

# Glandular Lesions

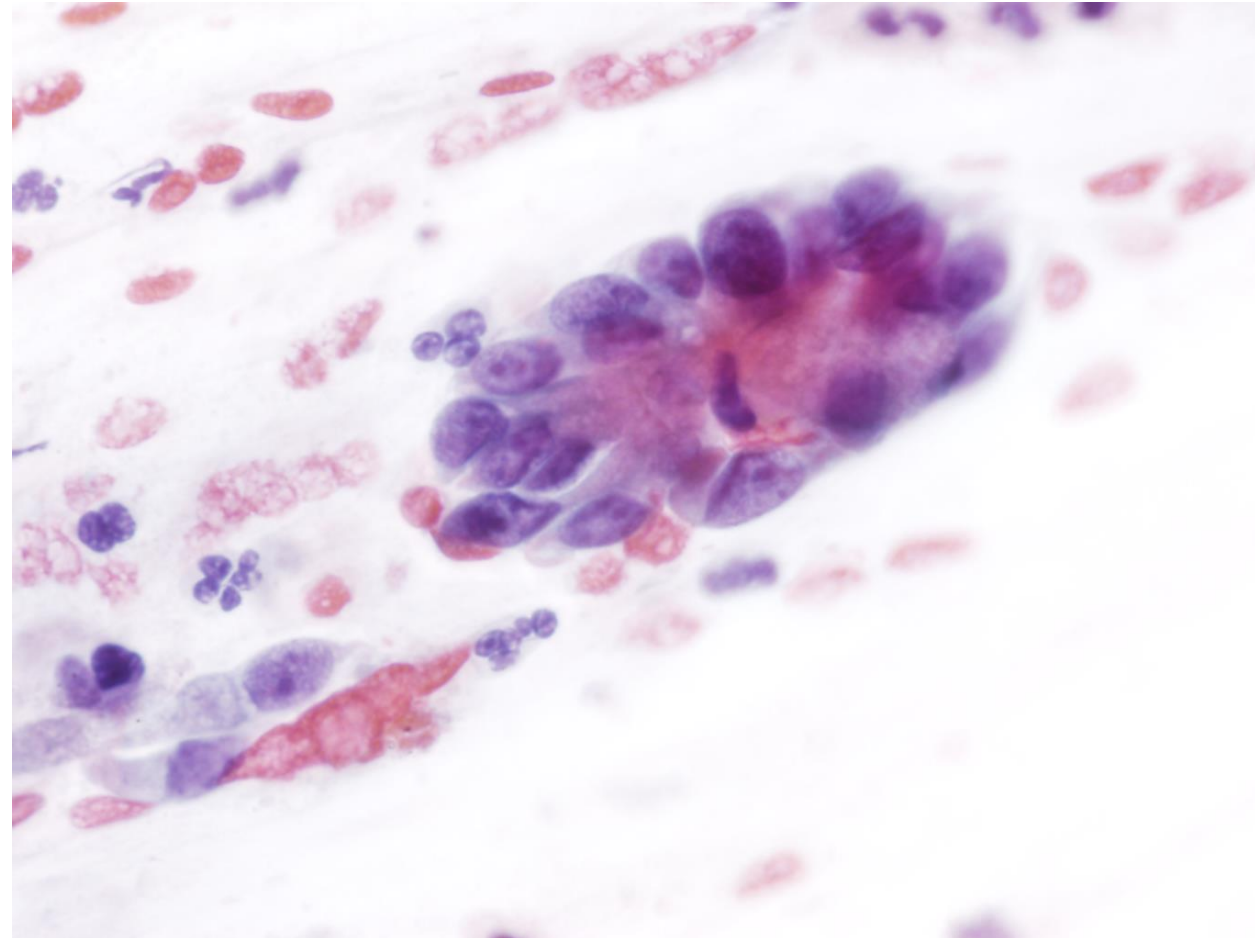
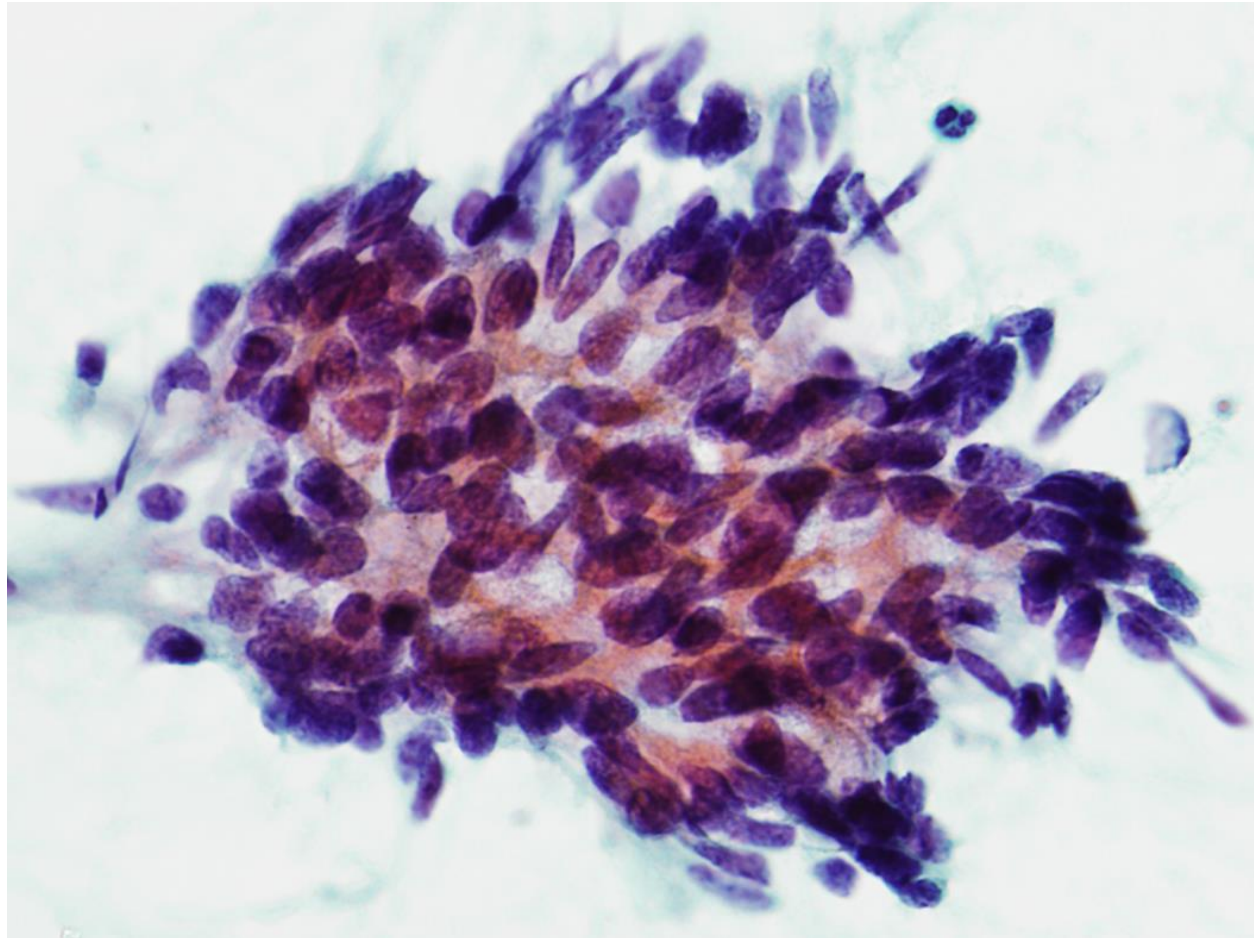
Michael Thrall MD

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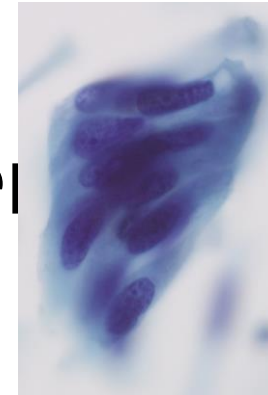
- Glandular cells are one of the most problematic areas of cytology
- True lesions are rare, but reactive/metaplastic changes are common
- The interpretation of AGC is made in <1% of Paps in most series
- Of these, most are not true lesions, and the most common true lesion is HSIL involving glands
- Adenocarcinoma in situ and invasive cervical adenocarcinoma are rare and the sensitivity of Pap testing is low
- The identification of AIS/AGC is arguably harder on liquid-based Pap tests - probably the only disadvantage of liquid-based

- Air drying artifact accentuates the nuclear changes
- Feathering is more prominent
- Rosettes are more obvious

# Conventional Pap test AIS

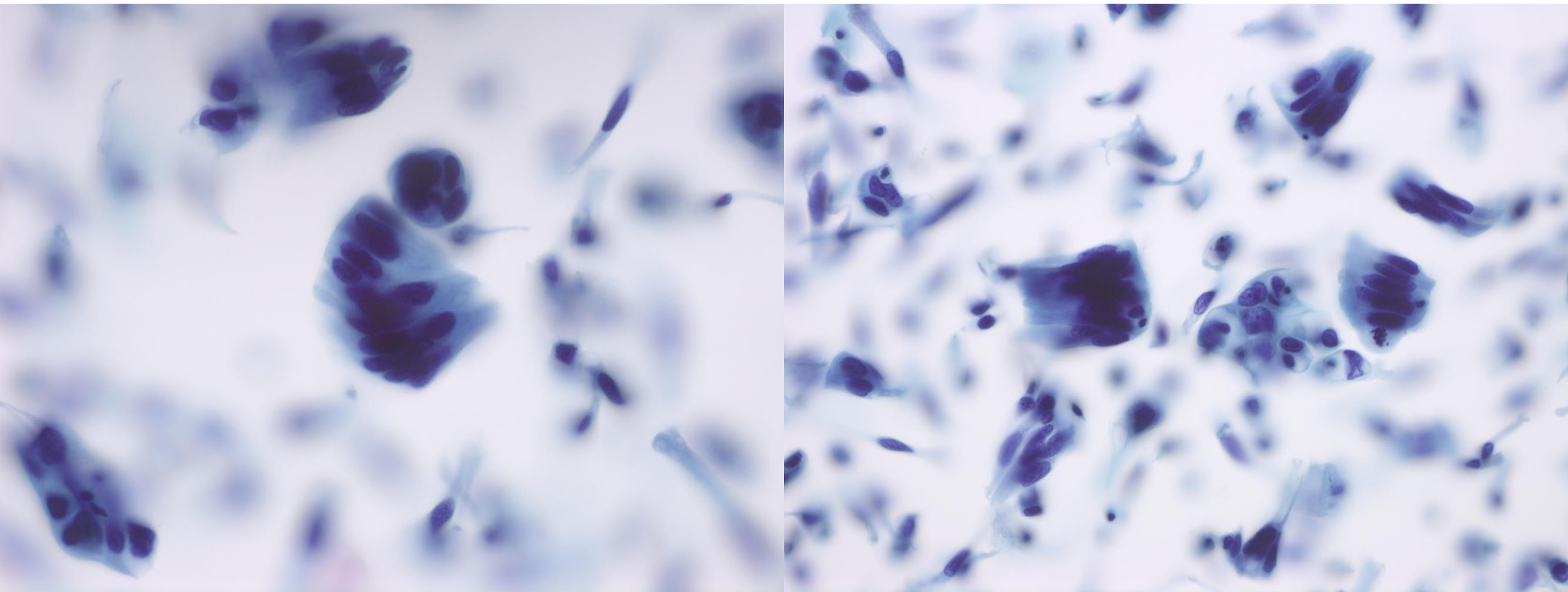
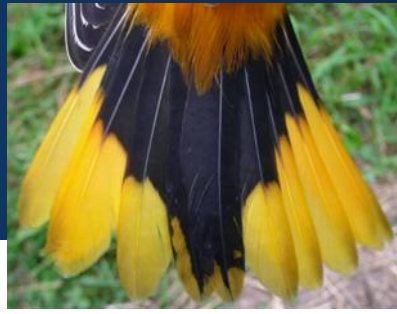


- Feathering and rosettes are less obvious
- Nuclei are better seen and nucleoli are more often apparent
- Short strips of tumor cells are seen
  - “Bird tails” or “fish tails”
- Individual tumor cells are more likely to be seen
- Large hyperchromatic crowded groups may also be prominent

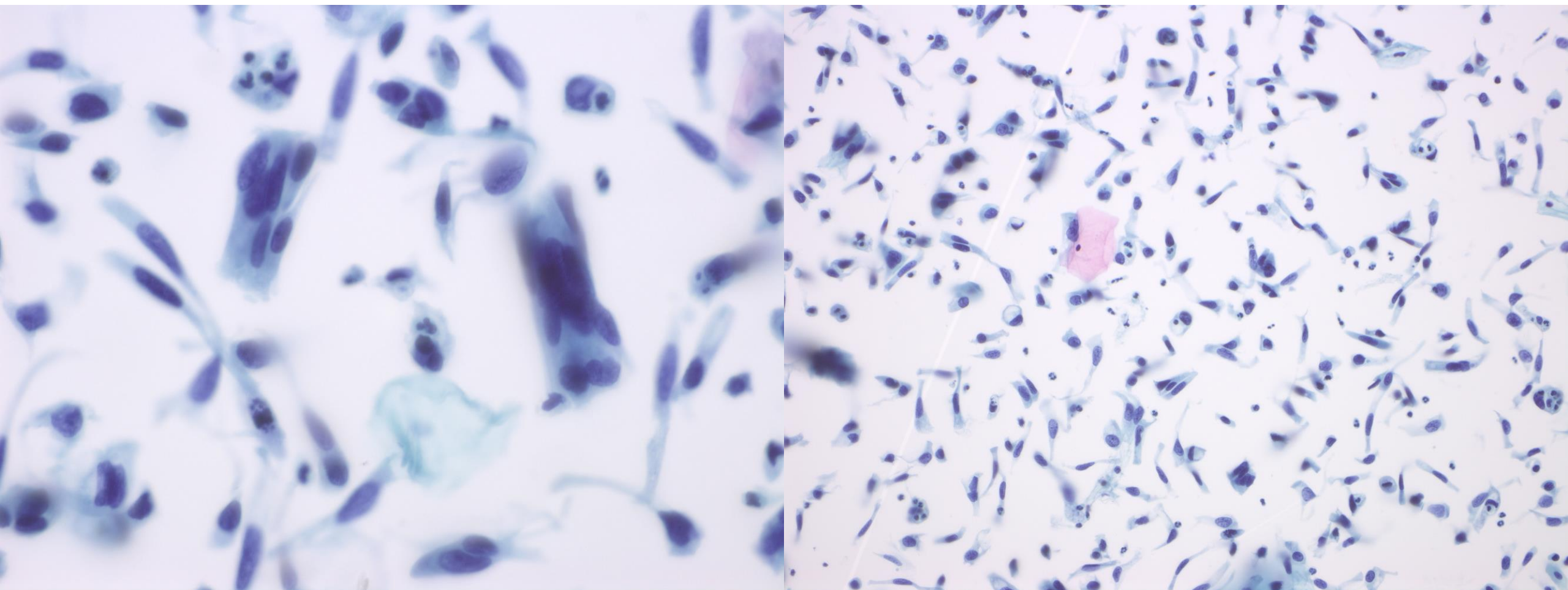


- Single intact cells are more easily found
- Hyperchromatic crowded groups are smaller, denser, and more three-dimensional with smoother, sharper margins
- Pseudostratified strips of cells may be the most prominent architectural feature
- Architectural features of peripheral feathering, rosettes, and cell strips have a more subtle presentation
- Nuclear chromatin may be coarse or finely granular
- Nucleoli may be more readily visible
- All from p. 215 of 3<sup>rd</sup> Edition

