

COLPOSCOPY TRAINING

Module 6b: ABNORMAL COLPOSCOPIC FINDINGS

**MINISTRY OF HEALTH
NATIONAL CANCER CONTROL PROGRAM
CERVICAL CANCER SCREEN AND TREAT**

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Indications of Colposcopy

- ASCUS with +ve hrHPV DNA
- Epithelial cell abnormality on cervical cytology
- Positive hrHPV DNA test in appropriate guideline algorithms
- VIN, VAIN, AIN and PAIN

Objectives of Colposcopy

- Localize SCJ
- Evaluate extent of disease
- Identify the most severe disease for biopsy
- Determine the presence of invasive disease

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International (IFCPC) colposcopic terminology–1990

Normal colposcopic findings

- Original squamous epithelium
- Original columnar epithelium
- Transformation zone

Abnormal colposcopic findings

(Inside/outside transformation zone)

- Acetowhite epithelium (flat/micropapillary)
- Punctation (fine/coarse)
- Mosaic (fine/coarse)
- Leukoplakia (fine/coarse)
- Iodine negative epithelium
- Atypical vessels
- Colposcopically suspect invasive carcinoma

Unsatisfactory colposcopy

- Squamocolumnar junction not visible
- Severe inflammation or atrophy
- Cervix not visible

Miscellaneous findings

- Nonacetowhite micropapillary surface
- Exophytic condyloma
- Inflammation, atrophy, ulcer, and others

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IFCPC Classification

The principal novelties of this new classification are:

- The concept of adequate examination (replacing the classical concept of satisfactory colposcopy).
- The description of the lesions in relation to size, localization and location with respect to the transformation zone.
- Two new signs have been included in the section on grade 2 changes (inner border sign and the ridge sign).
- The classification and terminology for vaginal lesions has been included.

General Assessment		Adequate/Inadequate (reason): SCJ visible: Completely visible/partially visible/not visible Transformation zone 1 / 2 / 3	
Normal colposcopic findings		Origin squamous epithelium - <i>Mature</i> - <i>Atrophic</i> Columnar Epithelium - <i>Ectopy</i> Metaplastic squamous epithelium - <i>Nabothian cysts</i> - <i>Crypt openings</i>	
Abnormal colposcopic findings	General Principles	Location of the lesion: Inside TZ / outside TZ / both inside and outside TZ: - <i>Clock position</i> - <i>Number of quadrants involved: 1/ 2 /3 /4</i> - <i>Size of the lesion: <25%, 25-50%, 50-75%, >75%</i>	
	Grade 1 (minor)	Thin AW epithelium Irregular, geographic border	Fine mosaic Fine punctation
	Grade 2 (major)	Dense AW epithelium Rapid appearance of acetowhitening Cuffed crypt openings	Coarse mosaic Coarse punctation Sharp border Inner border sign Ridge sign
	Non-Specific	Leukoplakia Erosion Lugol's staining (Schiller's test): stained/non-stained	
Suspicious for invasion		Atypical vessels/fragile vessels/irregular surface/exophytic lesion, necrosis/ulceration (necrotic)/tumour/gross neoplasm	
Miscellaneous finding		CTZ Condyloma Polyp Inflammation	Stenosis Congenital anomaly Post-treatment Endometriosis



2011 IFCPC colposcopic terminology of the cervix – addendum¹

Excision treatment types	Excision type 1,2,3
Excision specimen dimensions	<p>Length - the distance from the distal/external margin to the proximal/internal margin</p> <p>Thickness - the distance from the stromal margin to the surface of the excised specimen.</p> <p>Circumference (Optional)- the perimeter of the excised specimen</p>

COLPOSCOPIC PICTURES OF SUB CLINICAL FORMS OF HPV INFECTION

Atypical transformation zone

● Acetowhite epithelium

- Micropapilliferous contour
- Multiple wart like lesions
- Brain like structure

● Punctations

- Fine / Coarse
- Reg / Irregular

● Mosaic

- Fine / Coarse
- Reg / Irregular

Lesions extend beyond T.Z

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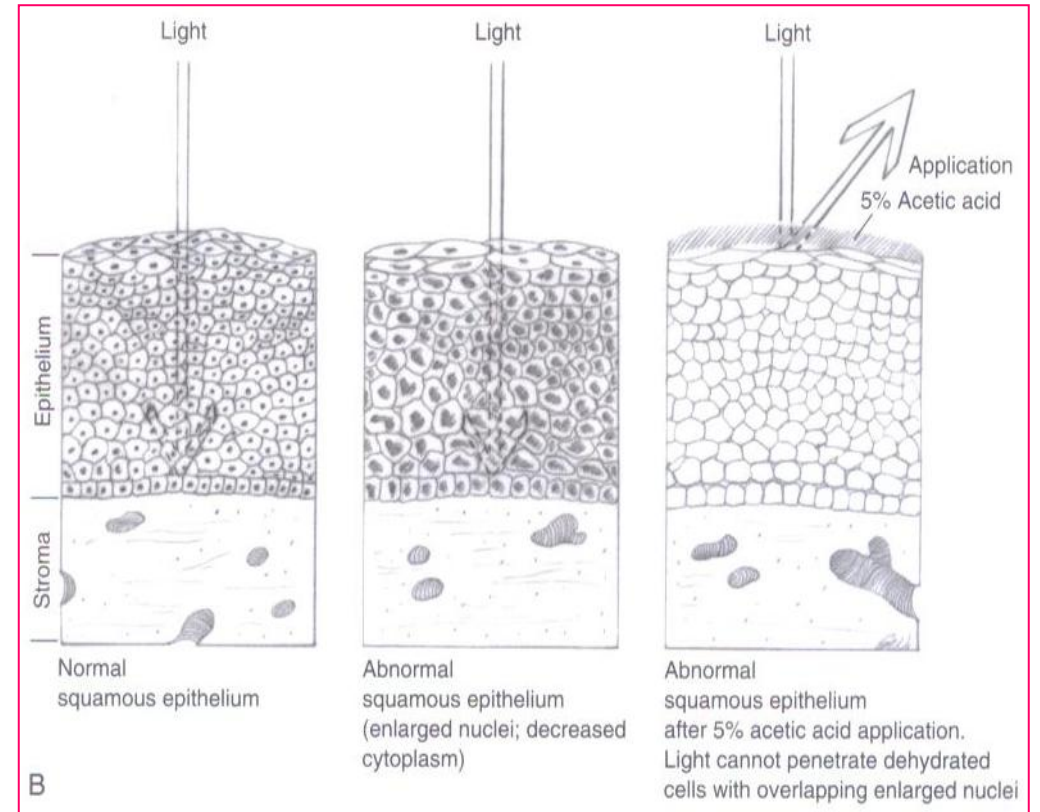
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1. Acetowhite epithelium



