

**GLANDULAR LESIONS OF THE CERVIX**  
**Cytomorphology for Year 1-2 Registrars**

**INVASIVE ENDOCERVICAL ADENOCARCINOMA**

**OVERVIEW**

- May resemble AIS, maybe adenocarcinoma NOS associated with fragments of AIS or may be difficult to identify cytologically as of endocervical origin depending on the degree of differentiation
- Distinction from AIS (only) can be particularly difficult in well-differentiated cases
- Although cytology is not particularly good at discriminating between AIS and invasive endocervical adenocarcinoma, we do make separate predictions of AIS and endocervical adenocarcinoma in cytology reports but accept that the histology may not correlate.

**Features suggesting invasion include** (the three most helpful features are in red)

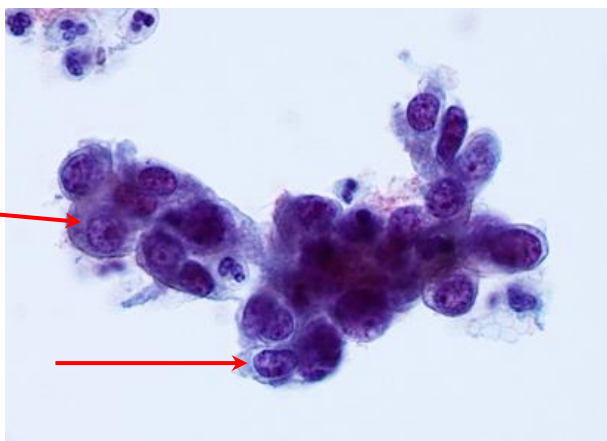
1. **Tumour diathesis** (25%). Abundant fresh blood or inflammation are also common
  2. Abundance of abnormal cellular material
  3. Large complex groups
  4. Papillary clusters
  5. Single cells
  6. Supercrowding in sheets or 3-D groups of cells, with **loss of architectural polarity**.
  7. Fewer strips and rosettes than with AIS
  8. Marked nuclear pleomorphism
  9. Nuclei with irregularly clumped and cleared chromatin and **conspicuous nucleoli**.
- Poorly differentiated adenocarcinomas often lose specific features of glandular architecture and may become hypochromatic.
  - In practice, invasion can never be ruled out cytologically in any case diagnosed as AIS, and diagnostic conization is always necessary.
  - may be impossible to differentiate between endocervical and endometrial adenocarcinoma, or even poorly differentiated squamous cell carcinoma. Can be reported as Adenocarcinoma NOS, Carcinoma NOS or Malignant neoplasm NOS. Usually the primary site of origin is apparent clinically or radiologically or becomes so on further investigation.

Aside from specific features of AIS which may be present, endocervical carcinoma otherwise has all the general nuclear and cellular features of adenocarcinoma at other body sites.

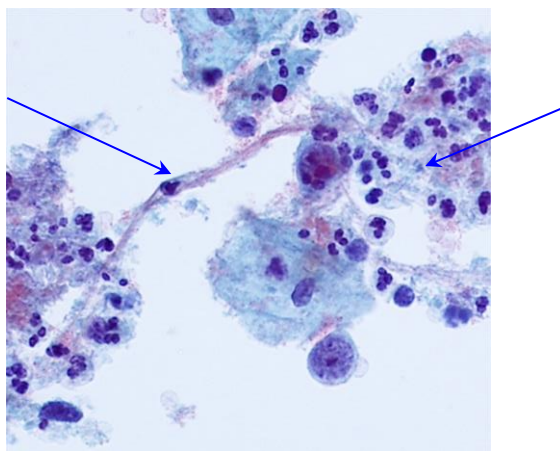
- Histologically endocervical adenocarcinomas are now classified as HPV-related and HPV-independent but this distinction is not made in cytology reporting. In the HPV screening programme, all cases should now have an HPV test prior to treatment.
- Of the non-HPV related endocervical adenocarcinomas, the gastric type does have a distinctive cytologic appearance if there is abundant intracytoplasmic mucin related to intestinal differentiation. These cases can be very well differentiated so the nuclear pleomorphism may be minimal.

