

Outcome audit of borderline endocervical cells in ThinPrep cervical samples.

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Introduction

- Borderline nuclear changes in endocervical cells (BNC EC) has a low incidence rate of 0.043% (1). Changes within endocervical cells can be difficult to interpret and can result in under calling and false positive reporting. Benign conditions such as cervicitis, endocervical polyps and tuboendometrial metaplasia can result in false positive reports.
- It has been suggested that although BNC EC is an infrequent finding, it should be considered the same as a high grade referral (2). Studies suggest a high percentage of cases reported as BNC EC are found to have a notable incidence of high grade outcomes on histology, which was also the findings of an audit carried out at New Cross Hospital previously.
- Following NHSCSP guidance 'BNC EC must be offered colposcopy within two weeks', NHSCSP (3).
- It is important to monitor, review and learn from BNC EC cases.

Methodology

- Cytology cases reported as BNC EC during a 6 year period (2013 to 2019) were identified from the pathology databases.
- Data included patient demographics, high-risk Human papillomavirus (HrHPV) results, cytological follow up and histological outcomes.

Results

A total of 172 cytology cases were reported as BNC EC. Consisting of 162 HrHPV triage and 10 HrHPV primary cases.*

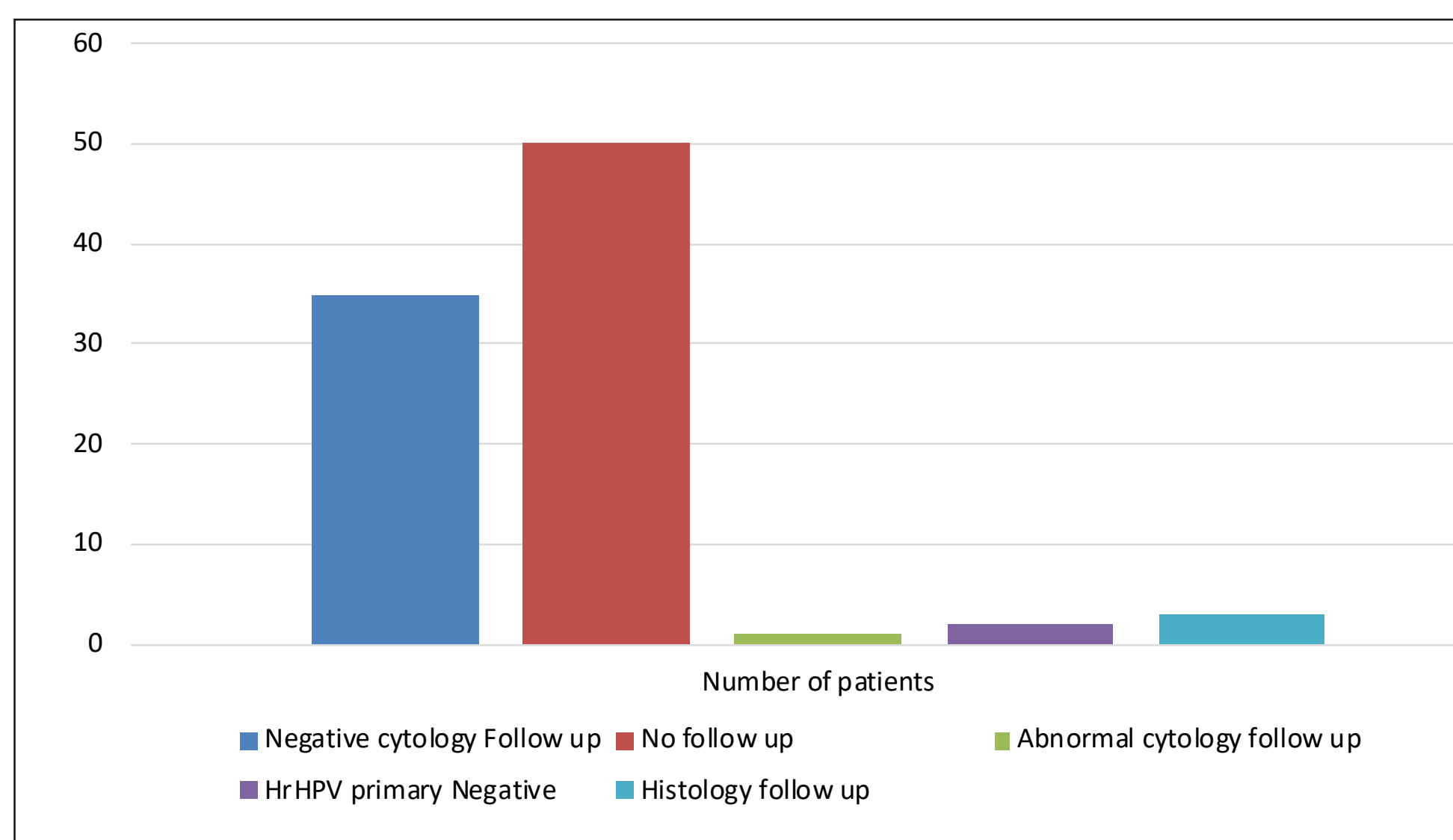
Age ranged from 24 to 62 years old, median age 37 years old.