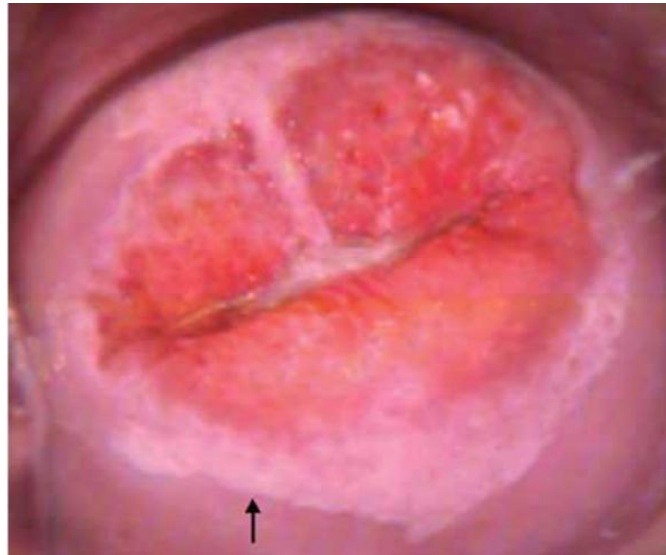
Small grade 2 AW lesion seen inside TZ at 6-7 O'clock occupying one quadrant only



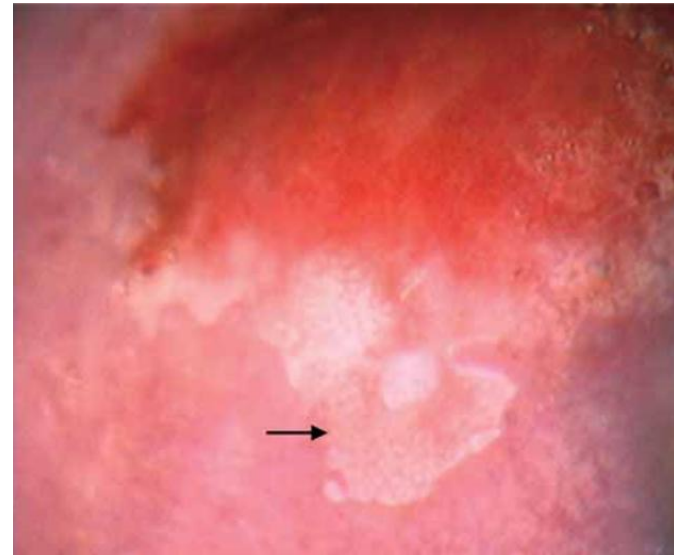
Effect of acetic acid on atypical squamous cells due to collapse of cell membrane as water leaves the cell due to osmolar effect or it may be due to coagulation of intracellular protein.



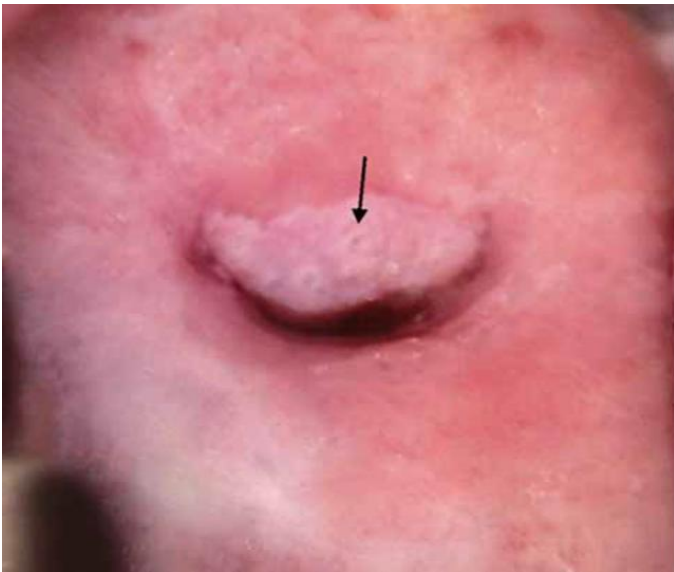
Grade 1 AW lesion seen inside TZ at 5-8 O'clock occupying two quadrants



Thin rim of AW lesion occupying three quadrants, but only about 10% of the cervix.



Thin AW epithelium with geographical border and fine mosaic.



Dense AW lesion with sharp border and cuffed gland openings.



Unsatisfactory Colposcopy-Acetowhite epithelium going insight endo cx



Acetowhite epithelium with Inner border sign.
Lesion within a lesion – an acetowhite area has another sharper lesion within it



