

INS & OUTS OF PAP SMEARS

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DISCLOSURES

Faculty Presenter Disclosure

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- Relationships with financial sponsors: None

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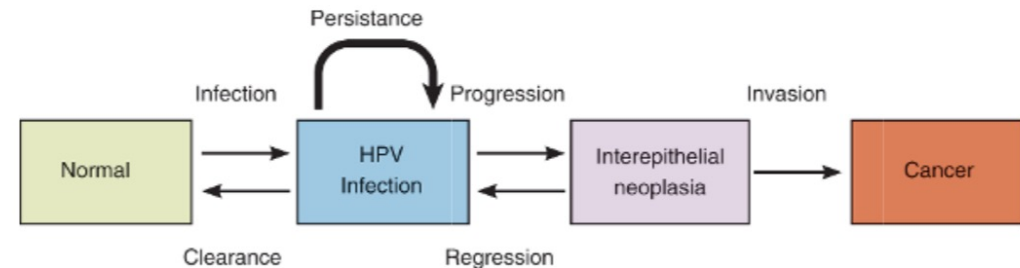
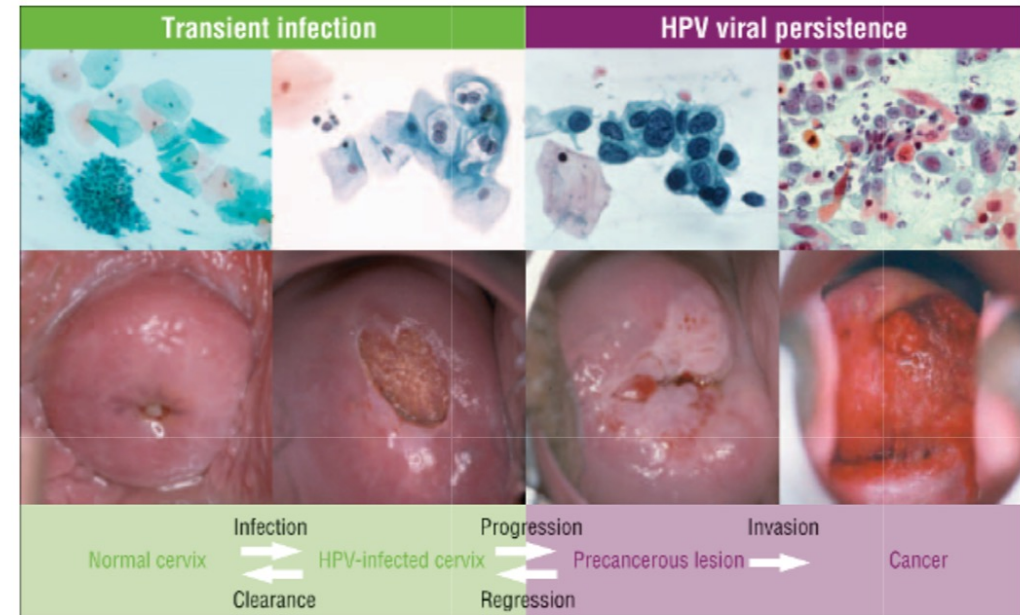
Mitigating Potential Bias

- No mitigation has been required. Content in this talk does not relate to any of the above disclosures.



PATHOPHYSIOLOGY OF CERVICAL DYSPLASIA

- HPV infection is a necessary precursor
- Two primary classifications of HPV-cervix interactions
 - Transient (low grade lesion) – support virion production
 - Precancerous – persistent viral infection



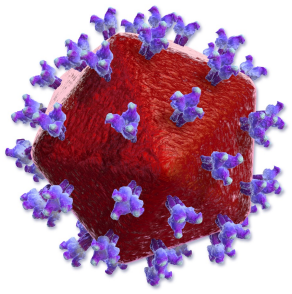
Correlates of exposure to HPV:

- Age at first intercourse
- Number of sexual partners
- Condom use

Long-term OC uses

- Smoking
- Multiparity
- HPV genotype

HPV genotype



Human Immunodeficiency Virus (HIV)



PATHOPHYSIOLOGY OF CERVICAL DYSPLASIA

- Four major steps in development of cervical cancer
 1. **Infection** of transformation zone epithelium with one or more carcinogenic HPV types
 2. Viral **persistence** rather than clearance
 3. **Progression** of persistently infected epithelium to precancerous lesion
 - Modified by cofactors for HPV progression
 4. **Invasion**