BNC in endocervical cells HPV results:

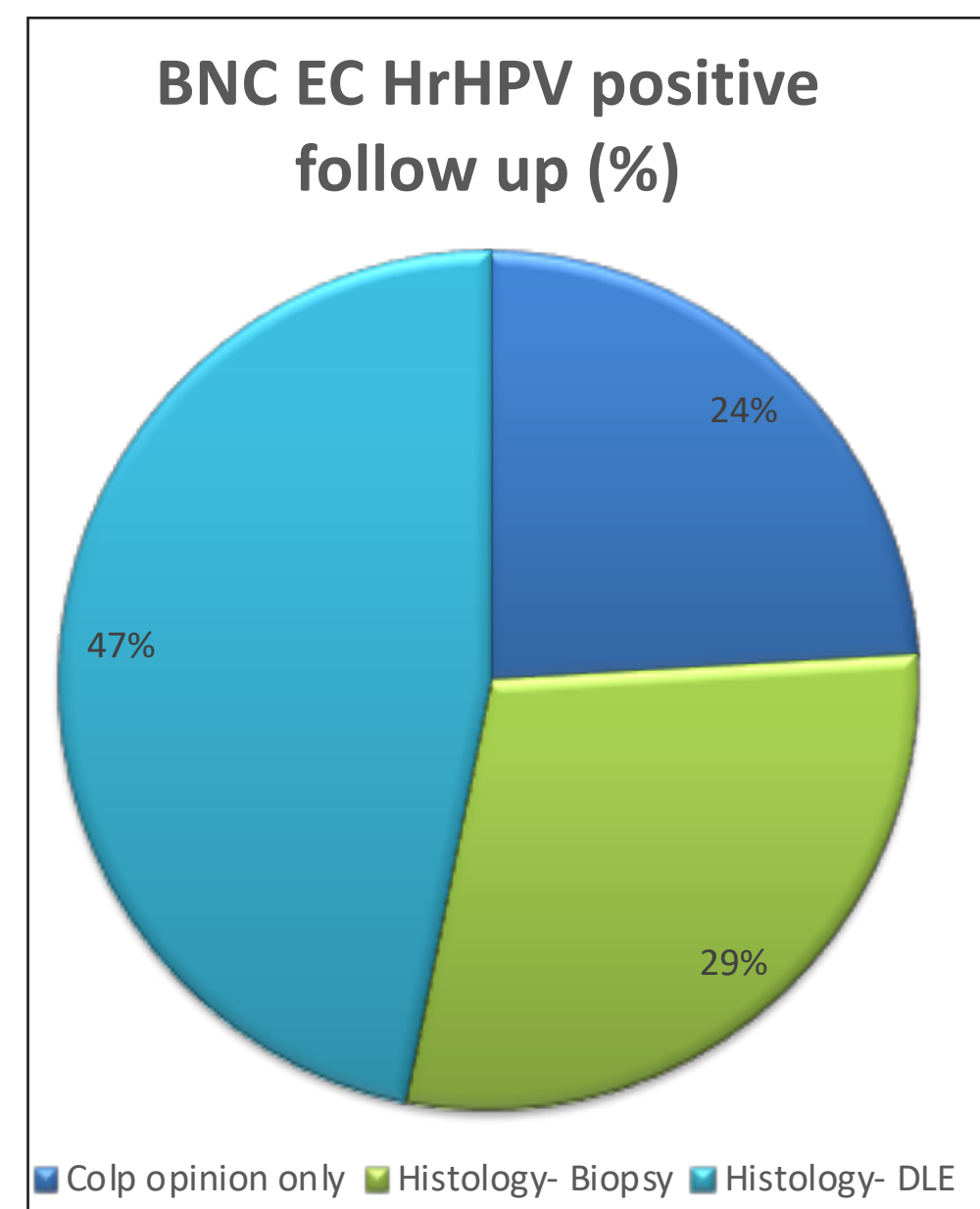
- HPV- = 91 cases
- HPV + = 79 cases
- HPV u = 2 cases