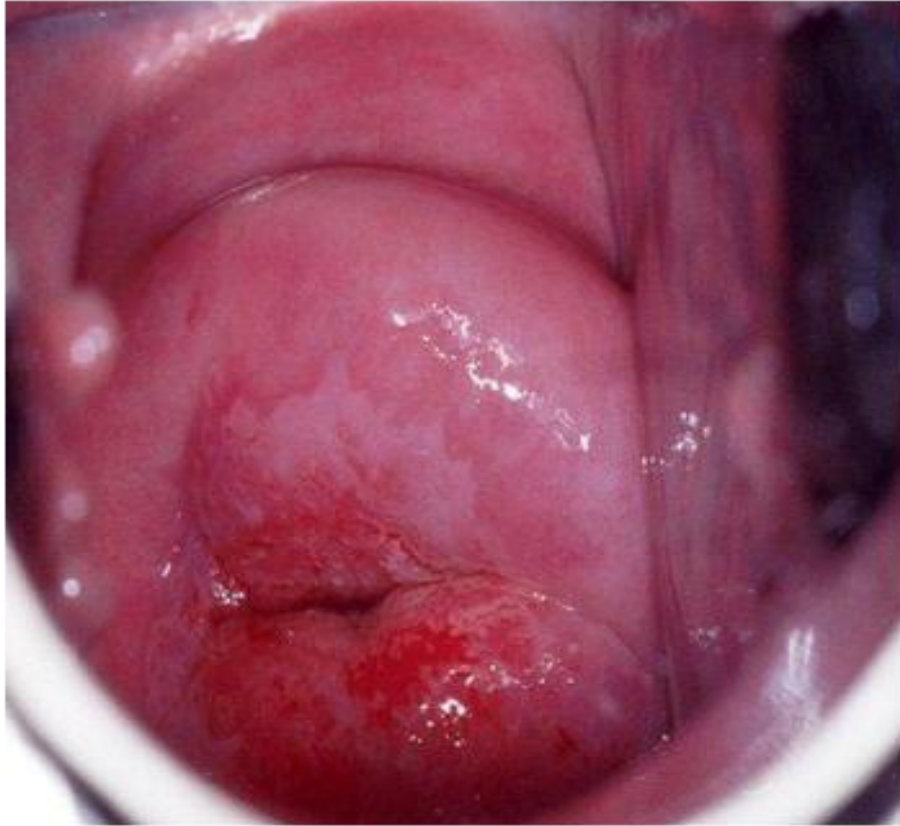
Acetowhite epithelium with **Ridge sign**. Thick opaque protuberance of AW epithelium with sharp border near SCJ.



Rag Sign: Dense detached AW epithelium hanging from cervix like a rag after applying acetic acid.



Rapid appearance of acetowhitening: Dense AW epithelium with inner border and rag sign seen after thirty seconds only.



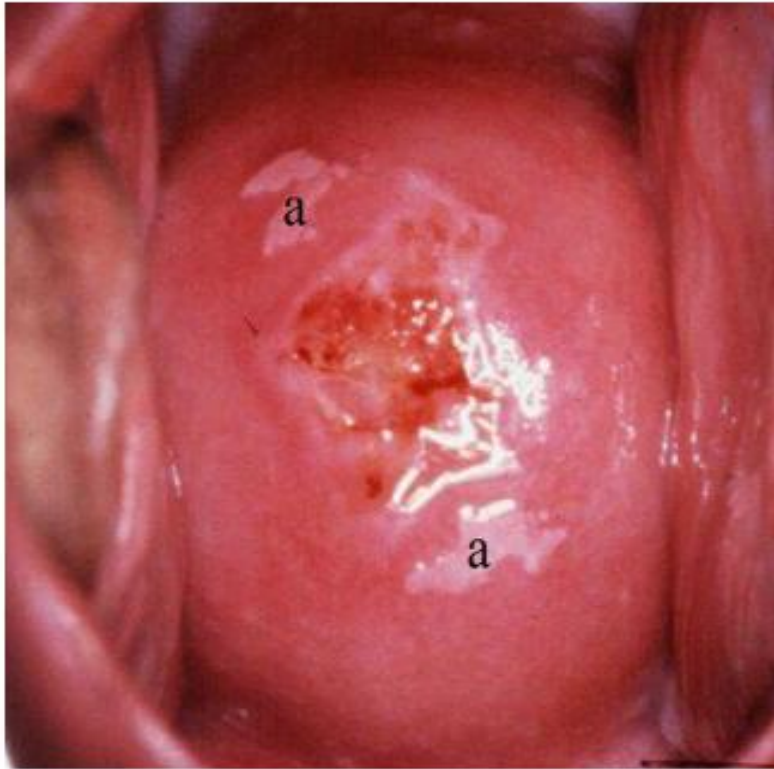
Thin acetowhite lesion with geographic margins in the upper lip. Histology indicated CIN 1



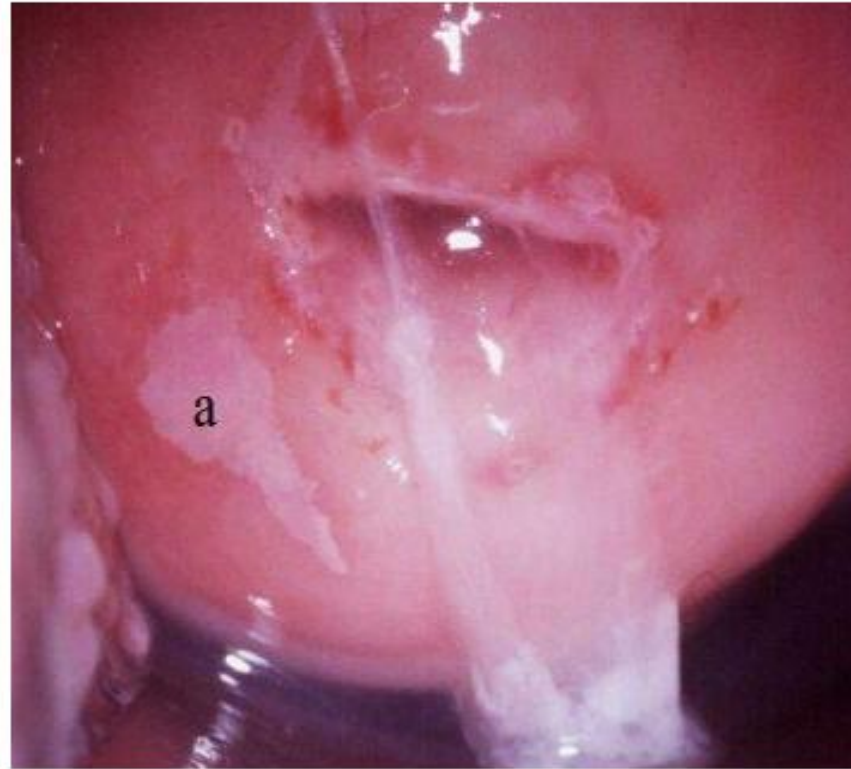
Moderately dense acetowhite lesions with irregular margins in the anterior & posterior lips (CIN 1)



