Chapter 2.c.

Screening and diagnosis – Colposcopy

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Cervical cancer - Precancerous stages

• **Diagnostics**
  - Cytology
  - Histology
  - **Colposcopy**
  - HPV detection

• Therapy

• Prevention

• Follow-up
Hans Hinselmann (1)
“Assembling the colposcope is a task I have undertaken together with Mr. Hans Hilgers, Bonn, Heerstraße 43, the representative for Leitz Enterprises.”
‘Improved Inspection of the Vulva, Vagina and Portio’
Munich Medical Weekly
October 1925

“Based on the need for early diagnosis and the aetiology of portio cancer, I endeavored to improve visualization of the portio.”

“... I have attached a light source to the Leitz binocular dissecting microscope. The vagina can thus be inspected at a long object distance with intensive illumination and at 3.5-fold magnification…”

“It enables us to study all diseases of the vulva, vestibule, vagina and portio in a way that was not possible up to now.”
Colposcopic examination
Colposcopy

Acetowhite epithelium

Acetowhite epithelium with iodine: iodine-negative
Histology

[Images of histological sections]
Tischler-Morgan forceps
Colposcopy (1)

- Normal Transformation Zone
  - Non-keratinising squamous epithelium
  - Columnar epithelium
  - Nabothian cysts
  - Patent glands
Typical transformation zone and normal squamous epithelium

Glandular epithelium with mild acetowhite reaction
Colposcopy (3)
Colposcopy (4)

- Atypical Transformation Zone
  - Acetowhite epithelium
  - Mosaicism
  - Punctuation
  - Leukoplakia
  - Atypical vessels
Colposcopy (5)
Histology

CIN II and CIN III
Colposcopy
Histology

CIN II lesion

CIN III lesion
Colposcopy (1)
Colposcopy (2)
Colposcopy

• Grading
  - Colour
  - Surface
  - Intervascular distance
  - Demarcation
  - Iodine uptake
Colposcopy (2)
Histology

Focal CIN I with koilocytotic atypia
Colposcopy
Histology
Colposcopy
Histology

CIN II lesion

CIN III lesion
Inner border (1)

The outline shows the inner border clearly.
Inner border (2)

The outline shows the inner border clearly
Ridge sign
Colposcopy
Histology

Carcinoma in situ

Micro-invasive carcinoma

Invasive cancer
**Histology**

Focal CIN III lesion

CIN II lesion
Histology

CIN II lesion
Colposcopy
Histology
Colposcopy (1)
Colposcopy (2)
Histology

CIN II / CIN III
Colposcopy (1)
Colposcopy (2)
Histology

Invasive squamous cancer
Colposcopic appearance of adenocarcinoma in situ and adenocarcinoma

- Patches of villi or cuffed crypt openings
- Lesions with papillary excrescences or atypical villous structures
- Large, complex acetowhite lesions obliterating the os
- Lesions with irregular and exophytic contour
- Strikingly thick, chalky-white lesions with raised and rolled out margins
- Associated with concomitant CIN lesions
- Atypical vessels may indicate the first sign of invasion
- Lesions bleeding on touch
The modified Reid colposcopic index

<table>
<thead>
<tr>
<th>Colposcopic signs</th>
<th>Zero points</th>
<th>One point</th>
<th>Two points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Low-intensity acetowhitening; indistinct acetowhitening; transparent or translucent acetowhitening</td>
<td>Intermediate shade; grey/white colour and shiny surface</td>
<td>Dull, opaque, oyster-white; grey</td>
</tr>
<tr>
<td>Lesion margin and surface configuration</td>
<td>Flat lesions with indistinct angular, jagged lesions; satellite lesions beyond the margin of the transformation zone</td>
<td>Regular-shaped, symmetrical lesions with smooth, straight outlines</td>
<td>Rolled, peeling edges; internal demarcations between areas of differing colposcopic vessels</td>
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<tr>
<td>Vessels</td>
<td>Fine/uniform-calibre vessels; closely and uniformly placed</td>
<td>Absent vessels</td>
<td>Well-defined coarse punctuation or mosaic, sharply demarcated, and randomly and widely placed</td>
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<tr>
<td>Iodine staining</td>
<td>Positive iodine uptake giving mahogany-brown colour</td>
<td>Partial iodine uptake; variegated, speckled appearance</td>
<td>Negative iodine uptake of significant lesion</td>
</tr>
</tbody>
</table>
Colposcopy: the 4-5-6-7 rule

- **Normal transformation zone (4)**
  - Non keratinizing squamous epithelium
  - Columnar epithelium
  - Ovulum Nabothi
  - Open glands

- **Atypical transformation zone (5)**
  - Acetowhite epithelium
  - Mosaicism
  - Punctuation
  - Leukoplakia
  - Atypical vessels

- **Grading (6)**
  - Colour: opaque vs white
  - Surface pattern: course vs smooth
  - Intercapillary distance: big vs small
  - Border: distinct vs blurred
  - Iodine uptake: absent vs partial
  - Inner border and Ridge sign: present vs absent

- **Course of examination (7)**
  - Inspection by self-holding speculum
  - Application of 5% acetic acid
  - Is the squamo-columnar junction fully visible?
  - Is there a typical (4) or atypical (5) transformation zone?
  - Application of Grading-criteria including application of 3% iodine (6)
  - Where should a biopsy be taken?
  - Which treatment should be done under colposcopic guidance?
Thank you

This presentation is available at
www.uicc.org/cervicalcancercurriculum