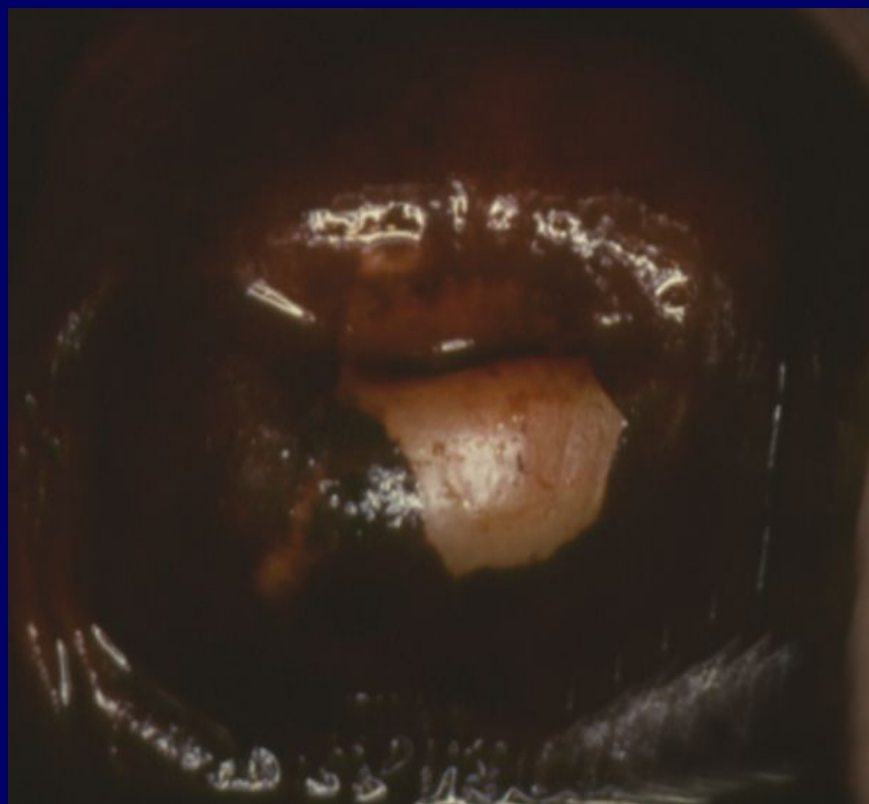


Normal and abnormal colposcopic findings

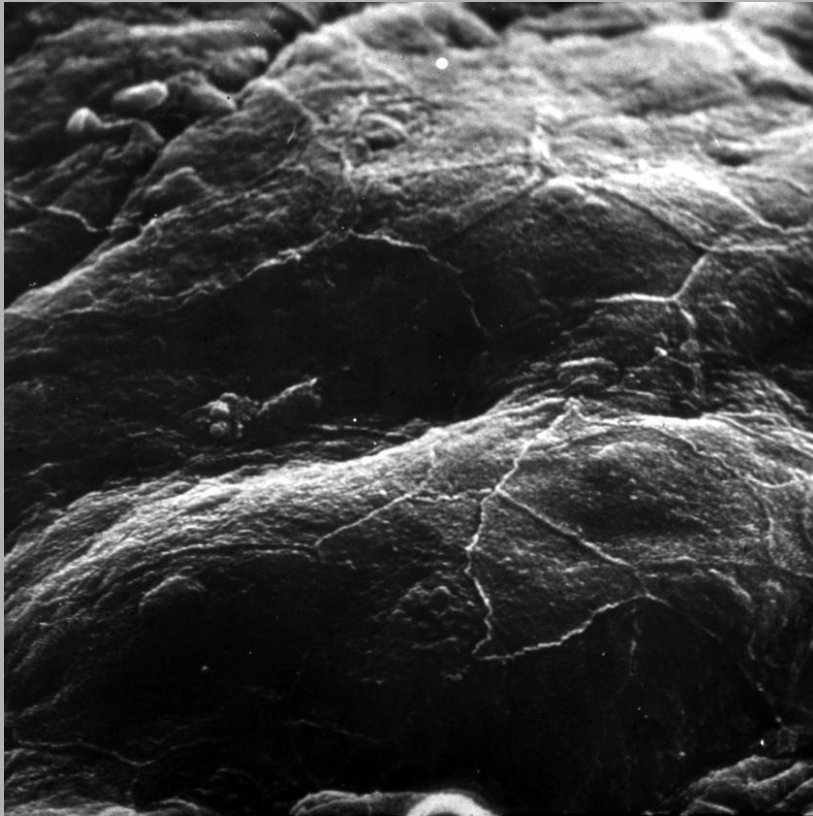
Colposcopy

Acetic acid test (3-5% acetic acid)
Schiller test (Lugol's solution)



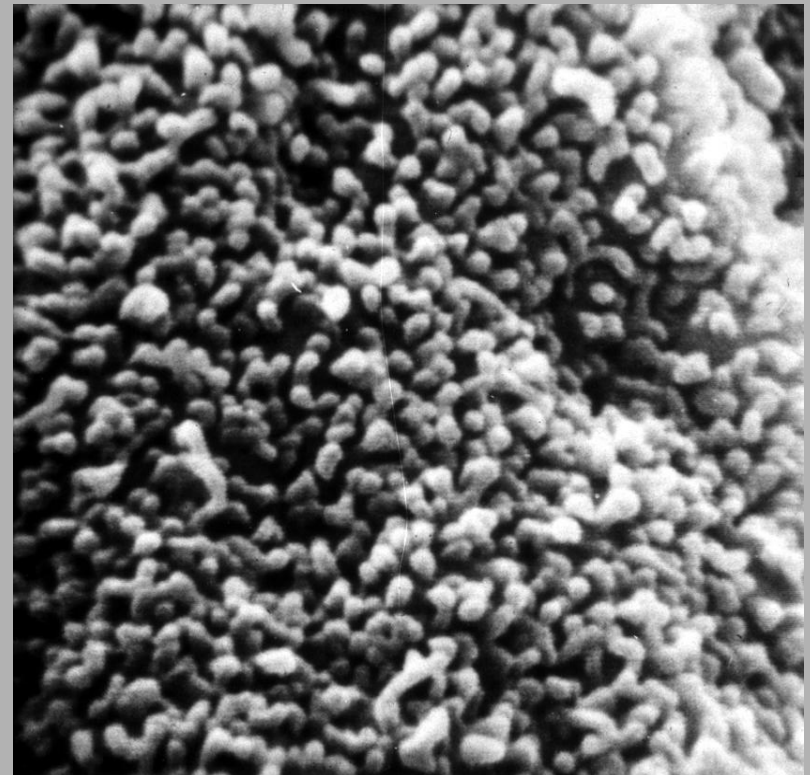


- Squamous epithelium
 - Columnar epithelium
 - Squamo-columnar junction
-
- Metaplasia
 - Transformation Zone

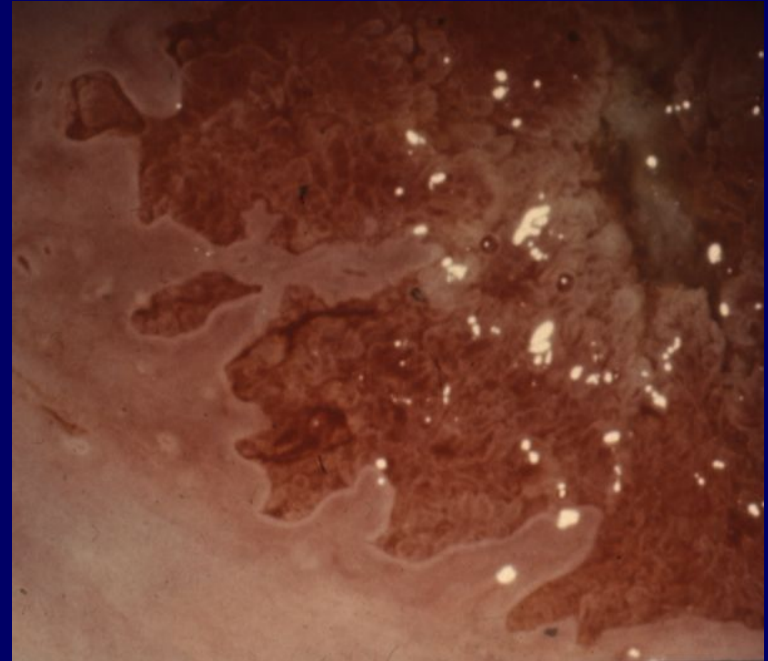
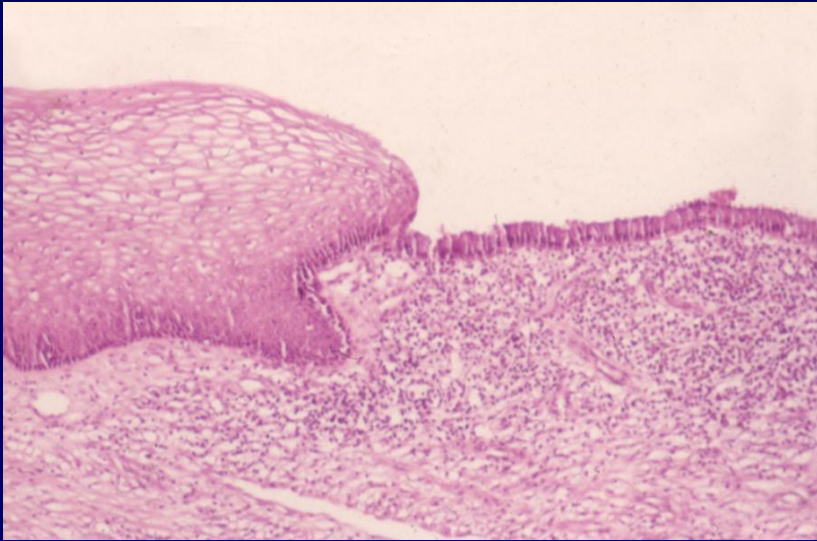


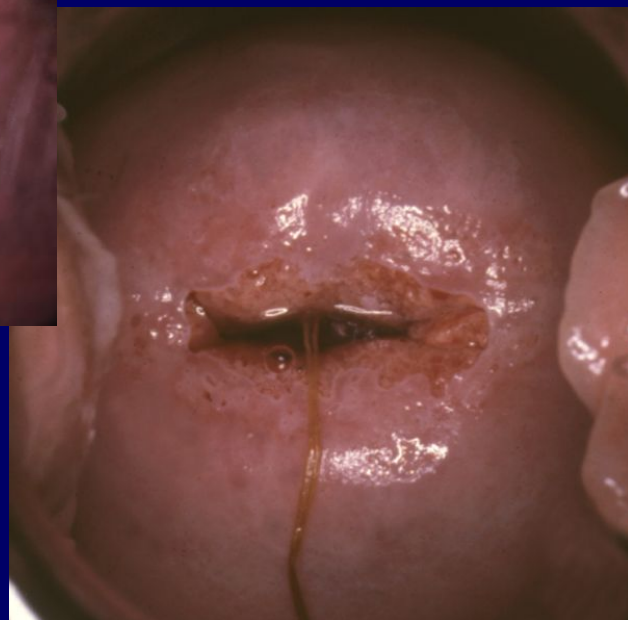
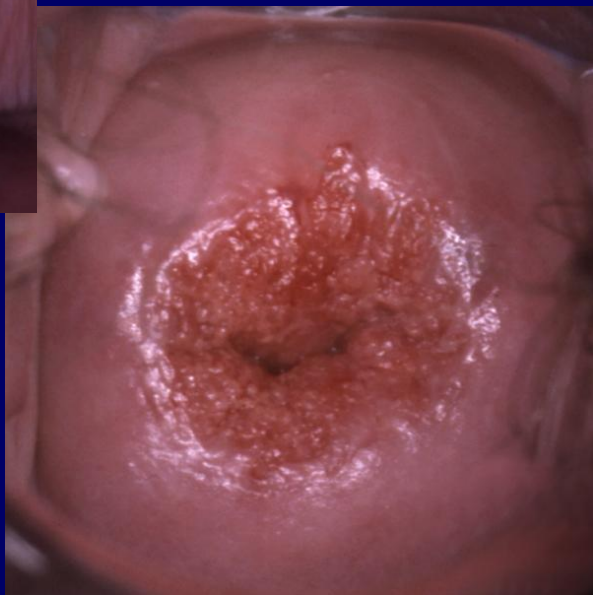
Squamous epithelium