Geographic satellite lesions



condyloma

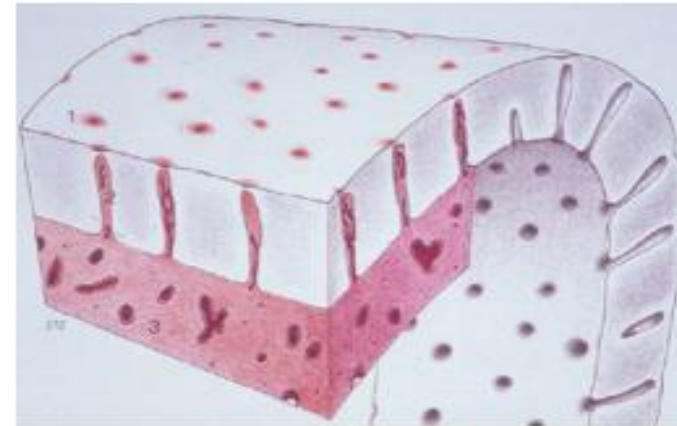
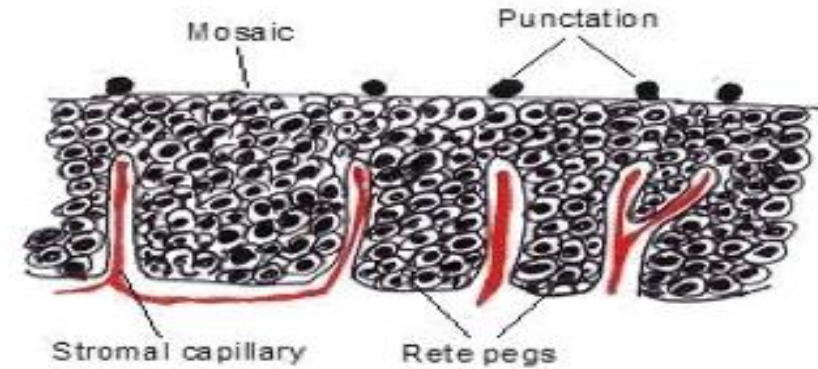


low-grade lesion

2. PUNCTATIONS

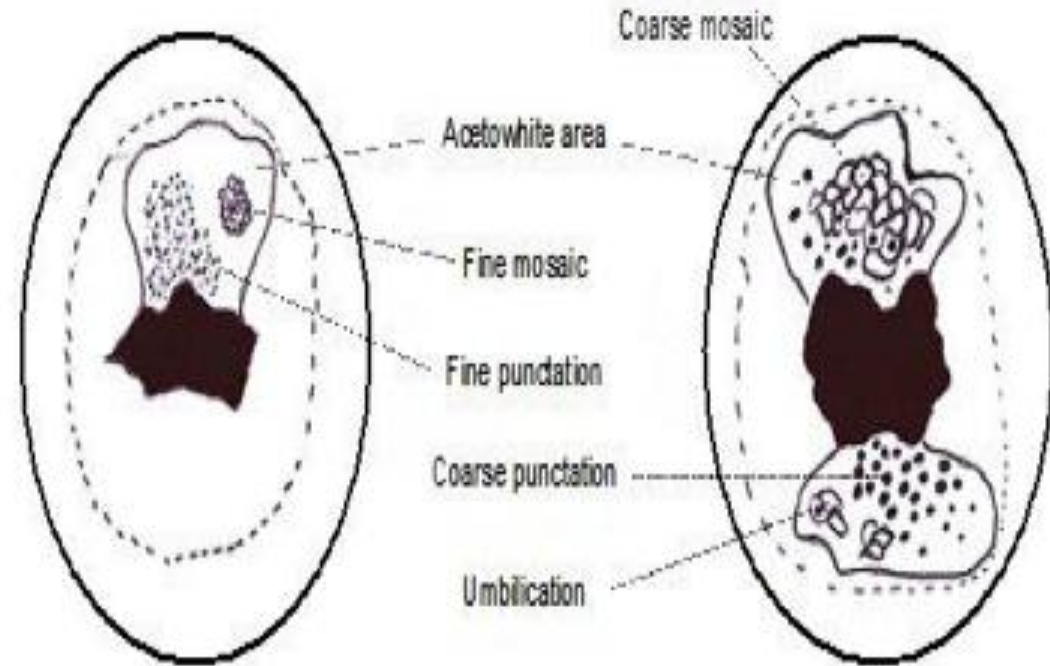
Definition

- Vertical single loop intraepithelial capillaries viewed end on in a demarcated area
- Etiology
- Normal vascular pattern
- Abnormal modification of existing vascular architecture
- Arises from the normal original columnar epithelial angioarchitecture



Colposcopic Appearance

- Red dots usually seen within an area of acetowhite epithelium
- Variable with increasing severity of disease
- Increasing caliber of dot from fine to coarse



Course punctations



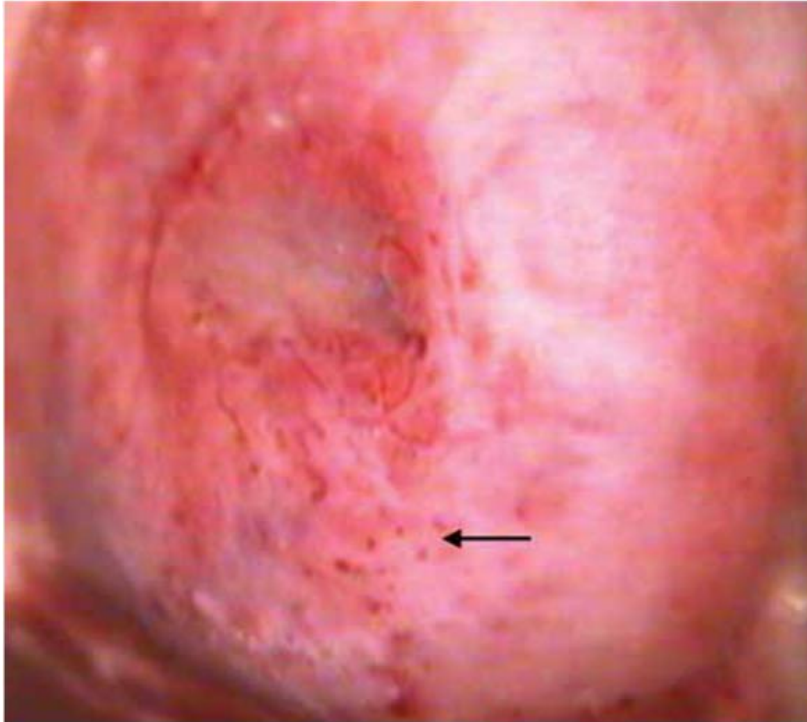
Coarse punctation before & after application of acetic acid