# Case #1 - bird tails

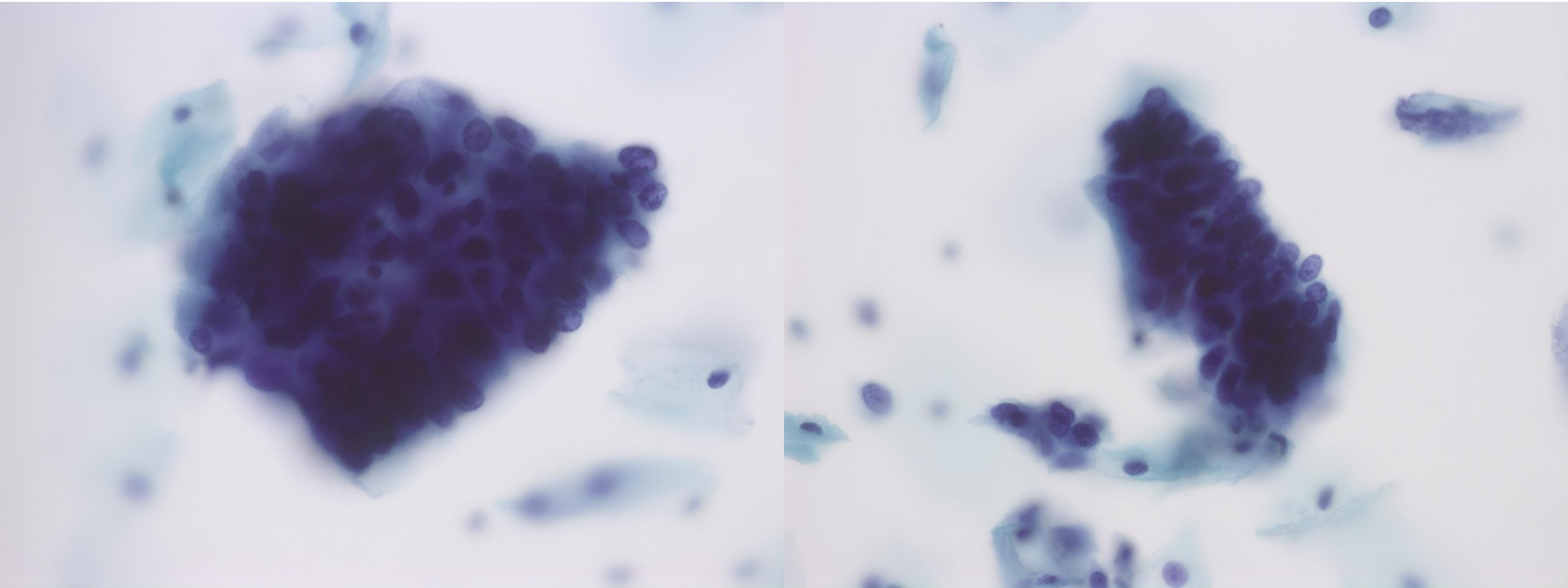


# Case #1 - individual tumor cells

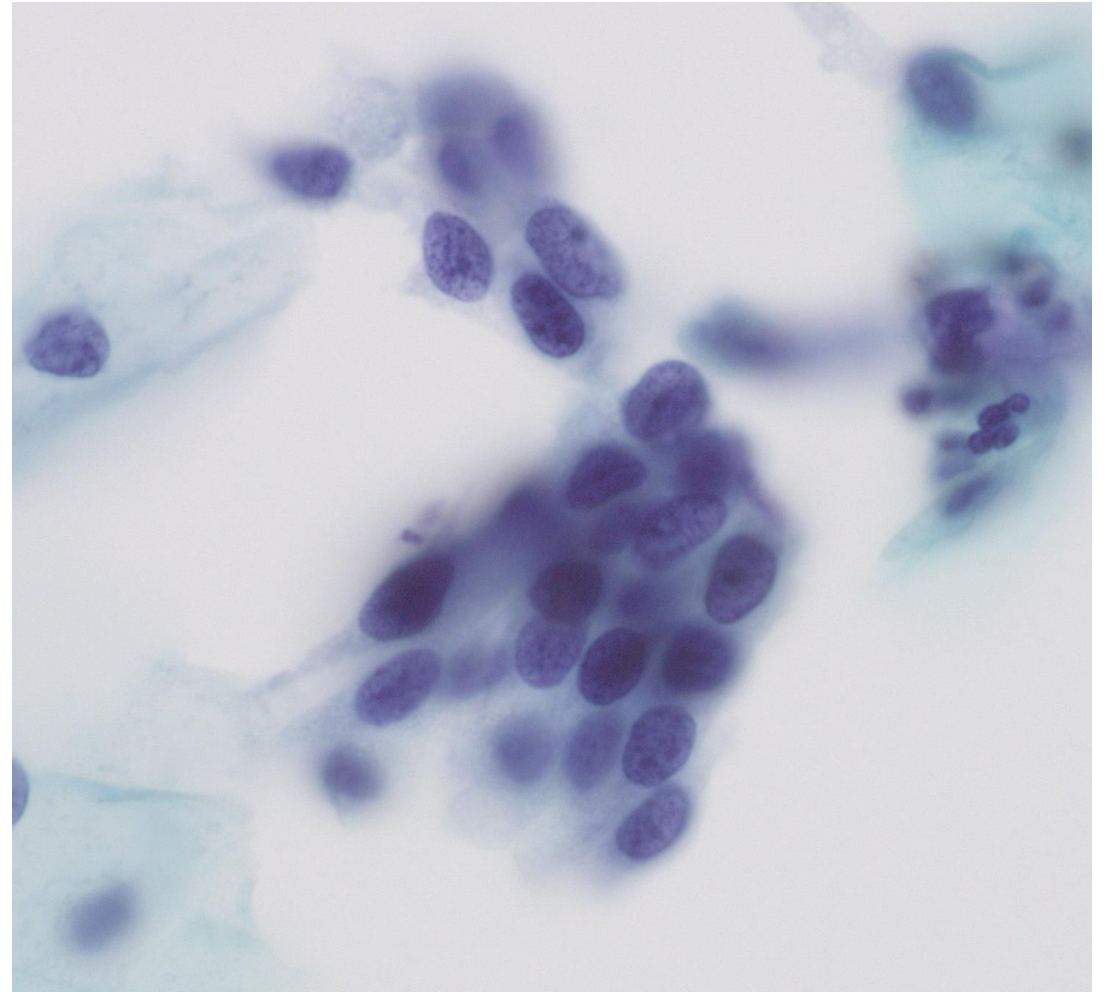
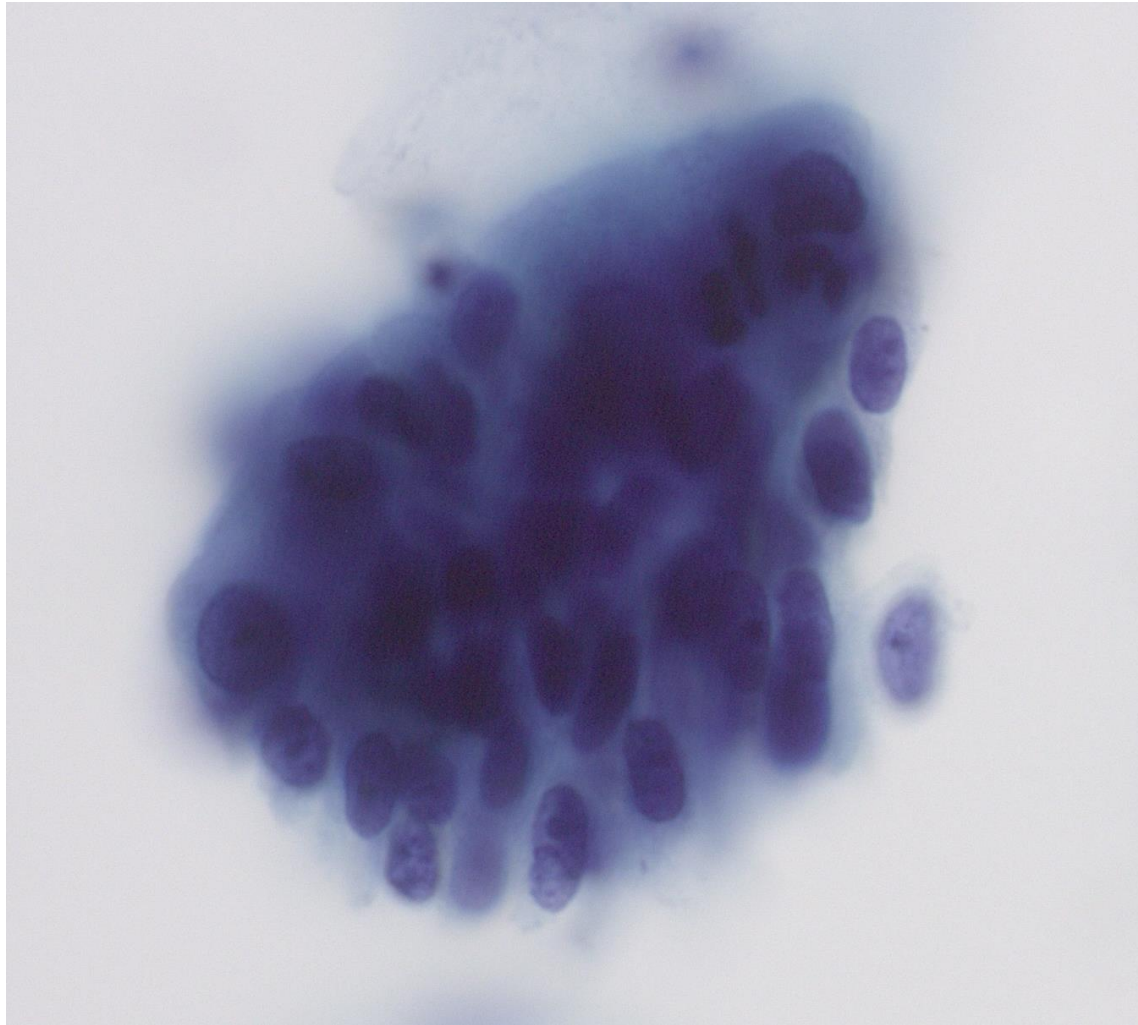