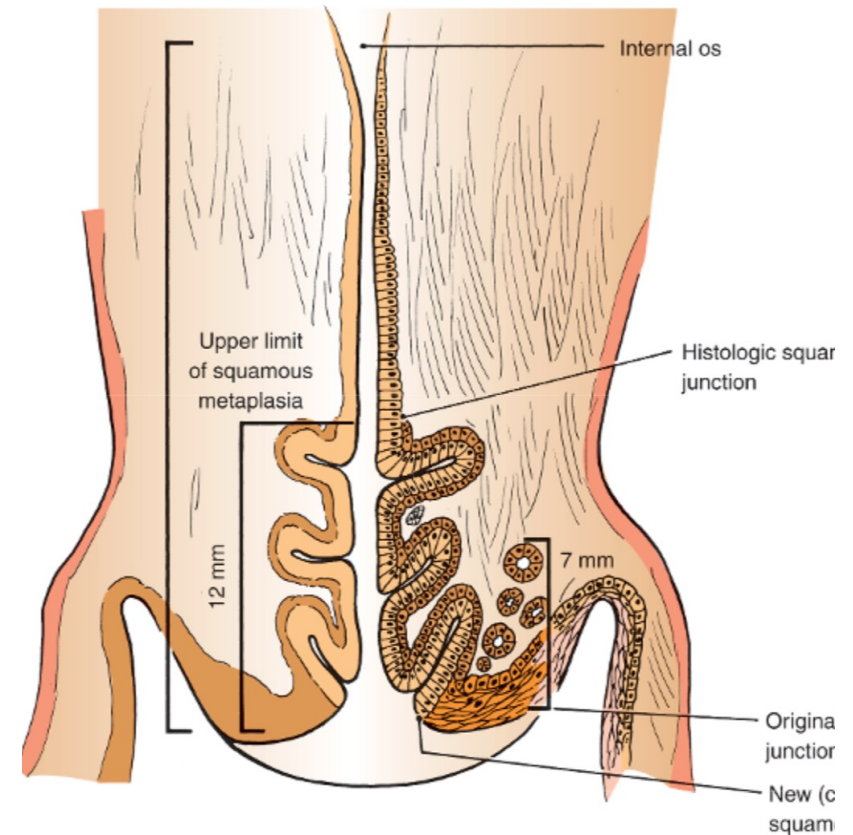
WHAT IS THE TRANSFORMATION ZONE?

Area between the original squamocolumnar junction and new (visible colposcopically) squamocolumnar junction

Squamocolumnar junction – junction between the squamous (ectocervix) and columnar (endocervix) epithelium

Cervical dysplasia/neoplasia almost ALWAYS arises in transformation zone

Can be fully or partially visible on ectocervix



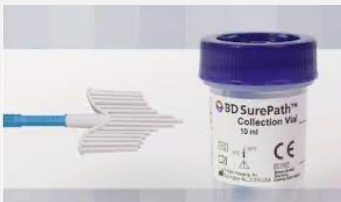
RATIONALE FOR CERVICAL SCREENING

- Long latent phase between cervical dysplasia and development of malignancy
- Detectable pre-malignant lesion
- Treatment options available for pre-malignant lesion
- **Prevent malignancy!**

PAP SMEAR METHODS

LIQUID BASED CYTOLOGY

- Advantages:
 - Uniformity in slide preparation
 - Fewer unsatisfactory specimens
 - Theoretically allows for HPV testing
- Disadvantages:
 - Higher cost
 - Need for specialized processing equipment



CONVENTIONAL SMEAR

- Advantages:
 - Low cost
 - No specialized equipment
- Disadvantages:
 - Lack of uniformity in specimen preparation
 - High rate of unsatisfactory smears due to blood, inflammation
 - Significant false negative rate



WHEN THE PAP SMEAR FAILS

- Single pap smear has LIMITED sensitivity for detection of cervical dysplasia or malignancy
- High false negative rate
 - Sensitivity for detection of HSIL 50-60%
 - Main factors contributing to false negatives
 - Poor specimen collection
 - Laboratory error
- False positive rate 2-5%

PERFORMING PAP SMEARS – CURRENT GUIDELINES

- Who to screen:
 - Healthy, sexually active women → q3years starting at age 21
 - Immunocompromised women (HIV, long-term immunosuppressants → q1years starting at age 21
- When to stop:
 - Age 70, with 3 consecutive normal pap smears (ie, 10 years normal)
 - Post hysterectomy, if no history of abnormal pap smears

STAY TUNED FOR UPDATES!!!

PERFORMING PAP SMEARS – UPDATED EVIDENCE

- When to start screening:
 - Updated recommendations suggest starting screening at **25**
 - Spontaneous resolution rate of cervical dysplasia > 80% in women under 25
 - Cervical cancer is incredibly rare in women under 25
- Introduction of HPV screening
 - Hopefully soon!