**A note about “Glandular Dysplasia”**

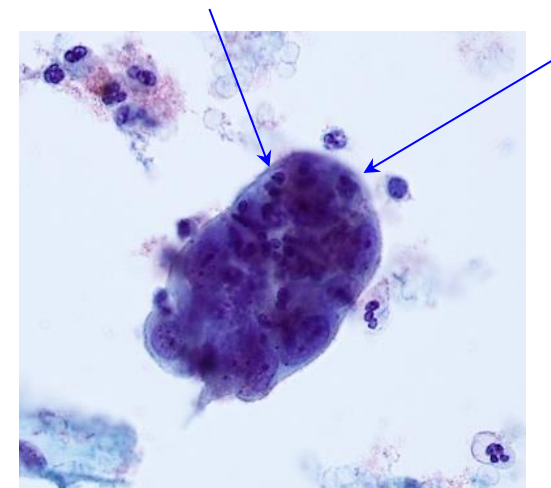
Glandular dysplasia is not an entity that is reproducibly and reliably identifiable in cytology, even though this is sometimes reported in histology. In such a case, the cells in a cytology preparation would ideally be reported as atypical glandular cells of endocervical type.



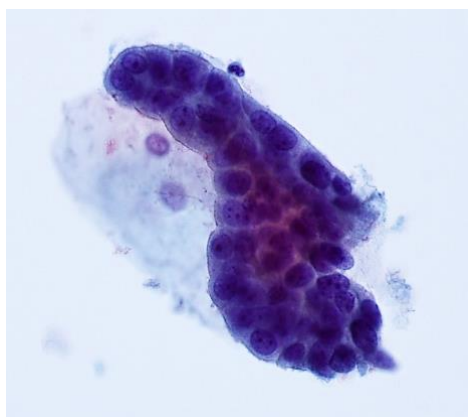
Large glandular cells show pleomorphic malignant nuclei with abnormally distributed granular chromatin (red arrows), small nucleoli and delicate vacuolated cytoplasm. This group is irregular in shape without particularly distinctive glandular architecture.



Two single malignant cells (blue arrows) and debris comprised of intact and degenerating neutrophils and degenerate blood.



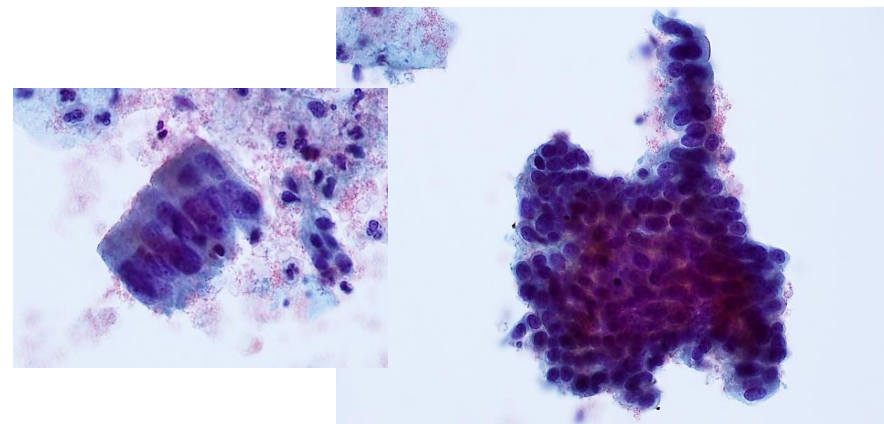
A rounded (probably exfoliated before sampling) group of malignant glandular cells infiltrated by neutrophils. Some neutrophils appear to be ingested (blue arrows). This is a feature of degeneration and so while not specific, is common with malignancies.

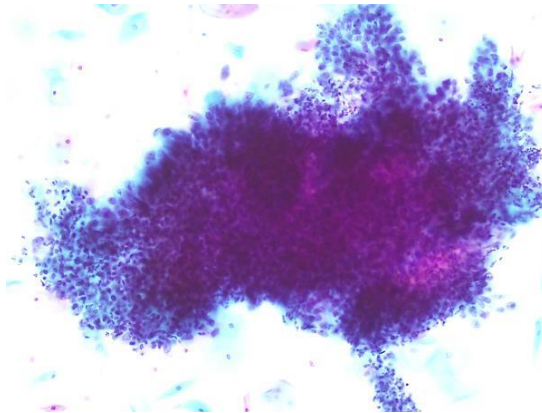


A papillary structure in one group.

