The Management of Borderline Glandular Smears

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Overview

- Borderline Glandular Smears
  - to worry or not?
- Evidence
- NHSCP Advice
- Cytology & False positives
- Case presentations
What is a borderline glandular smear?

• Glandular cells
• Nuclear or architectural abnormality
• ‘Less abnormal’ than those seen in a Glandular abnormality
• ‘More abnormal’ than reactive endocervical cells
• Should only be used where dyskaryosis cannot be excluded
Why does borderline glandular smear result cause anxiety?

• Rare
Incidence of BGI in NHS Lothian
(October 2009 – October 2011)

<table>
<thead>
<tr>
<th>Borderline Glandular</th>
<th>Total No. Smears</th>
</tr>
</thead>
<tbody>
<tr>
<td>159</td>
<td>94463</td>
</tr>
</tbody>
</table>

Incidence = 0.17%
Why does borderline glandular smear result cause anxiety?

- Rare
- Screening test poor for glandular lesions
  - Larger false +ve rate
  - Higher incidence of high grade lesions
- Lack of experience / education / knowledge
- Assumption it reflects high grade glandular disease

Or
- Assumption there is unlikely to be anything wrong
Borderline Glandular

Borderline Glandular

Borderline Glandular

Borderline Glandular
Before Borderline Category

Papanicolou Classification

I negative
II inflammatory
III dysplasia
IV carcinoma *in situ*
V invasive cancer

HPV = ‘Negative’ with early smear
Achievable standards, Benchmarks for reporting, and Criteria for evaluating cervical cytopathology (NHSCSP Publication No 1)

- 1986 – recognition of borderline change in endocervical cells by BSCC
- 1990 – Mandatory use of result and action codes by FHSAs
- The category of Borderline change (Standard Action code 8 - England) is now subdivided
  - Borderline change in endocervical cells
  - Borderline change, squamous, but not otherwise specified.
  - Borderline - high grade dyskaryosis cannot be excluded
- No category for Borderline change in endometrial cells.
The Bethesda System

Epithelial Cell Abnormalities

Squamous cell
- Atypical squamous cells (ASC)
  - of undetermined significance (ASC-US)
  - cannot exclude HSIL (ASC-H)
- Low-grade squamous intraepithelial lesion (LSIL)
- High-grade squamous intraepithelial lesion (HSIL)
- Squamous cell carcinoma

Glandular cell
- Atypical glandular cells (AGC) *(specify endocervical, endometrial, or not otherwise specified)*
- Atypical glandular cells, favor neoplastic *(specify endocervical or not otherwise specified)*
- Endocervical adenocarcinoma in situ (AIS)
- Adenocarcinoma
Should we be worried about Borderline Glandular smear?

<table>
<thead>
<tr>
<th>Study</th>
<th>BGI Rate (%)</th>
<th>Total No Patients</th>
<th>No Referred to Colp</th>
<th>CIN</th>
<th>CGIN</th>
<th>Ca Cervix</th>
<th>Benign/Normal</th>
<th>Other malignancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jadoon et al. 2009</td>
<td>0.02</td>
<td>85</td>
<td>56</td>
<td>15</td>
<td>5</td>
<td>1</td>
<td>21</td>
<td>0</td>
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<tr>
<td>Mohammed et al. 2000</td>
<td>0.07</td>
<td>43</td>
<td>43</td>
<td>14</td>
<td>3</td>
<td>6</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>Zweizig et al. 1996</td>
<td>0.27</td>
<td>110</td>
<td>110</td>
<td>18</td>
<td>1</td>
<td>3</td>
<td>47</td>
<td>6</td>
</tr>
<tr>
<td>Kennedy et al. 1996</td>
<td>0.2</td>
<td>77</td>
<td>77</td>
<td>7</td>
<td>3</td>
<td>2</td>
<td>40</td>
<td>1</td>
</tr>
</tbody>
</table>
Overall Outcomes

- CIN: 25%
- CGIN: 6%
- Ca Cervix: 6%
- Benign/Normal: 59%
- Other malignancy: 4%
• Jadoon et al.
  – High Negative predictive value of normal colposcopy & normal biopsy
NHSCSP 20 Advice

• Women should be referred for colposcopy after one test reported as borderline nuclear change in endocervical cells
• Women referred with borderline nuclear change in glandular cells should undergo colposcopy, any appropriate cervical biopsy and selective use of endometrial biopsy.
• Ideally such cases should be reviewed by a cytopathologist, a gynaecologist and a histopathologist before future management is decided.
Cytology Recap
Normal superficial squamous cells.
Normal endocervical cells. Note the finely vacuolated cytoplasm.
Ciliated endocervical cells with terminal bar (arrowed).
Normal endocervical cells. Honeycomb pattern is seen in the centre of the group.
Borderline Nuclear Change
Borderline Nuclear change
Endocervical cells

Borderline nuclear change  Normal
Glandular abnormality - CGIN
FALSE POSITIVES
False Positives

• Exogenous hormones
  – Eg ovulation induction
• 40yr Para 0+2
• “Intermenstrual bleeding”
• Pipelle biopsy
  – Normal
• Smear
  – Reactive endocervical cell groups, showing nuclear changes bordering on dyskaryosis
  – Advice: Repeat 3/12
• Undergoing ovulation induction
• Follow up smear Neg
False Positives

• Exogenous hormones
  – ovulation induction
  – Breakthrough bleeding on OCP

• Reactive endocervical cells
  – IUCD
  – Polyps
  – Cervicitis
• 44yr
• Normal appearance of cervix
• IUCD in situ
• ‘Bubblegum effect’
• 34yr old smoker. P0+0
• Never had smear
• Referred to colp with clin susp cervix & PCB
• At colp – benign endocervical polyp avulsed
False Positives

- Exogenous hormones
  - ovulation induction
  - Breakthrough bleeding on OCP
- Reactive endocervical cells
  - IUCD
  - Polyps
  - Cervicitis
  - TEM
- Use of endocervical brushes
  - LUS sample
- Acetic acid
• Give as much clinical information as possible

• Hormones
• Appearance of cervix
• IUCD / IUS
• Use of EC brush
Don’t Be Afraid....
Speak to your friendly cytologist...
Speak to your friendly cytologist...
Case 1

- 31yr Para 0+0.
- Lawyer
- Referred GOPD – post-coital & IMB, dyspareunia
- Cervical ectopy cauterised with AgNO₃.
- GP then referred to colposcopy with IMB/PCB
- At colp Suspicious TZ
  - Biopsy = inflammation,
  - Smear = borderline glandular
Case 1

- Seen back at colp
  - Pipelle = normal
  - LETZ = cervical endometriosis

- Follow up planned
  - 6/12 cervical smear
  - 12/12 colp
Case 2

Age: 24yrs
Parity 0+0
Non Smoker
OCP
No IMB PCB Discharge
Smear Negative 2009
Smear Borderline Squamous changes 2010
Colposcopy

- type 1 TZ
- grade 1 AWE
- mosaic and punctuation
- glandular budding
- fused columnar epithelium
Management

Lletz (Top Hat)

Macroscopic
- 3.3cm x 2cm x 1cm
- 1.7cm x 1 cm x 0.5 cm

Total endo cervical depth 1.5cm

Microscopic
- CGIN and CIN1

Incompletely excised at endo cervix diathermy margin

Discussed at MDT
Follow up smear
6 months

Borderline Glandular
Summary

• Healthy respect for borderline glandular smears
• Exclude possible causes
• Thorough completion of request form
• Consider endometrial biopsy in >40
• Low threshold for MDT referral
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