PAP SMEARS IN SPECIAL CIRCUMSTANCES

PAP SMEARS IN PREGNANCY

- Pap smear NOT automatically required in every pregnancy
- Only perform pap smear in pregnancy if patient is due for routine screening
 - Pregnancy does NOT alter recommended screening interval
- Can be technically challenging
 - Trial wedge/fists under pelvis
- Colposcopy still performed in pregnancy
 - *** please note patient EDC on referral ***



PAP SMEARS IN PREGNANCY

- Physiologic changes of pregnancy may mimic cervical dysplasia
 - Increased vascularity
 - Hypertrophy
 - Hyperplasia of endocervical glands
- Cellular changes of pregnancy may mimic HSIL → false positive pap-smears if pathologist unaware of pregnancy
 - Arias-Stella reaction = degenerated decidual cells
- Rate of progression of dysplasia to malignancy unchanged by pregnancy

PAP SMEARS IN PROLAPSE

- Pelvic organ prolapse associated with increased rate of non-HPV pap smear abnormalities
- Examination more challenging
 - Large graves speculum with condom
 - Pelvic wedge
 - Bimanual PRIOR to speculum examination to locate cervix
 - Q-tips
- More likely to have atrophy
 - Atrophic cervical epithelium can mimic high or low grade cervical dysplasia on cytology



PAP SMEARS IN TRANSGENDER PATIENTS

- Female to male transgender patients require routine Pap smear screening if cervix retained
- Screening continues according to routine Pap smear screening guidelines

PAP SMEAR FINDINGS

CONCERNING FEATURES ON SPECULUM EXAMINATION

- **Examine the vulva!!!**
- Excessively friable cervix
- Purulent/necrotic discharge
- Foul odor
- Nodular/irregular cervical mass

COMMON FINDINGS

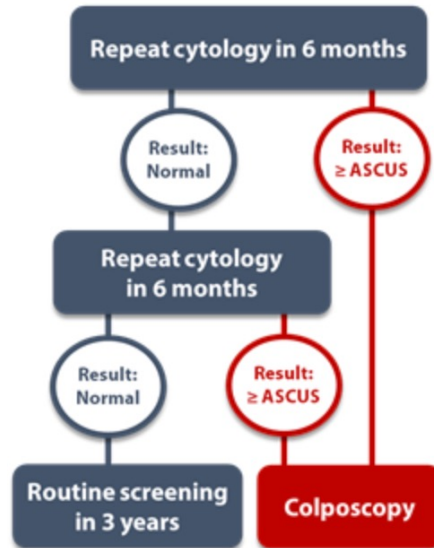
- Unsatisfactory for evaluation
 - Repeat Pap in 3 months
- Absent transformation zone (satisfactory)
 - No repeat necessary → routine screening
- Actinomycosis
 - No treatment necessary UNLESS symptomatic
 - Do NOT remove copper IUD if in situ

ABNORMAL CYTOLOGY RECOMMENDATIONS

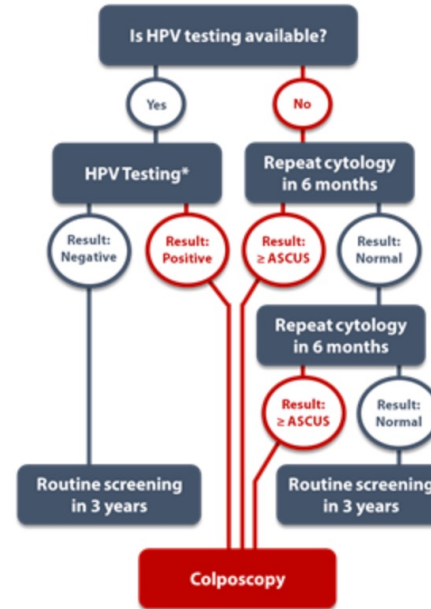
- ASCUS/LSIL
 - If first abnormal pap smear → repeat in 6 months
 - If previous abnormal pap smear → refer to colposcopy
- ASC-H/HSIL
 - Refer to colposcopy
- AGC
 - Refer to colposcopy
 - Endometrial biopsy

