The value of LEEP conization in diagnosis of early occult cervical cancer: a large retrospective study of 6654 cases

Yu Song
Attending
Obstetrics and Gynecology Hospital of Fudan University
Medical center of diagnosis and treatment for cervical diseases
Shanghai, China
Disclosures

• No financial relationships or conflict of interest to disclose
Introduction

- Colposcopy directed biopsy (CDB)
  - pivotal in diagnosis of cervical cancer
  - Failed to detect all early cervical cancer
Introduction

- LEEP conization
  - Cure cervical precancer
  - Detect unsuspected early invasive cancer
    - The early detection and appropriate management of occult cervical cancer is pivotal.
    - Incidence of 6-8% of patients was reported to have an underlying unsuspected early invasive carcinoma.
    - Incidence of early ICC by LEEP might be higher in our experience.
Methods - patients

✓ A large retrospective study
✓ All patients were included diagnosed HSIL, AIS and persistent LSIL for 2 years by CDB and then underwent LEEP conization in Ob/Gyn Hospital of Fudan University from July 1st, 2013 to July 1st, 2015.

6654 cases!
Methods-LEEP conization and pathologic examination

- Excisional techniques should remove tissue to a depth of 7-10 mm, 10-15 mm, 15-25 mm in type I, II, III cervical transformation zone, respectively.
- All pathologic specimens were processed by a standardized protocol and were interpreted by an experienced staff pathologist and verified by another advanced pathologist.
Results of pathology
Early occult cervical cancer detected by LEEP

6654 LEEP

408(6.13%) occult cervical cancer detected

IA1 3.46%

IA2 0.10%

IB1 2.57%

Squamous cell carcinoma (92.4%)
Adenocarcinoma (4.7%)
Adenosquamous carcinoma (2.5%)
Adenoid basal type carcinoma (0.2%)
Small cell neuroendocrine carcinoma (0.2%)
Early occult cervical cancer detected by LEEP in HSIL

- 5786 HSIL by CDB
- 391 (6.76%) occult cervical cancer detected
  - IA1: 3.89%
  - IA2: 0.10%
  - IB1: 2.77%
Early occult cervical cancer detected by LEEP in AIS

50 AIS by CDB

15(30.0%) occult cervical cancer detected

IA1 8.00%
IA2 2.00%
IB1 20.00%
Pathologic results of 408 occult cervical cancer (IA/IB1) before and after LEEP

<table>
<thead>
<tr>
<th>Punch biopies</th>
<th>LEEP conization</th>
<th>LEEP total</th>
<th>Occult cervical cancer(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IA1</td>
<td>IA2</td>
<td>IB1</td>
</tr>
<tr>
<td>LSIL</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>HSIL</td>
<td>225</td>
<td>6</td>
<td>160</td>
</tr>
<tr>
<td>AIS</td>
<td>4</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>230</td>
<td>7</td>
<td>171</td>
</tr>
</tbody>
</table>
Results of cytology
Cytology of occult cervical cancer diagnosed by LEEP(IA/IB1)

<table>
<thead>
<tr>
<th>Cytology test</th>
<th>Cases</th>
<th>Ratio(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSIL</td>
<td>132a</td>
<td>48.71</td>
</tr>
<tr>
<td>ASC–US</td>
<td>50</td>
<td>18.45</td>
</tr>
<tr>
<td>LSIL</td>
<td>27</td>
<td>9.96</td>
</tr>
<tr>
<td>ASC–H</td>
<td>22</td>
<td>8.12</td>
</tr>
<tr>
<td>SCC</td>
<td>5</td>
<td>1.85</td>
</tr>
<tr>
<td>AGC</td>
<td>2</td>
<td>0.74</td>
</tr>
<tr>
<td>AIS</td>
<td>1</td>
<td>0.37</td>
</tr>
<tr>
<td>NILM</td>
<td>32b</td>
<td>11.81</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>271</td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*a: Among the 132 HSIL cytology results, 9 were HSIL with suspicion of carcinoma, 1 was HSIL with AGC.
*b: Among the 32 cases with normal cytology results, 27 cases had HPV test results, and all the results were HPV positive.
Sensitivity of cytology

88.19%
(239/271)
Results of HPV test
**HPV test of occult cervical cancer diagnosed by LEEP(IA/IB1)**

<table>
<thead>
<tr>
<th>HPV test</th>
<th>Cases</th>
<th>Ratio(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPV+</td>
<td>229</td>
<td>95.82</td>
</tr>
<tr>
<td>HPV−</td>
<td>10$^c$</td>
<td>4.18</td>
</tr>
<tr>
<td>Total</td>
<td>239</td>
<td>100</td>
</tr>
</tbody>
</table>

$c$: Among the 10 cases with negative HPV results, all of them had abnormal cytology results, 2 were HSIL, 3 were ASCUS, 2 were ASC-H, 1 was LSIL, 1 was SCC, 1 was AGC.
Conclusions

• In early detection of cervical cancer, conization is essential in addition to CDB.
• Patients with AIS by CDB have high risk for occult invasive cervical carcinoma.
• Cytology is important in screening with high sensitivity near to 90%.
Loving and Caring for Women, Blessing and Protecting Life