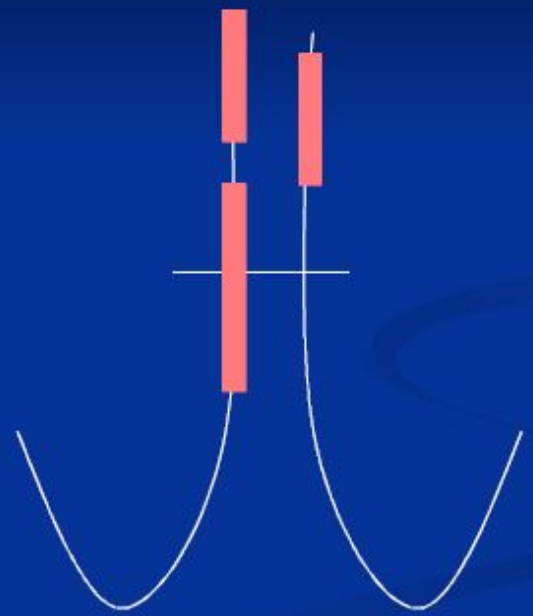
Skip Lesions: CGIN



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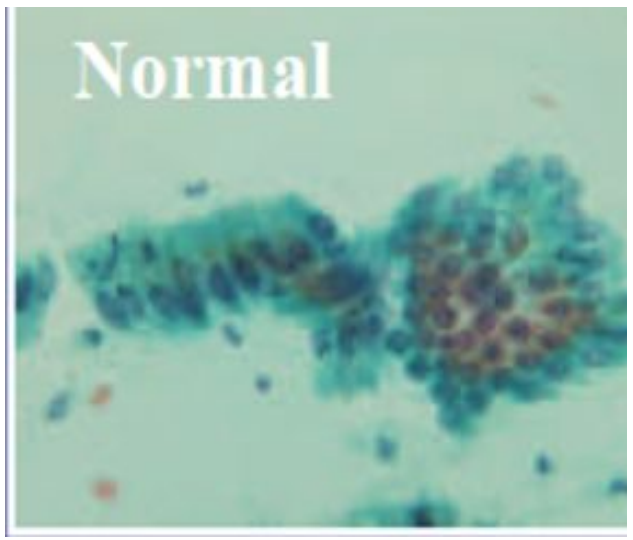
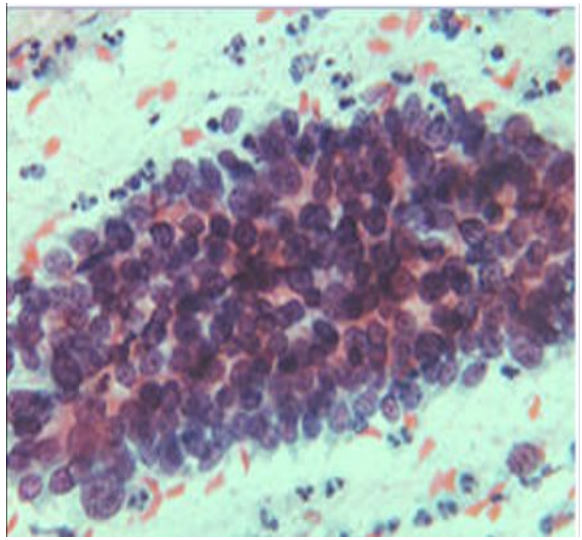
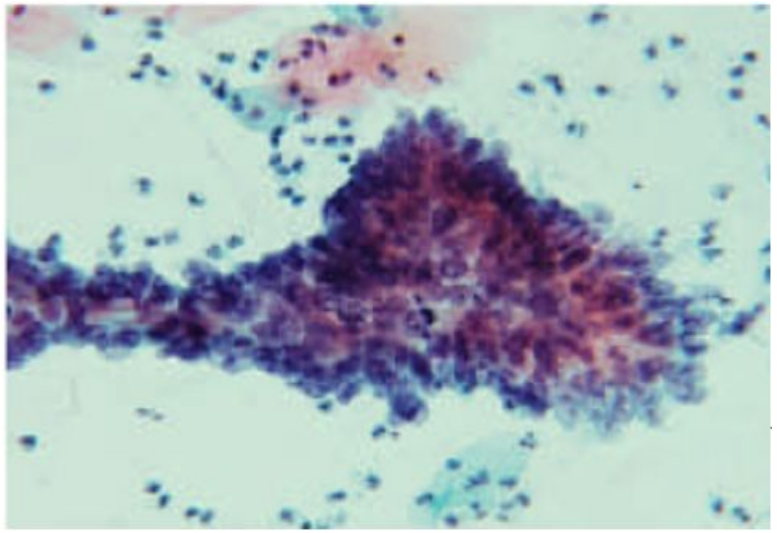
Cytological Features of CGIN