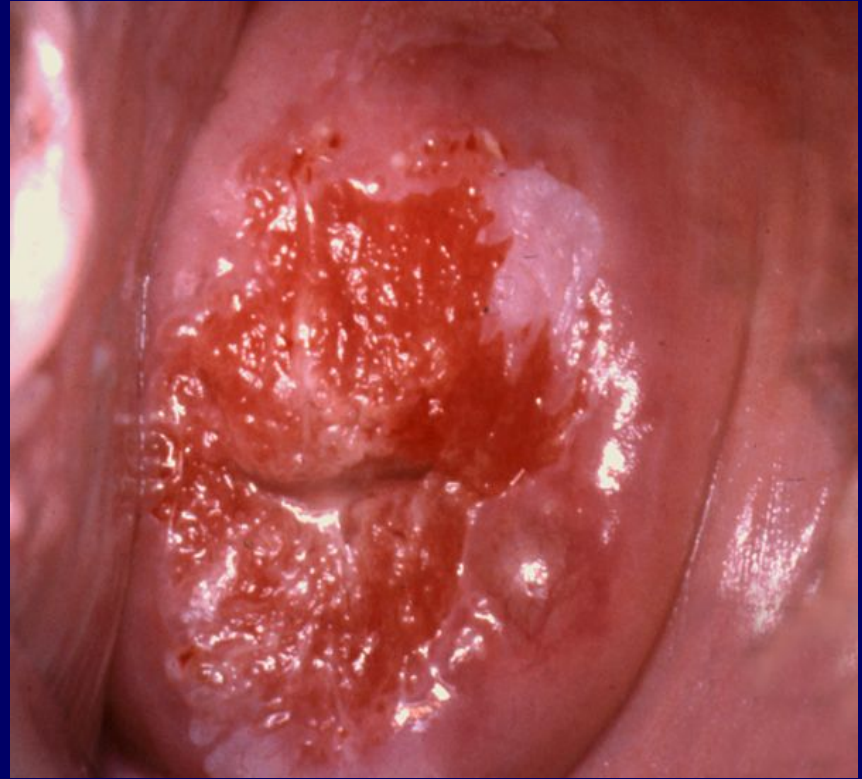
Columnar epithelium

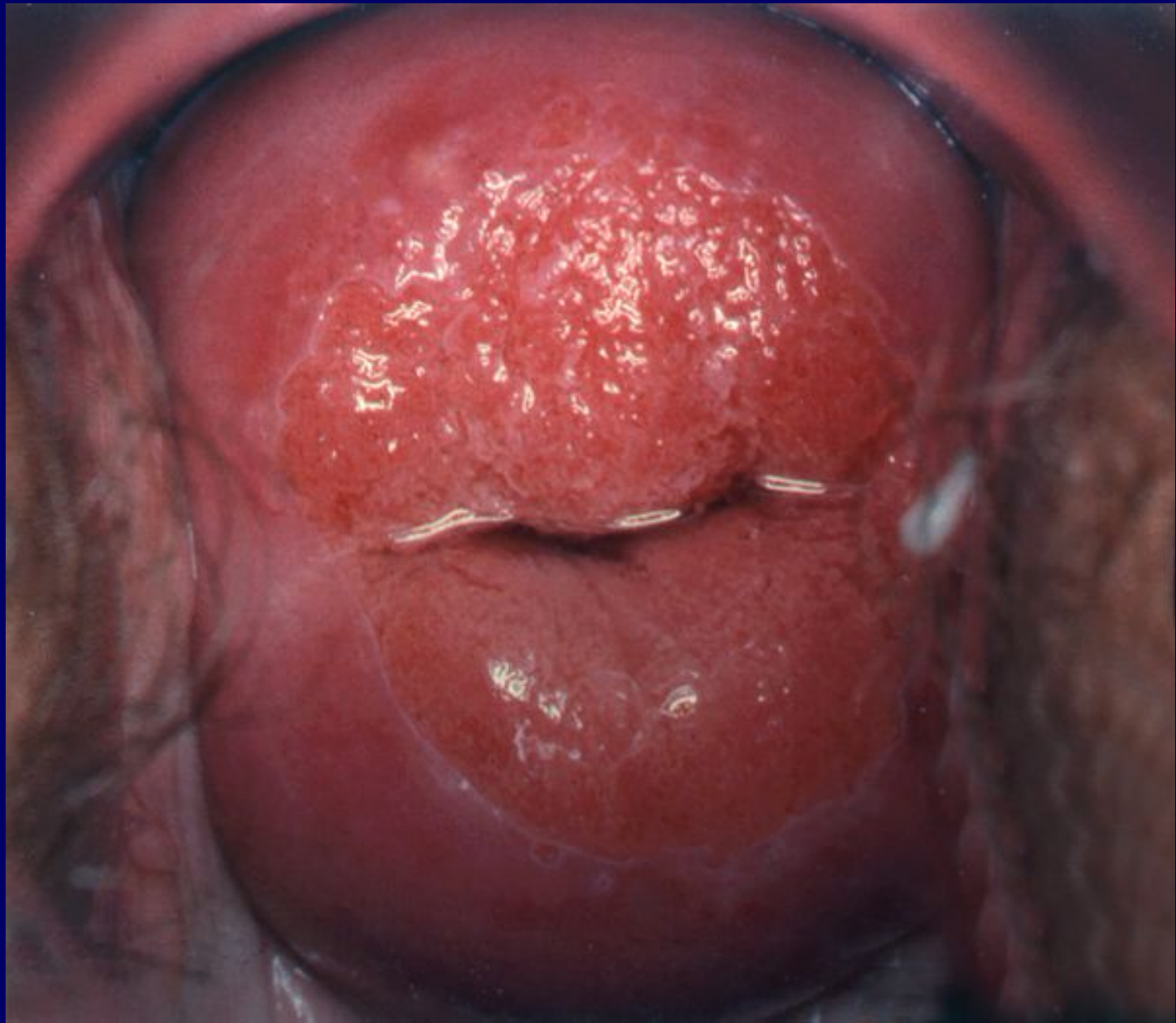


Squamo-columnar junction- SCJ







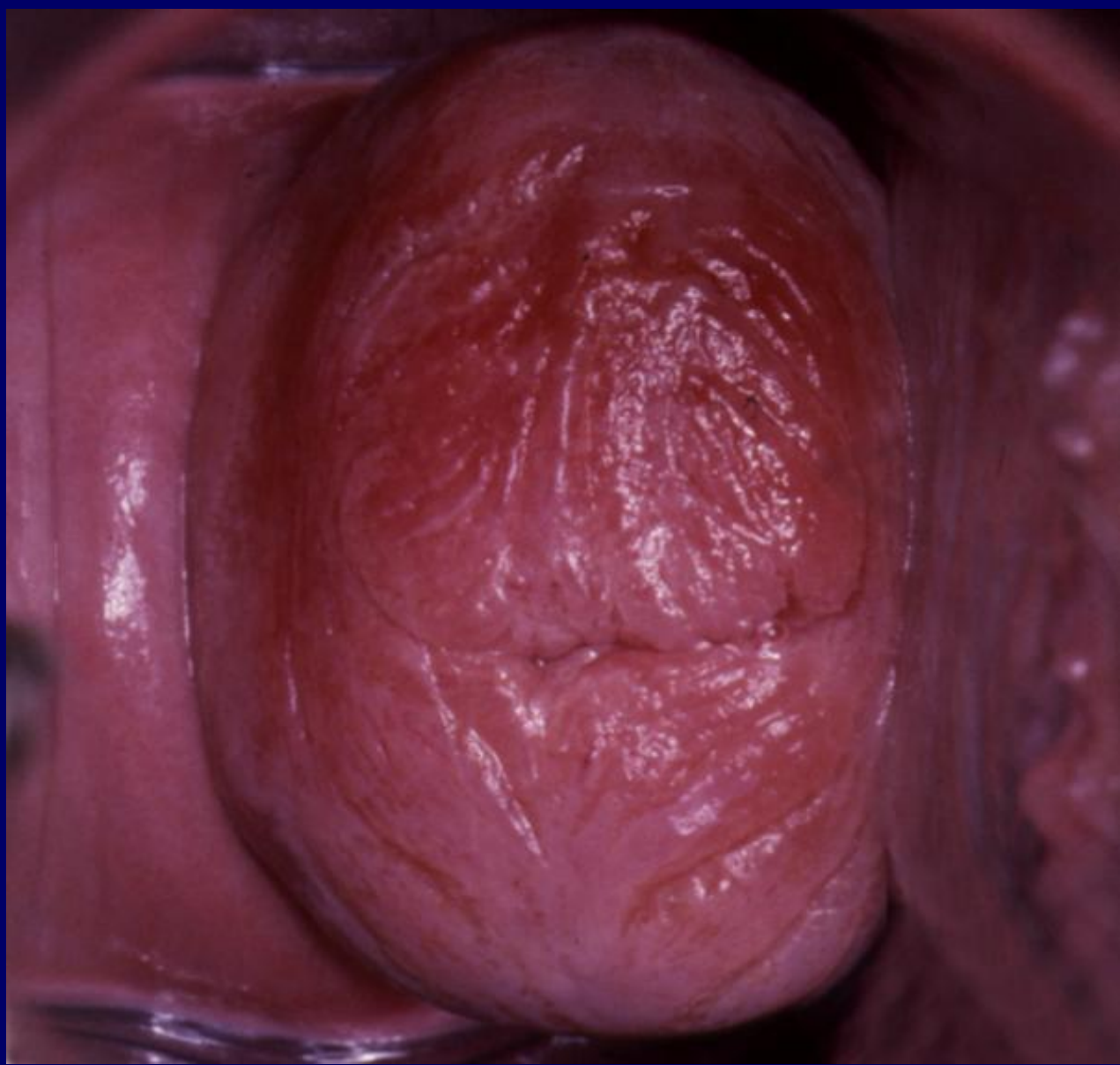


Metaplasia

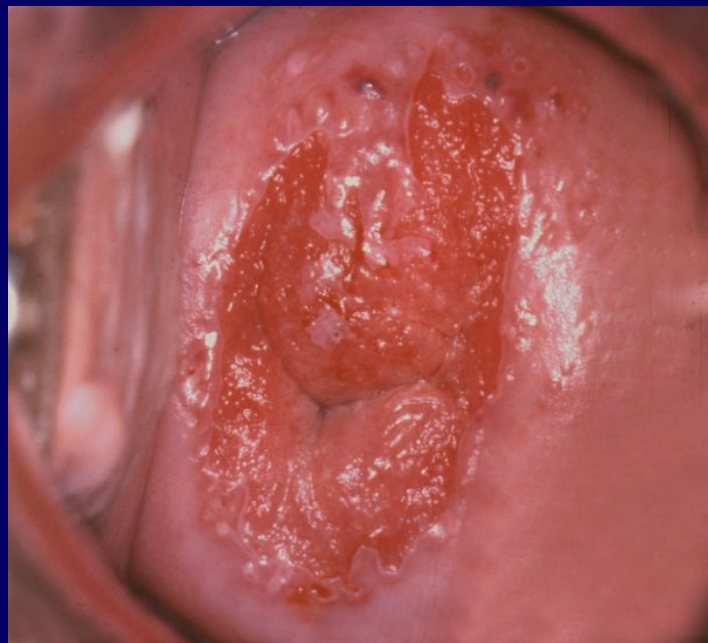
a physiological and benign process
whereby the columnar epithelium is gradually
replaced by squamous epithelium

Transformation zone

the area where metaplasia takes place



The result of normal metaplasia is
a normal Transformation zone



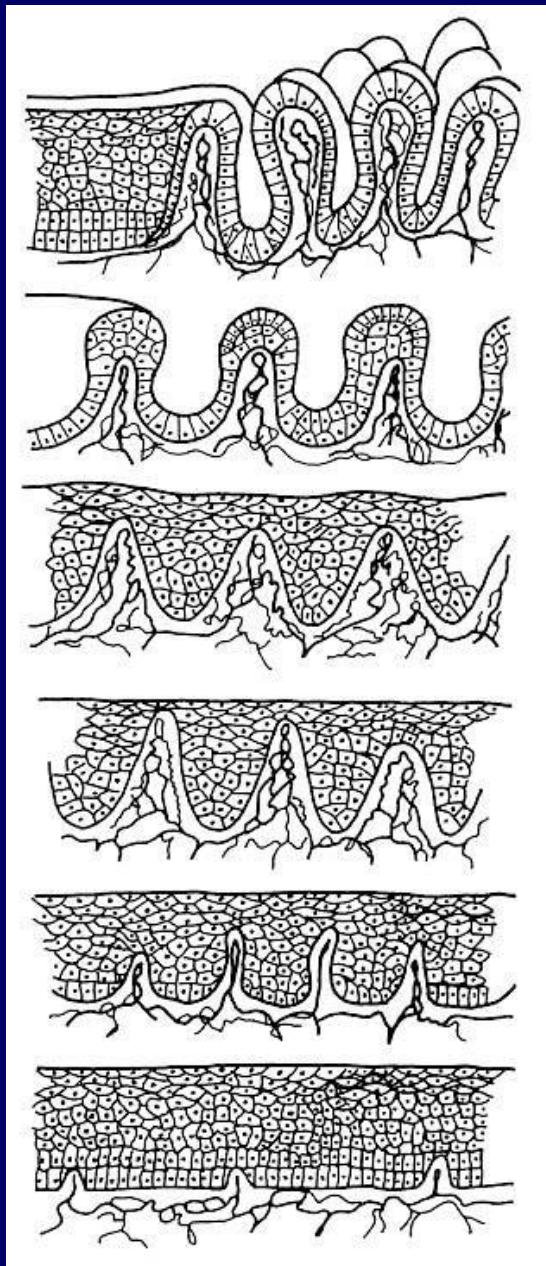
Immature metaplastic cells are
susceptible
to the development of
atypical cellular changes

The process of transformation from
normal cells to atypical cells
occurs under the influence
of Human papillomavirus (HPV) and cofactors

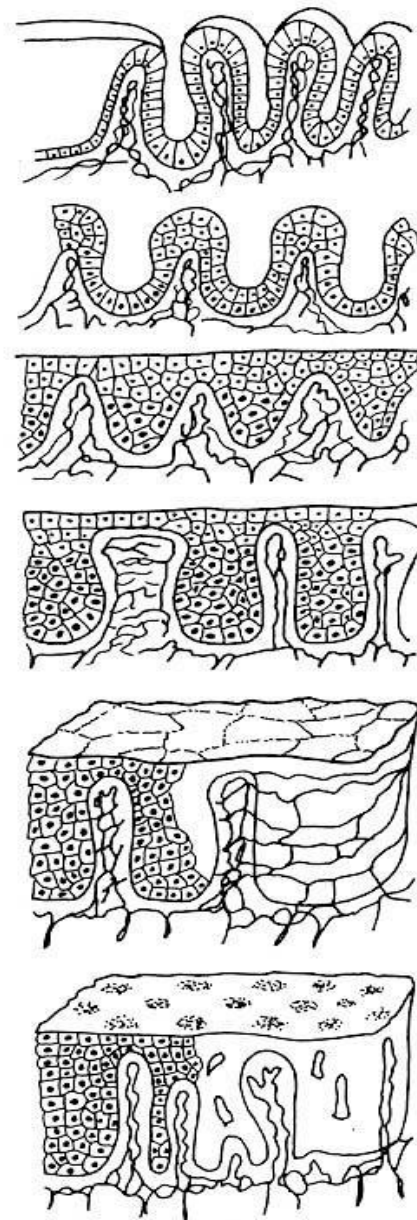
If atypical metaplasia takes place
an abnormal
Transformation zone develops



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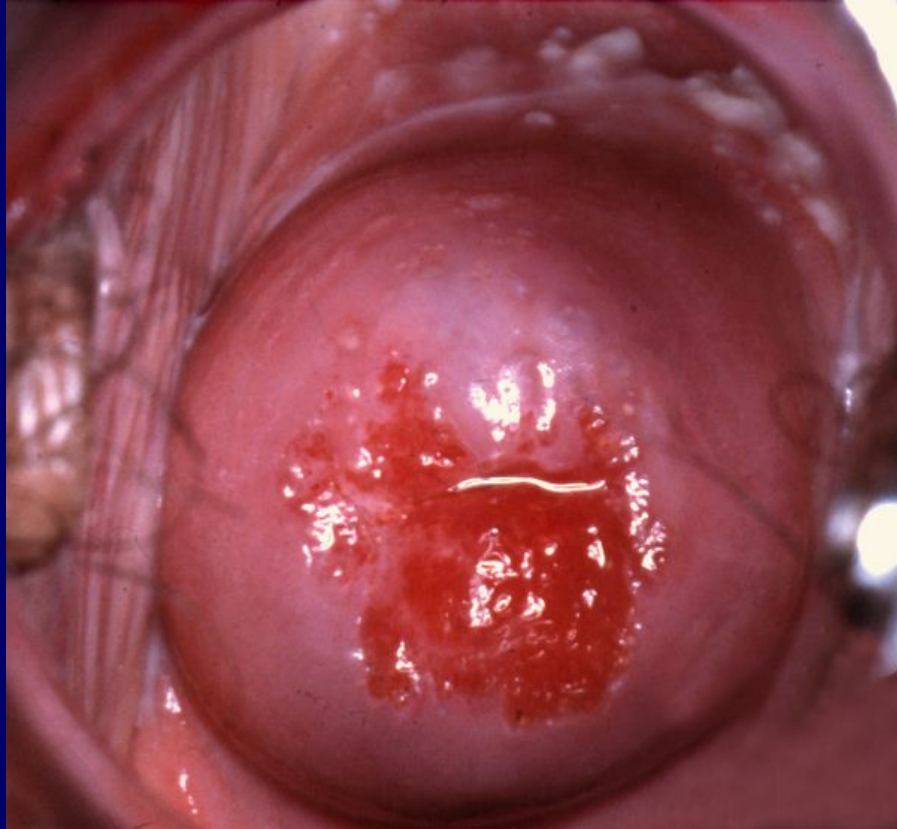


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In colposcopy, it is essential to assess whether Transformation zone is normal or abnormal



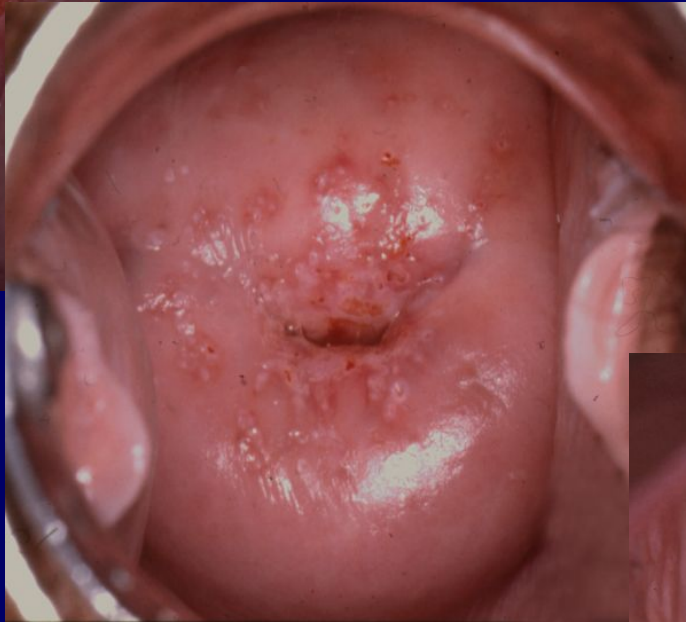
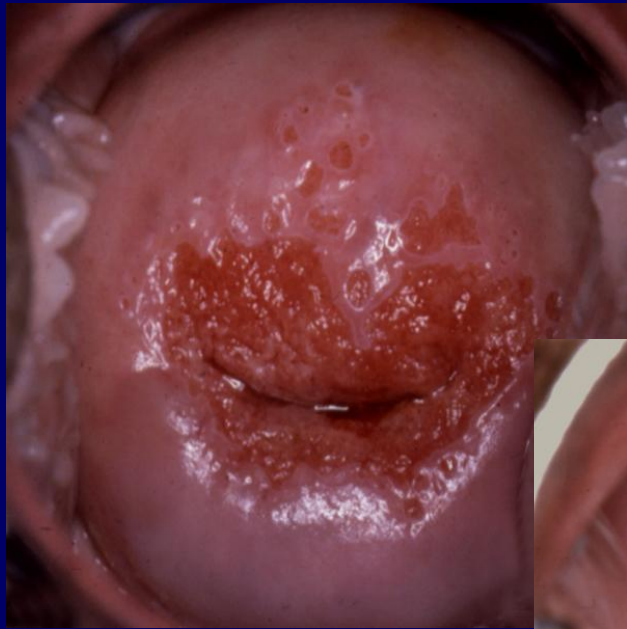
International Federation for Cervical Pathology and Colposcopy (IFCPC)

Colposcopic Classification

- I Normal colposcopic findings
- II Abnormal colposcopic findings
- III Colposcopic findings suggestive of invasive cancer
- IN Unsatisfactory colposcopy
- V Miscellaneous findings

Components of a normal Transformation zone

- Islands of columnar epithelium
- Cleft openings
- Nabothian cysts



The abnormal Transformation zone is manifested
as a wide spectrum of
epithelial and vascular findings

Abnormal transformation zone is
presented by
abnormal (atypical) colposcopic findings

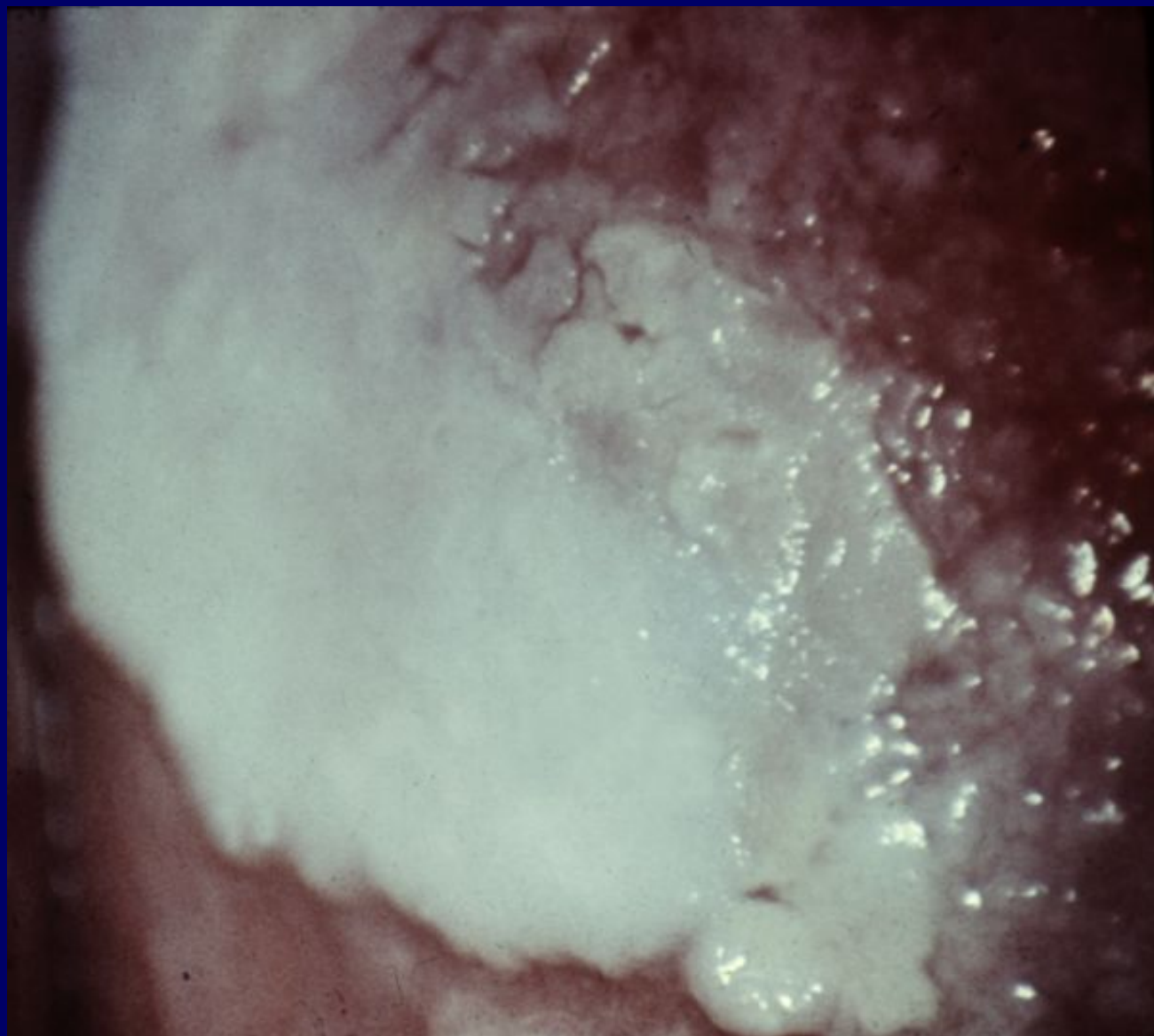
Abnormal colposcopic findings

- Leukoplakia
- Acetowhite epithelium
- Punctation
- Mosaic
- Iodine negativity
- Atypical vessels

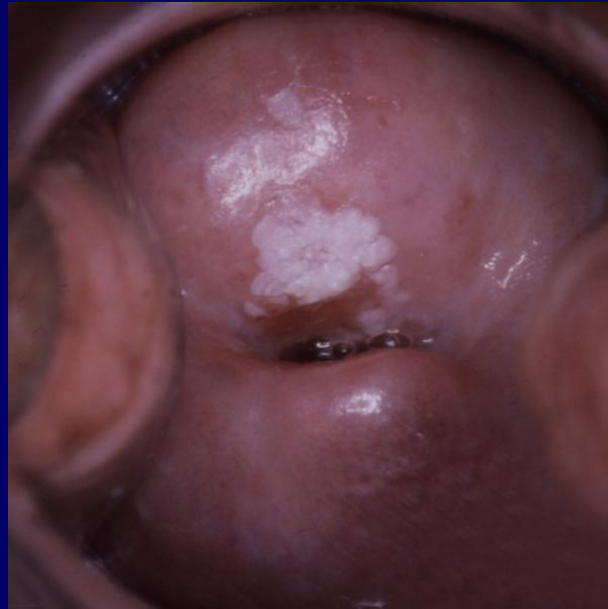
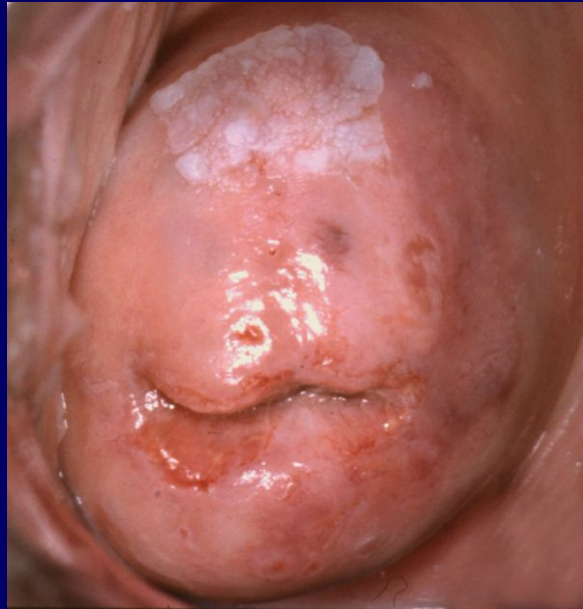
Leukoplakia