* From 17/9/2019 laboratory followed NHSCSP HPV primary protocol, prior to this date Triage/ToC protocol

Chart showing follow up of BNC EC HrHPV negative cases – 91 CASES



BNC EC HrHPV positive follow up (79 cases)



- 76% of cases had follow up histology, of which:
- 29% had biopsy only
- 47% had diathermy loop excision (DLE), sometimes with a preceding punch biopsy.
- 24% had colposcopy opinions only.

Outcome of histology follow up - 60 cases.

- Low grade findings on histology accounted for 16 cases (27%).
- 24 cases were CIN 2 or worse (40%).
- Adenocarcinoma was diagnosed in 5 patients (2.9%).

Histology Report	Number of patients
Inadequate	2
Normal	18
HPV	8
CIN1	8
CIN2	4
CIN3	10
CGIN/HGCGIN	5
Adenocarcinoma	5
Total	60

Findings

- A total of 60 cases with histology outcomes. 24 of the 60 cases were found to have CIN2 or worse.
- Therefore the abnormal predictive value (APV) is 40%.
- Overall incidence rate was 0.00032%. For HPV primary samples alone the incidence rate was 0.00012%.
- 50% with normal histology findings included features such as ectropion, cervicitis & ciliated metaplasia in endocervical cells.

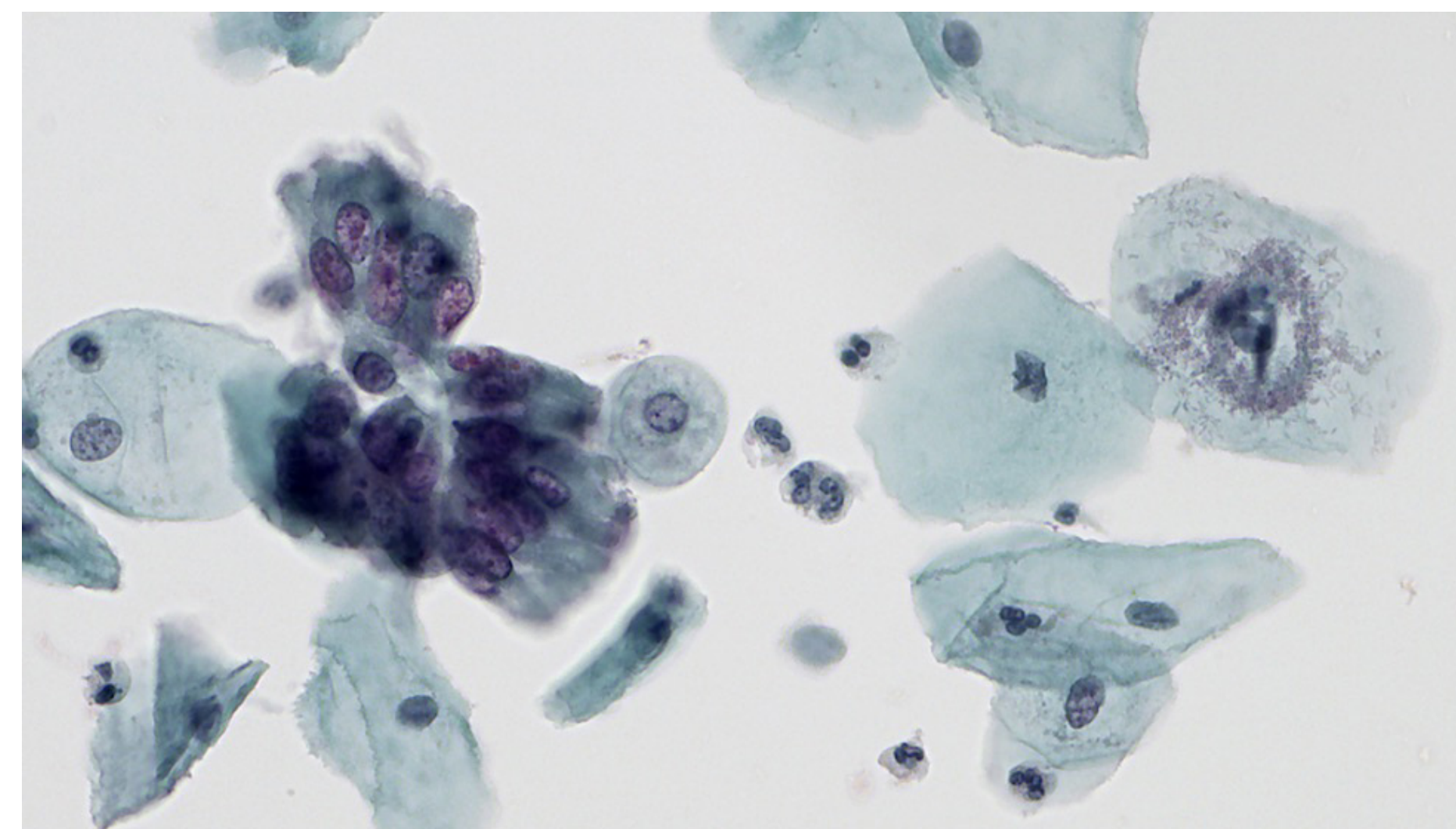


Figure 1.0 – Sample reported and reviewed at multi disciplinary team meeting (MDTM) as BNC EC. Subtle stippled chromatin pattern can be seen in the endocervical cells nuclei. Magnification x 400, PAP staining.