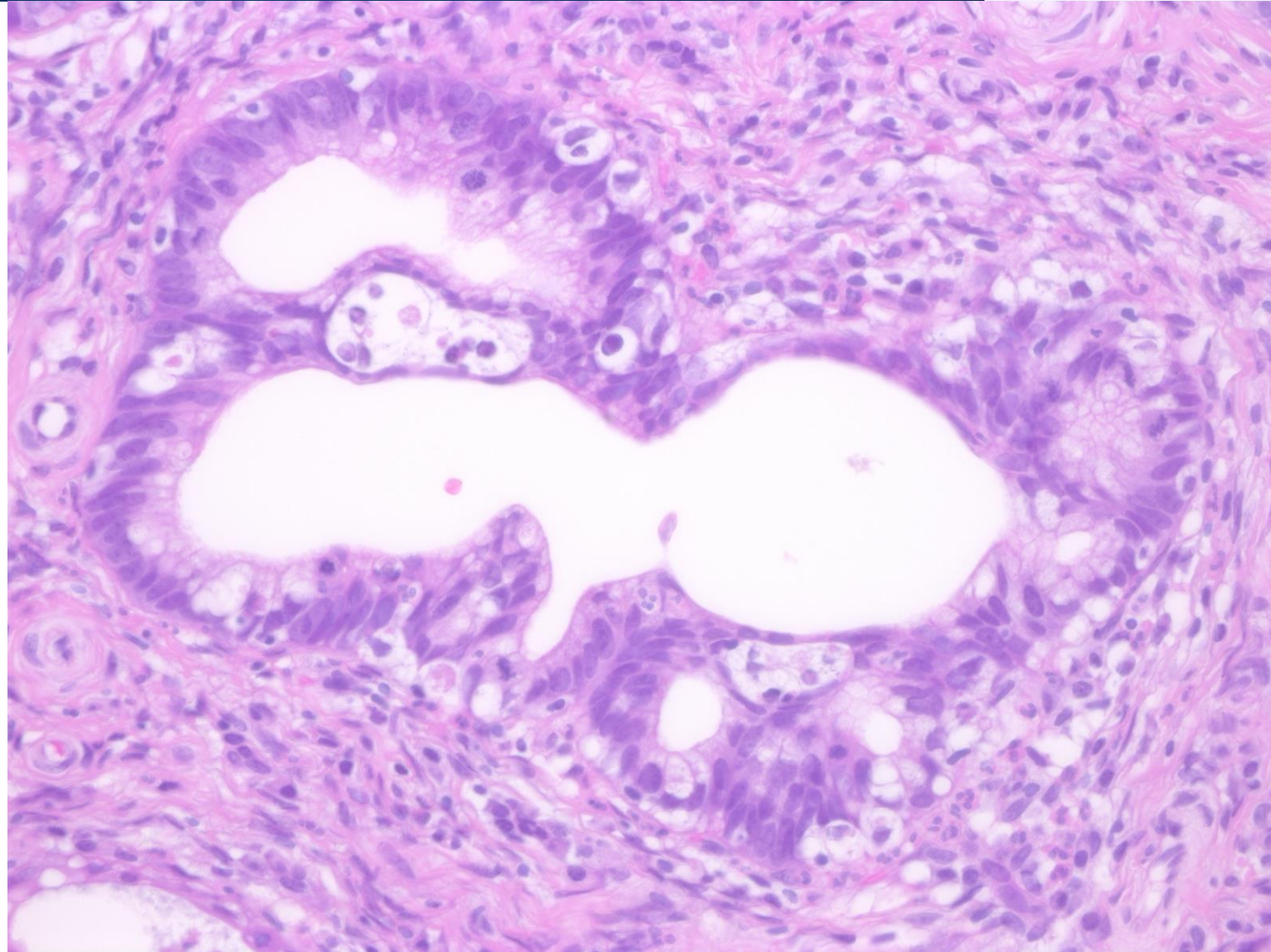
# Case #2 - HCGs



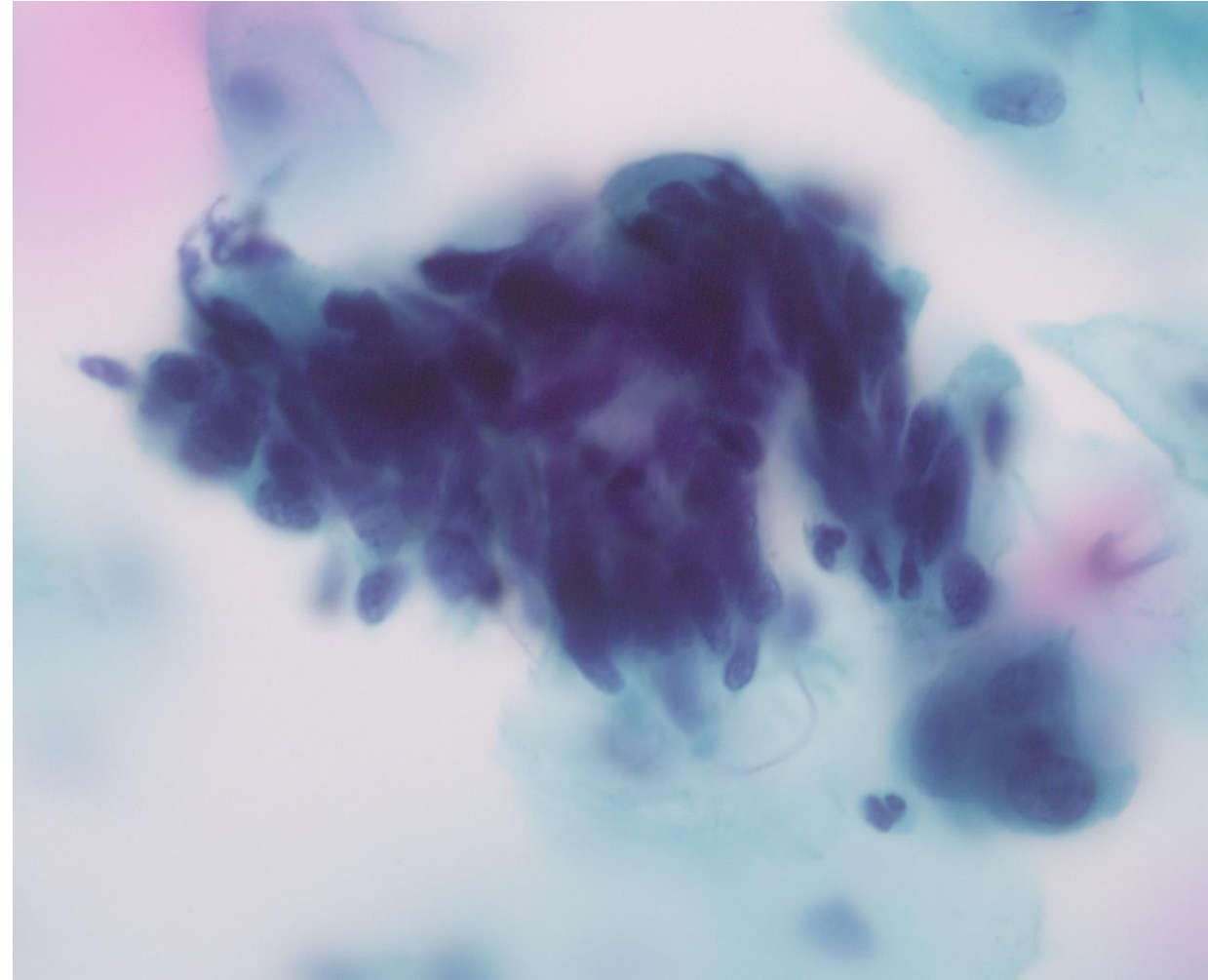
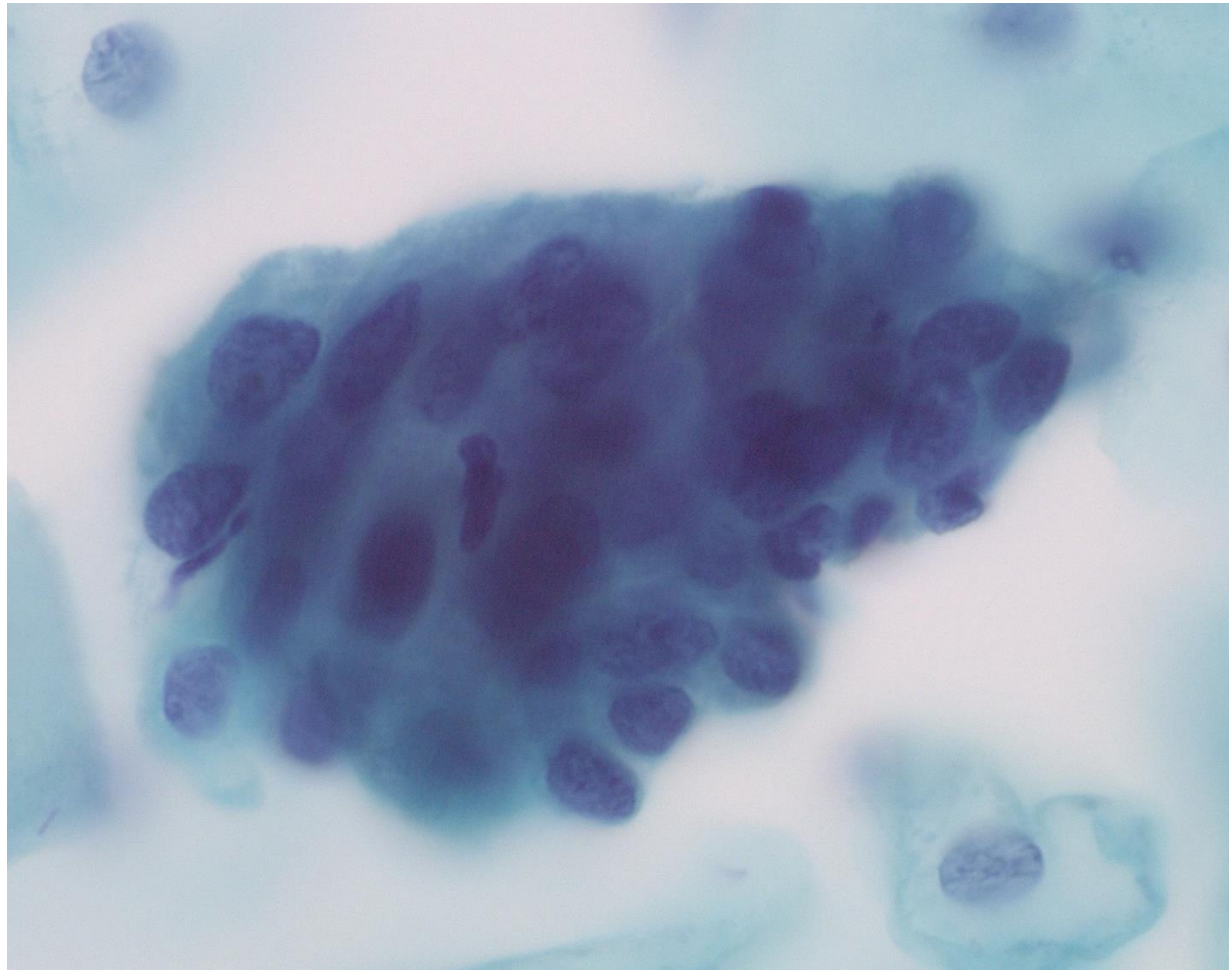
# Case #2 - feathering



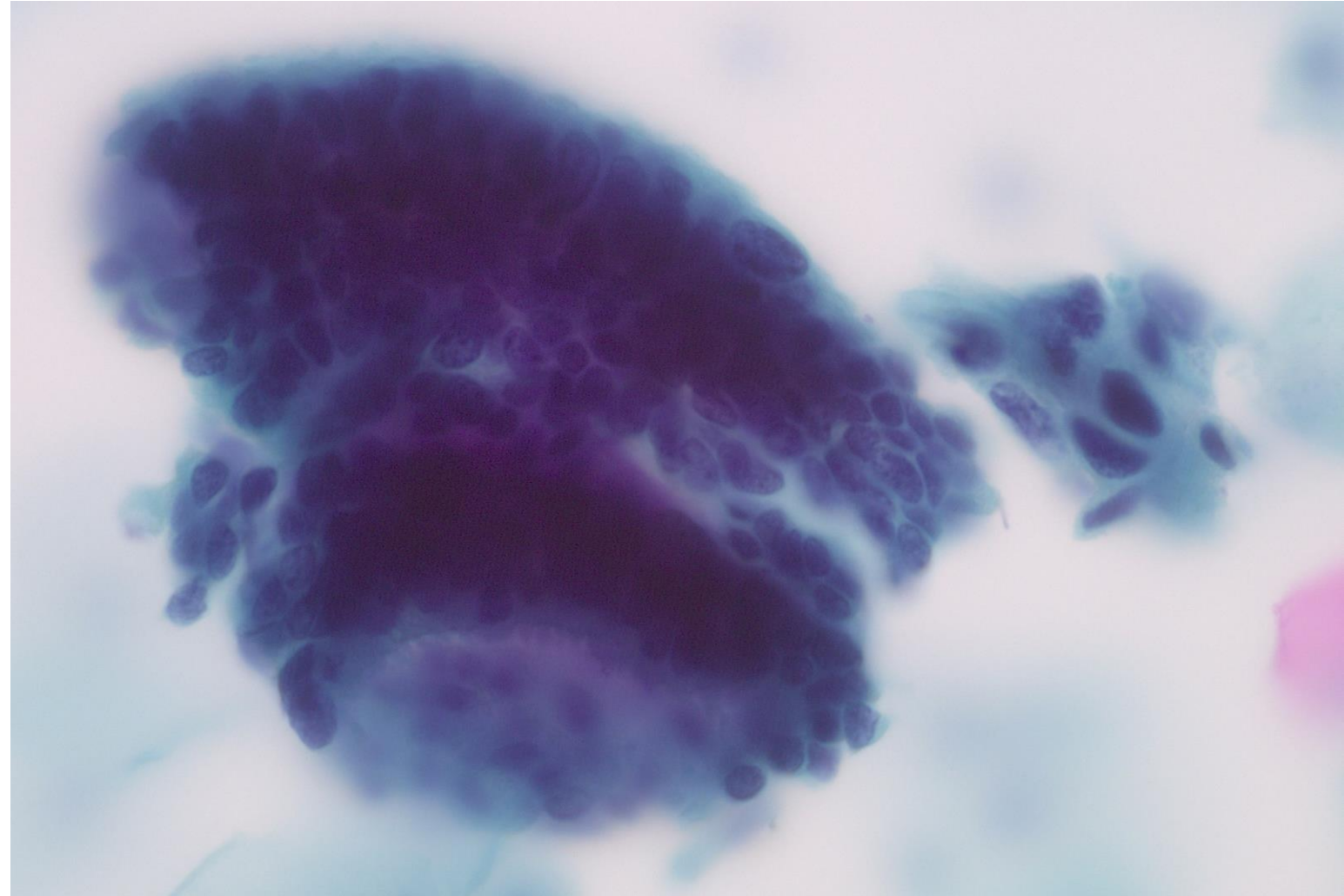
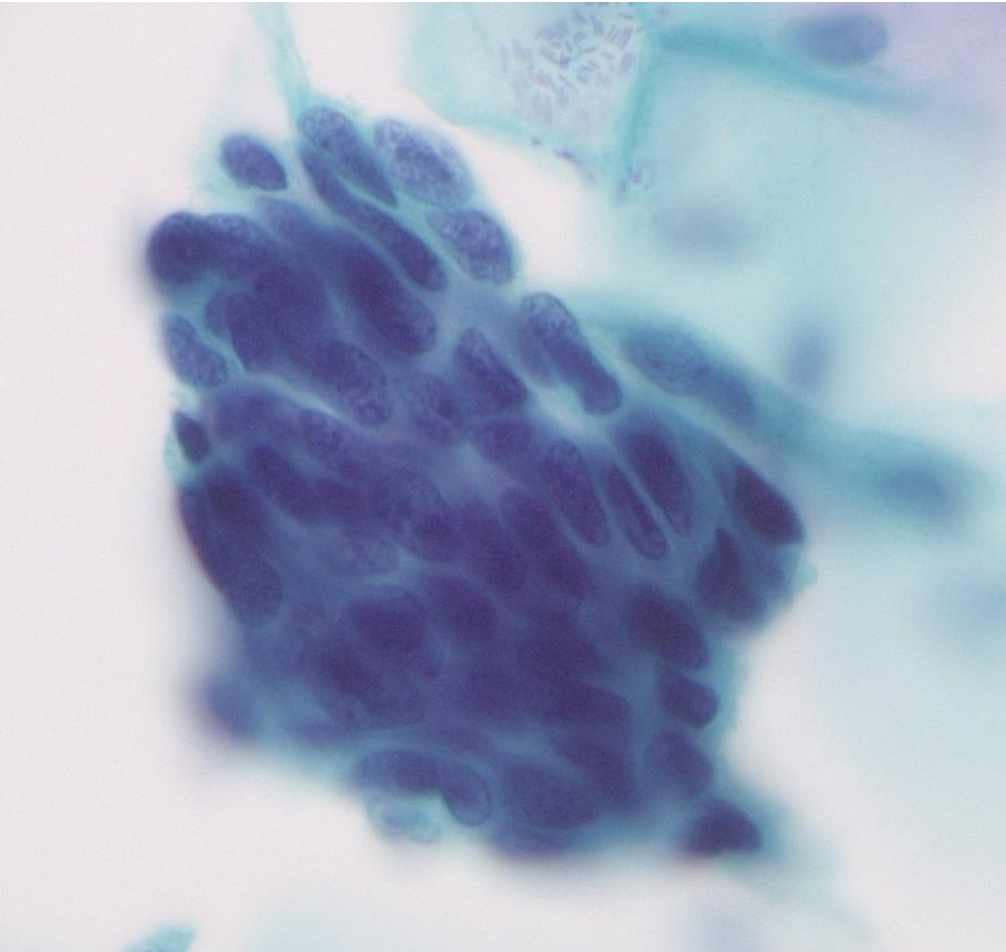
# Case #2 - histology