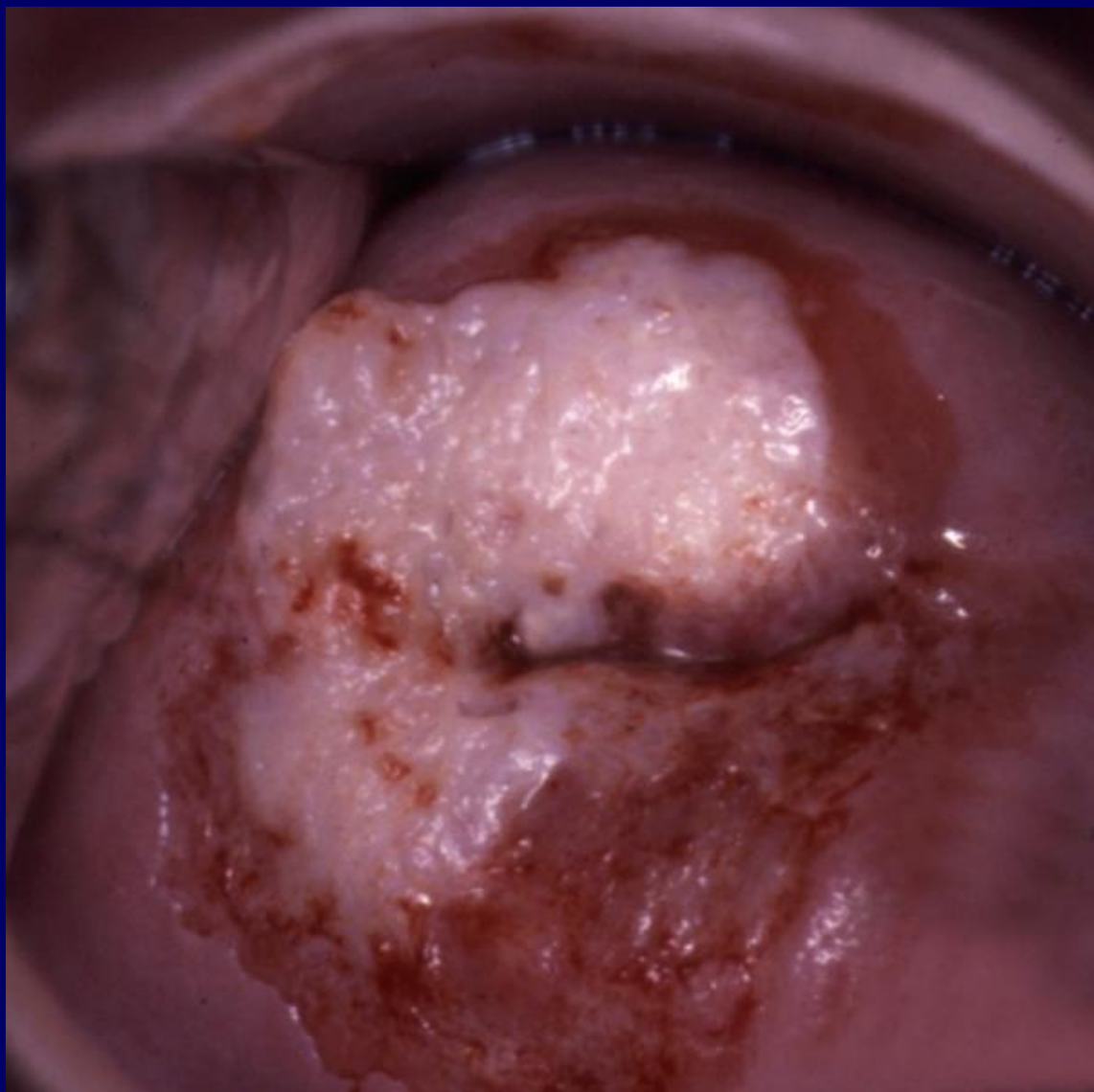
or white plaque

is visible grossly as a white often raised
area that is not necessarily confined to TZ









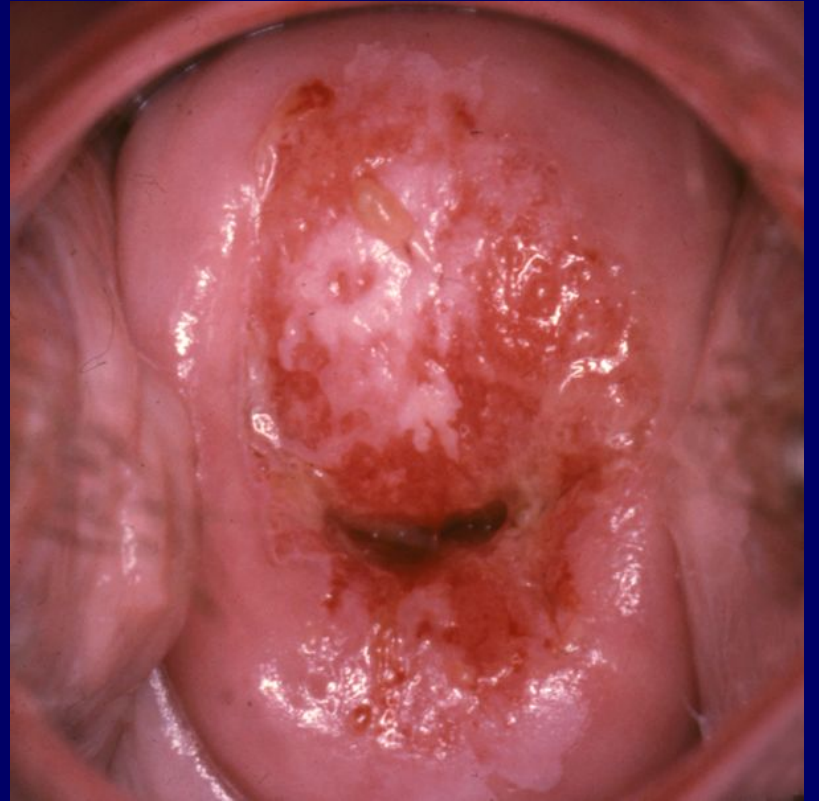
Leukoplakia

- HPV infection
- Keratinizing CIN
- Keratinizing cancer
- Chronic trauma
- Radiotherapy
- Immature metaplasia

Acetowhite epithelium

Appears grossly normal
but turns white after application
of 3% to 5% acetic acid





Acetowhite epithelium

- HPV infection
- Immature squamous metaplasia
- Regenerative or reparative changes
- Congenital Transformation zone
- Inflammation
- CIN
- Adenocarcinoma
- Invasive squamous carcinoma

Any cells with an enlarged nucleus
such as metaplastic cells or
cells traumatized by infection or friction,
may exhibit
varying degrees of acetowhiteness

Punctuation

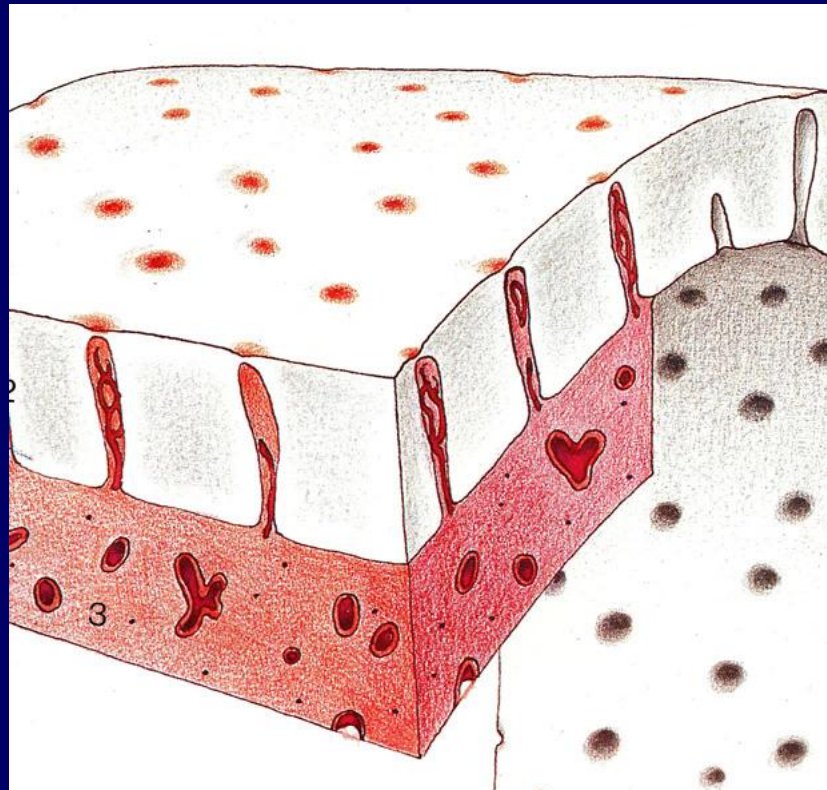
a focal colposcopic pattern in which capillaries appear in stippled pattern.

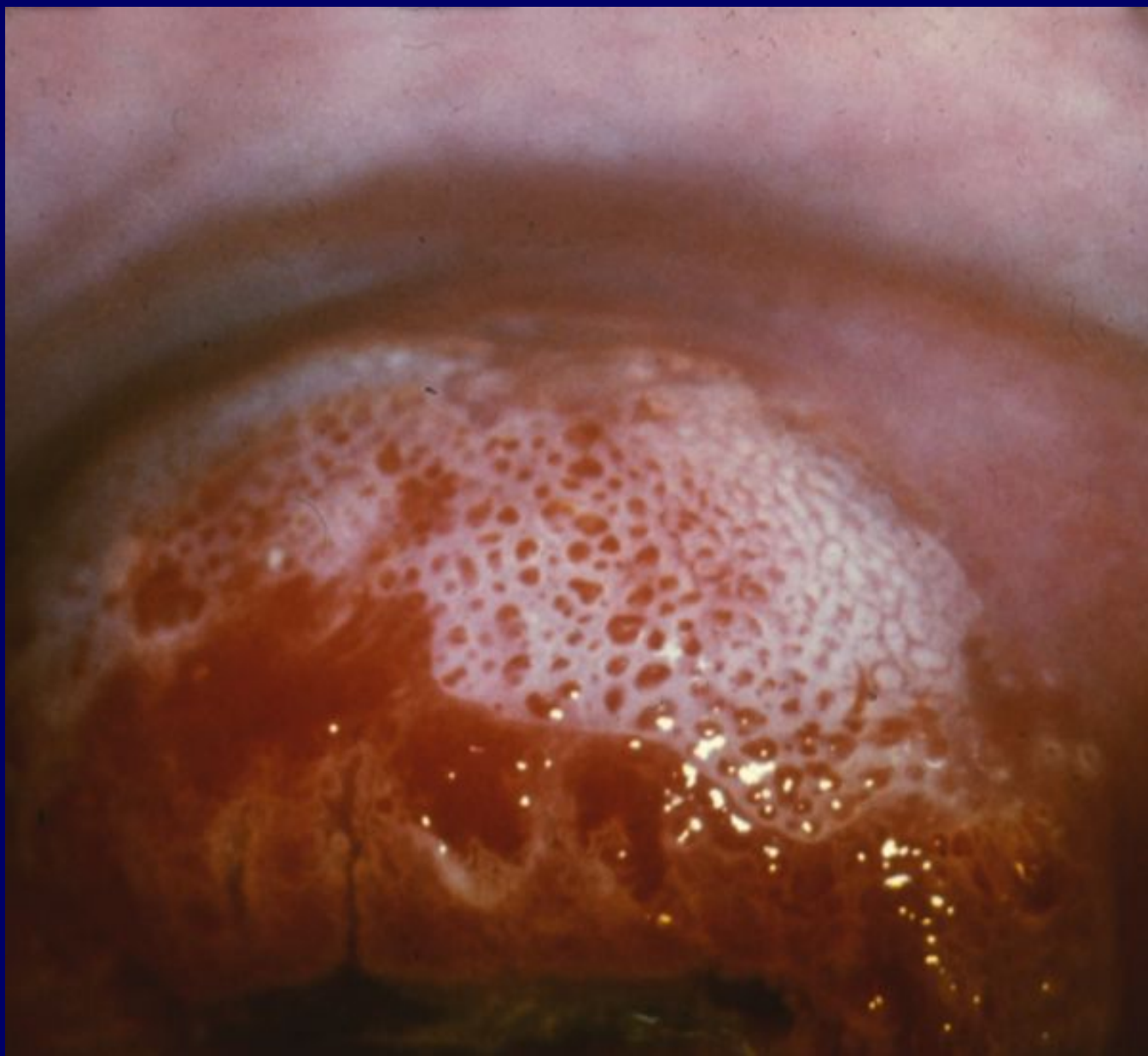
Mozaik

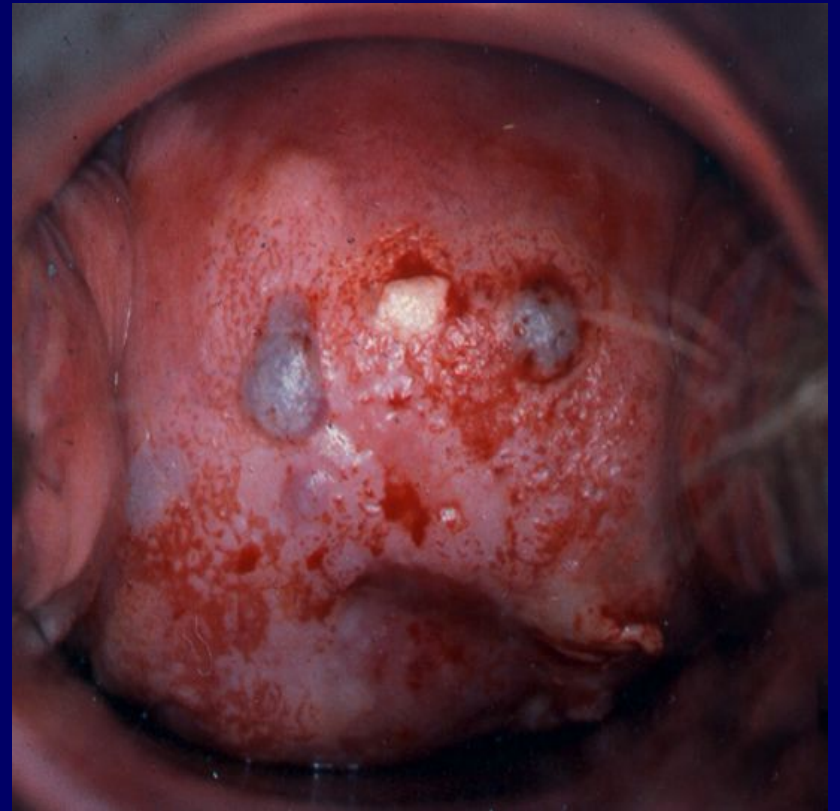
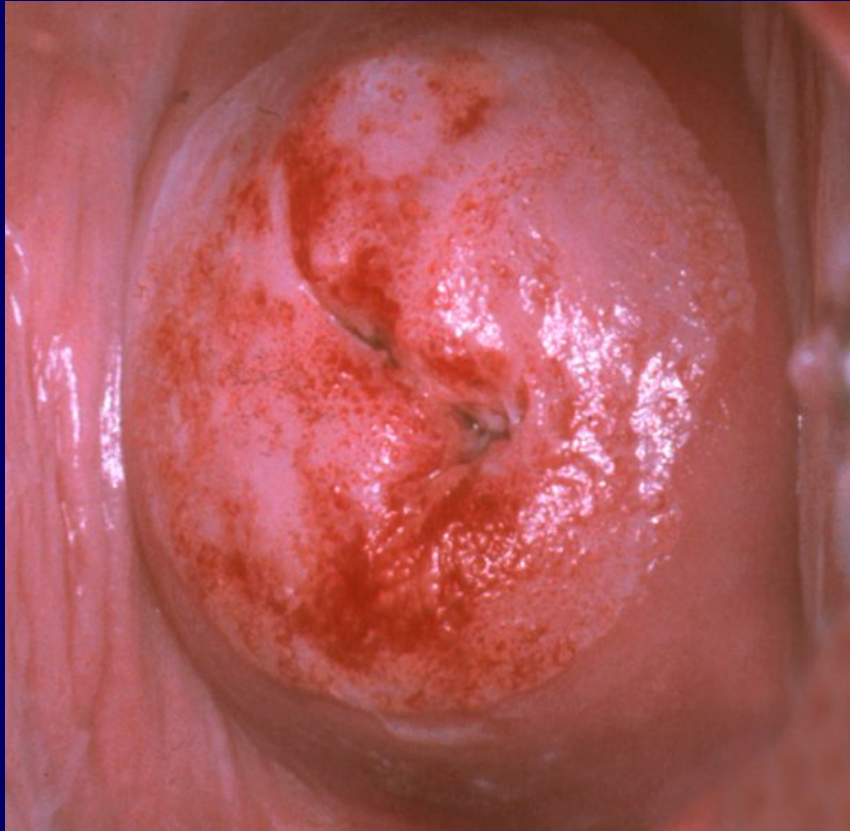
a focal colposcopic appearance in which the new vessel formation appears as a rectangular pattern like mosaic

Punctation

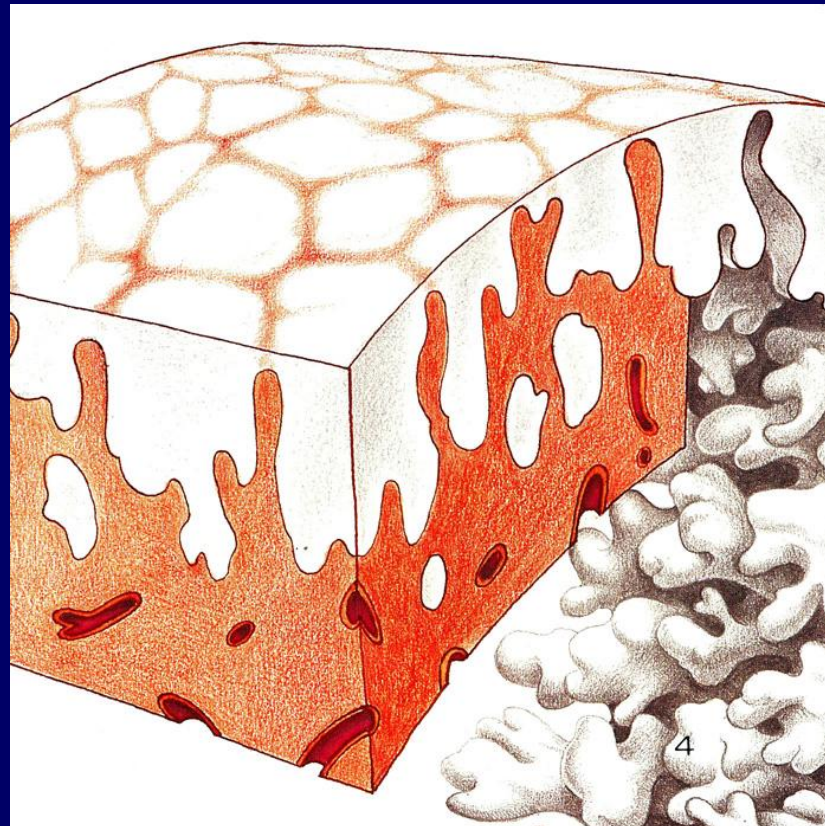
colposcopic finding reflecting
the capillaries in the stromal papillae
that are seen end-on and
penetrate the epithelium