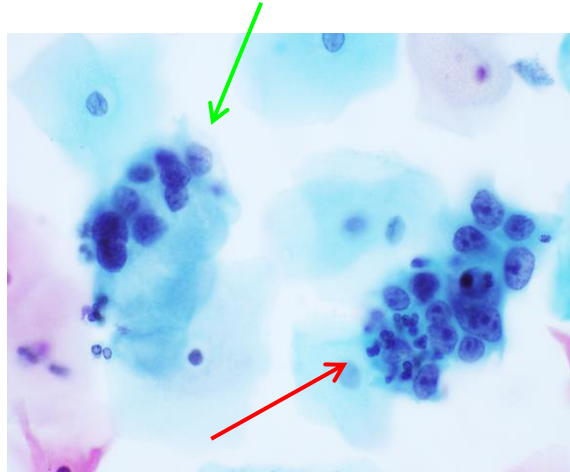
### Endocervical adenocarcinoma: a case in ThinPrep

Right: A short strip and an irregular crowded group with a strip coming off one edge – features of co-existing AIS that assist with classifying the lesion as endocervical adenocarcinoma

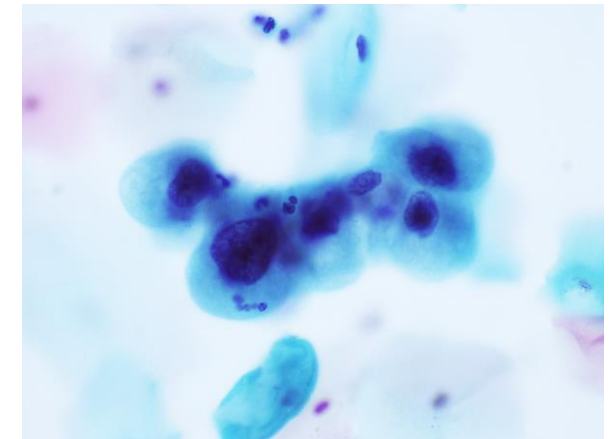




A large irregular densely cellular "microbiopsy" of glandular cells requiring close high-power examination

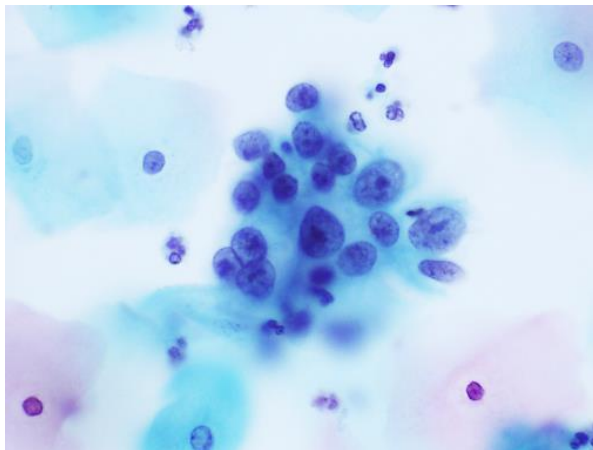


A strip on the left (green arrow) shows basal nuclei, pseudostratification and apical cytoplasm. The group on the right is disorganised with more nuclear pleomorphism, small nucleoli and heavy nuclear outlines, and infiltration by neutrophils (red arrow).



Marked nuclear pleomorphism, stippled chromatin and small nuclei. The cytoplasm is delicate with small vacuoles.

### Endocervical adenocarcinoma: a case in SurePath



A cluster of malignant glandular cells showing nuclear pleomorphism, stippled chromatin, nucleoli and heavy nuclear outlines.

Right: An abnormal strip on the left (green arrow) and a group on the right (red arrow) showing abundant cytoplasmic mucin in the plane of focus, with "out of focus" nuclei in behind. Care needs to be taken not to screen over such groups but to focus through the group to examine the nuclei closely.