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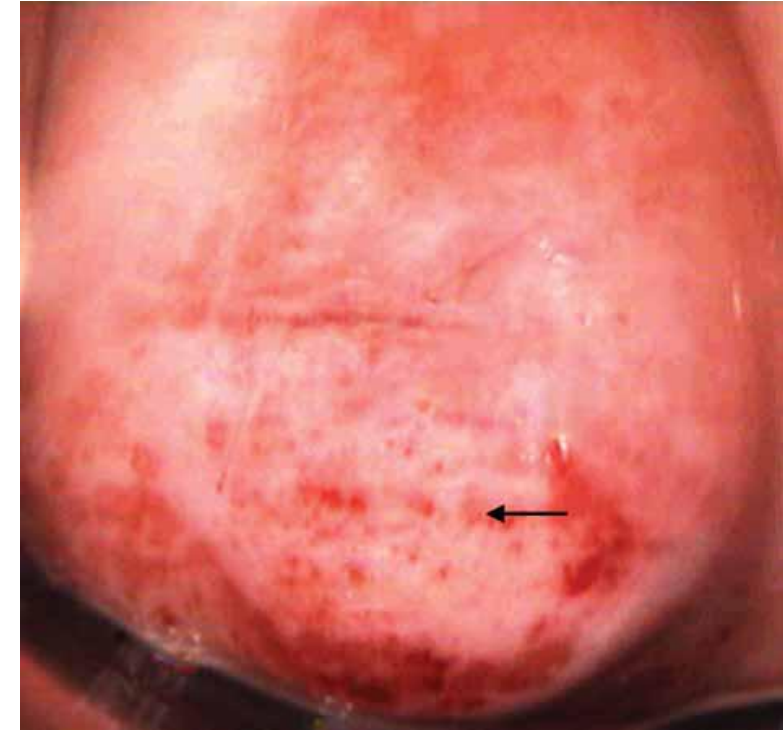




Coarse punctations



Coarse, irregularly placed punctations on anterior and posterior lips



After application of acetic acid: Dense AW lesion with coarse, irregularly placed punctations over posterior lip

3. MOSAICSM

- Intra epithelial capillaries encompassing blocks or buds forming a mosaic, tile or “chicken wire” pattern
- May be normal or abnormal modification of existing vascular architecture
- Red, tile-like grid usually viewed within acetowhite epithelium
- Fine or coarse caliber
- Variable intercapillary distance with increasing severity of neoplasia



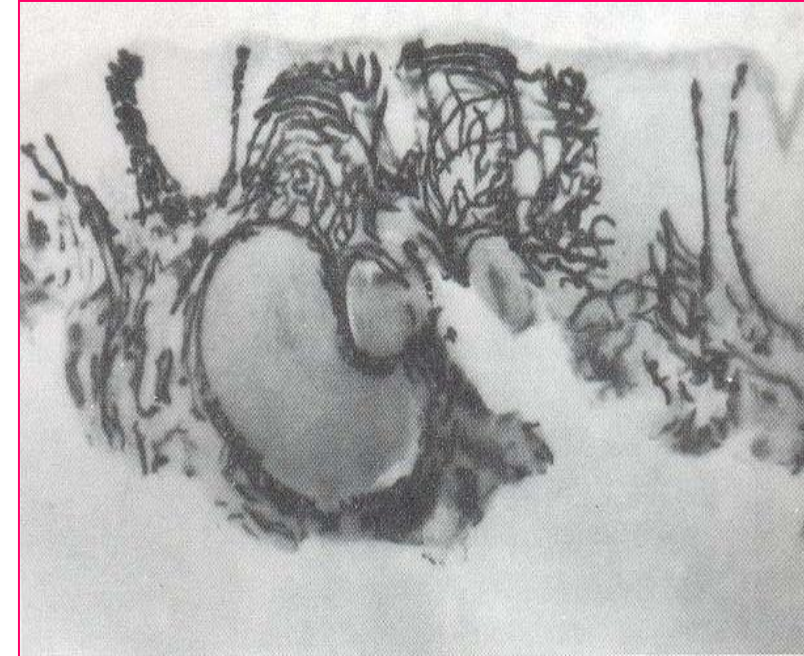
Atypical Mosaic Pattern



Atypical Mosaic Pattern



Irregular mosaic with increased intracapillary distance



Vessels forming basket like structure around pathologic epithelium



Another mosaic with coarse punctation

ATYPICAL BLOOD VESSELS

- Punctate & mosaic pattern get disrupted & disorganized. They start to break out of their geometric pattern trans-mutating into more bizarre vessels, referred to as corkscrew, spaghetti like, irregular coarse, irregular parallel or comma like vessels
- Other atypical forms have non branching vessels that bulge, and contract appear on uneven surface contour
- DD
 - Condylomata
 - Post radiation changes
 - Cervical / endometrial polyp
 - Decidual lesions
 - Fibroid polyp