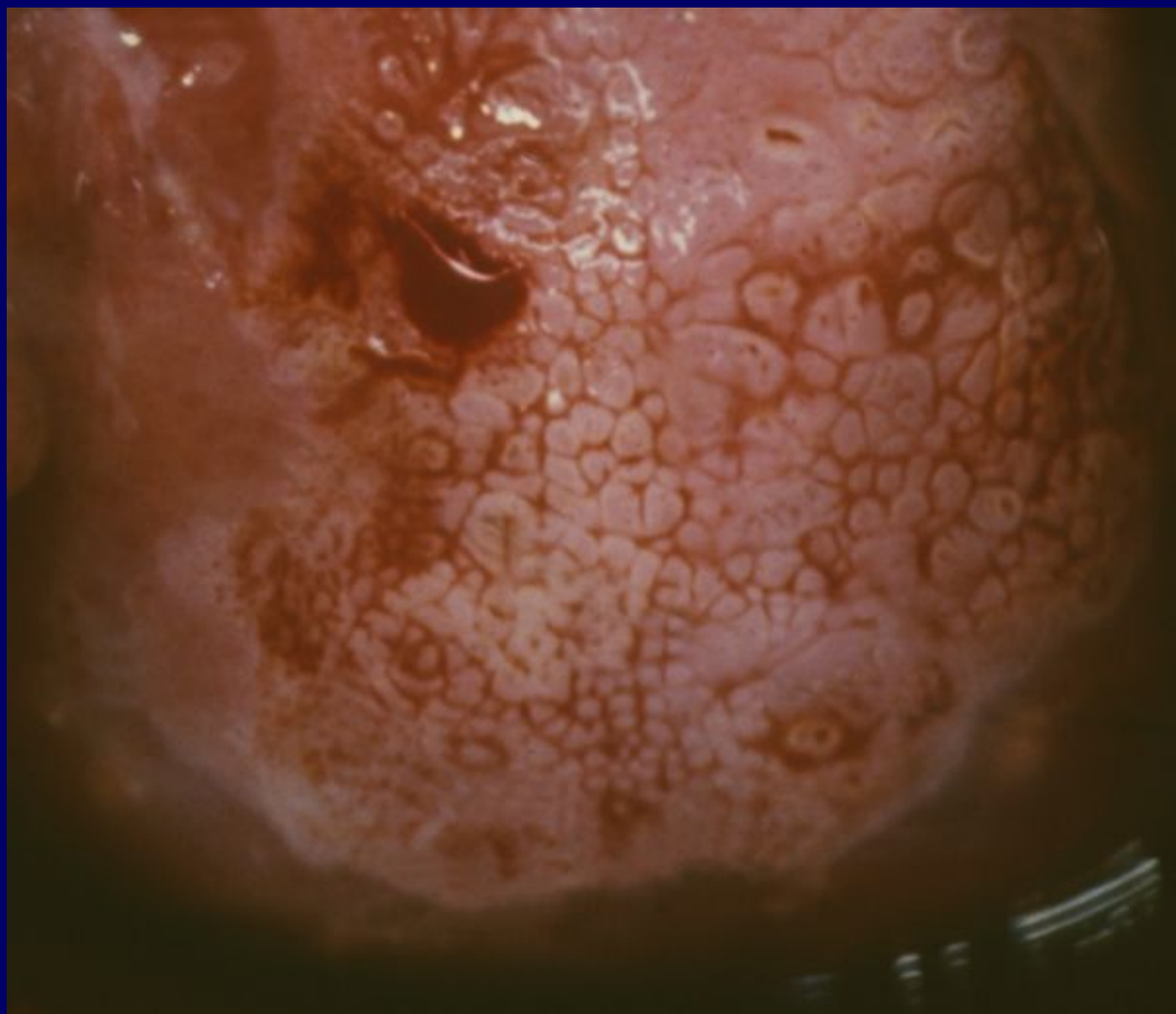






Mosaic
colposcopic finding reflecting
the islands of squamous epithelium,
encircled by blood
vessels in a basket-like arrangement







Punctation and Mosaic

- Inflammation
- Rapidly growing metaplastic epithelium
- CIN
- Invasive squamous cancer
- Recurrence of cervical cancer

If the punctation or mosaic
is not located
in a field of acetowhite epithelium,
it is unlikely to be associated with CIN

Iodine negativity

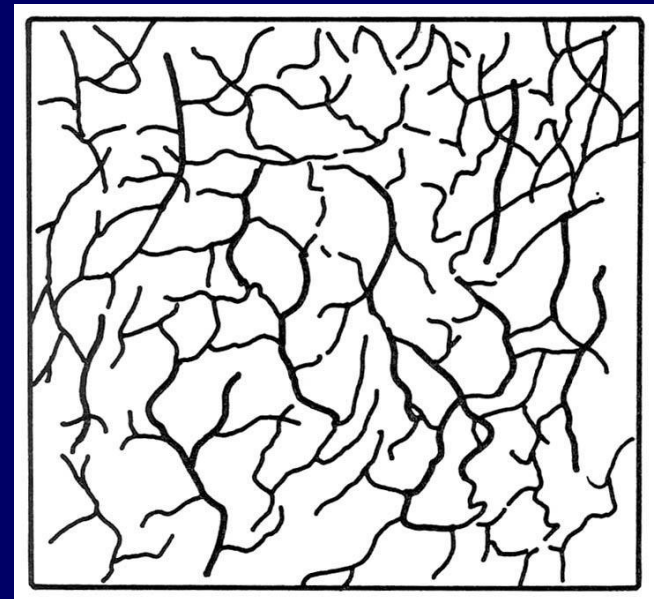
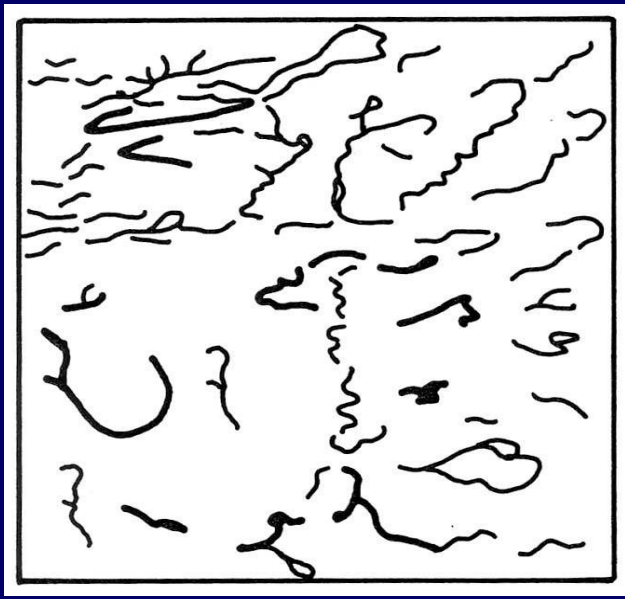
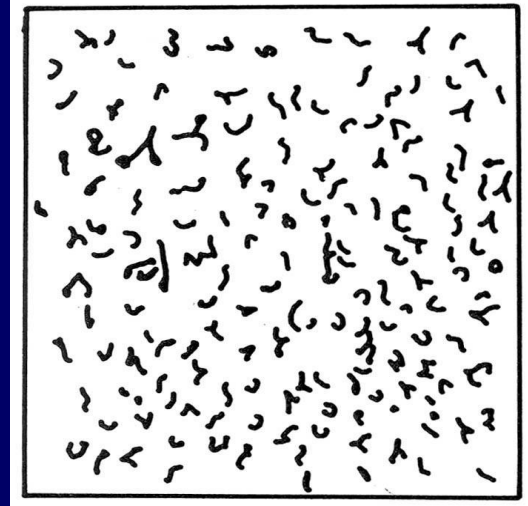
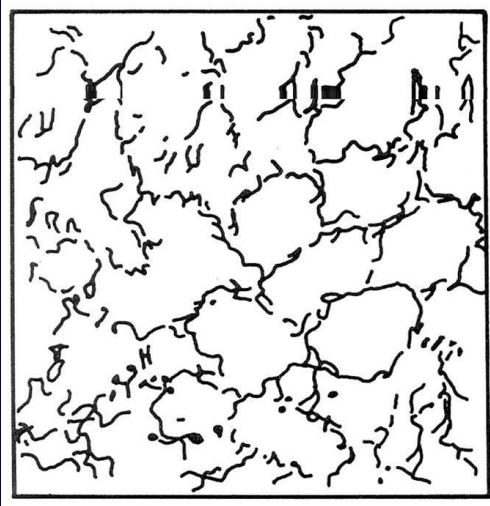
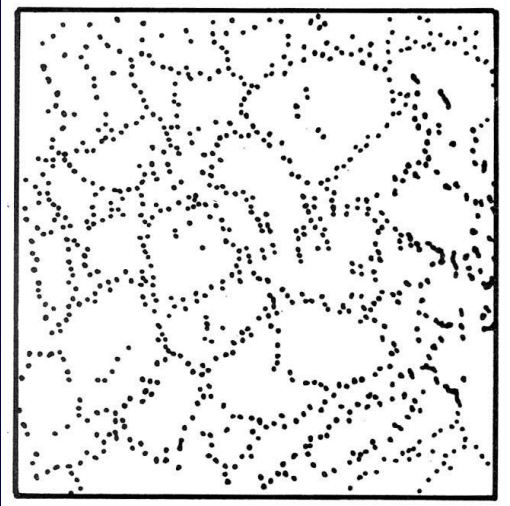
- Immature metaplasia
- Cervical intraepithelial neoplasia
- Low estrogen status (atrophy)

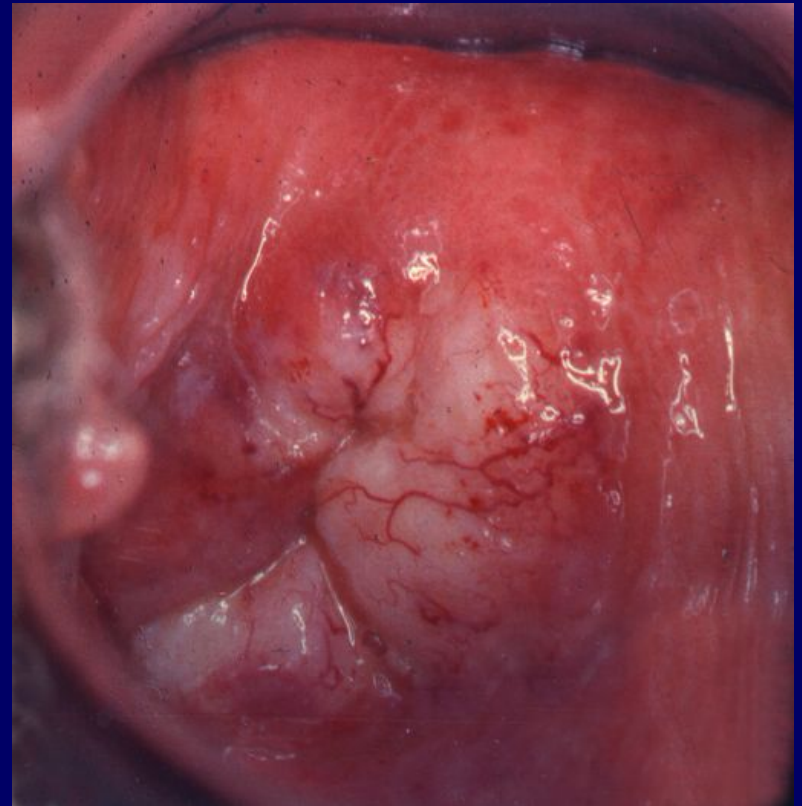
Atypical vessels

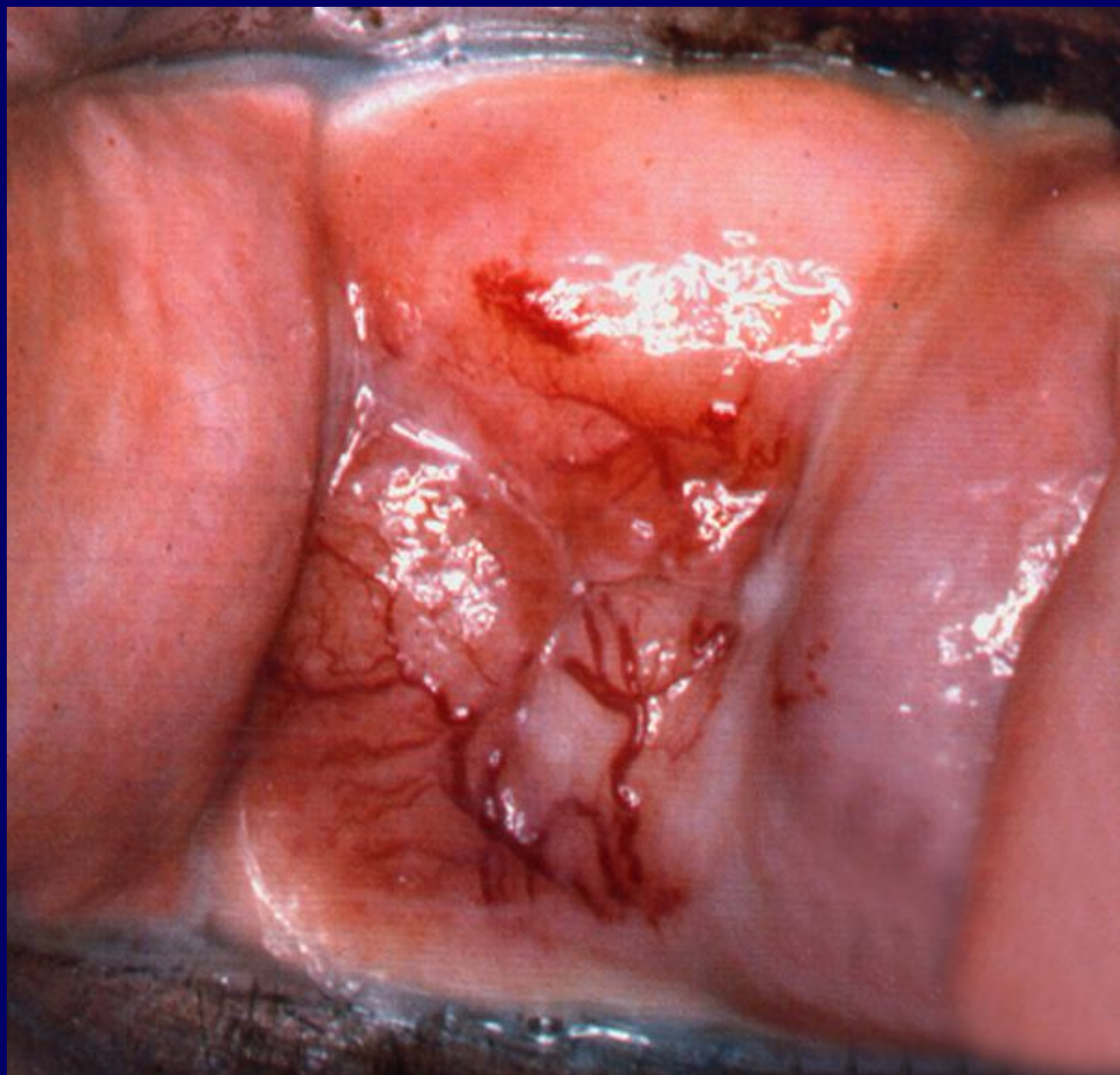
- Irregular vessels with an abrupt and interrupted course
- Appearing as commas, corkscrew capillaries or spaghetti-like forms

Atypical vessels
are the hallmark of invasion,
but can be associated with other conditions such as

- Inflammation
- Postirradiation effect
- Rapidly growing metaplastic epithelium
 - Normal epithelium
 - Systemic diseases







Development of abnormal
colposcopic features may be the
result of:

- Immature physiologic metaplasia
 - Papilloma virus infection
 - Developing CIN

Colposcopic index (score)

a grading system used to evaluate the severity
of the colposcopic findings

A number of scoring systems
have been introduced:

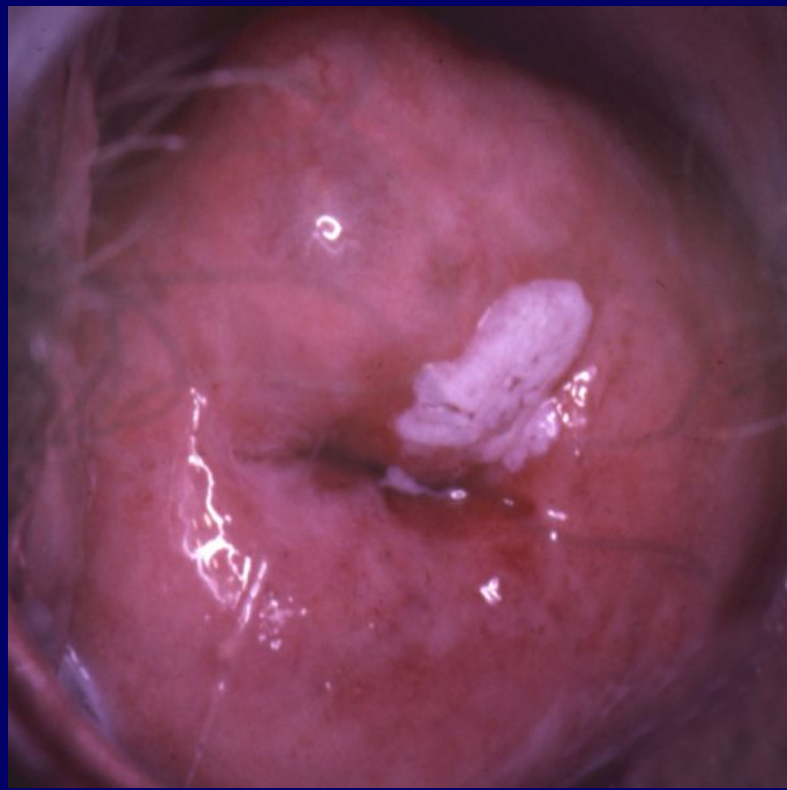
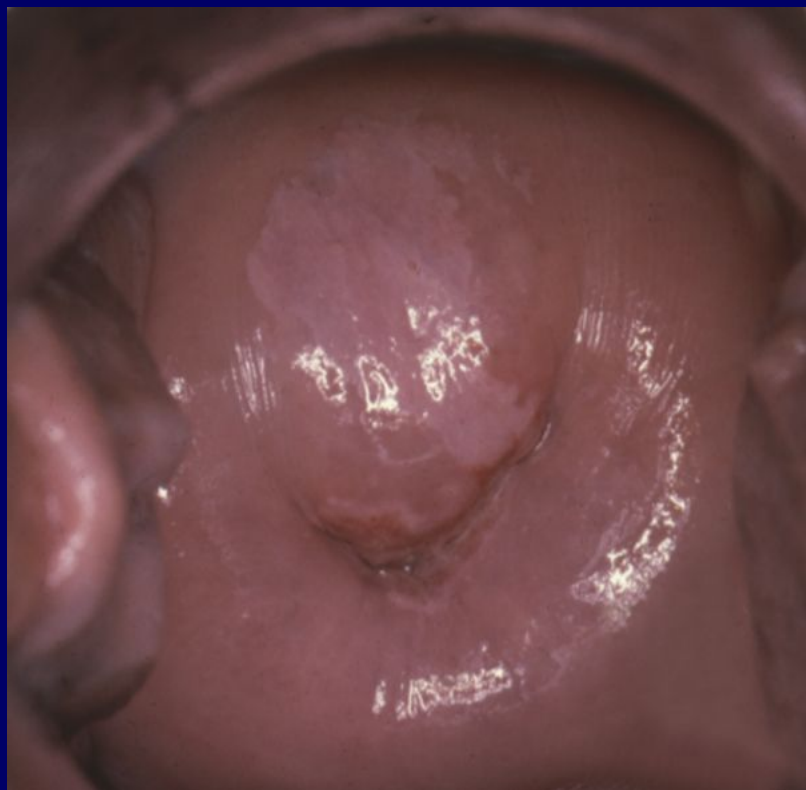
- Coppleson & Pixley
- Burghardt
- Rubin & Barbo
- Reid