Figure 1.1

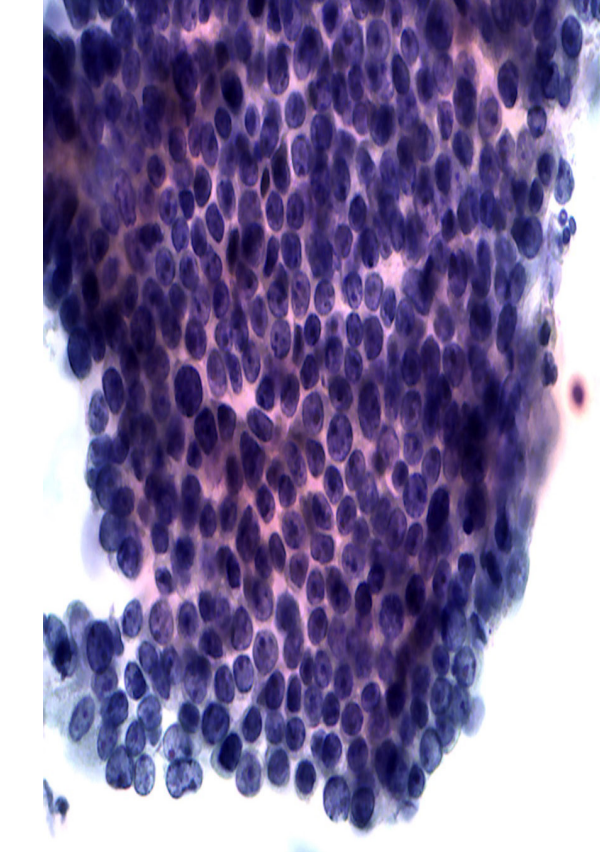


Figure 1.2

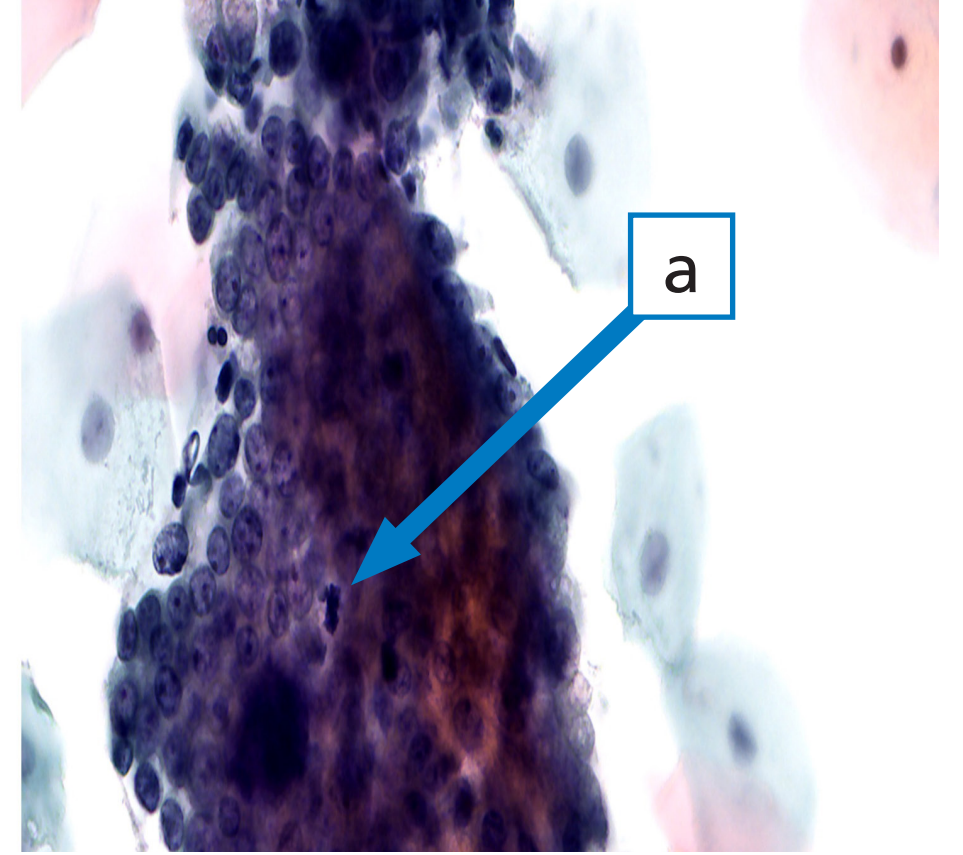


Figure 1.1 & 1.2 – Sample reported and reviewed at MDTM as BNC EC. Figure 1.1 - Endocervical group with irregular chromatin pattern, although group architecture not affected. Figure 1.2 Endocervical group with irregular chromatin patterns and a mitotic figure (a). Magnification x 400, PAP staining.