- Nuclear hyperchromasia
- Mitoses
- Small Nucleoli
- Papilliform micro-biopses
- Cellular crowding
- Feathering of peripheral cells
- Cribriform micronuclear structures







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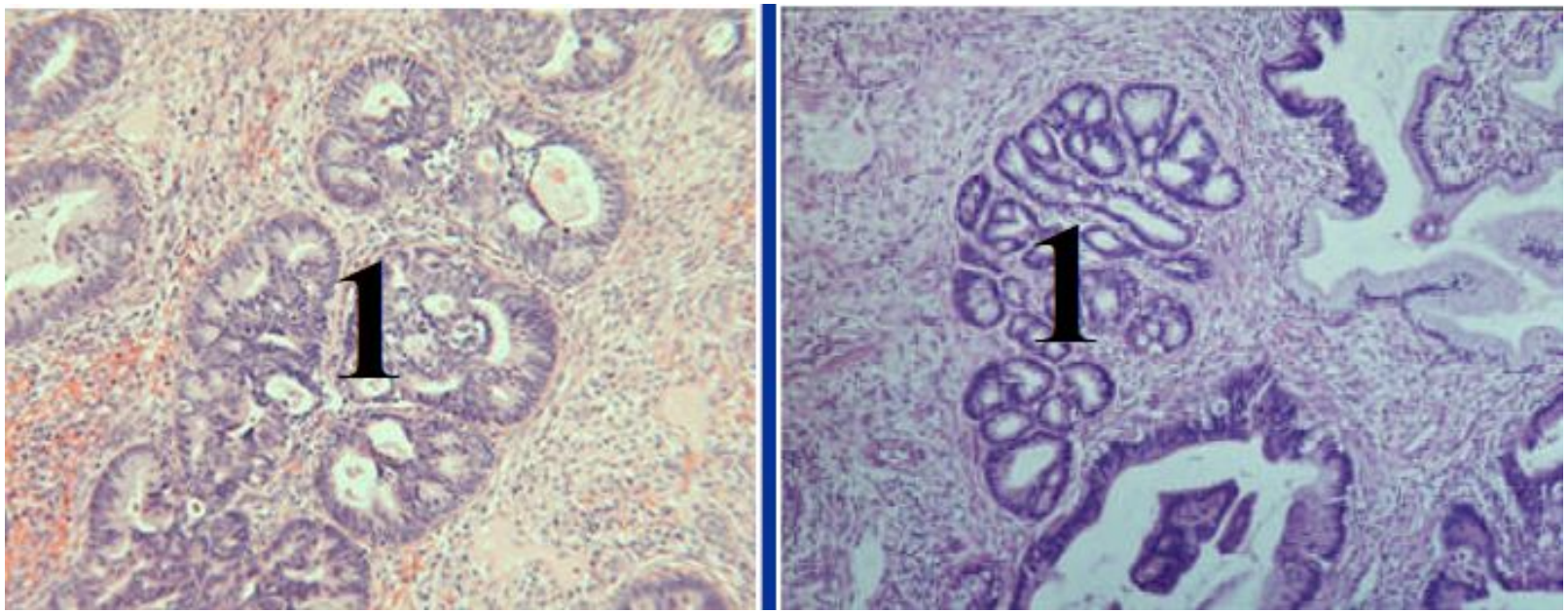
Histological Features of CGIN

Architectural features

- Gland crowding, branching & budding
- Intraluminal papillary projections
- Cribriform pattern



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