Atypical vessels patterns



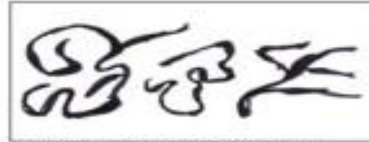
(a): Wide hair pin-like vessels



(b): Waste thread vessels



(c): Tendril-like vessels



(d): Bizarre branching waste thread vessels



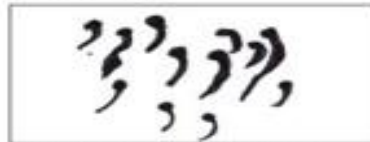
(e): Corkscrew vessels



(f): Irregular root-like vessels



(g): Tree-like vessels



(h): Comma-shaped or tadpole-like vessels



(i): Irregular branching vessels

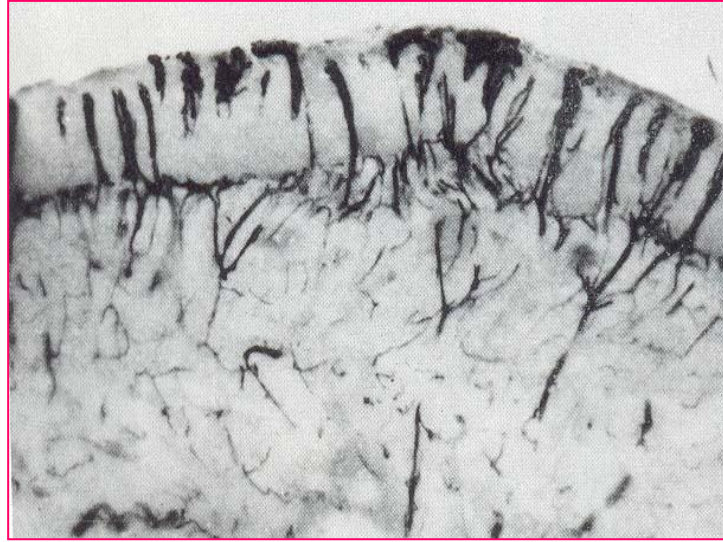
- Superficial blood vessels exhibiting bizarre variation in caliber, course and branching pattern
- Develop in response to tumor angiogenesis factor (TAF)
- Result in chaotic, rapidly proliferating vessels attempting to nourish rapidly in neoplastic tissue
- Lack systematic, uniform branching



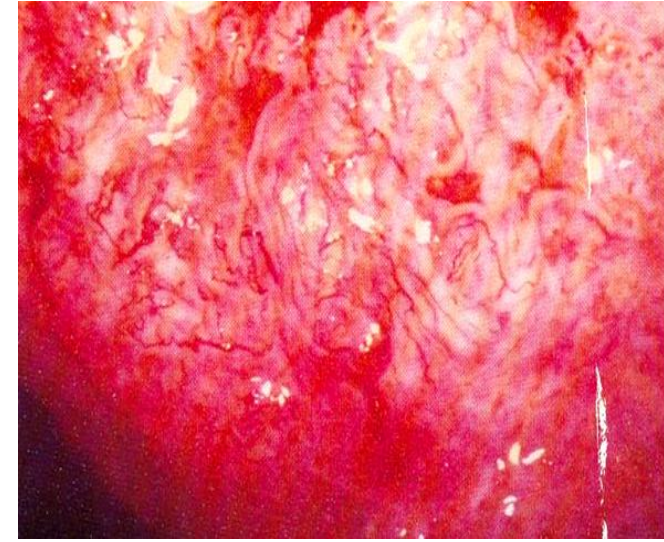
Atypical Blood Vessels



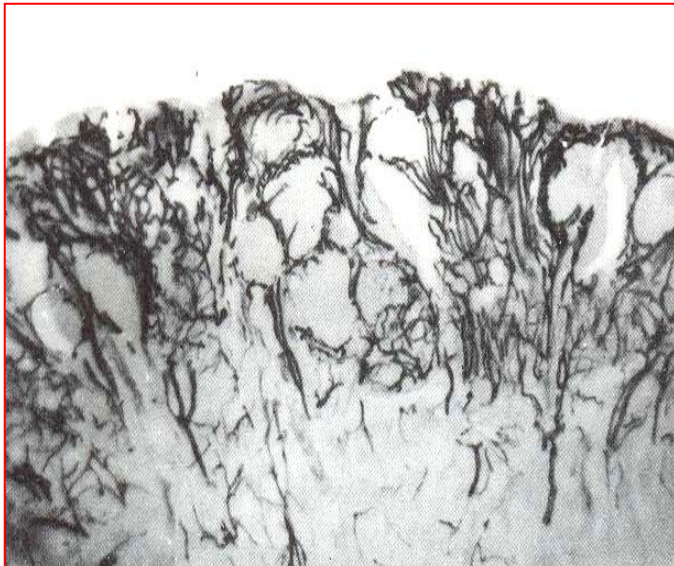
BV running parallel with the surface in small invasive Ca



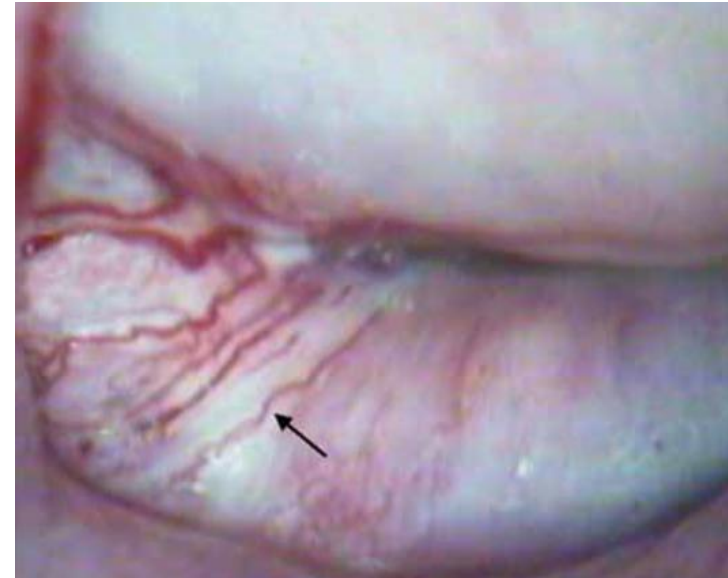
Histochemical preparation Blood vessels running parallel with the surface