# Case #3 - rosettes



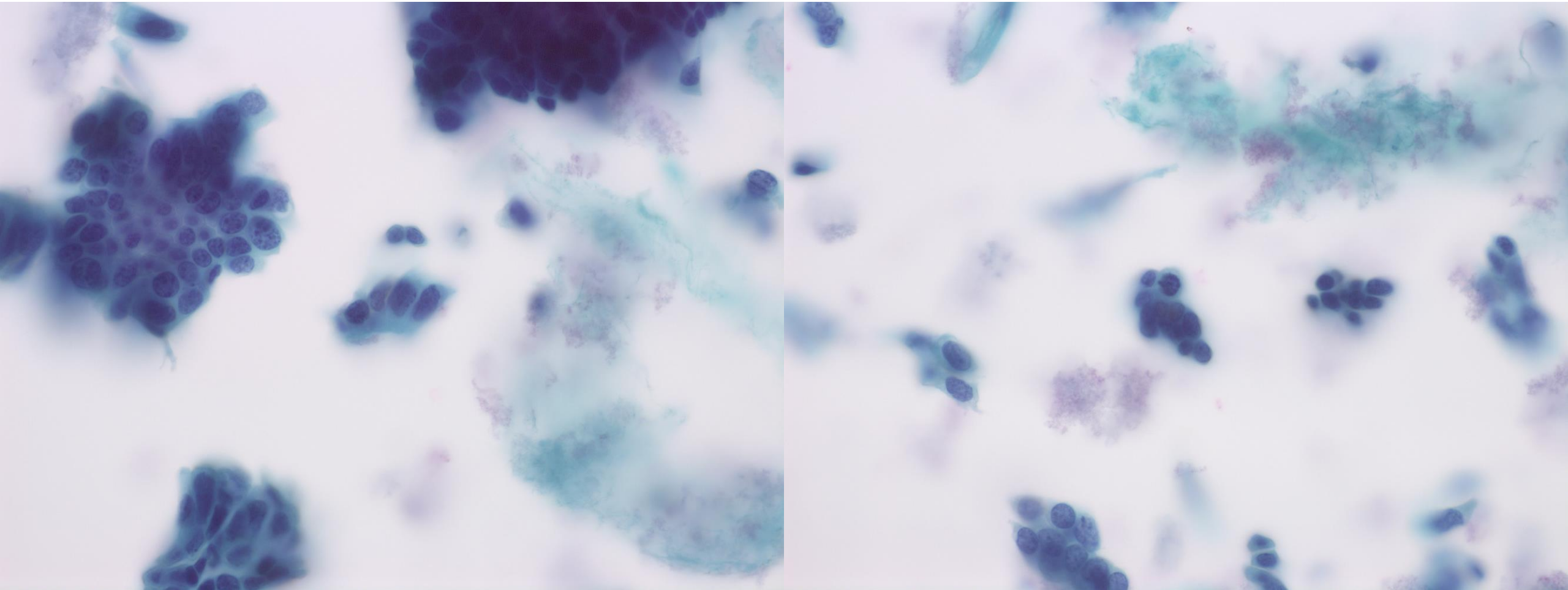
# Case #3 - nuclear atypia



- Invasive adenocarcinoma often resemble AIS
  - Greater nuclear atypia
  - More prominent nucleoli
  - Loss of polarity of nuclei and disorderly arrangement
  - Clinging diathesis
- Gastric type adenocarcinoma is a non-HPV-driven uncommon variant
  - Cytology is often more bland and difficult to recognize - “adenoma malignum”
- When poorly differentiated, cervical adenocarcinoma is difficult to differentiate from endometrial adenocarcinoma or metastasis

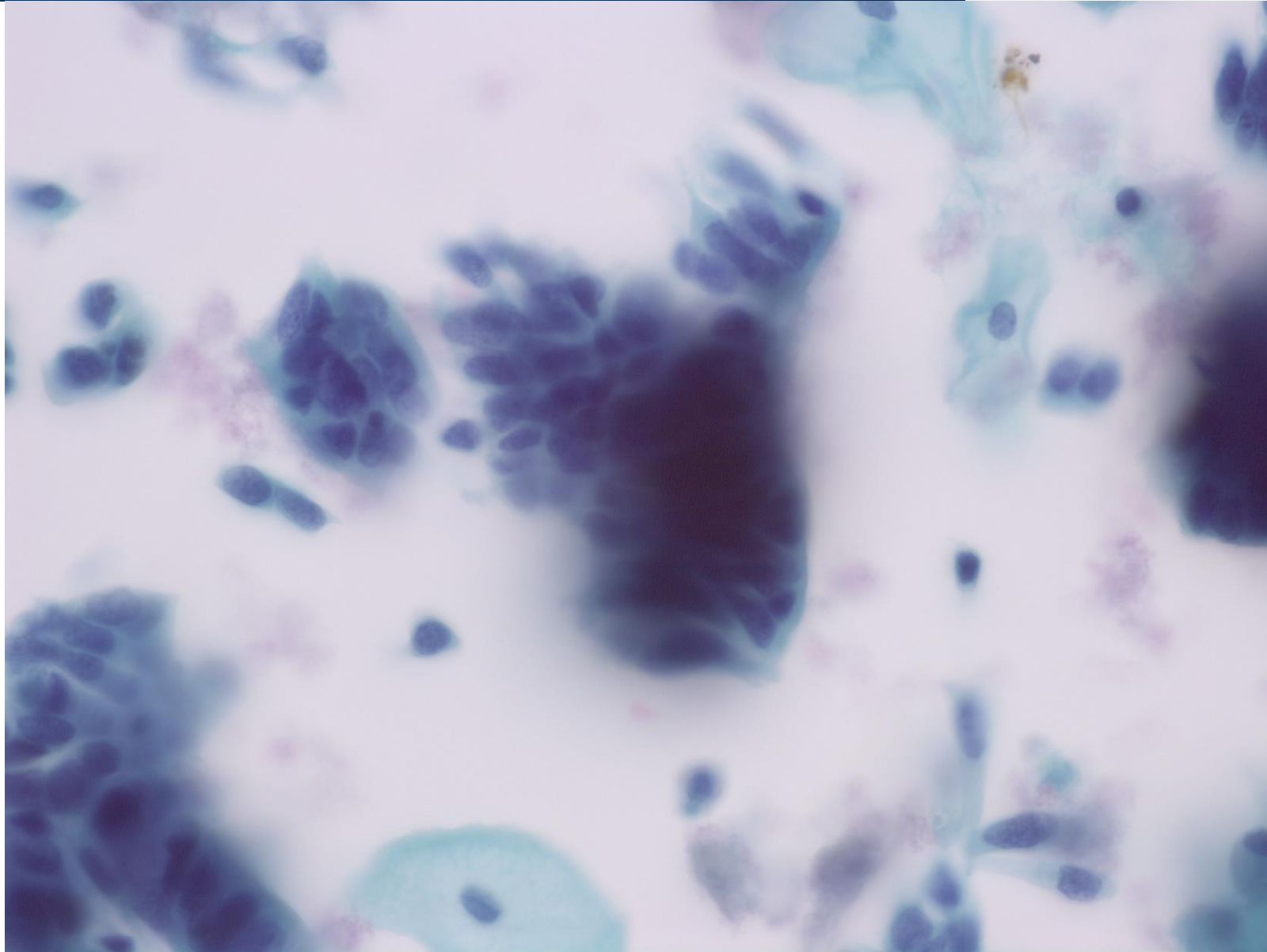
- Cell groups tend to be denser, spherical, and three-dimensional; nuclei within the central portions may be completely obscured
- Isolated abnormal cells are more frequently seen
- Chromatin is more vesicular with irregular chromatin distribution and chromatin clearing
- Nucleoli are more prominent
- Tumor diathesis is less apparent, consisting of aggregates of proteinaceous and inflammatory debris clinging to the surface of individual cells or cell clusters; SurePath specimens have a finer “cotton candy” diathesis
- All from p. 225 of 3<sup>rd</sup> Edition

# Case #4 - diathesis

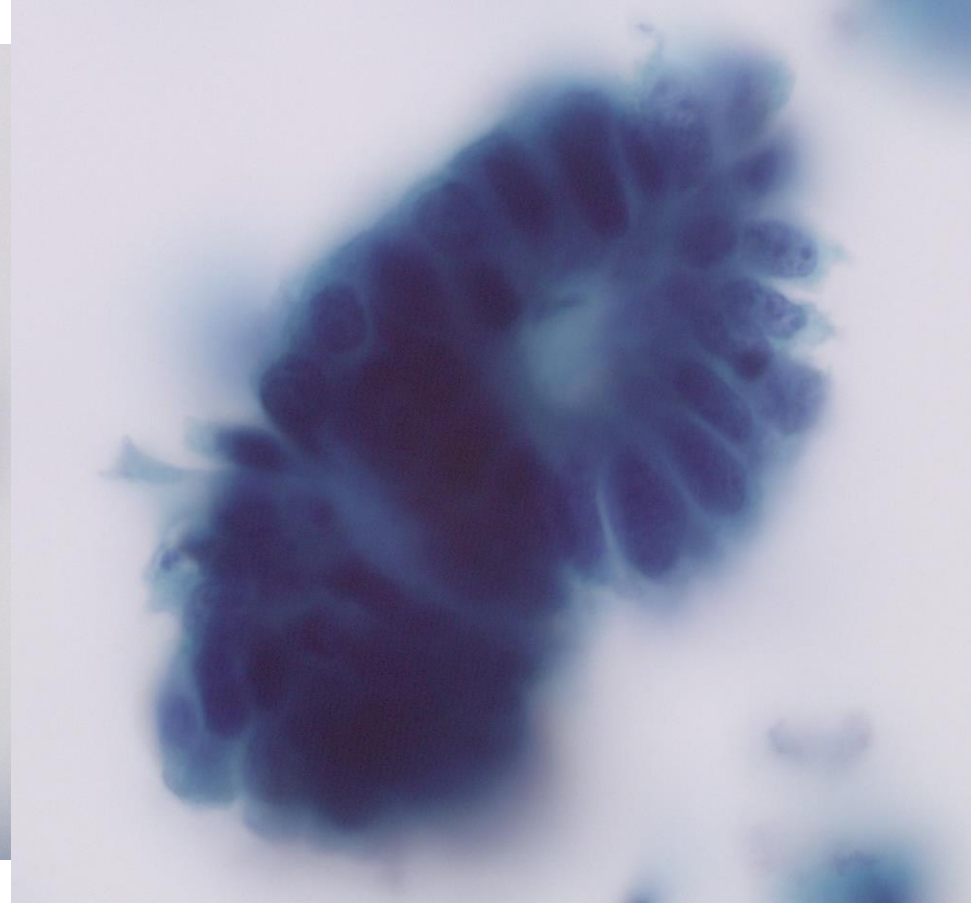
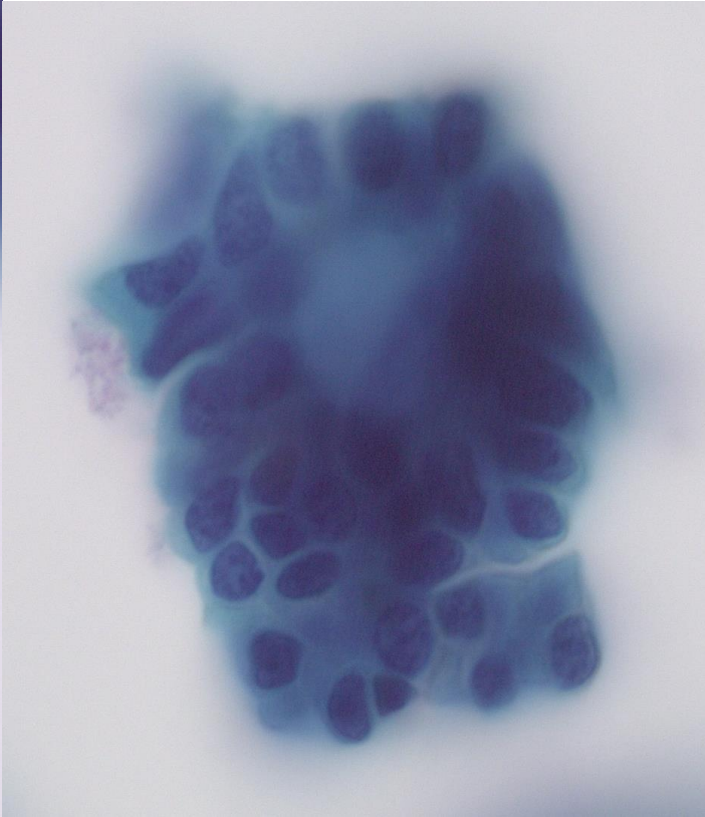
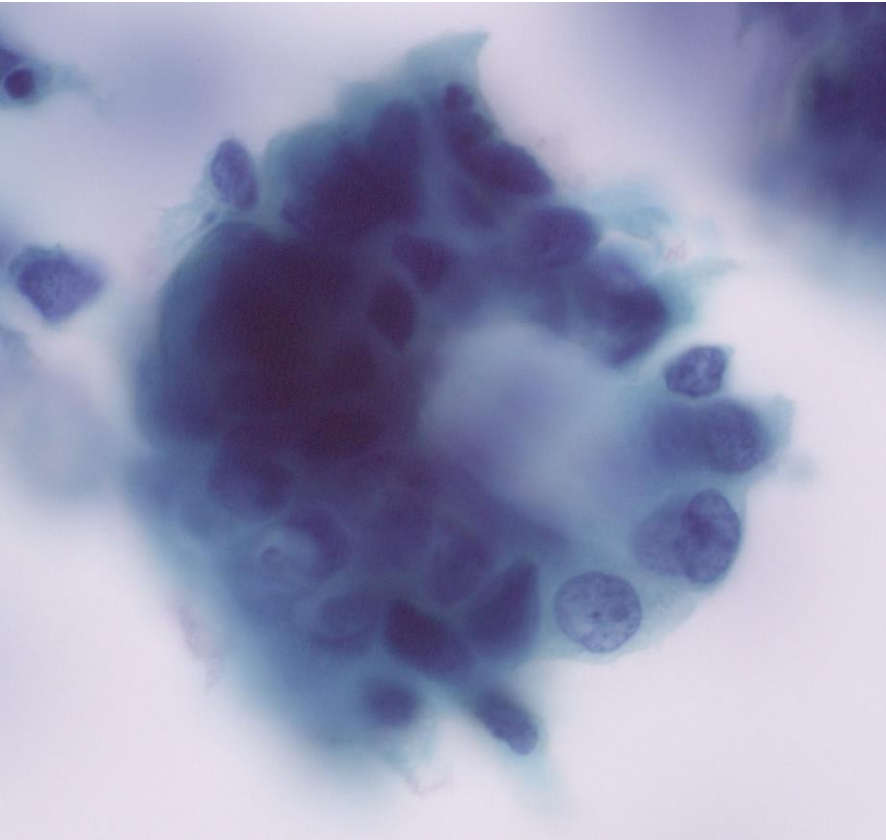