Grading of colposcopic findings

- Vascular pattern
- Intercapillary distance
- Color tone and opacity
- Surface pattern
- Borders with normal tissue

Colour

- Severe abnormalities become whiter
than minor lesions
- They tend to become white more quickly
- Retain their whiteness longer than
the mild lesions



Borders

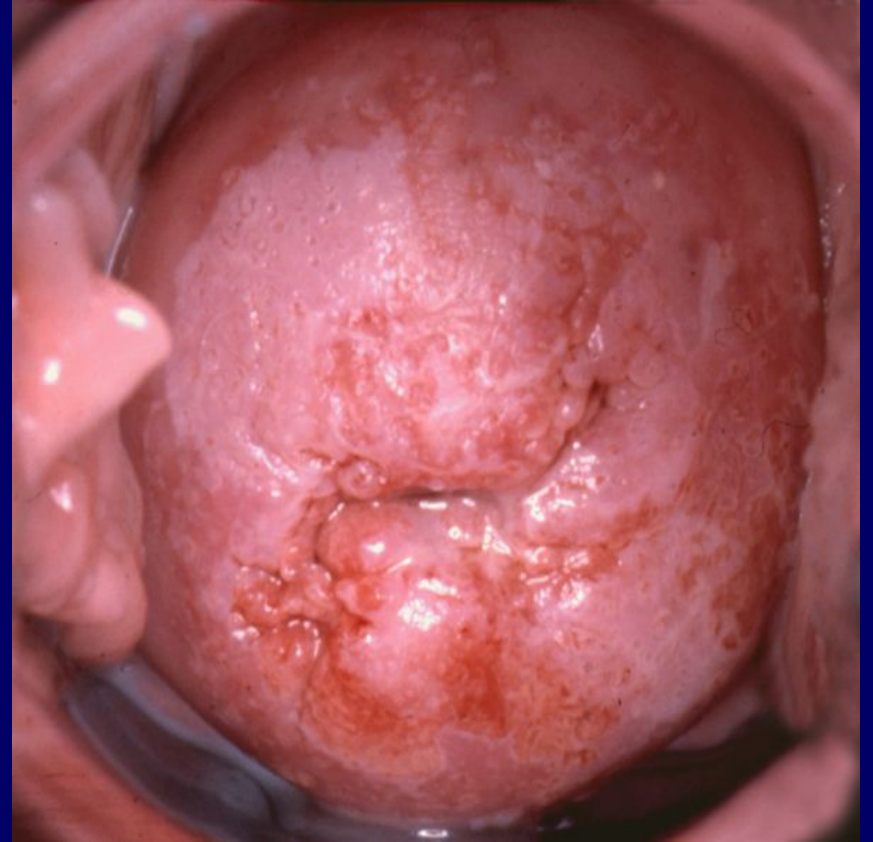
A clear zone of demarcation exists between the native squamous epithelium and high grade CIN lesion.

Mild changes usually have a less distinct outline



Surface pattern

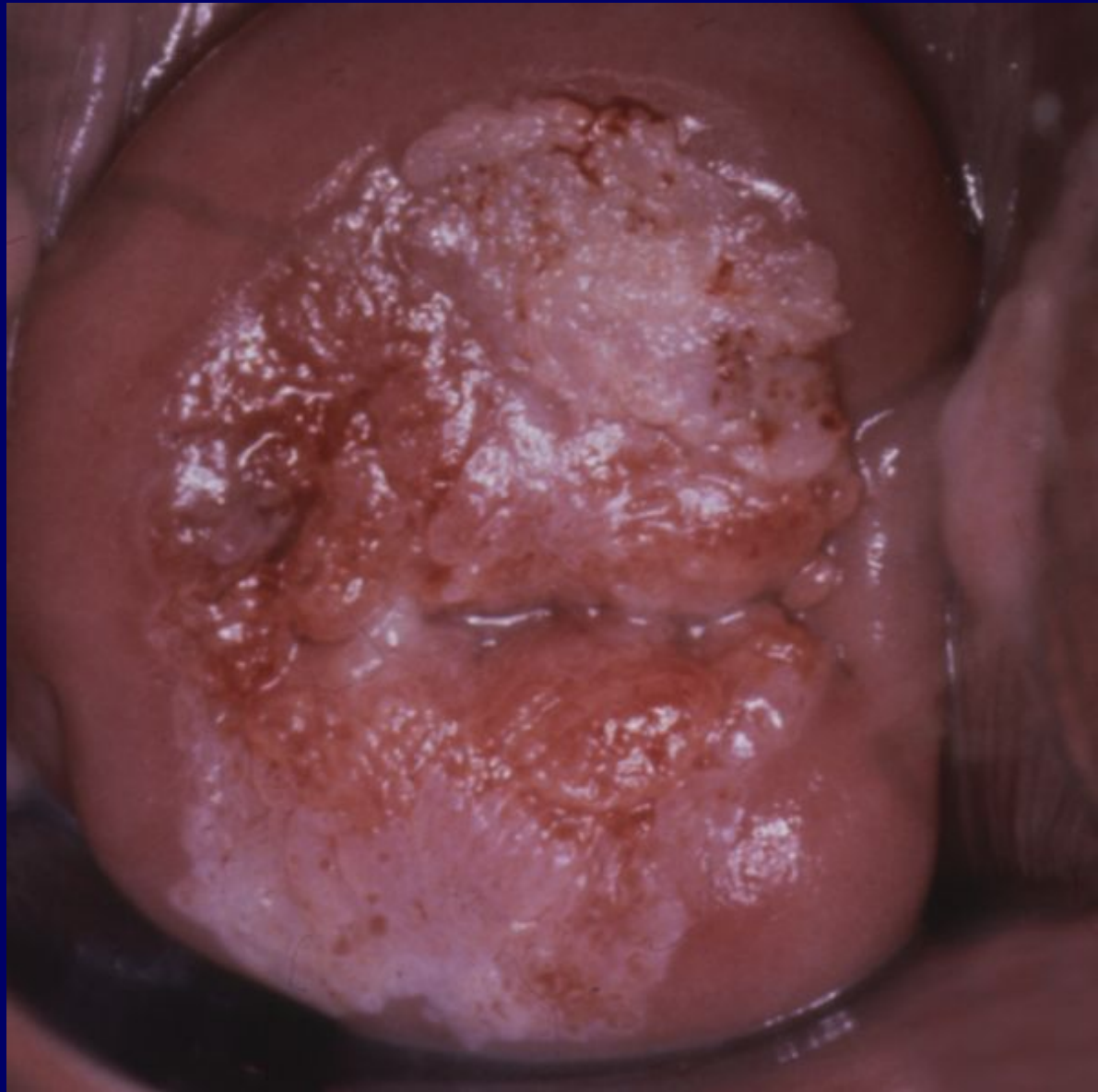
More uneven and elevated contours are,
the higher grade the lesion is.



Intercapillary distance

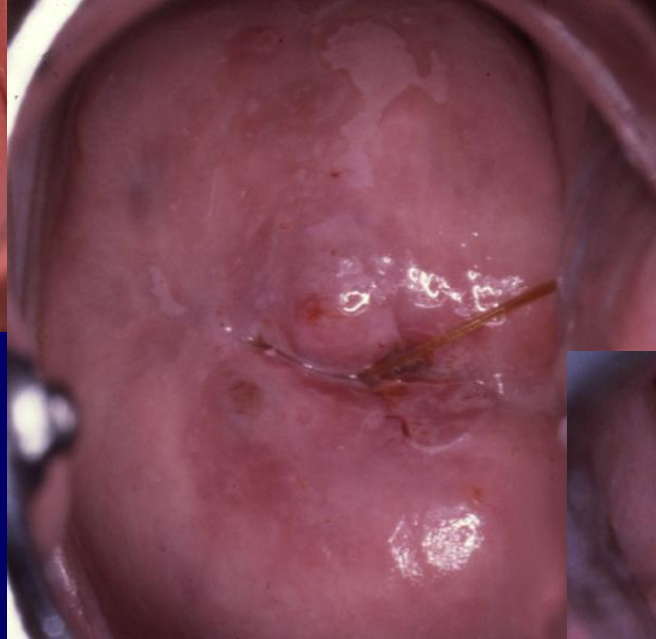
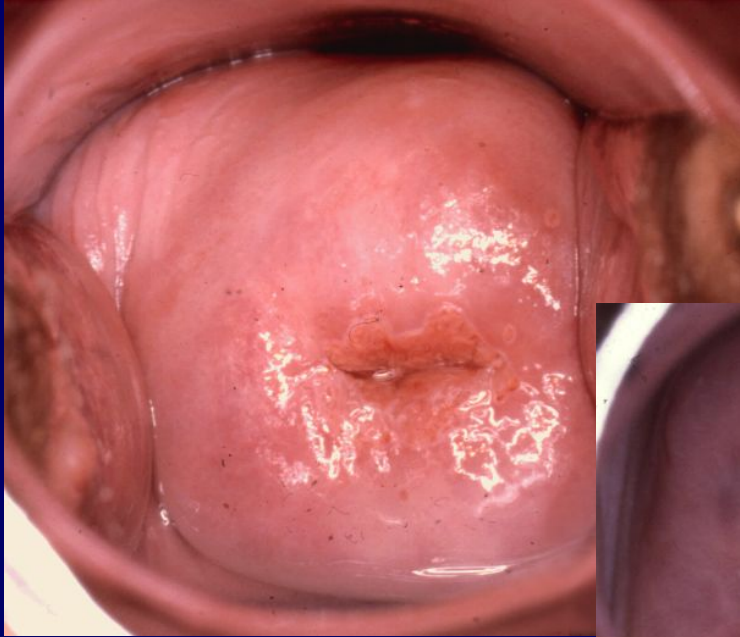
- Increases as the lesion becomes more severe.
- The larger vessels and further apart they lie,
the more severe is the lesion





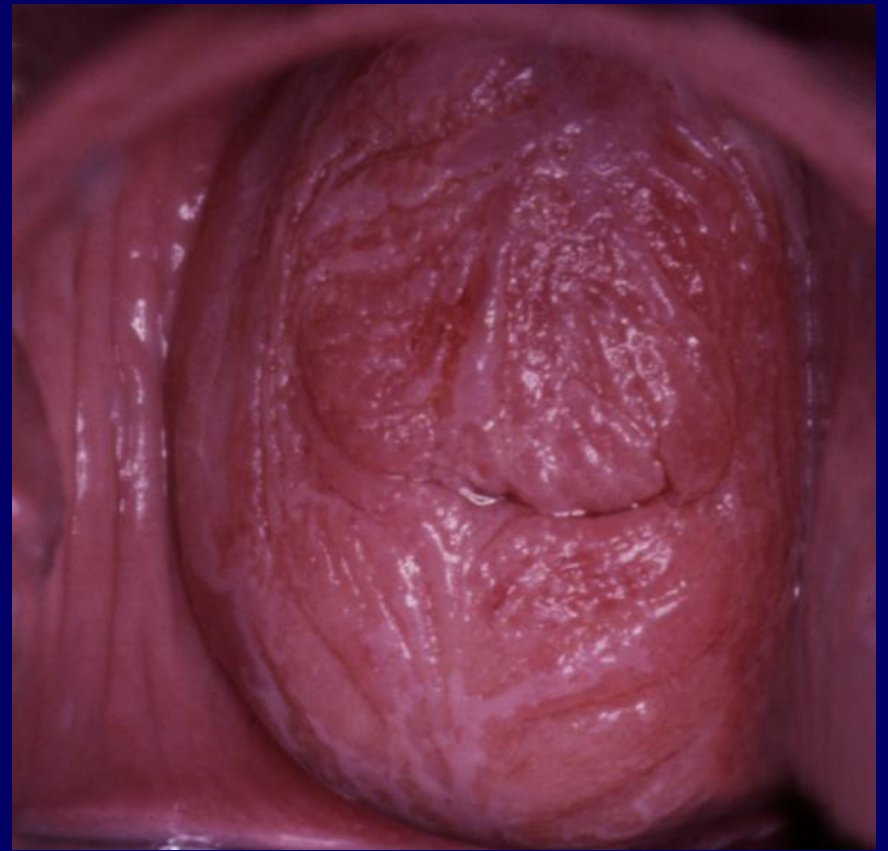
Ideally, colposcopic scoring should allow categorizing the colposcopic pattern as:

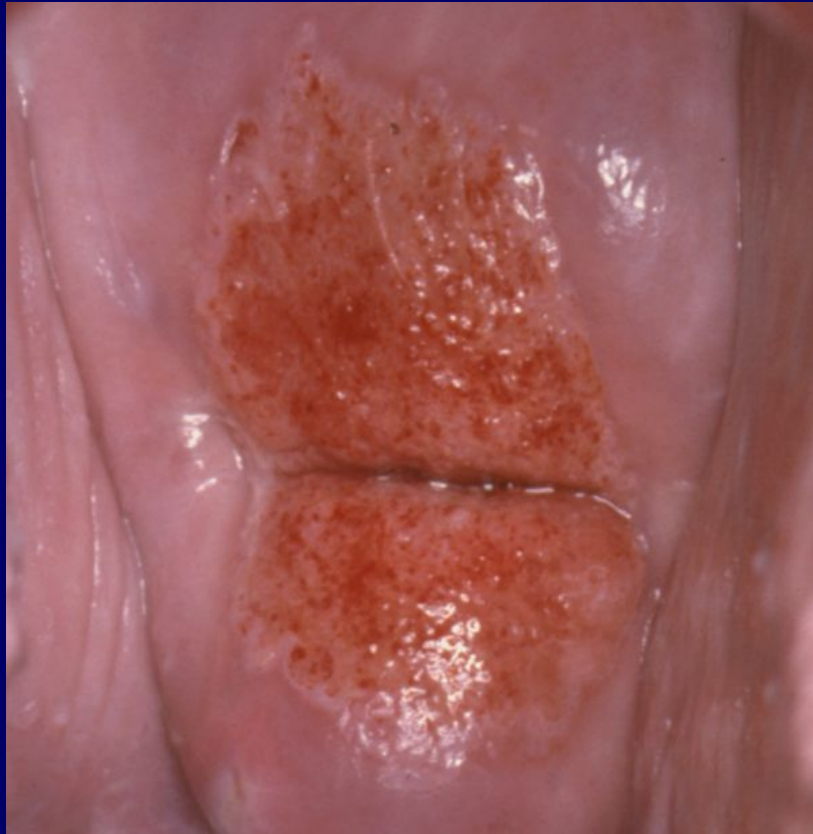
- Normal
- Insignificant
- Clinically significant

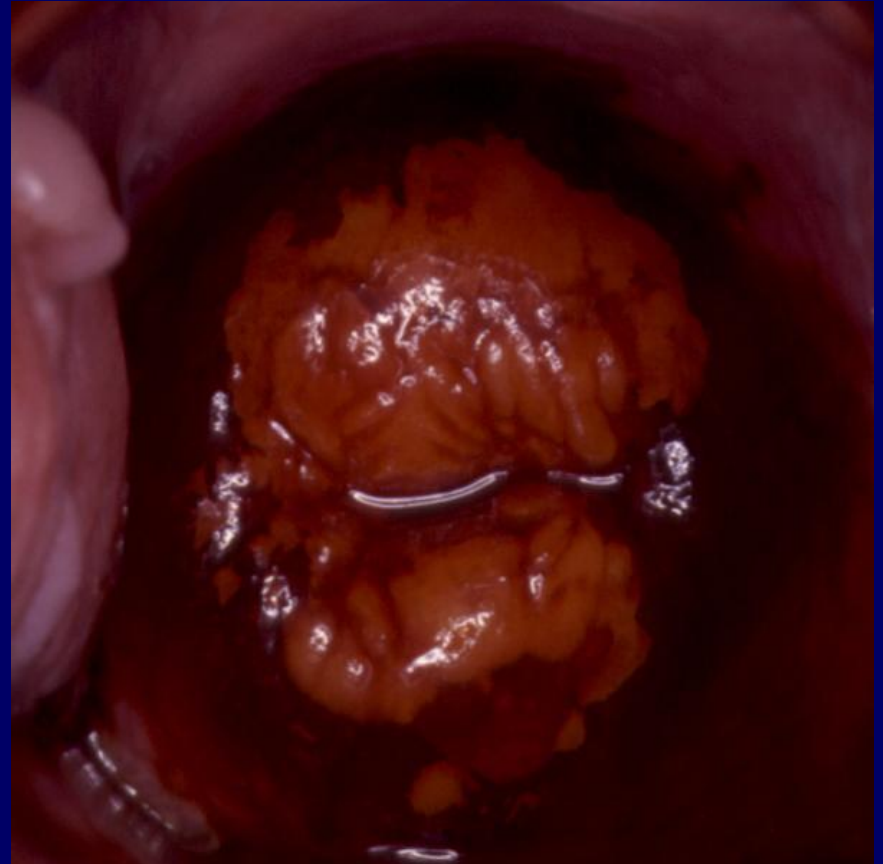
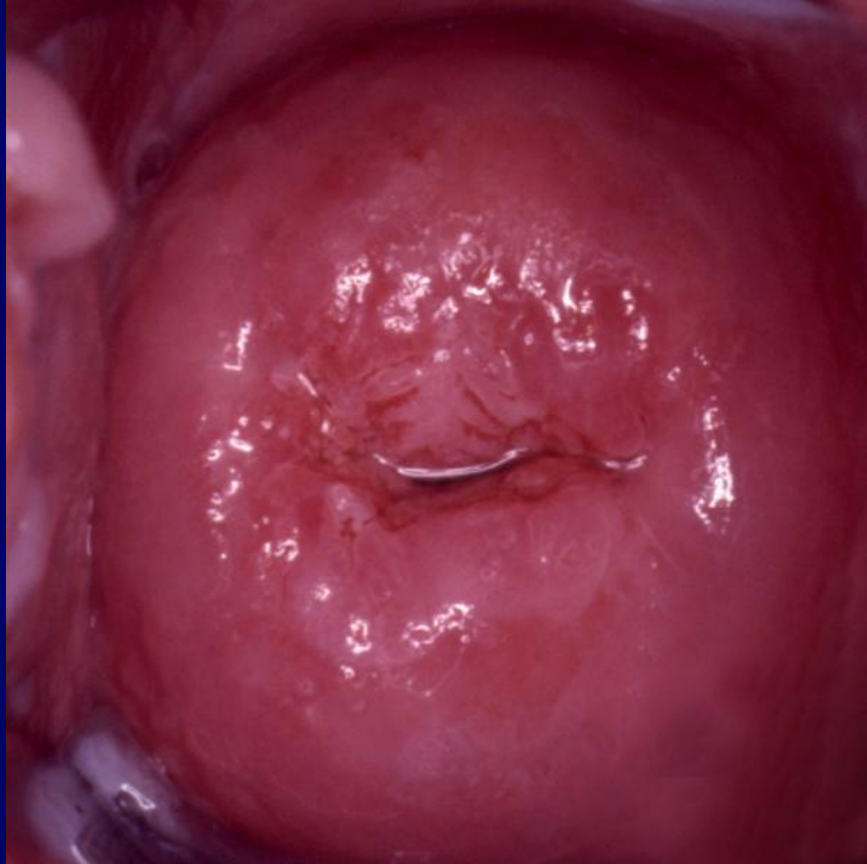