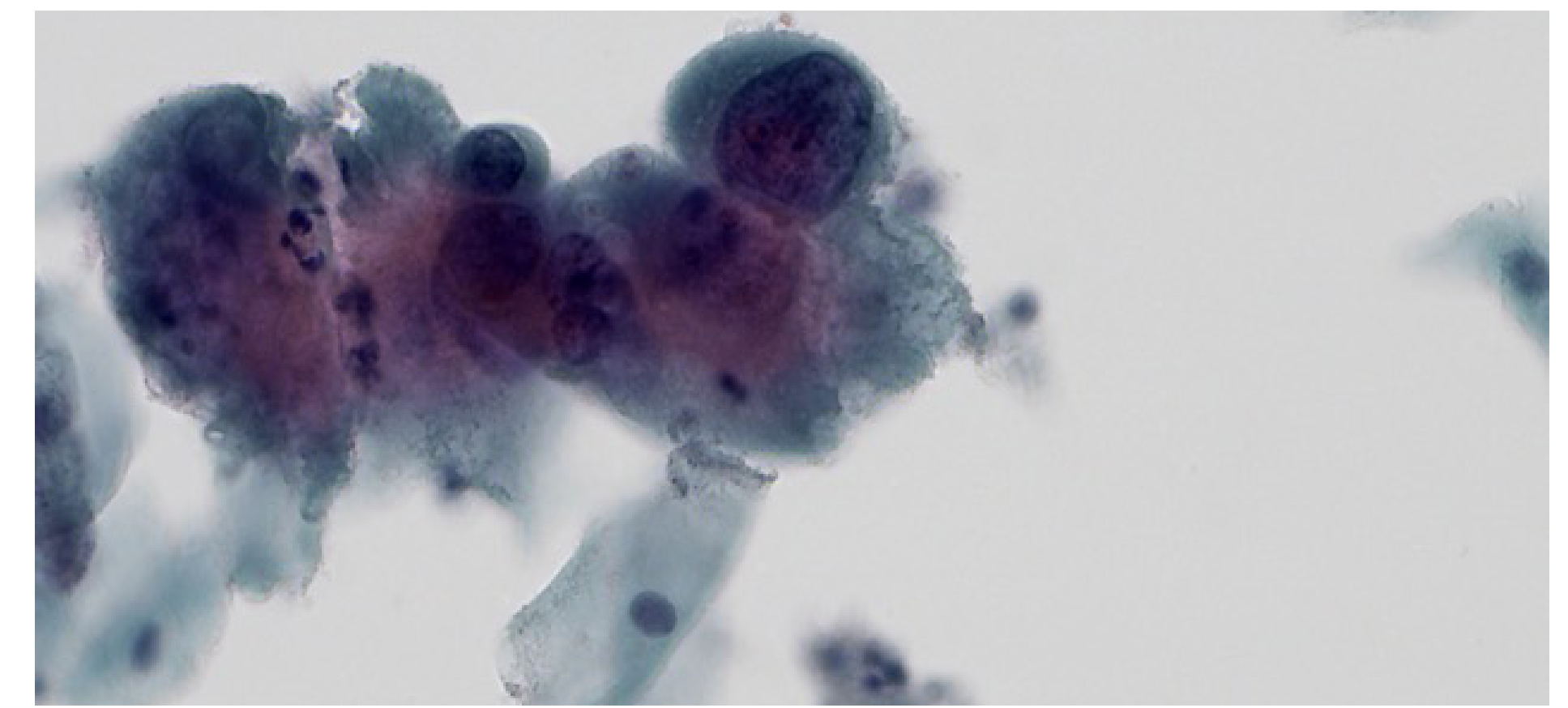


Figure 1.3 – Sample reported and reviewed as BNC EC. Case reviewed at MDTM as ?glandular neoplasia with possible squamous abnormality also present. Enlarged nuclei in cervical cells with irregular chromatin patterns. Histology outcome was adenocarcinoma. Magnification x 400, PAP staining.

Discussion

- 40% of cases were found to be CIN2 or worse, it's important to continue to refer BNC EC to colposcopy within 2 weeks.
- Based on this audit, we would continue to be aware of the risk of high grade and malignancy in BNC EC cases and follow NHSCSP guidance by reviewing all cases at MDTM.
- It is important to continue to review cases at MDTM particularly where there is a mismatch between cytology, colposcopy and histology and to develop individual management plans.
- Suggest repeating this audit to see if the APV affected by the introduction of primary HrHPV testing due to the following reason:
- Only HrHPV positive BNC EC cases will be referred. This may increase the APV, NHSCSP (4).
- Review of these cases is a useful learning point for all screening staff. Slides have been available for review for training purposes.

References

- Daniel et al. 2005. Histological and clinical significance of atypical glandular cells on pap smears. International Journal of Gynaecology Obstetrics. Dec, 91 (3): 238-42.
- Manley et al. 2020. An audit of liquid based cytology samples reported as high risk human papillomavirus and borderline nuclear change in endocervical cells. Cytopathology. Mar; 31 (2): 130-135. doi:10.1111/cyt.12803.
- NHSCSP, 2020. Cervical Screening: Programme and Colposcopy Management. 5/2/2020. <https://www.gov.uk/government/publications/cervical-screening-programme-and-colposcopy-management>
- NHSCSP 2013. Achievable standards, benchmarks for reporting and criteria for evaluating cervical cytopathology. Third edn. NHSCSP publication no. 1.

Keywords

Audit, borderline, cells, cervical, cytology, endocervical.

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