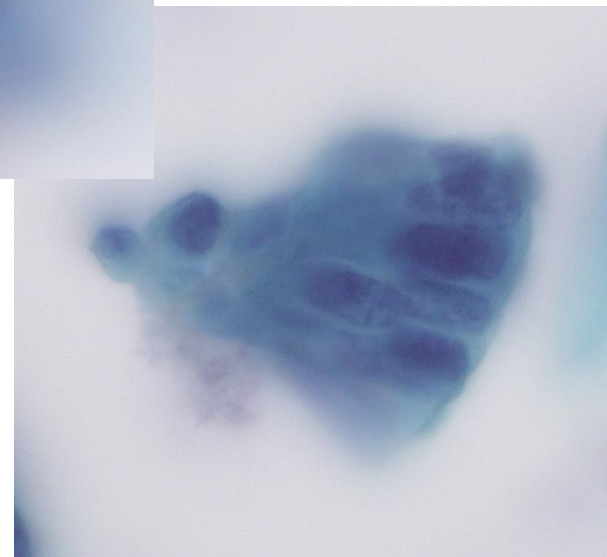
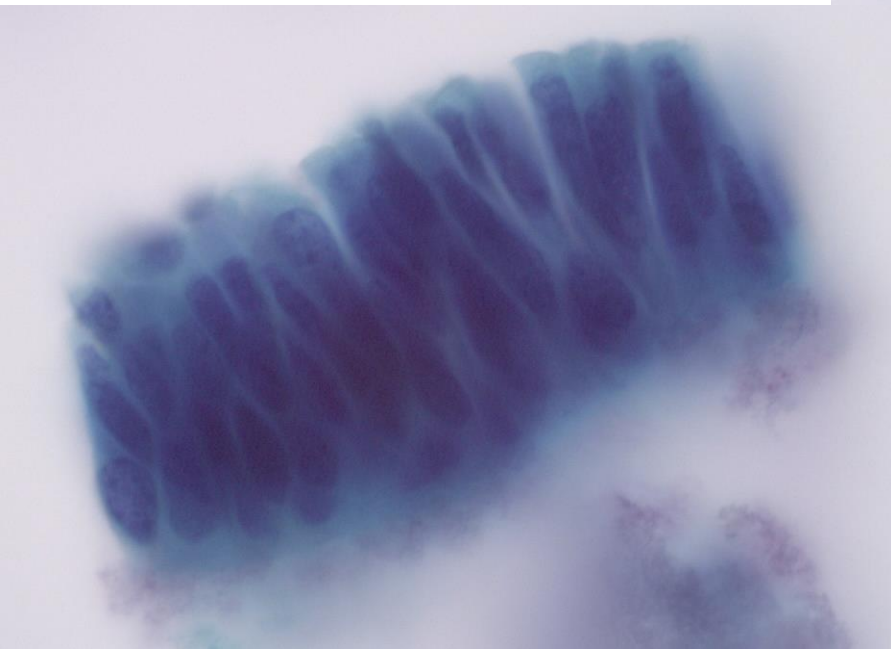
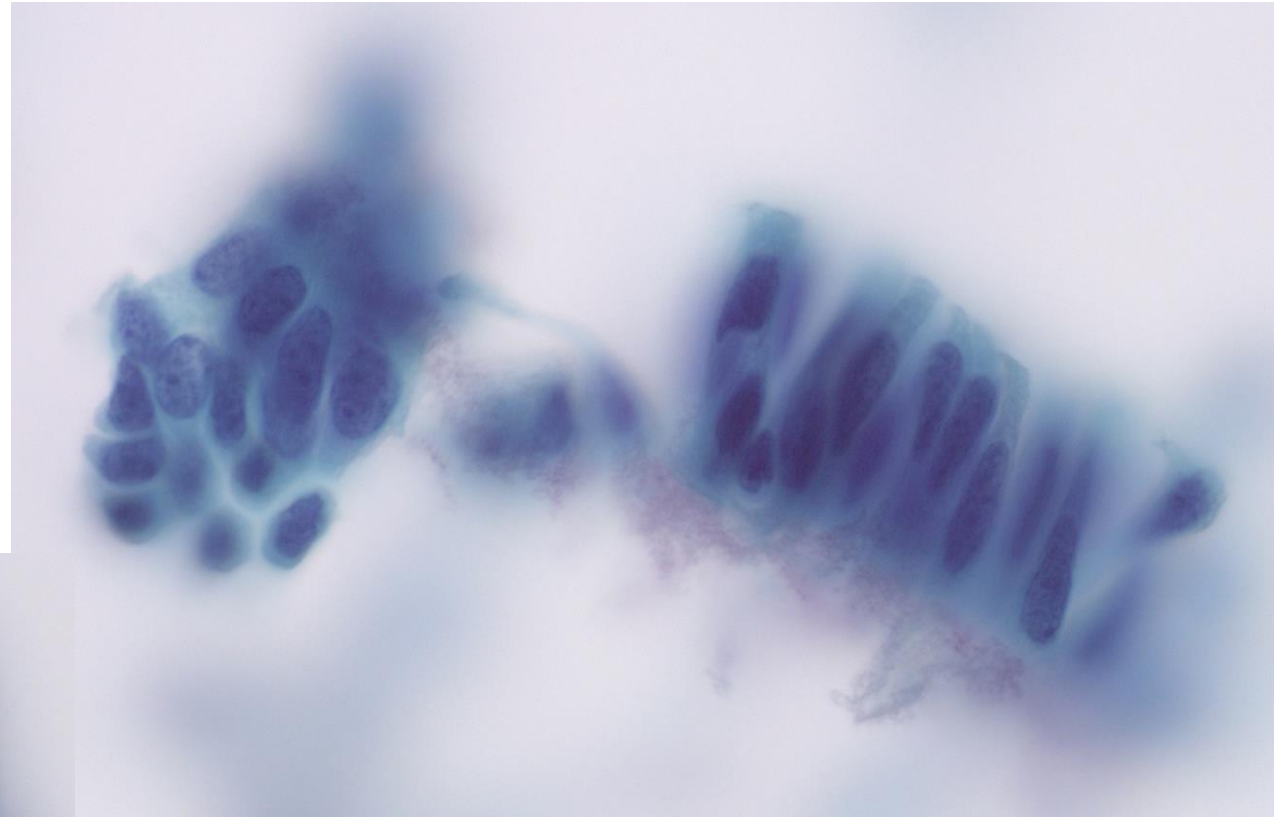
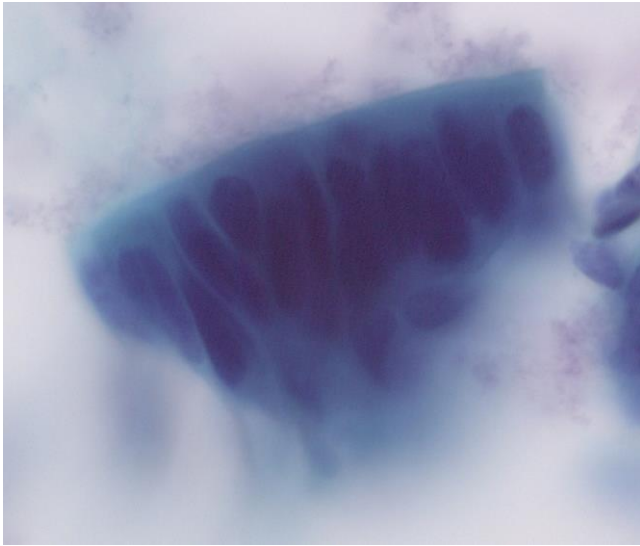
# Case #4 - feathering



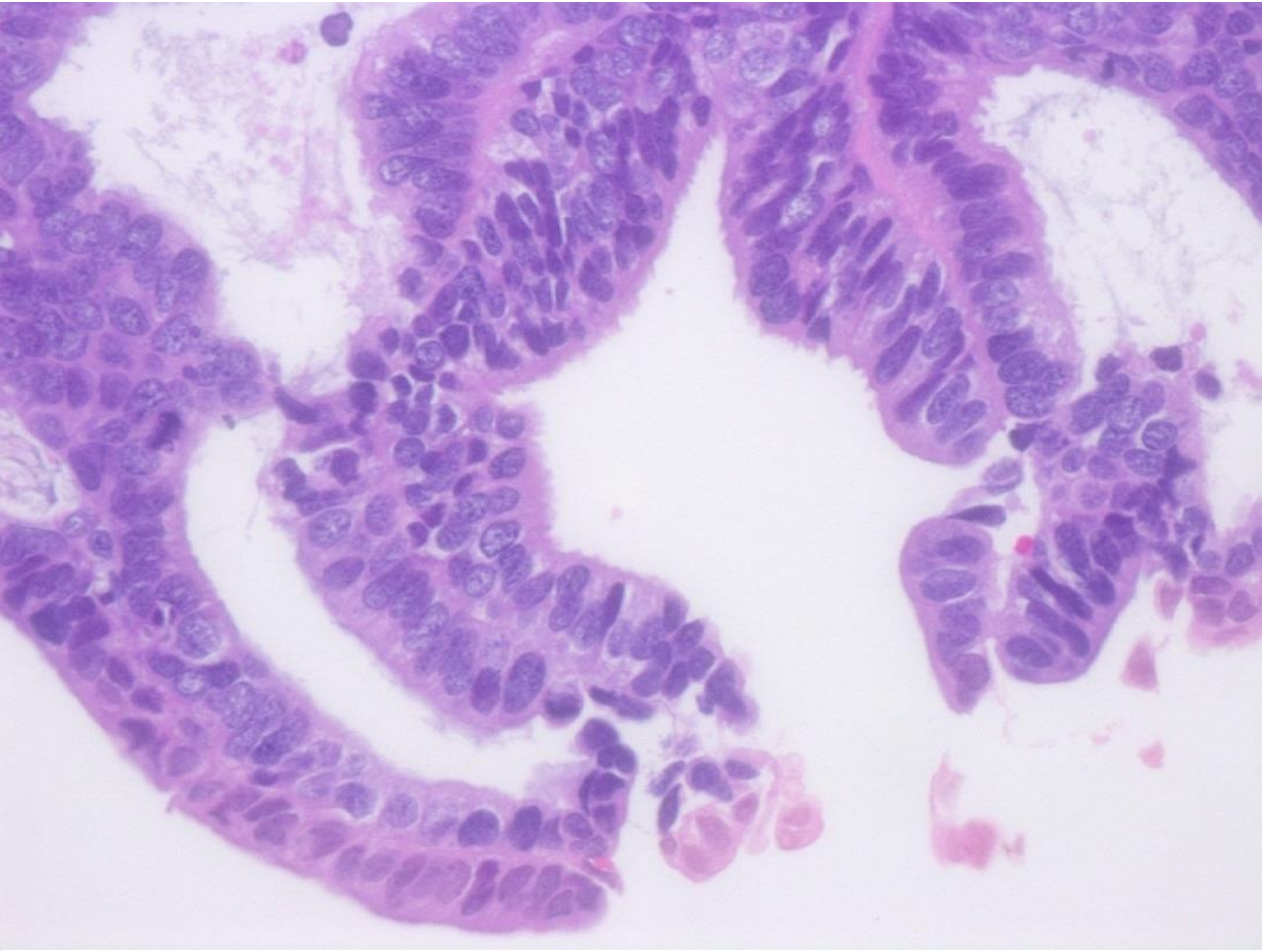
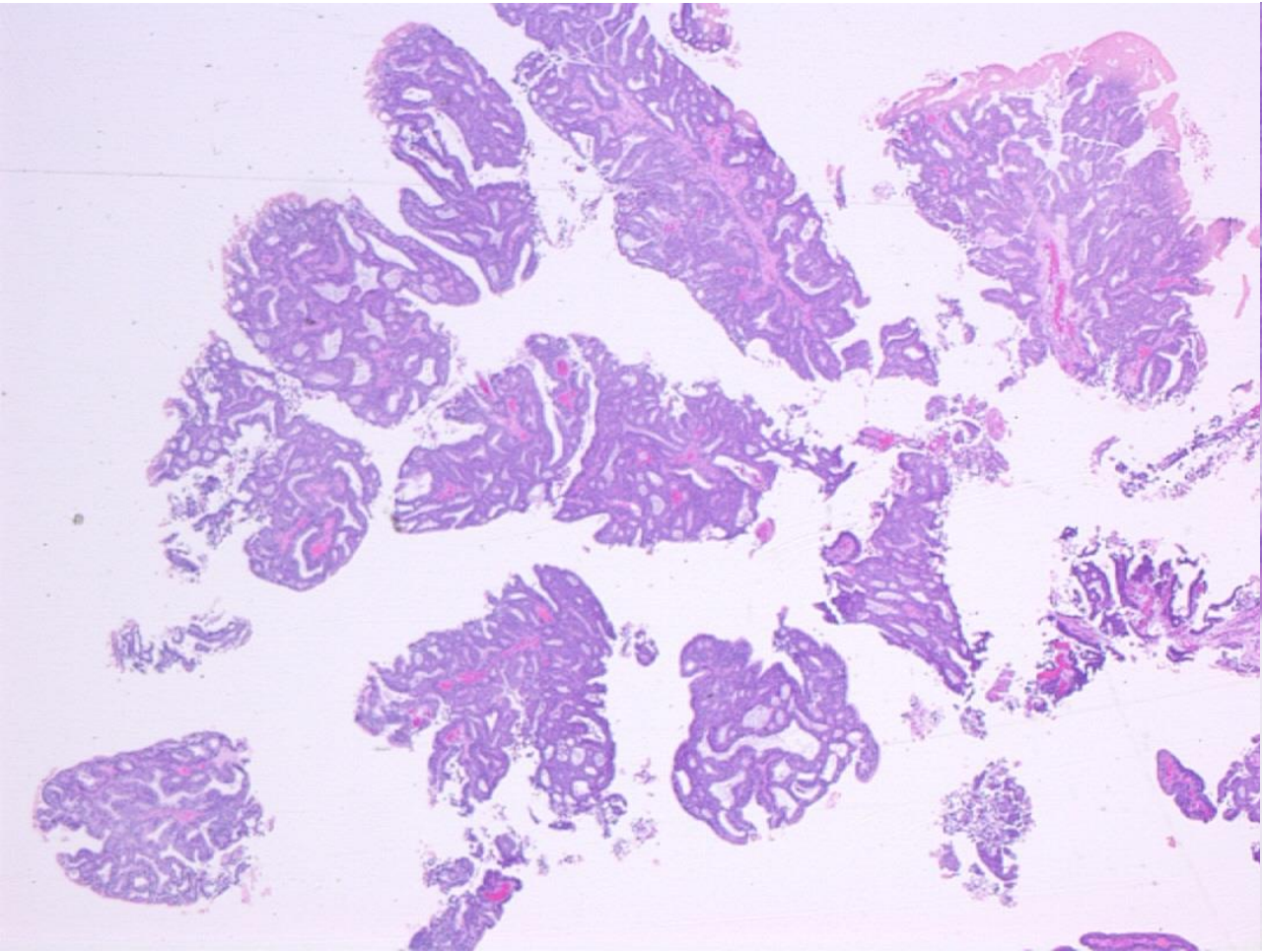
# Case #4 - rosettes