Colposcopic features suggestive of metaplastic changes

- A smooth surface with fine, uniform-caliber vessels
- Mild acetowhite change
- Negative or partial positivity with Lugol's iodine







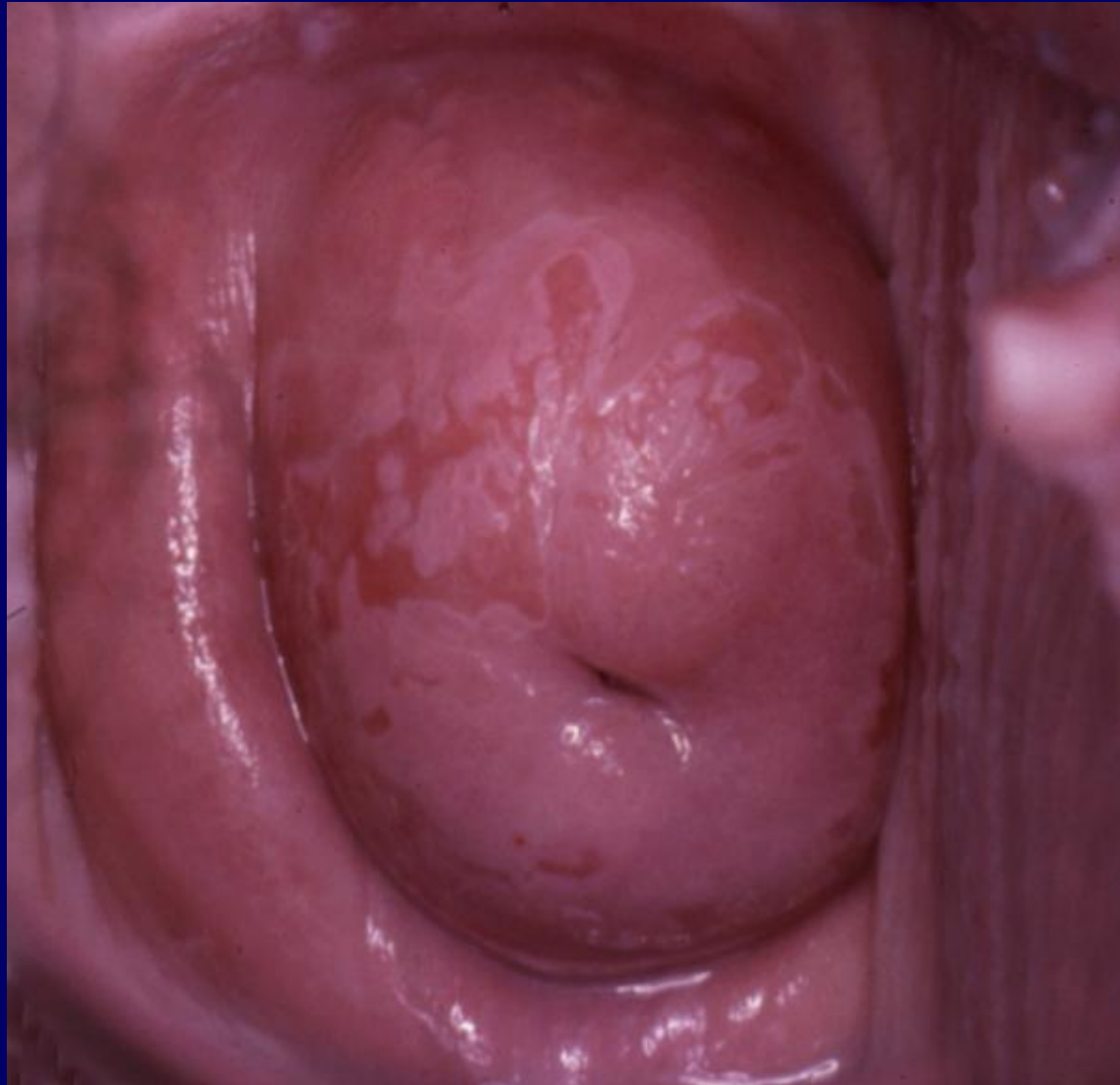
As the metaplastic cells transform into
mature squamous cells,
the coloration is indistinguishable from
the mature ectocervix



Colposcopic features suggestive of **low grade disease**

(minor changes)

- A smooth surface with an irregular outer border
- Slight acetowhite change
slow to appear and
quick to disappear
- Mild, often speckled iodine partial positivity
- Fine punctation and fine regular mosaic





The subtle differences between the features of squamous metaplasia and those of low-grade intraepithelial lesions make both the colposcopic and histologic diagnosis of these conditions difficult



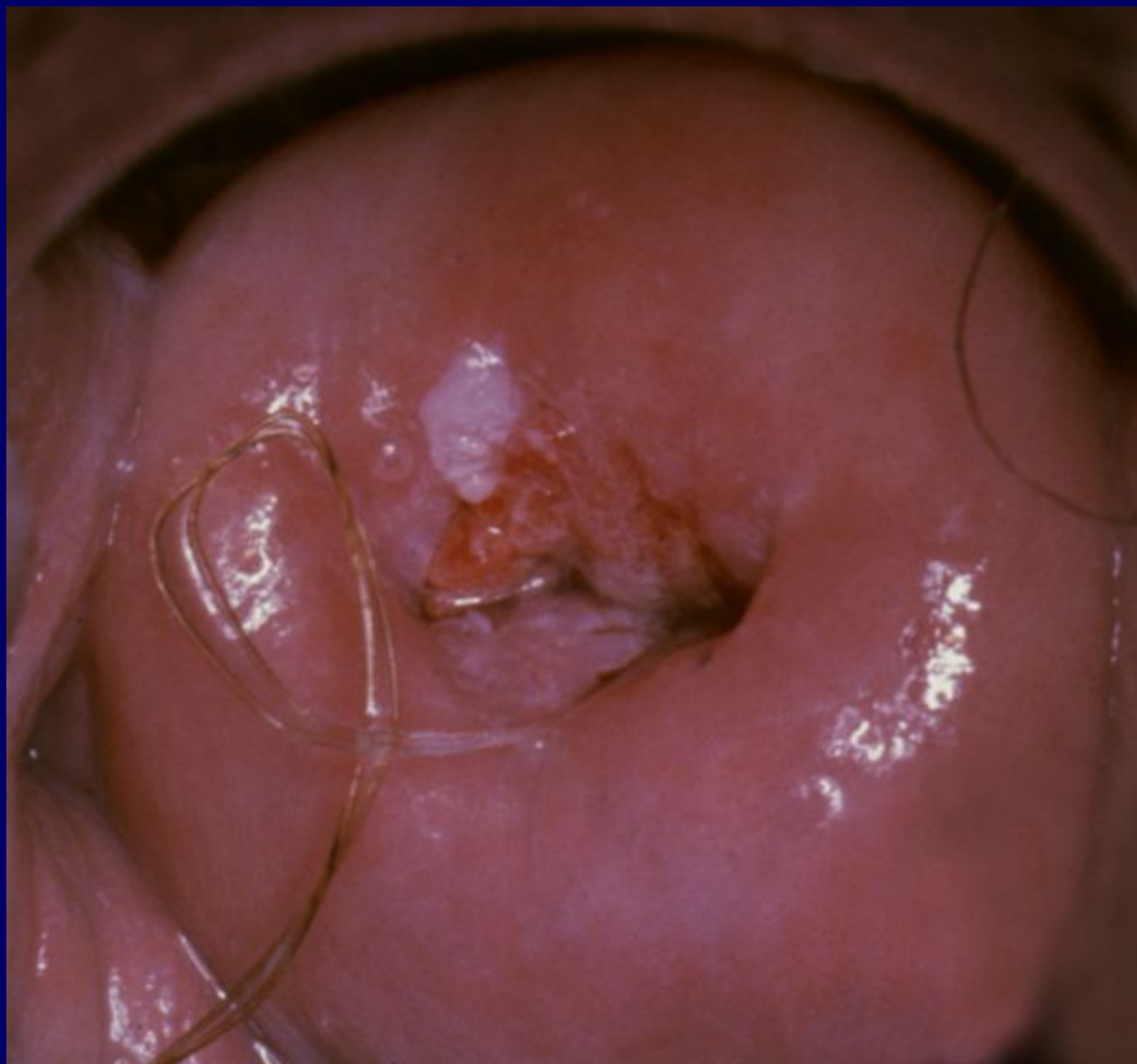
It is easier to determine that a cervix is
either normal or very abnormal,
than it is to distinguish between
minor degrees of change

Misinterpretation of trivial changes
as atypical findings can lead
to mismanagement and
overtreatment of the patient

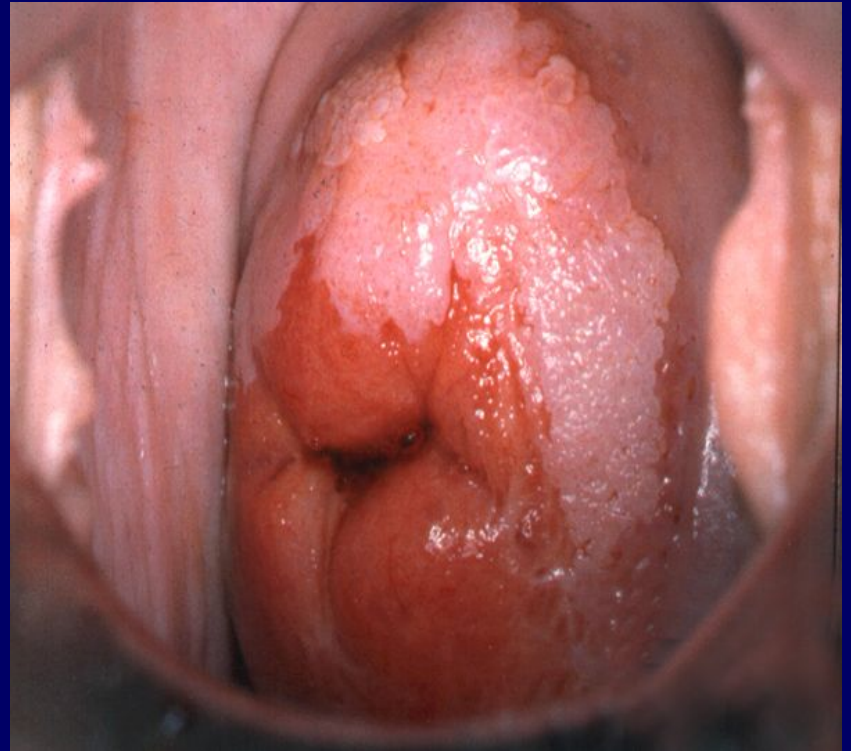
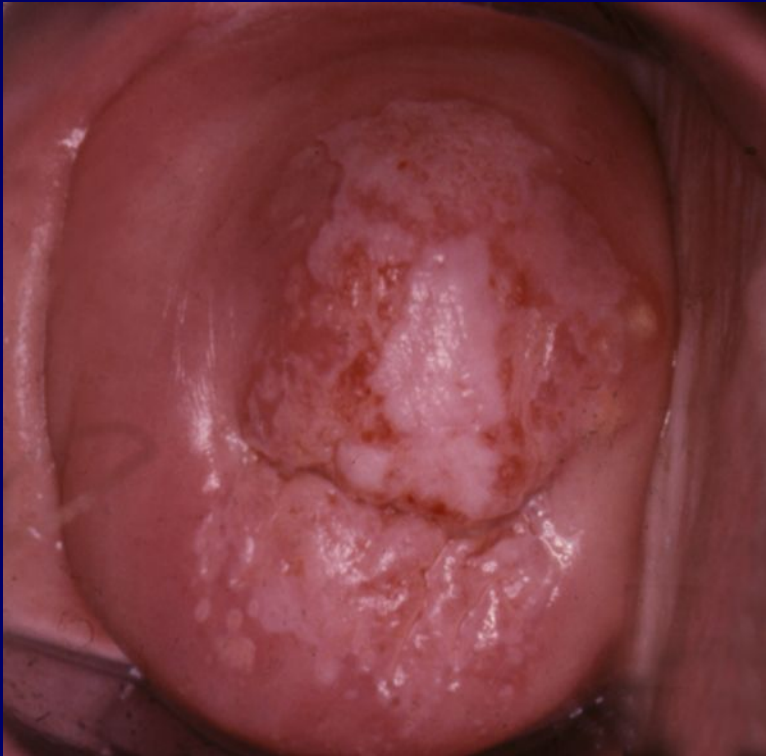
Colposcopic features suggestive of **high- grade disease**

(major changes)

- A generally smooth surface with sharp outer border
- Dense acetowhite change, may be oyster white
appears early
slow to resolve
- Iodine negativity
- Coarse punctation and wide irregular mosaic of
different sizes

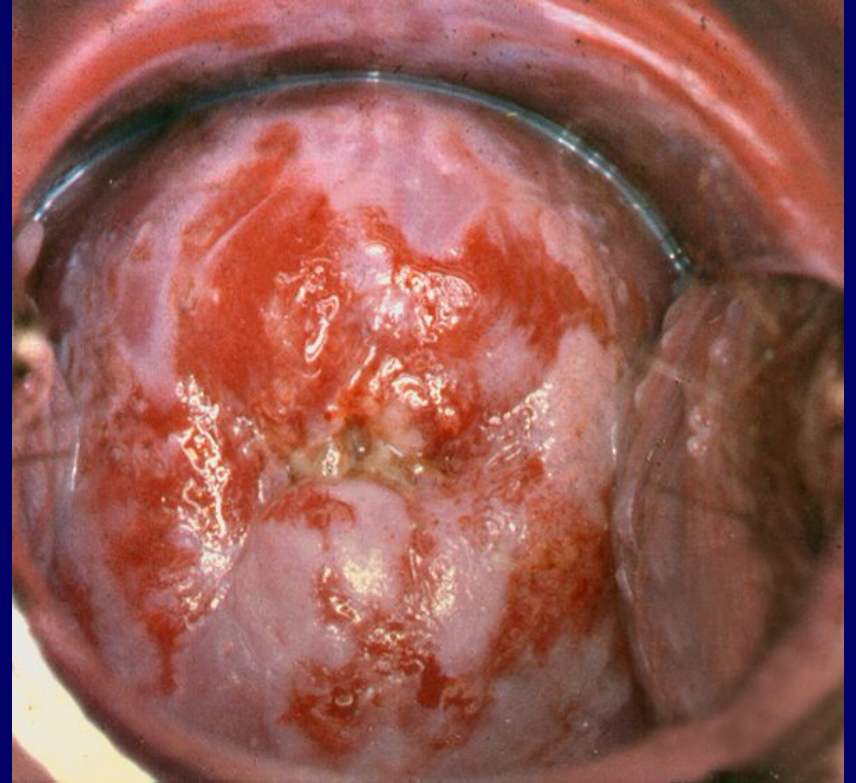
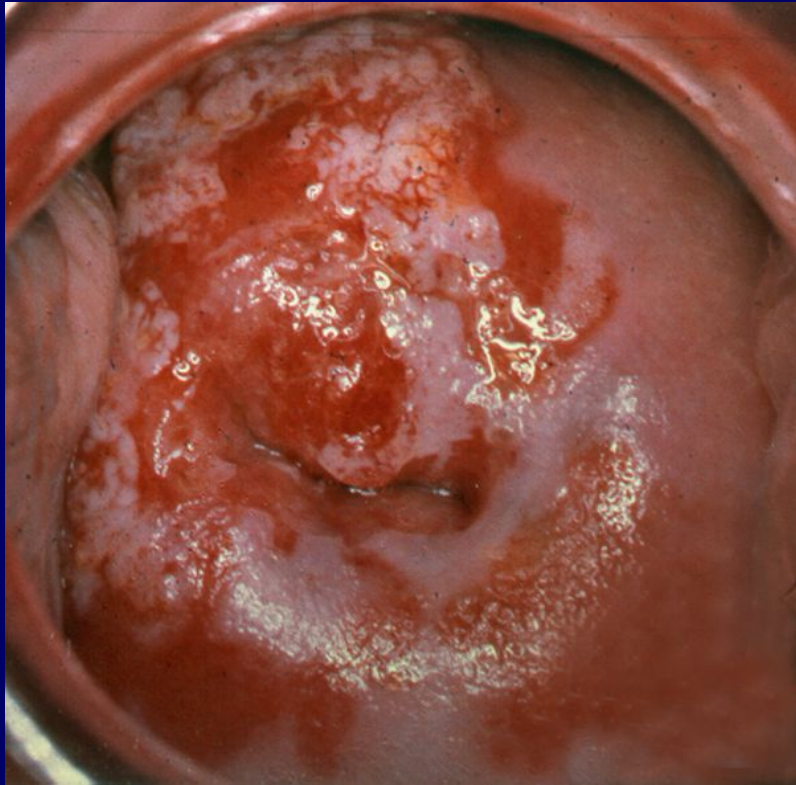


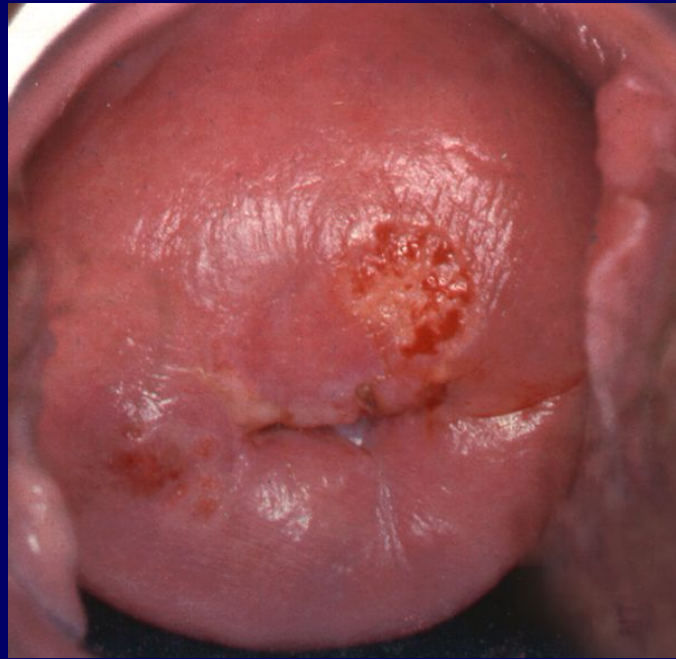
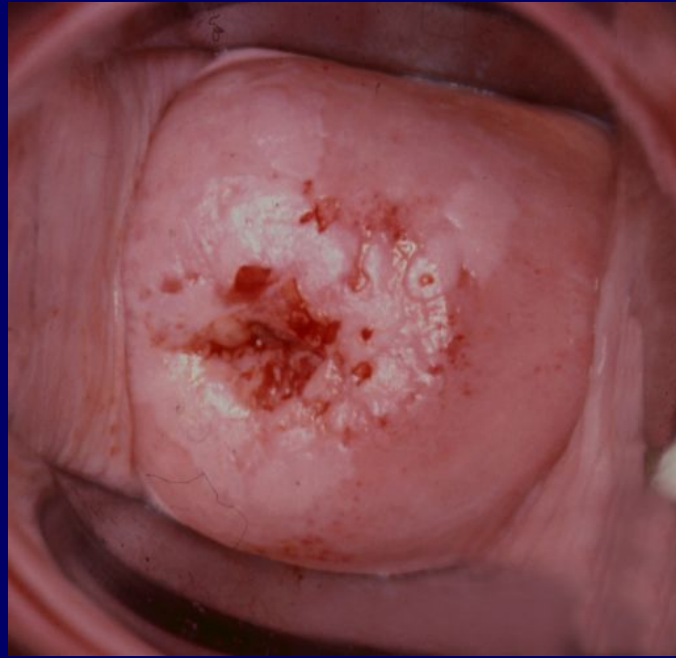
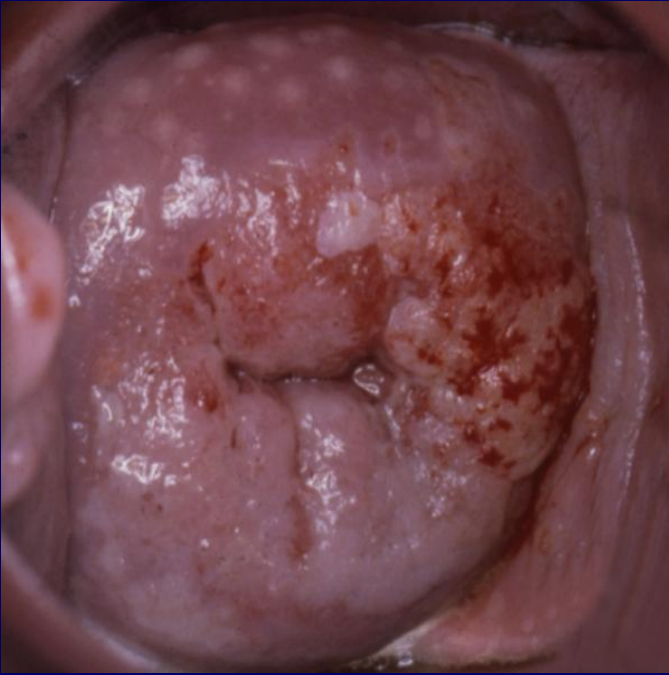