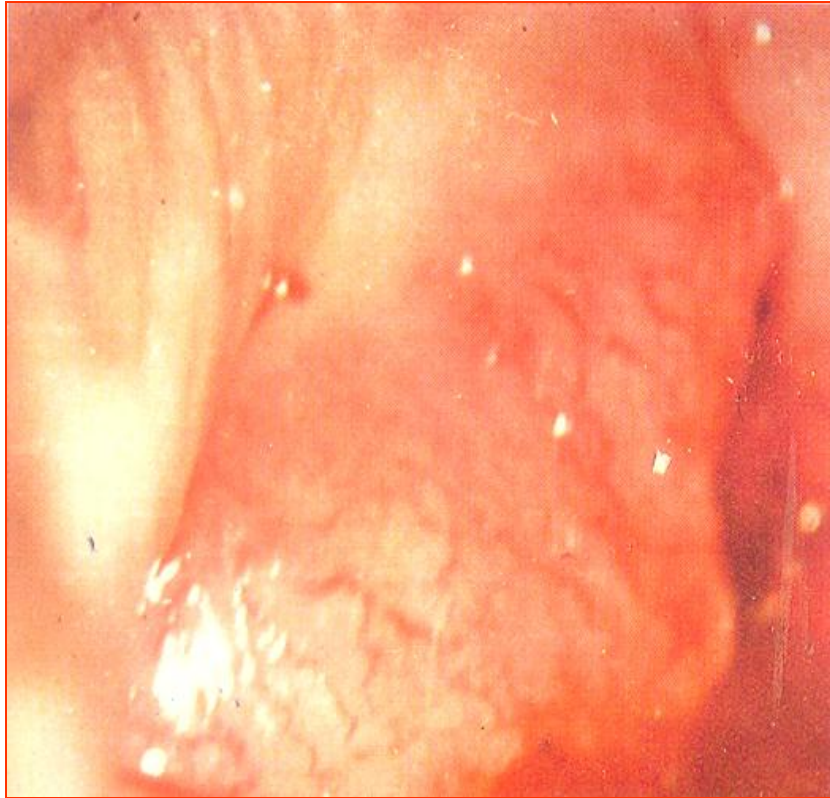
Chaotic vascular picture in frank invasion



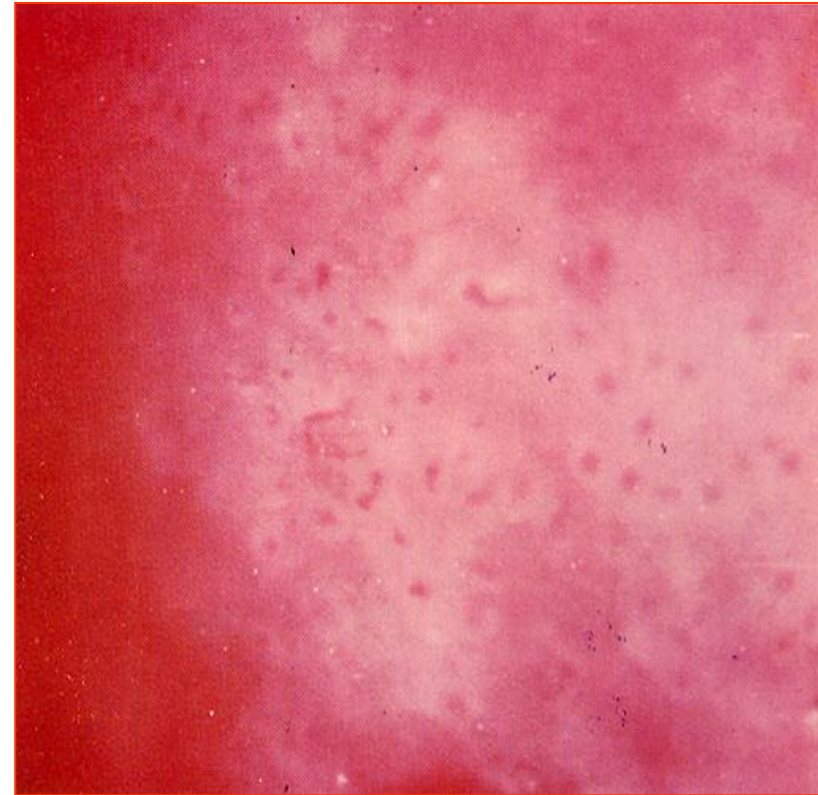
Histochemical preparation of the same



Atypical Vessels



Atypical vessels corkscrew shaped



Irregularly placed coarse punctations with increased intercapillary distance

IMPORTANT FACTS ABOUT ATYPICAL VESSELS

- Usually absent in CIN I & II
- rarely present in CIN III.
- May be associated with micro invasion but mostly present in frank invasion
- Atypical vessels present and biopsy negative is an indication of cone biopsy