# Case #4 - bird tails and strips



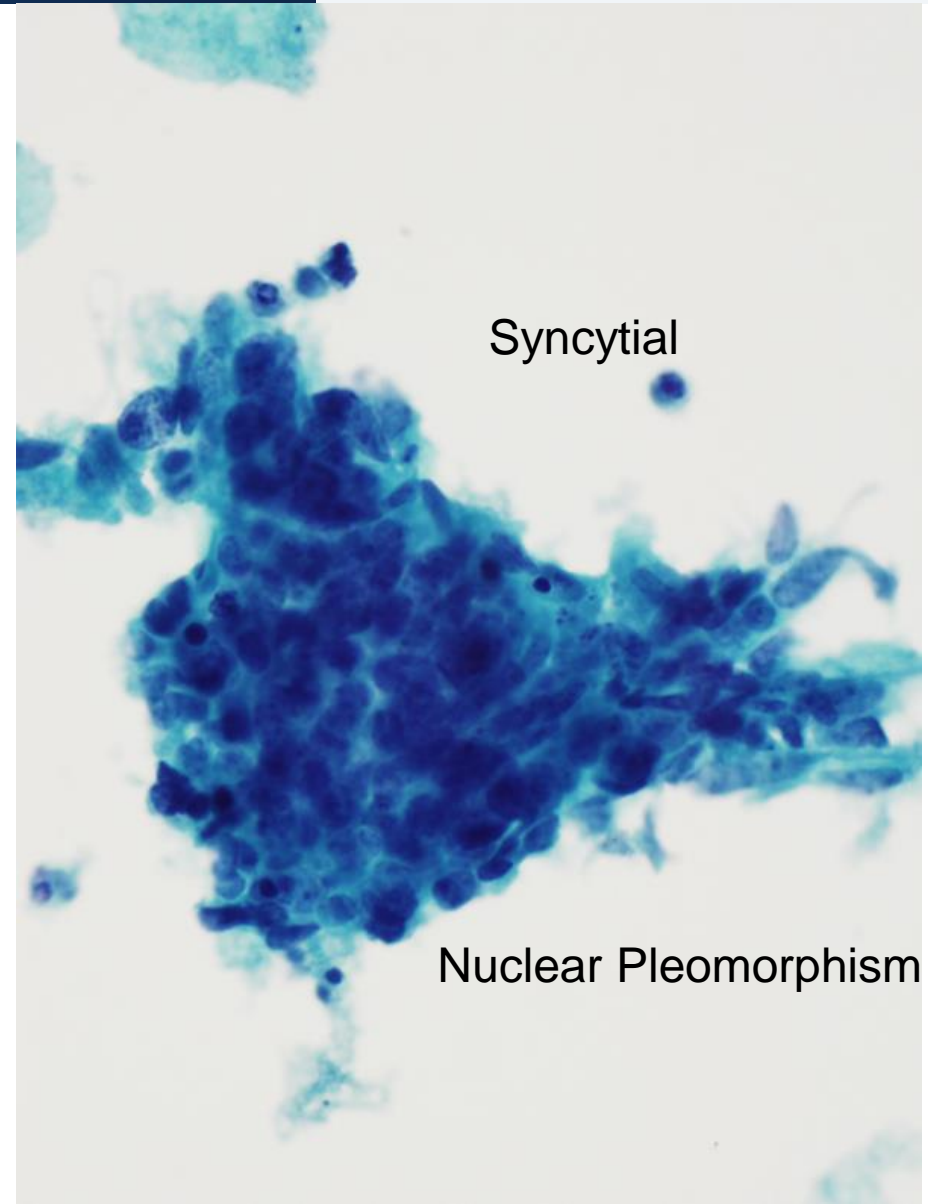
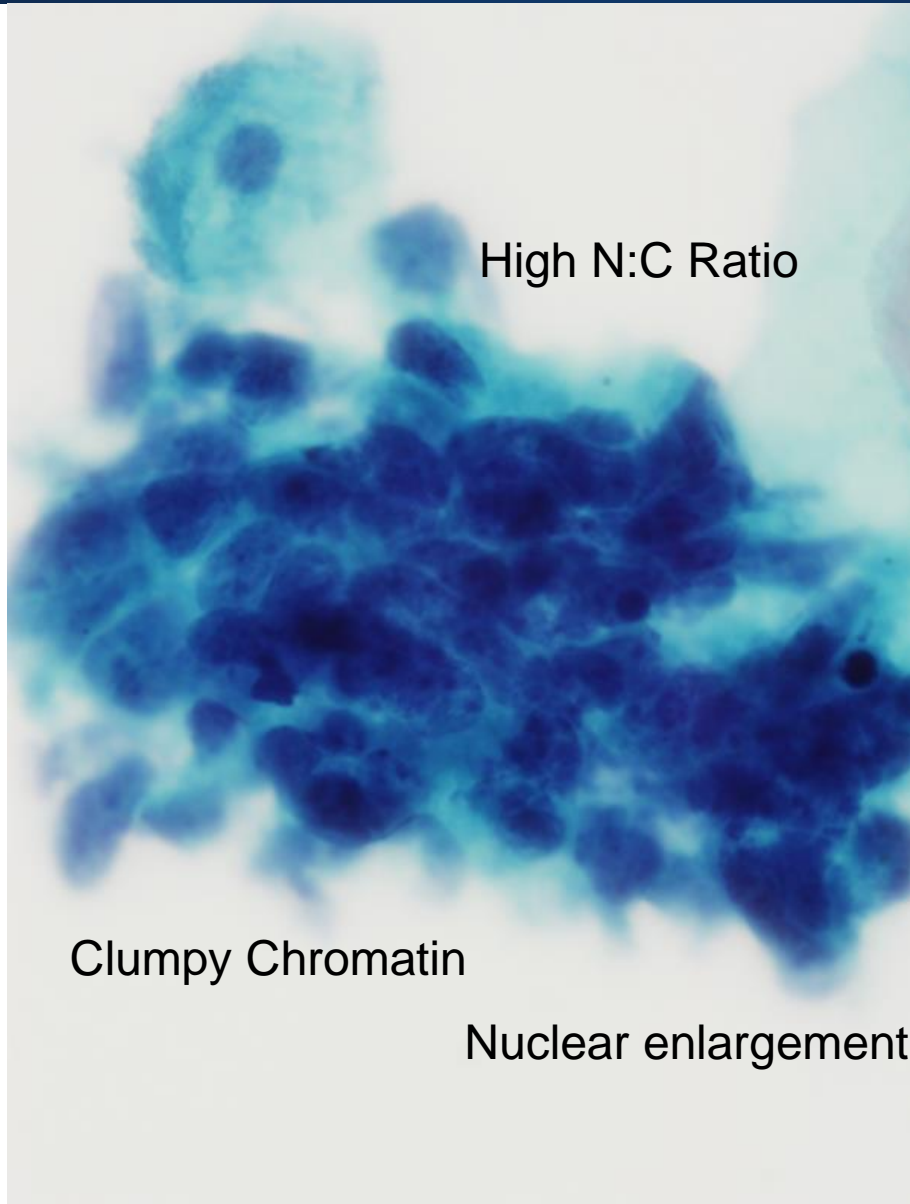
# Case #4 - histology



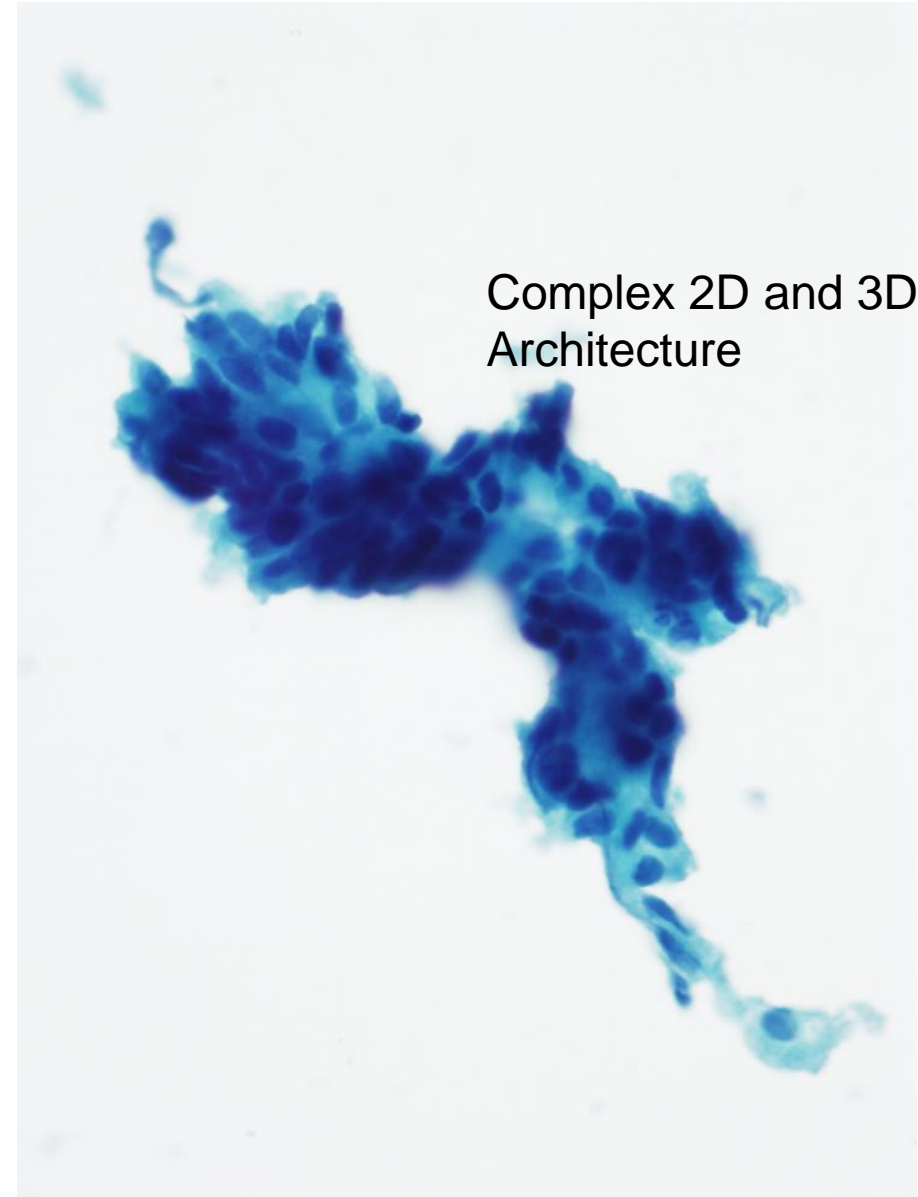
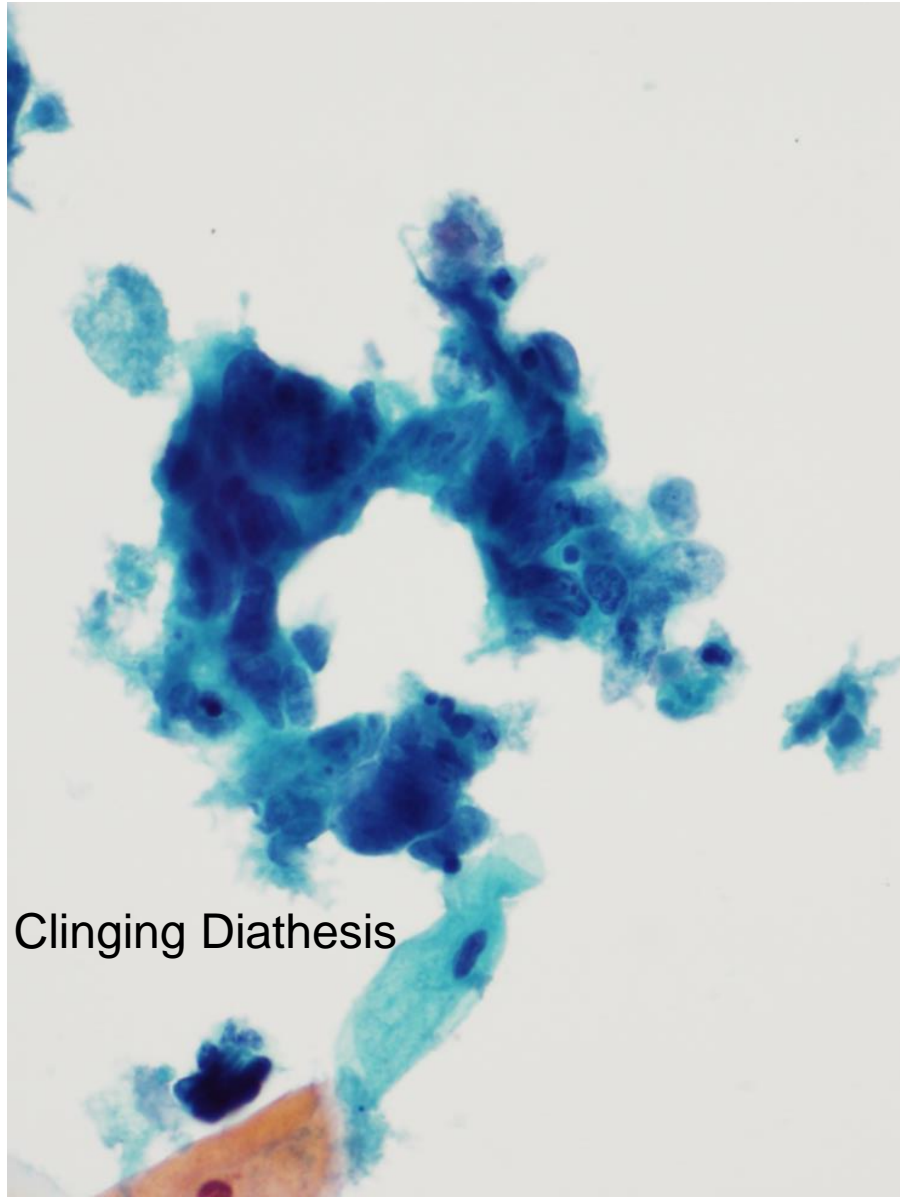
# Adenocarcinoma

- Adenocarcinoma:
  - Endocervical
  - Endometrial
  - Extra-uterine
  - Not otherwise specified (NOS)