Signs of microinvasion

- Yellow discoloration
- Ulceration
- Thickened areas
- Nodularity
- Abnormal vascularity
- Rapid increase in size

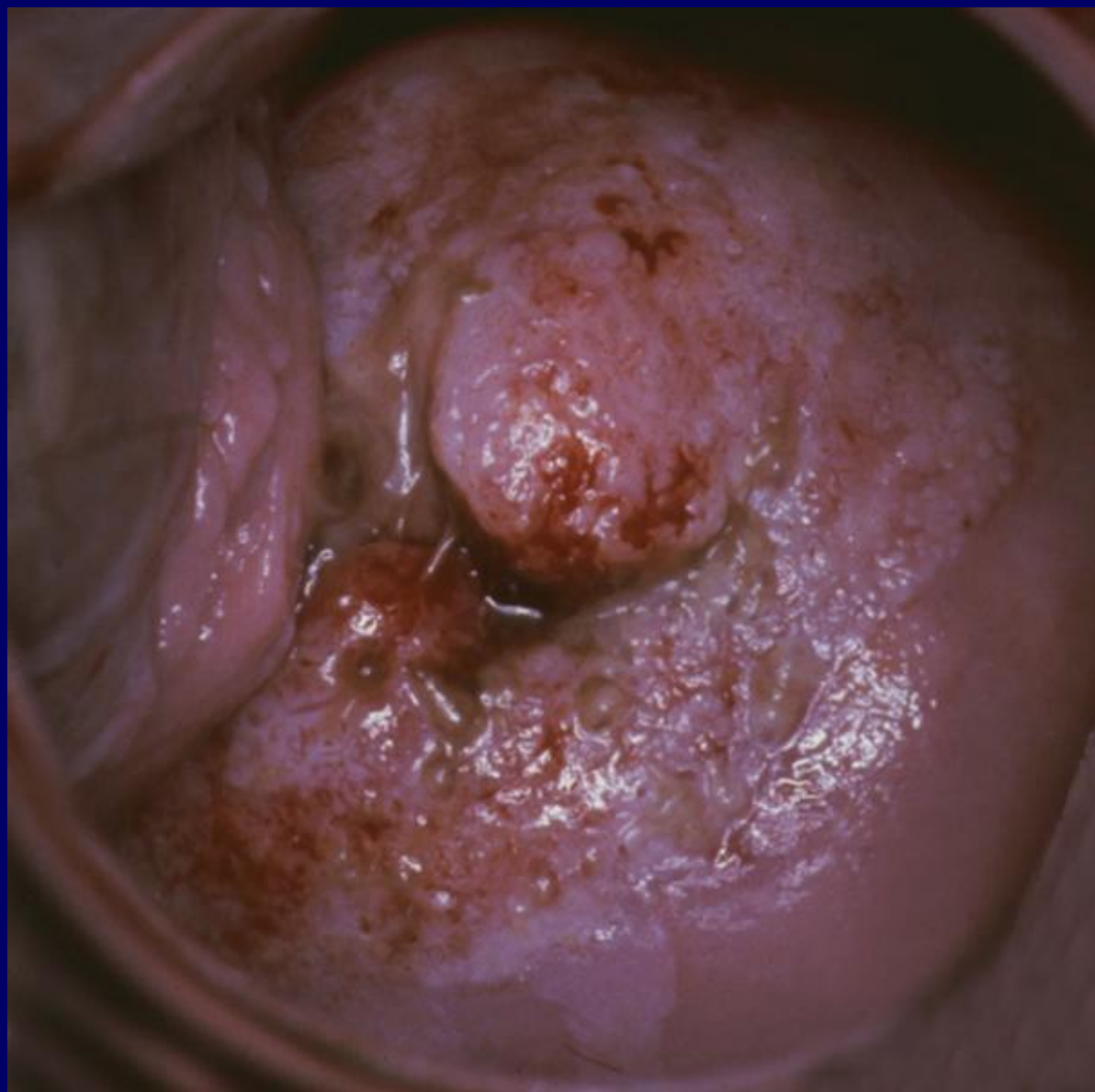


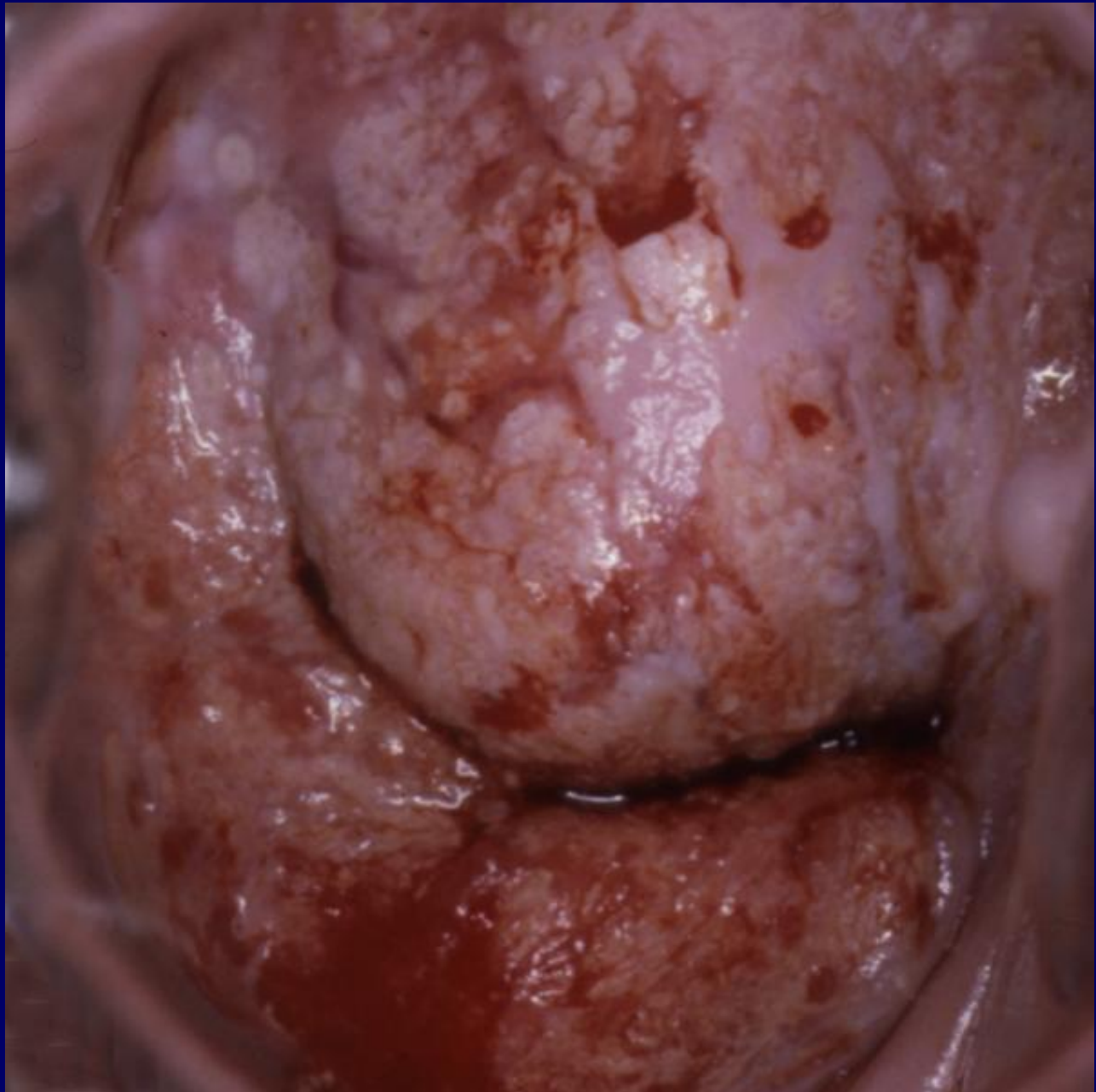


There is a direct relationship
between the size of a lesion and
the likelihood of invasion

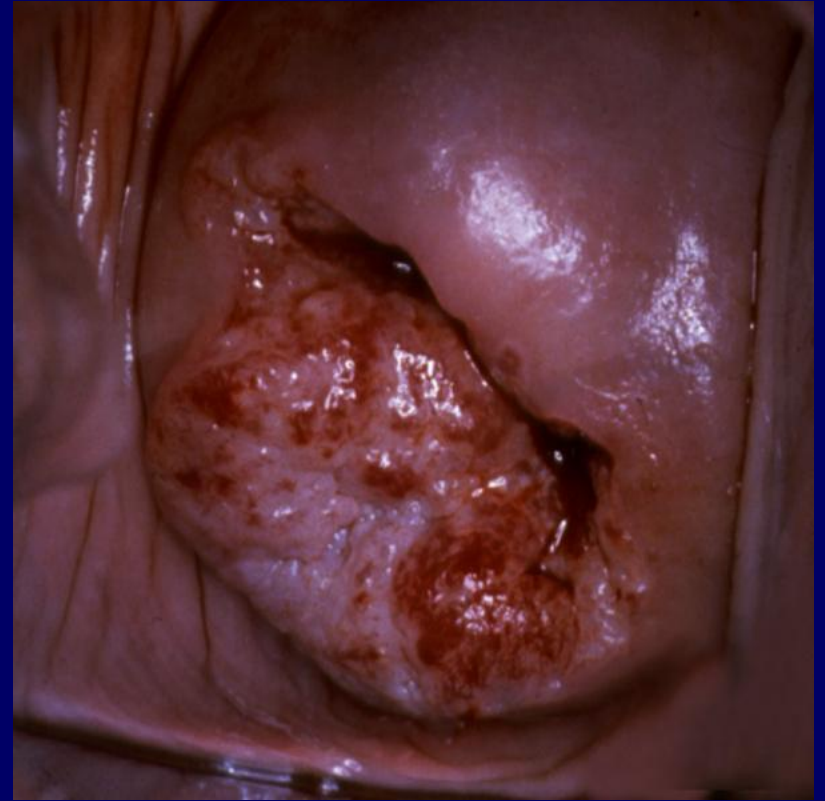
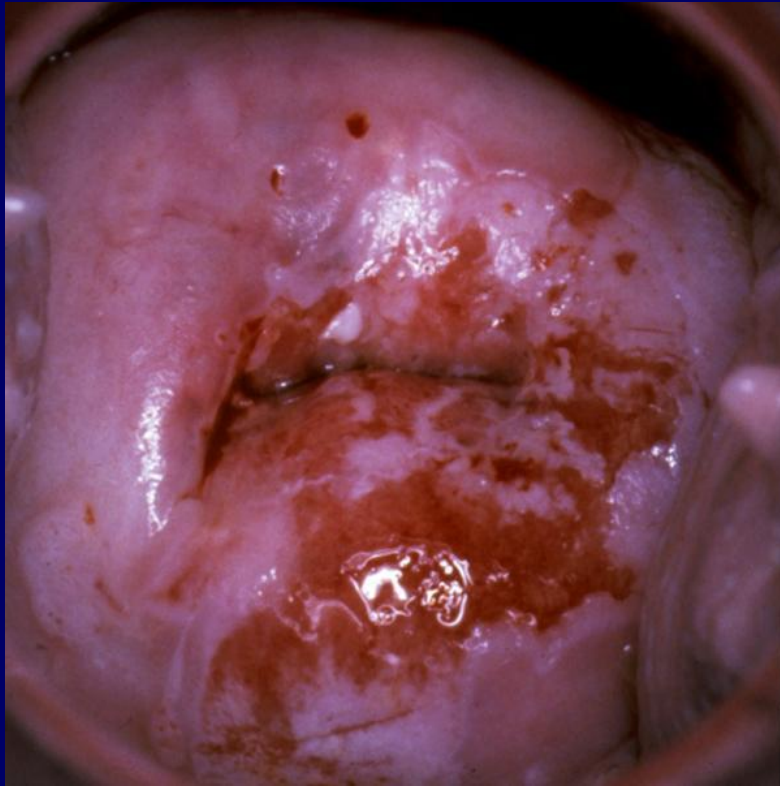


Early stromal invasion
is more common when
there are different types of epithelia
(complex colposcopic changes)



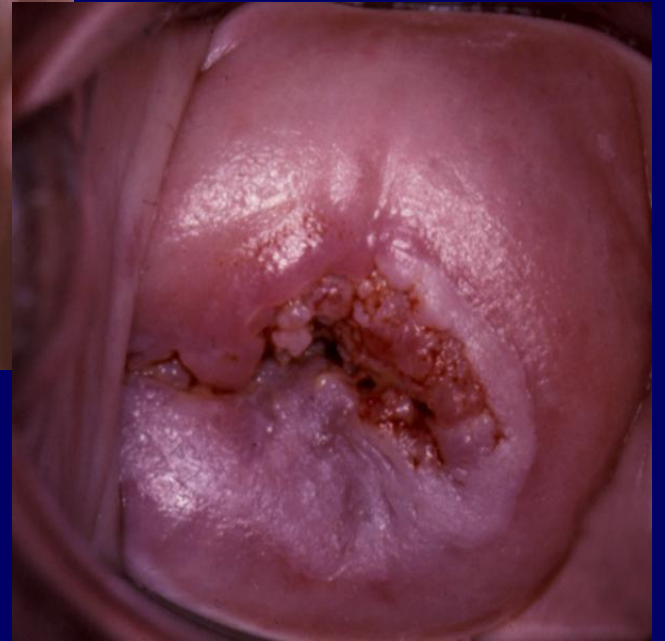
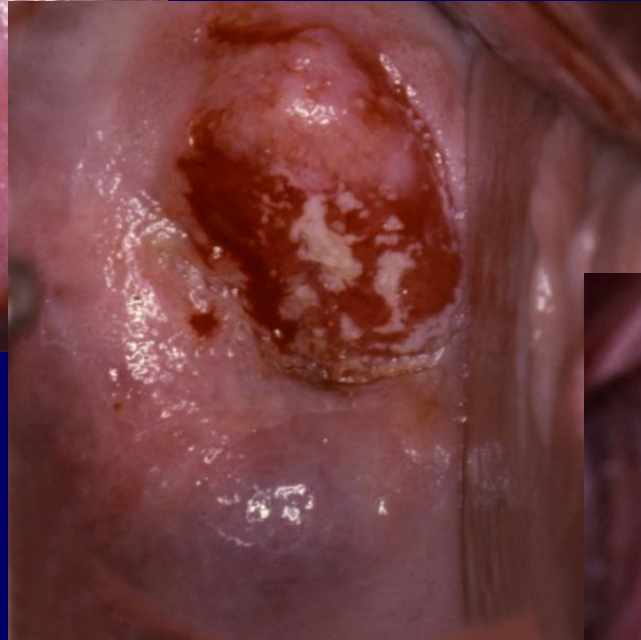
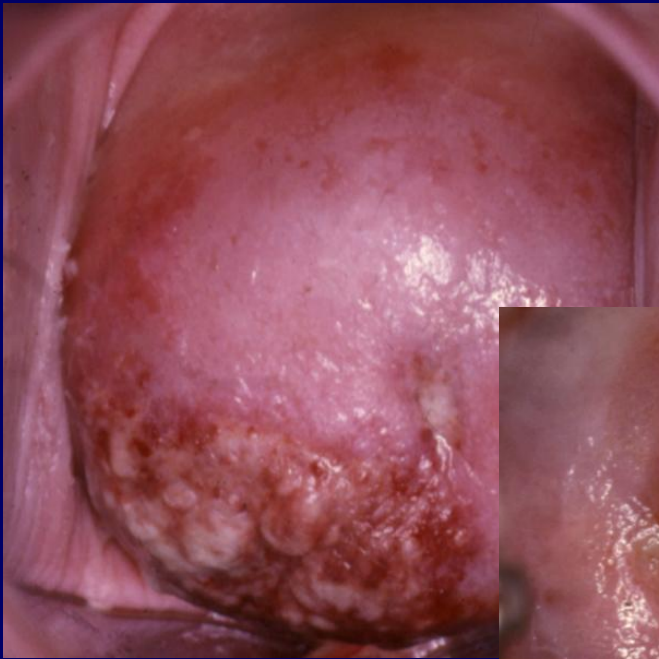


Microinvasion should be suspected
when relatively flat lesions
display focal collections of
atypical vessels