Condylomata



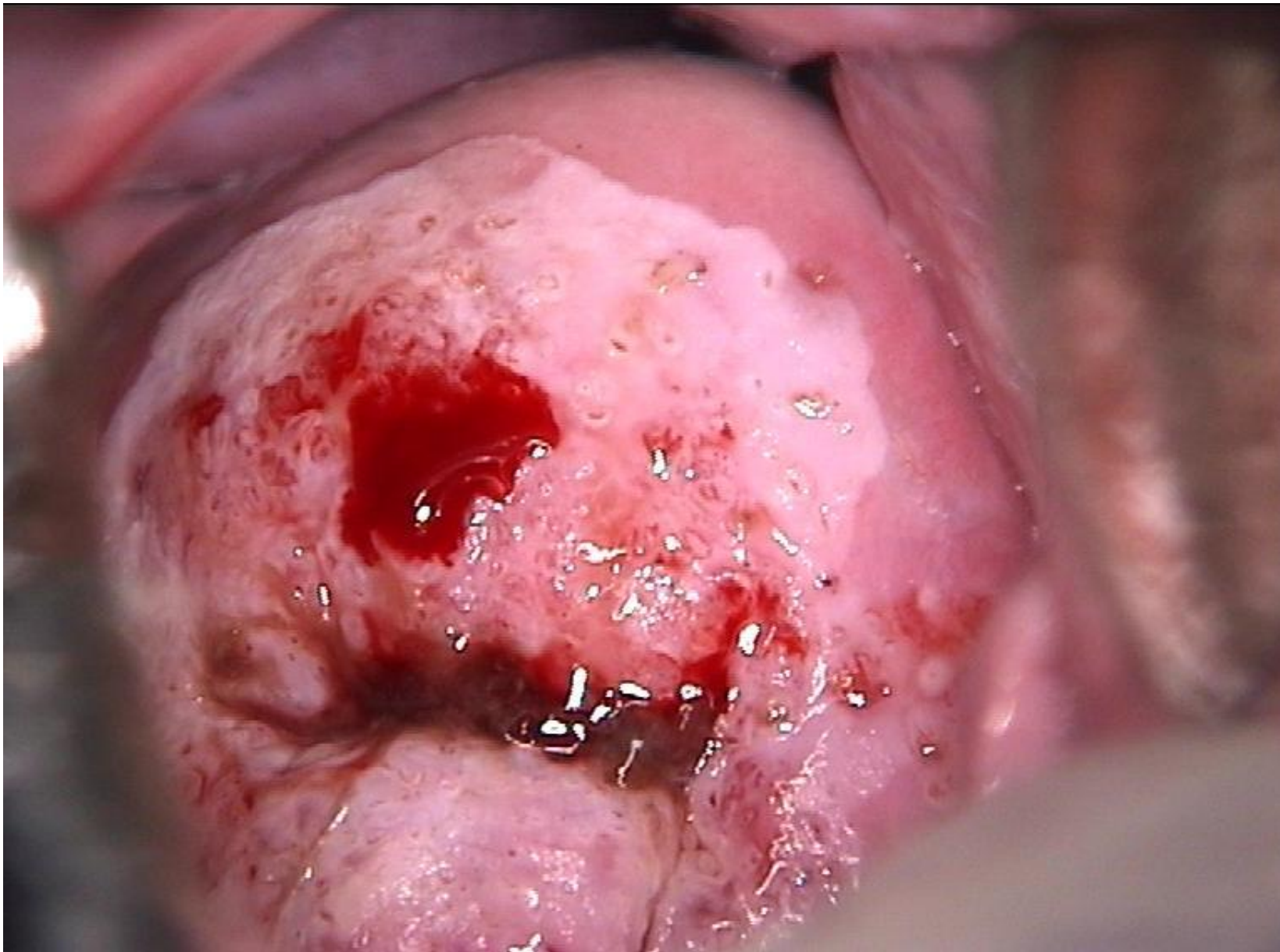
Small Exophytic



Punctations consistent with condyloma

Large Exophytic





Distorted shape of cervix, highly suspicious of malignancy

Colposcopically Suspected Invasive Cancer



ig. 4.30: Exophytic lesion with fragile vessels, irregular surface and atypical vessels

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Table 4.4: Modified Reid index (2010)

<i>Feature</i>	<i>Zero points</i>	<i>One point</i>	<i>Two points</i>
Margin and surface contour of AW lesion	<ul style="list-style-type: none"> – Feathered margins – Angular, jagged lesions – Flat lesions with indistinct margins – Microcondylomatous or micropapillary contour 	<ul style="list-style-type: none"> – Regular lesions with smooth straight white lines 	<ul style="list-style-type: none"> – Rolled peeling edges – Internal demarcations (a central area of high grade change and peripheral area of low-grade change)
Color of acetowhite (AW) area	<ul style="list-style-type: none"> – Low intensity acetowhitening – Snow-white shiny AW – Indistinct AW – AW beyond TZ. 	<ul style="list-style-type: none"> – Gray white AW with shiny surface 	Dull oyster-white, gray AW
Vessels	<ul style="list-style-type: none"> – Fine/uniform vessels – Poorly formed patterns or fine punctations and/or mosaic – Vessels beyond TZ margins – Fine vessels within microcondylomatous or micropapillary lesions 	<ul style="list-style-type: none"> – Absent vessels 	<ul style="list-style-type: none"> – Well-defined coarse punctation and mosaic
Iodine staining	<ul style="list-style-type: none"> – Positive iodine uptake giving mahogany brown color – Negative uptake of lesions scoring ≤ 3 points on above three categories. 	<ul style="list-style-type: none"> – Partial iodine uptake by a lesion scoring ≥ 4 points on above three categories—variegated, speckled appearance 	Negative iodine uptake by a lesion scoring ≥ 4 points on above three categories

Score 0–2 likely to be CIN 1

3–4 indicate overlapping lesion likely to be CIN 1–2

5–8 indicate significant lesion likely to be CIN 2–3.

TECHNIQUE OF VULVOSCOPY

● **Use of 5% acetic acid**

Biopsy mandatory whenever in doubt

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VULVAL ANATOMY



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NON-NEOPLASTIC EPITHELIAL DISORDERS

{lichen sclerosus et atrophicus}

- Squamous cell hyperplasia(SCH)

{hyperplastic dystrophy}

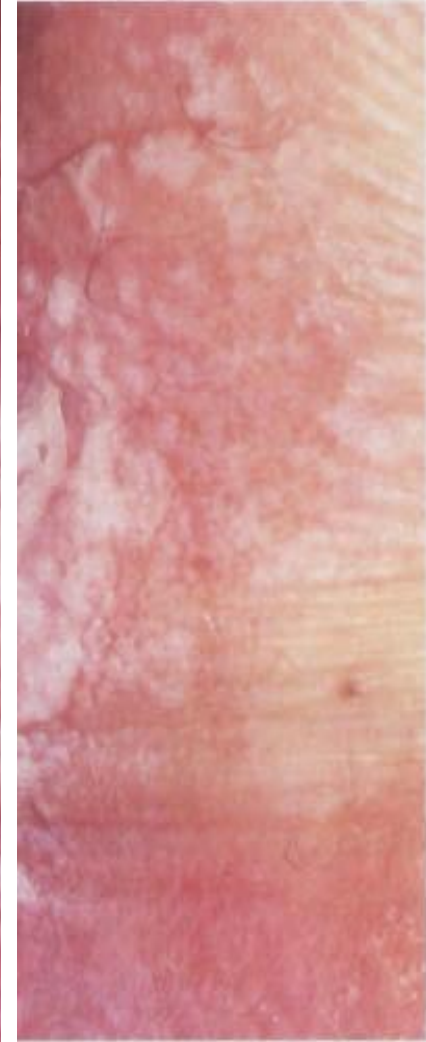
- Other dermatoses

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SQUAMOUS CELL HYPERPLASIA





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Reid colposcopic index

Colposcopic
sign

0

1

2

Margin

Condylomatous or
micropapillary contour
Indistinct acetowhitening
Flocculated or feathered
margins
Angular jagged lesions
Satellite lesions &
acetowhitening that exten
beyond TZ

Regular lesion
with smooth
straight
outline
Rolled peeling
edges, internal
demarcation
between area
of differing
appearance

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Color	Shiny, snow white Indistinct acetowhitening	Intermediate shade	Dull, oyster white
Vessels	Fine caliber Poorly formed patterns	Absent vessels	Definite punctations or mosaic
Iodine	+ve staining minor I ₂ negativity	Partial I ₂ uptake	-ve staining of significant lesions