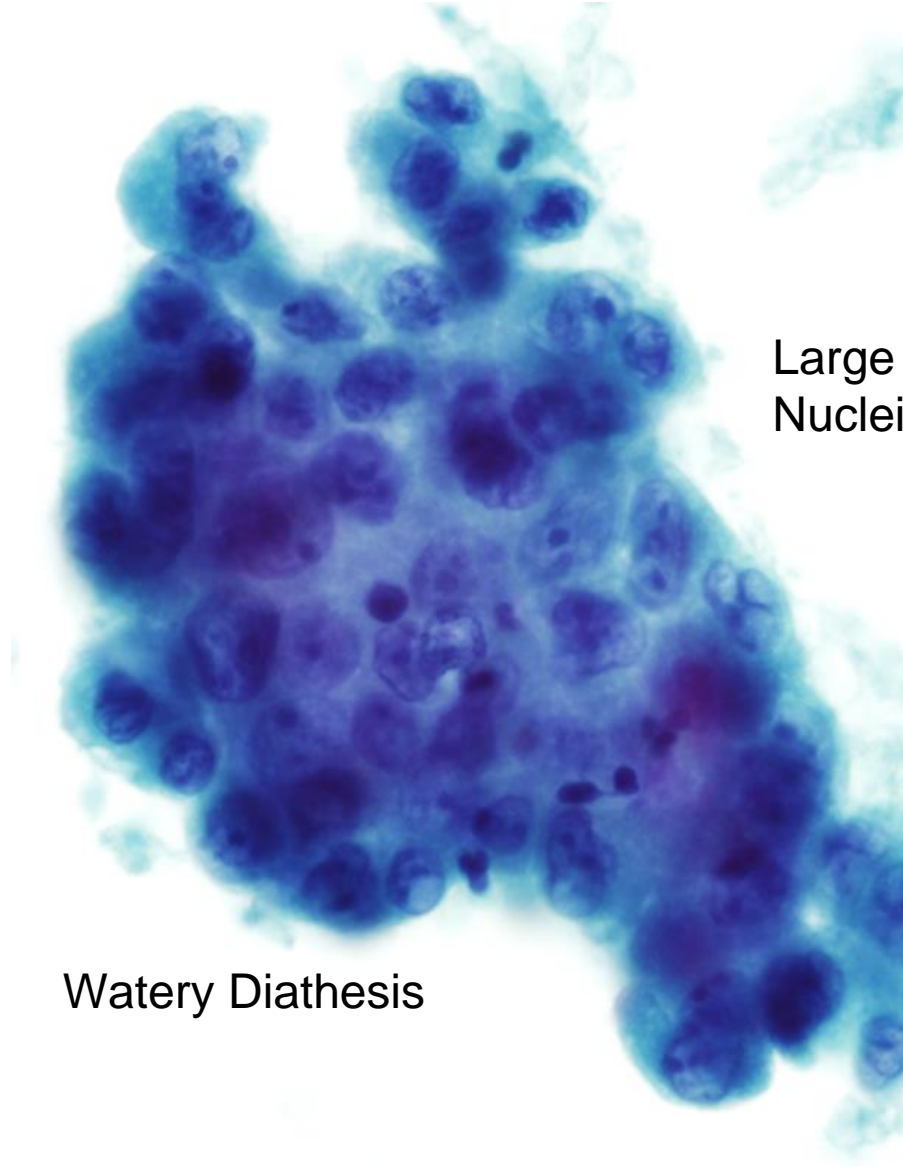
# Endocervical Adenocarcinoma



# Endocervical Adenocarcinoma

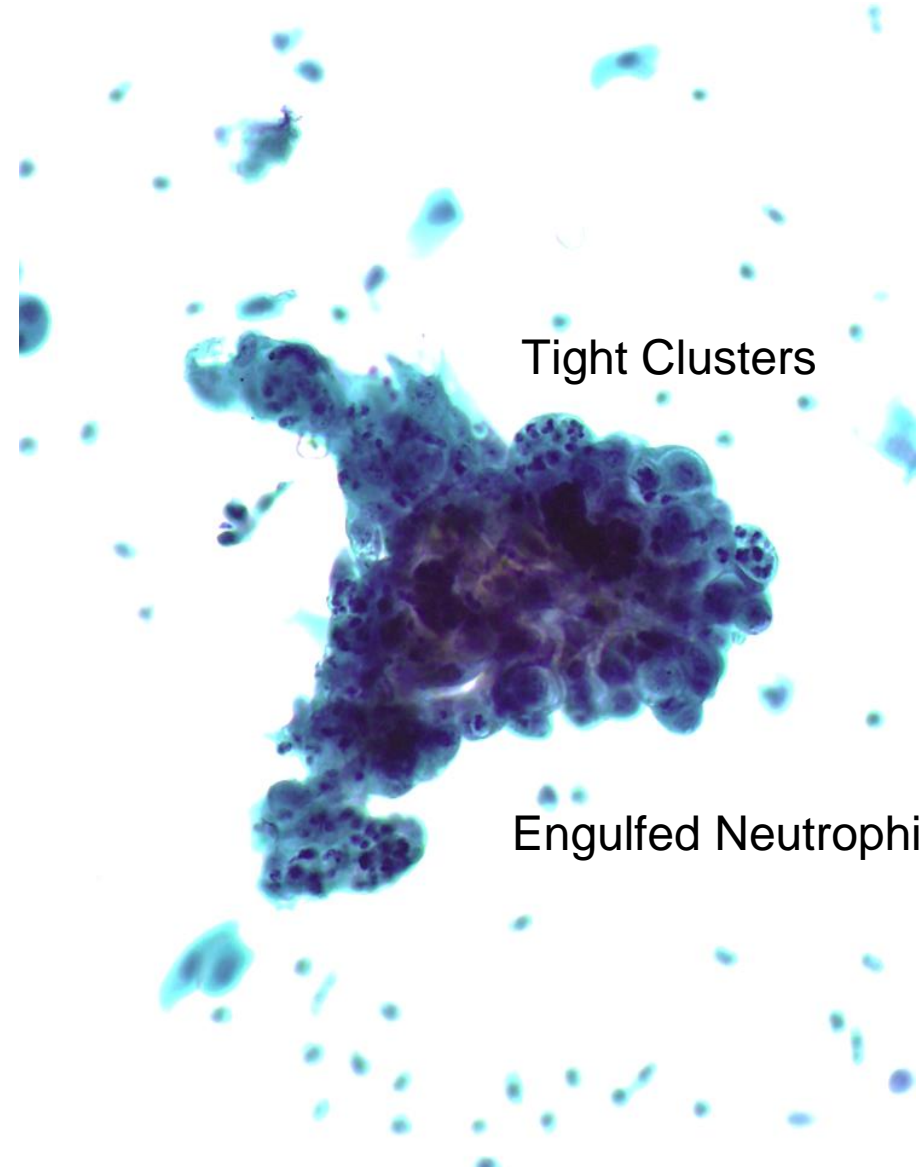


# Endometrial Adenocarcinoma



Large Pleomorphic  
Nuclei with Nucleoli

Watery Diathesis

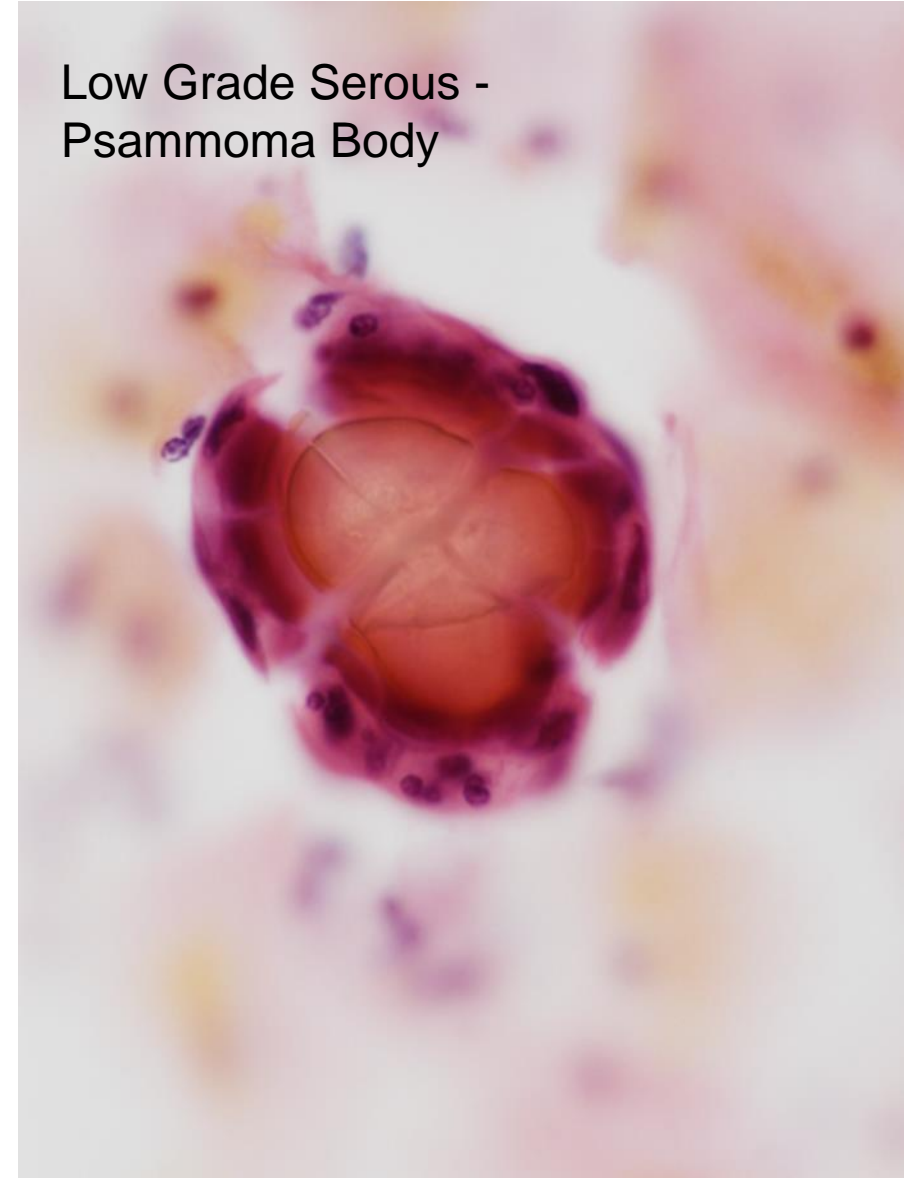
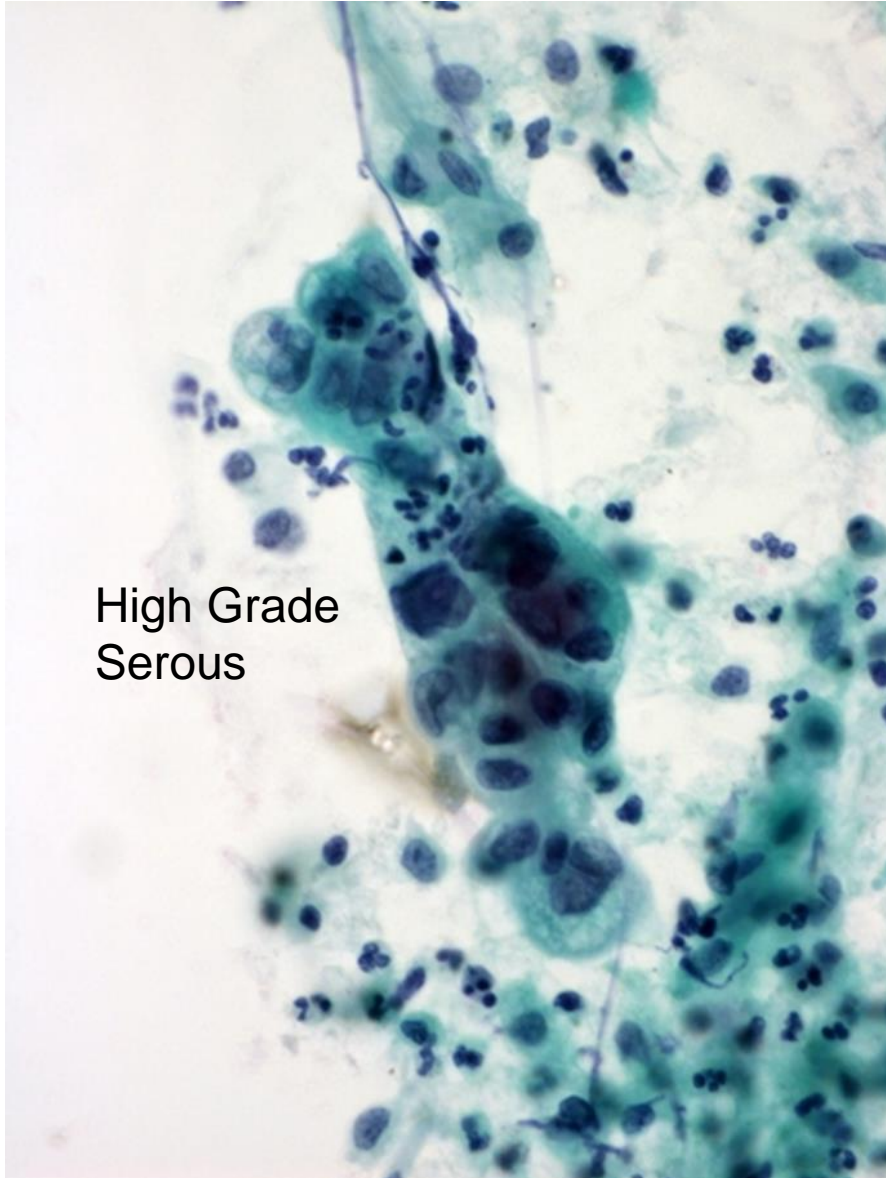


Tight Clusters

Engulfed Neutrophils



# Serous carcinoma

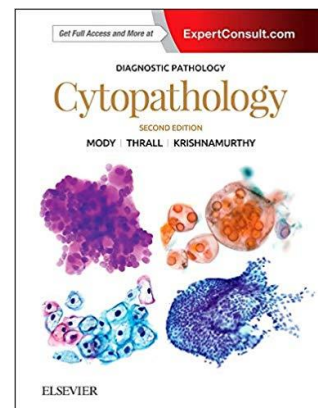


# Endocervical vs. endometrial

## CYTOLOGIC DISTINCTION BETWEEN ENDOCERVICAL AND ENDOMETRIAL PRIMARIES

Features	Endocervical Carcinoma	Endometrial Carcinoma
Cellularity	Hypercellular	Low cellularity
Pattern	Strips, rosettes, large abnormal sheets, peripheral feathering, single malignant cells	Small clusters, rarely papillae or single cells
Diathesis	Visible, type varies by preparation	Watery, absent or subtle
Cell shapes	Oval, columnar, pleomorphic	Round, irregular, smaller
Nuclei	Oval, elongated, pleomorphic	Round, irregular in higher grade
Cytoplasm	Mucin (+)	Degenerate vacuoles, mucin (-)
Squamous intraepithelial lesion or SQCA	Usually present	Absent
High-risk HPV	Positive	Negative

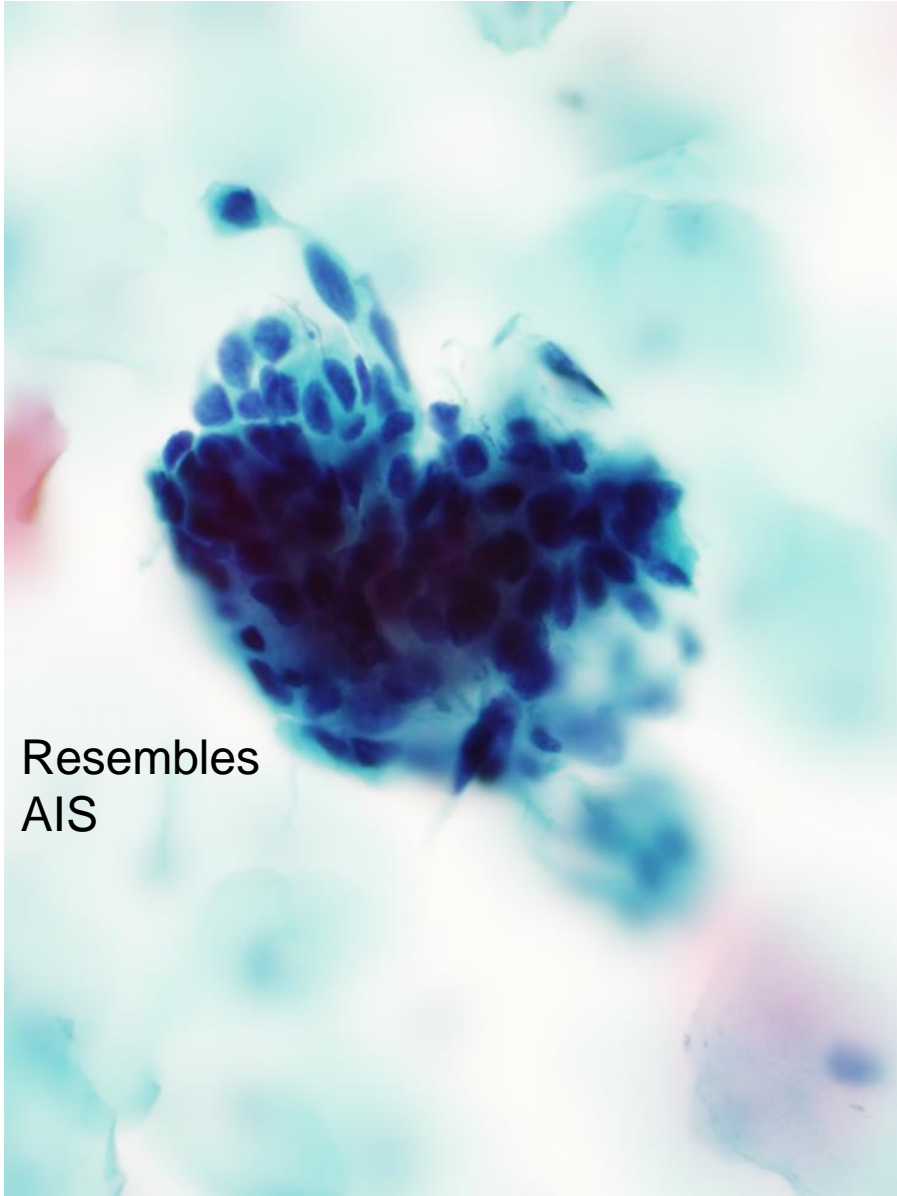
SQCA = squamous cell carcinoma; HPV = human papillomavirus.