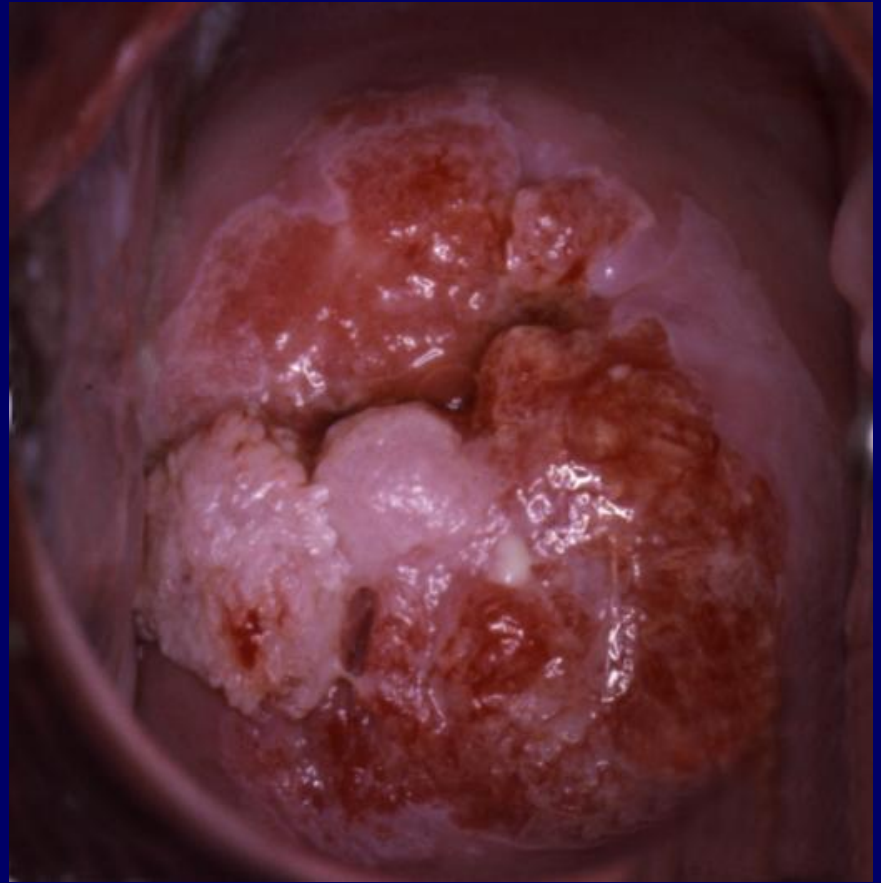
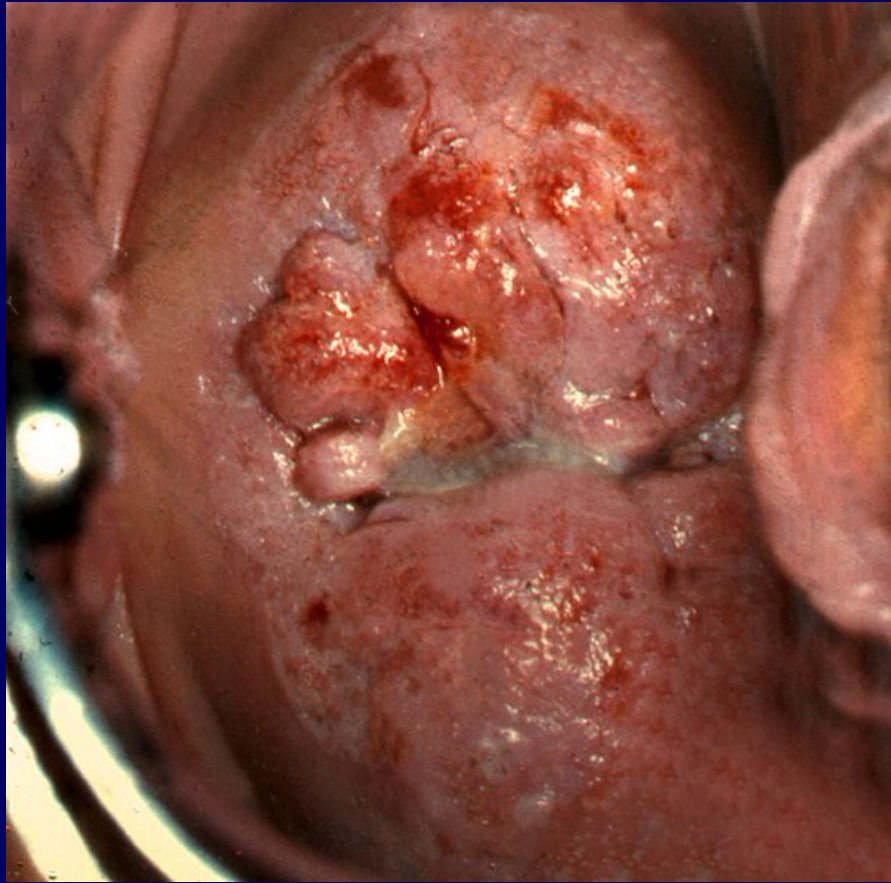


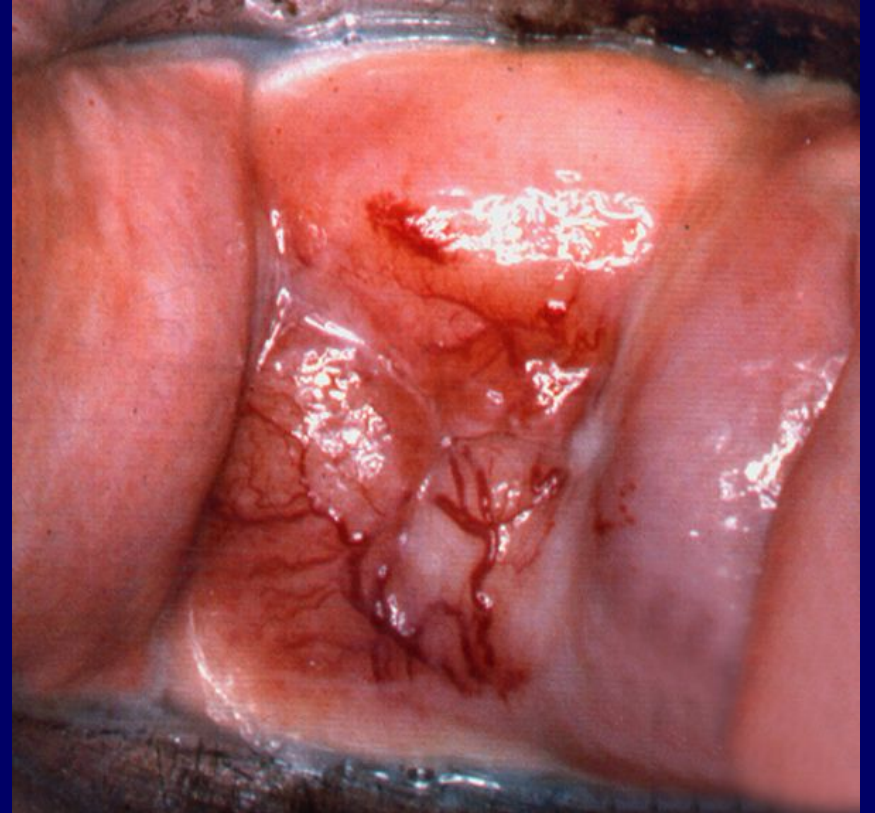
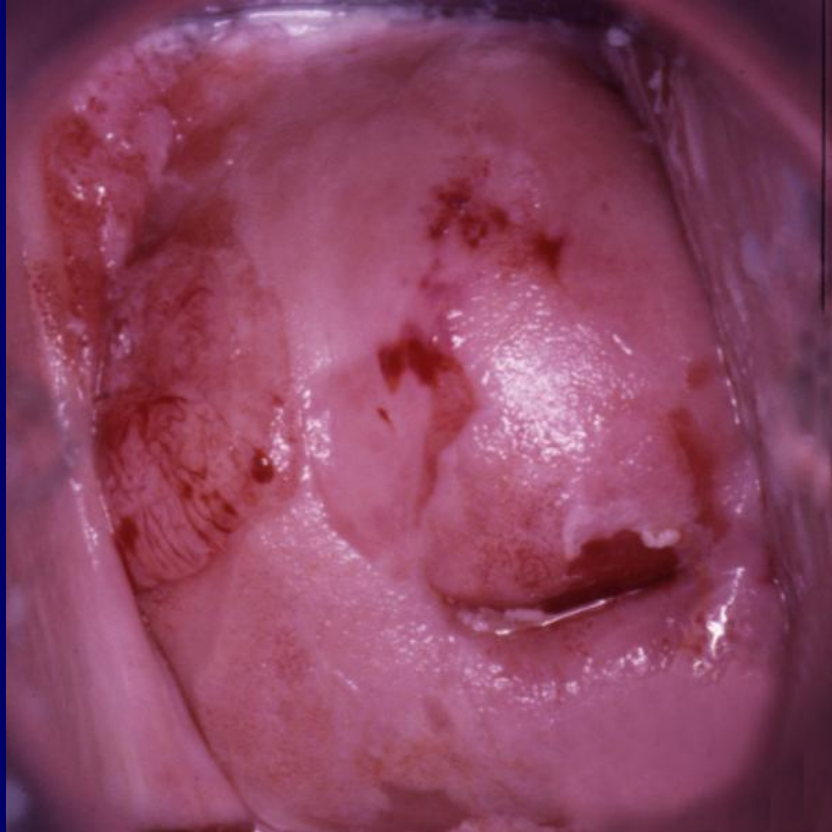
Colposcopic features suggestive of invasive cancer

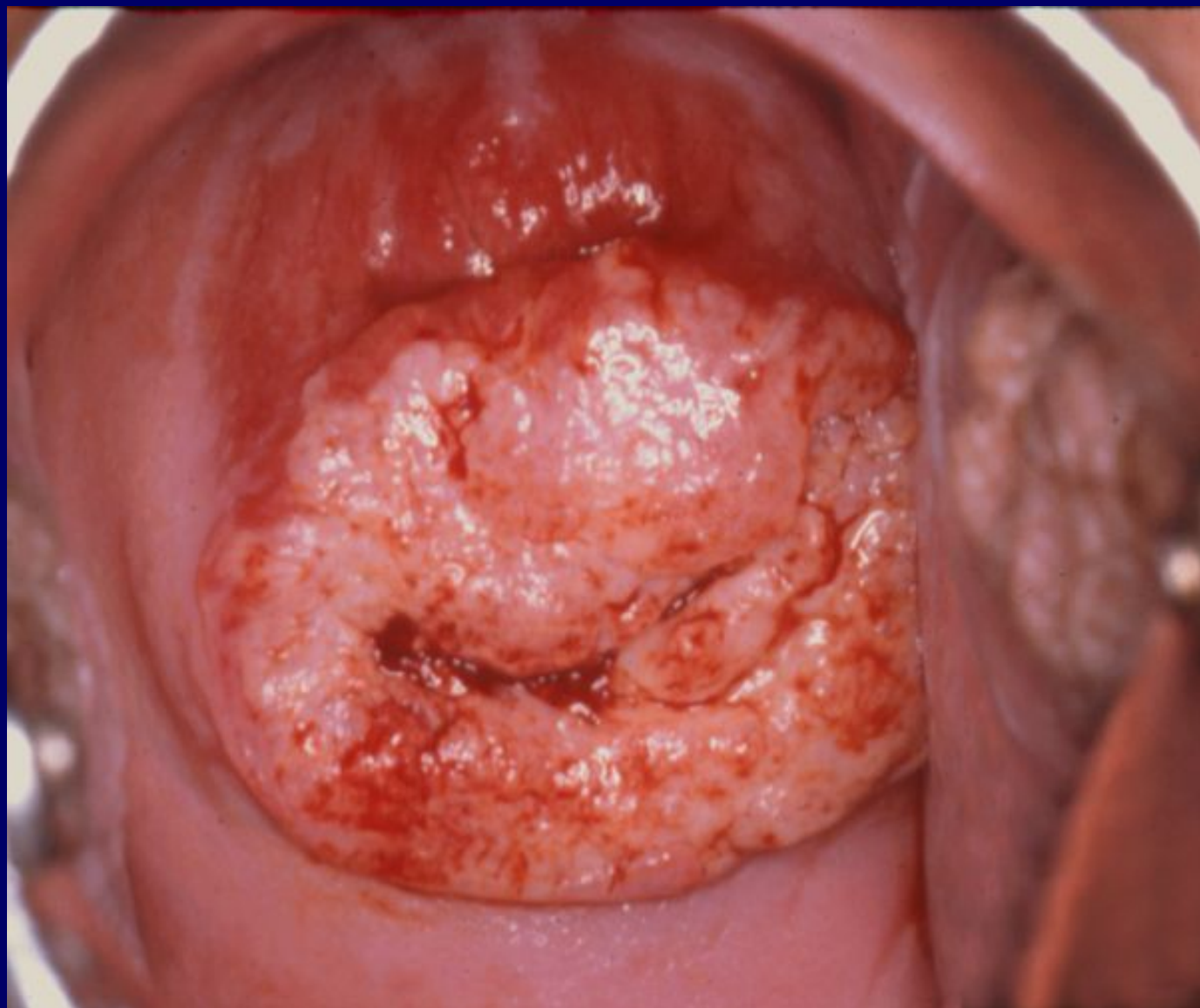
- Irregular surface, erosion or ulceration
- Dense acetowhite change
- Wide irregular punctation and mosaic
- Atypical vessels

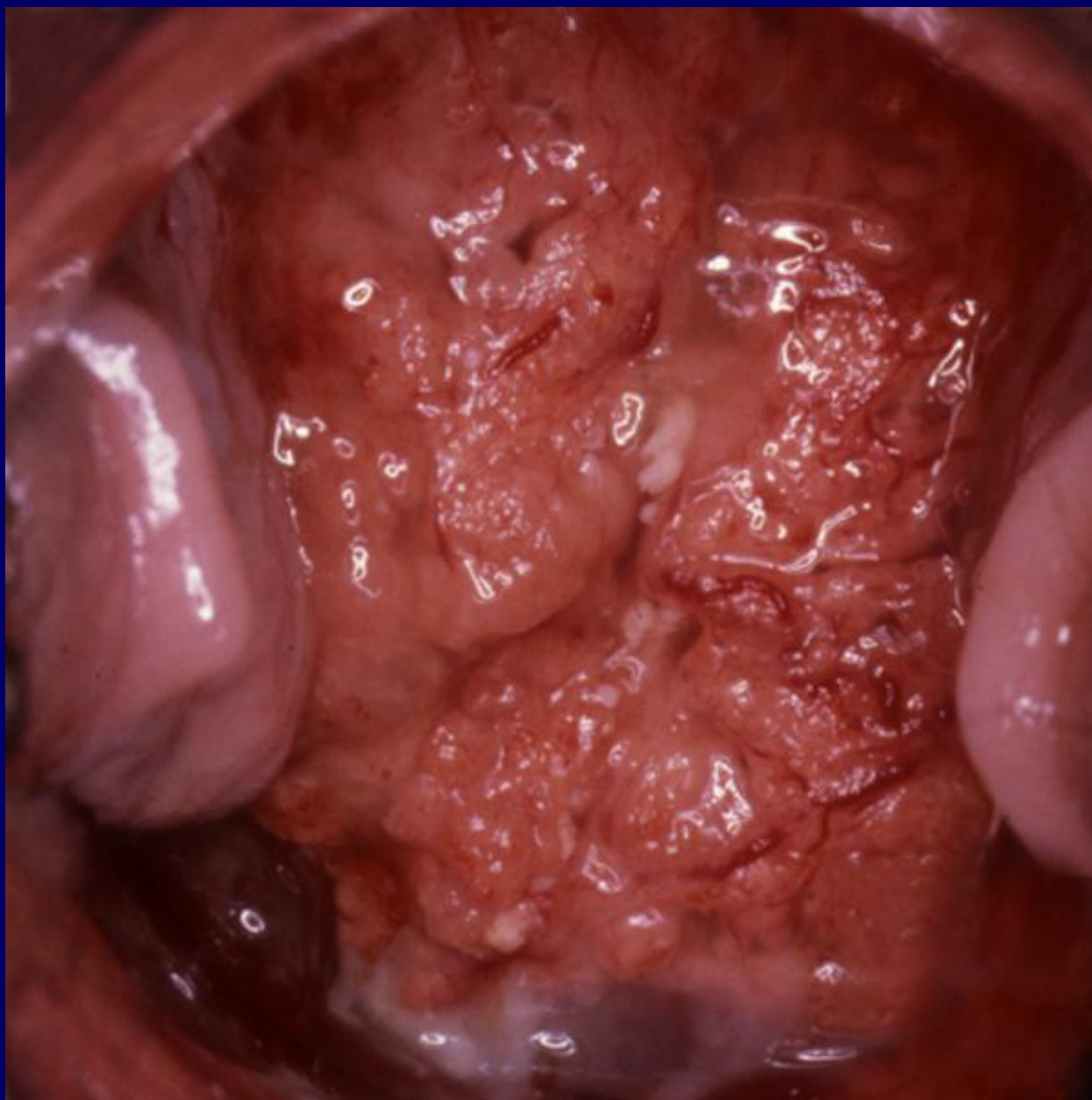


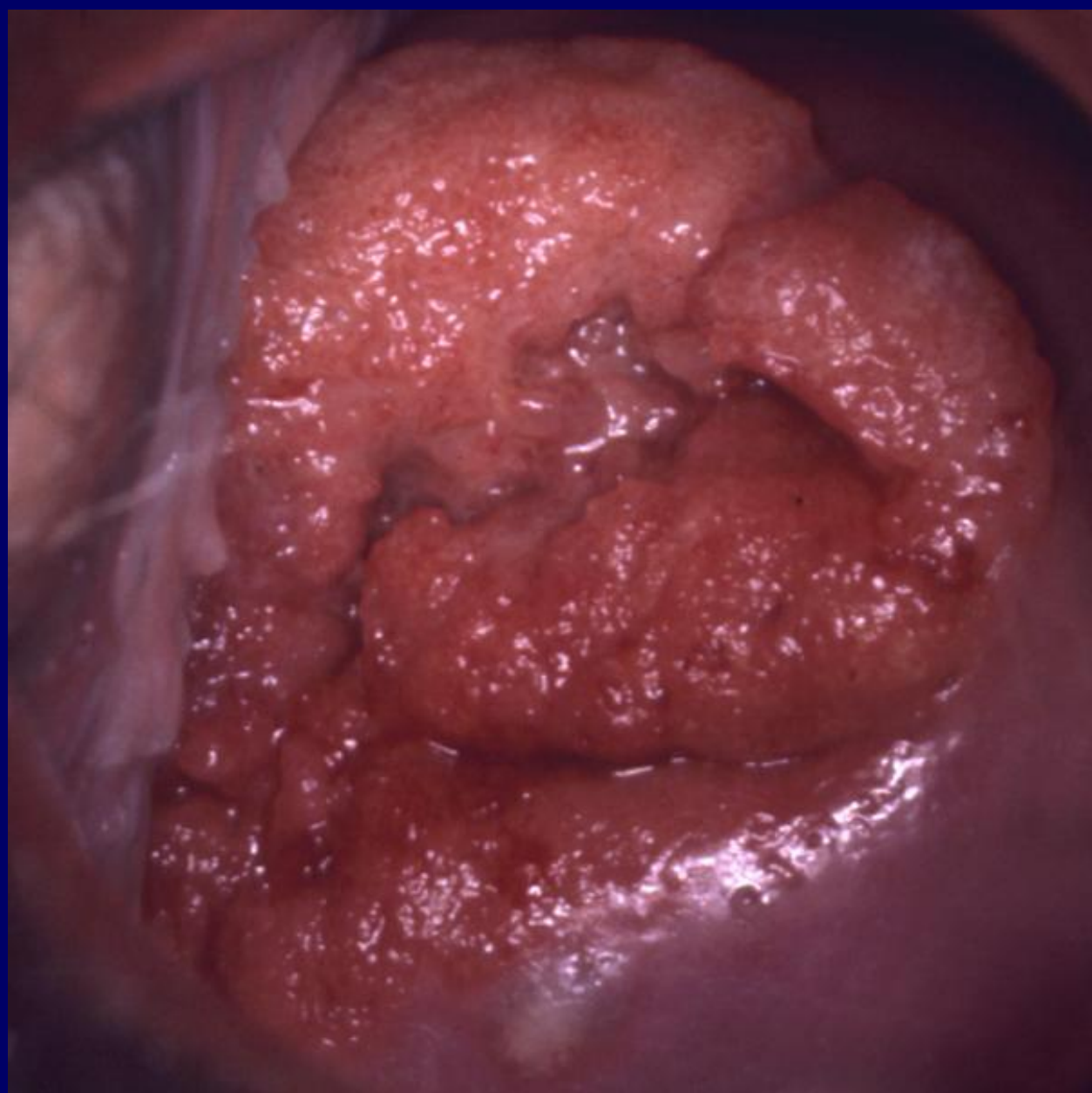














In most cases
biopsy is mandatory to establish
the correct diagnosis

The primary goal of the colposcopist is
to ensure that
invasive disease is not missed