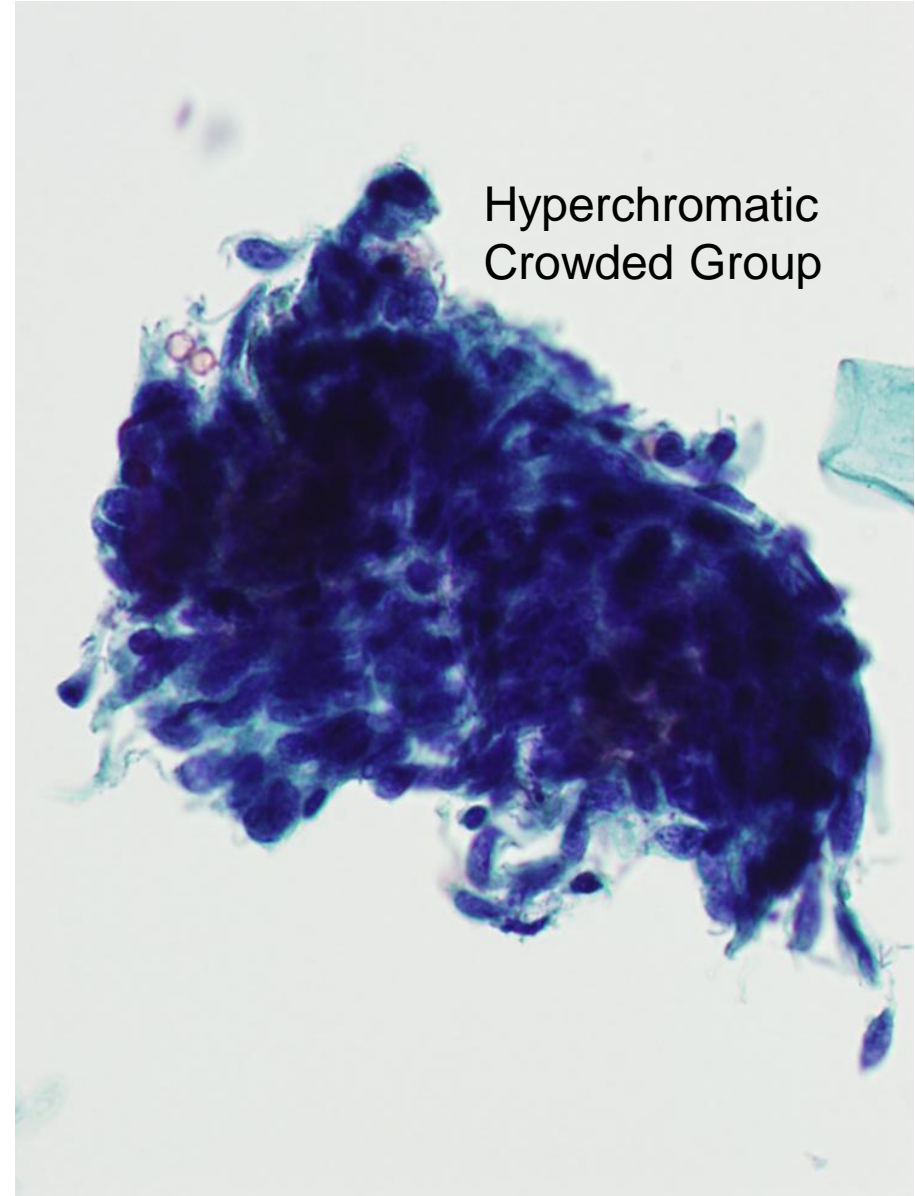
# Atypical Glandular Cells (AGC)

- Atypical glandular cells
  - NOS (not otherwise specified)
  - Favor neoplastic
- Atypical endocervical cells
  - NOS (not otherwise specified)
  - Favor neoplastic
- Atypical endometrial cells

# Atypical Endocervical Cells

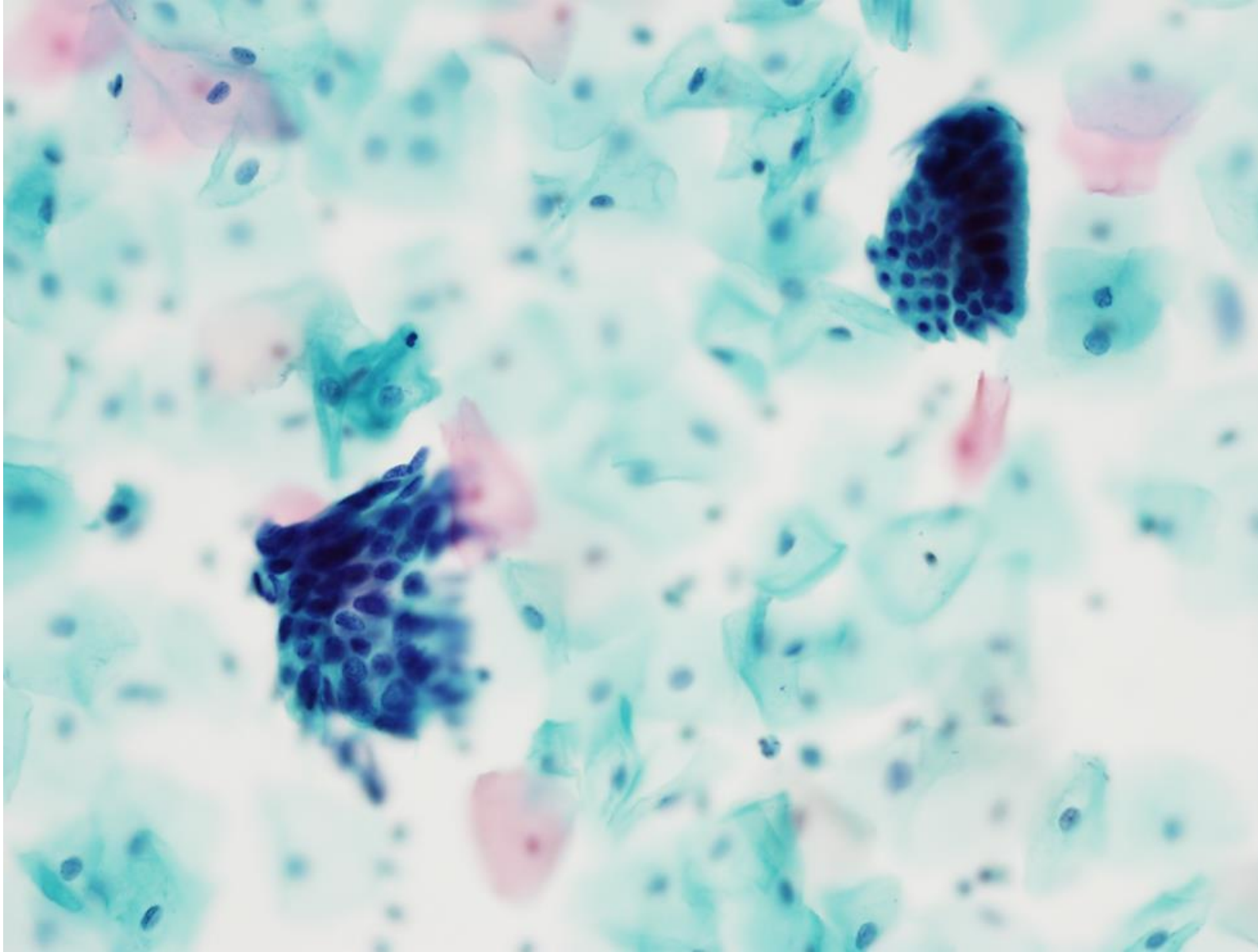


Resembles  
AIS

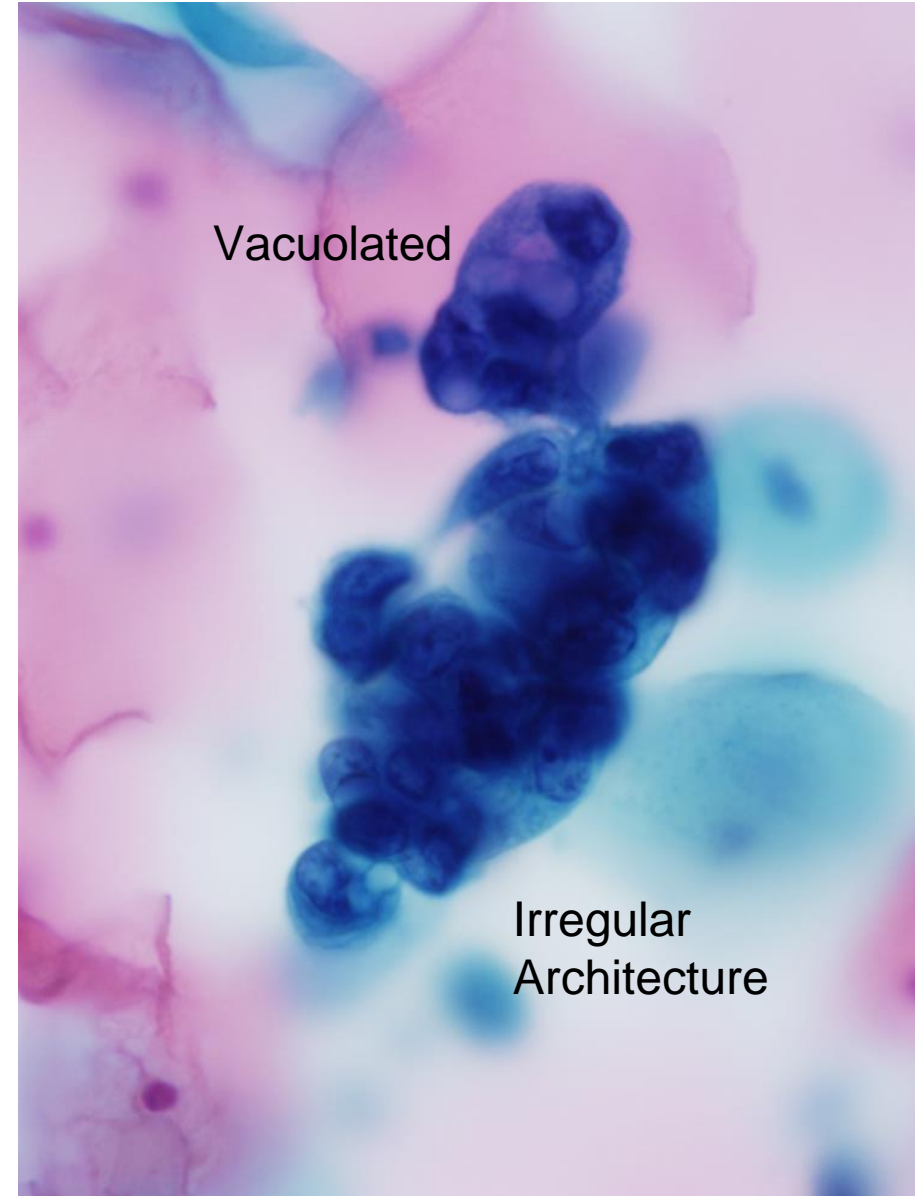
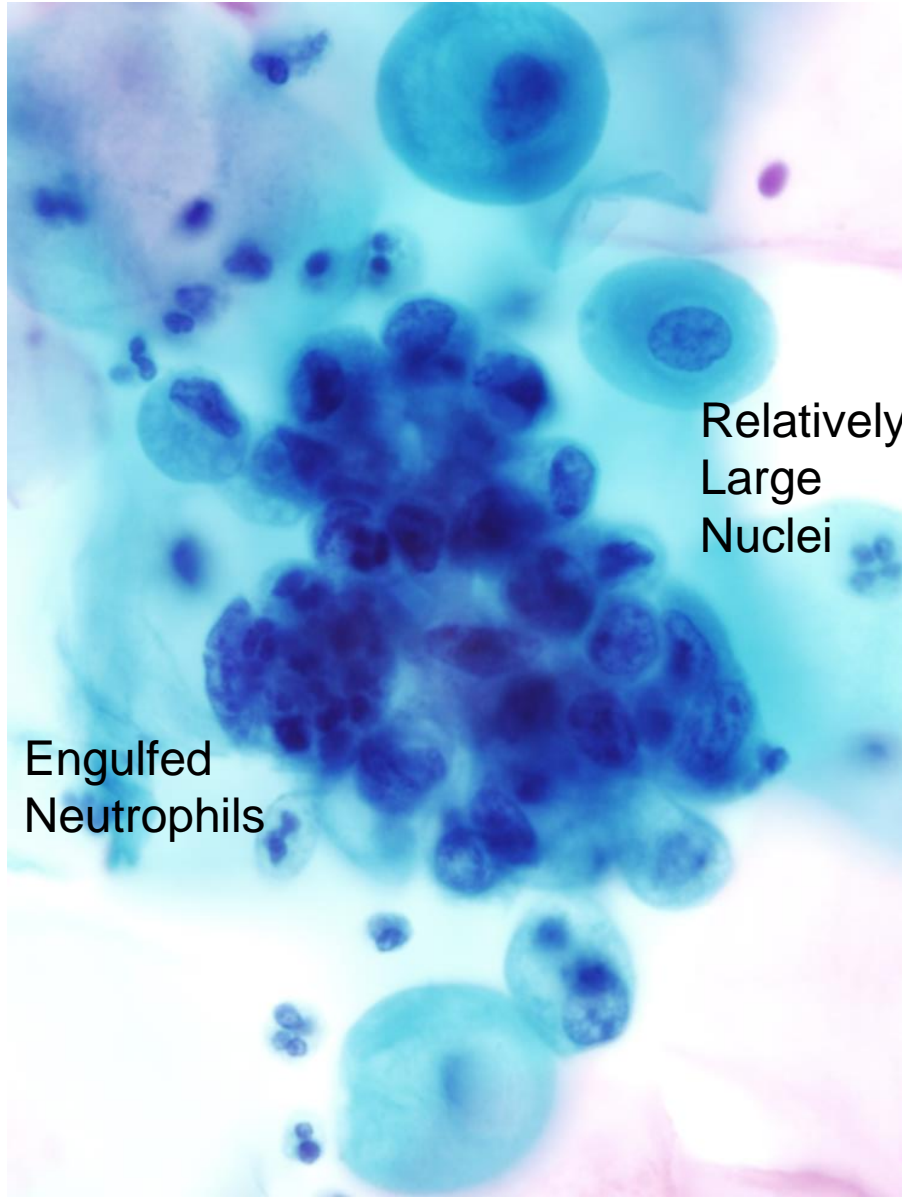


Hyperchromatic  
Crowded Group

# Contrast Atypical vs. Normal



# Atypical Endometrial Cells



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