ASCUS Pap

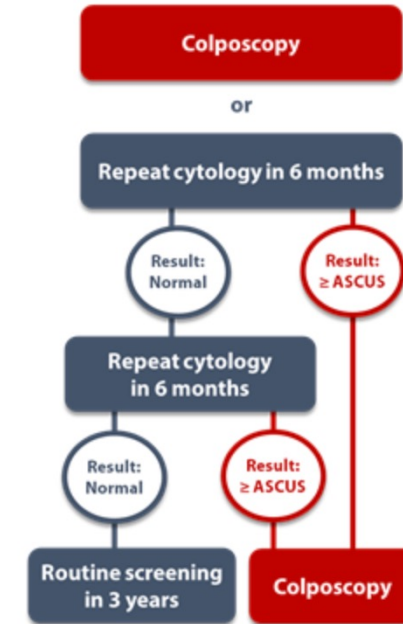
For women < 30 years old (HPV triage is not recommended)



For women ≥ 30 years old



LSIL Pap

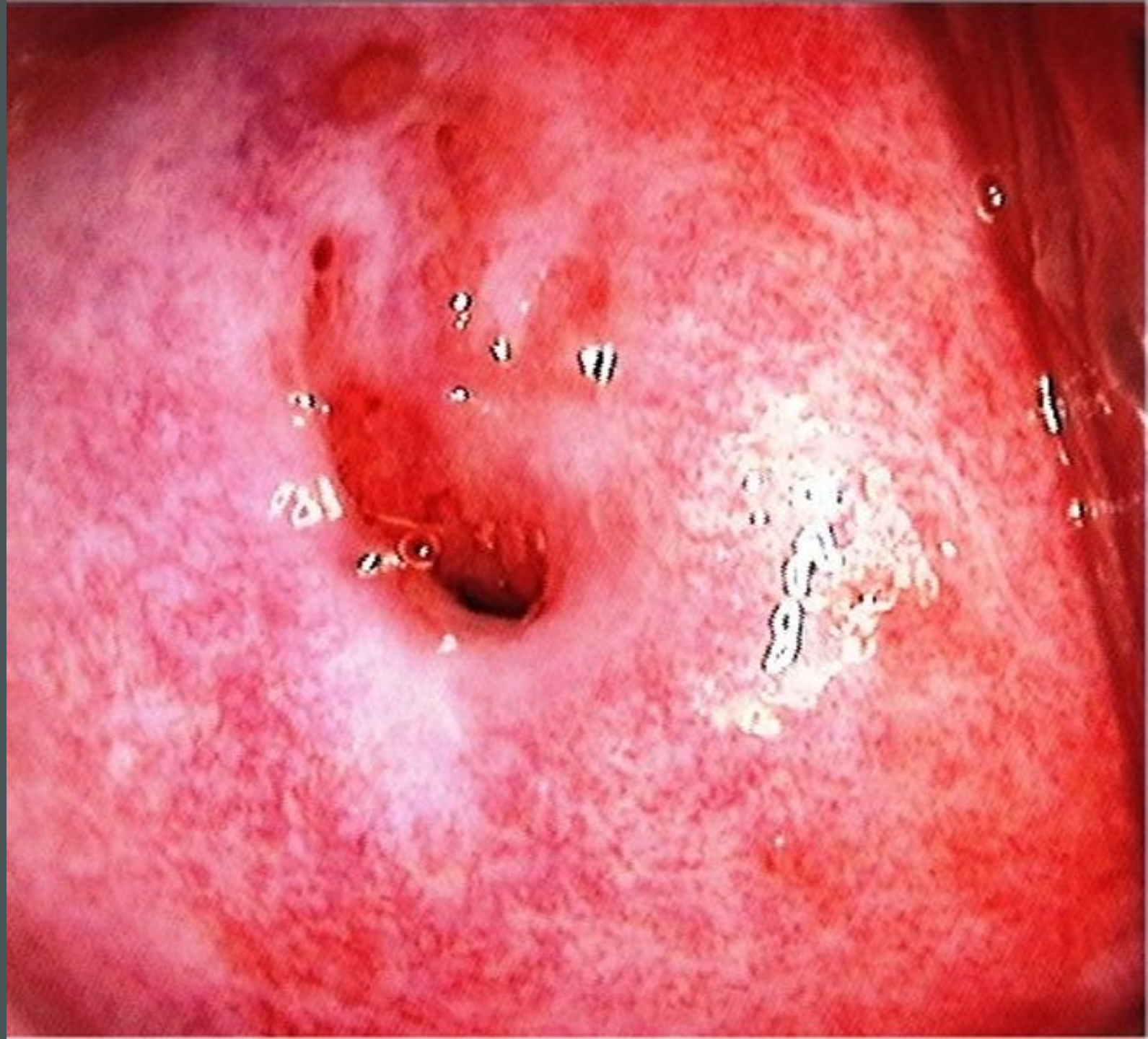


ABNORMAL CYTOLOGY RECOMMENDATIONS

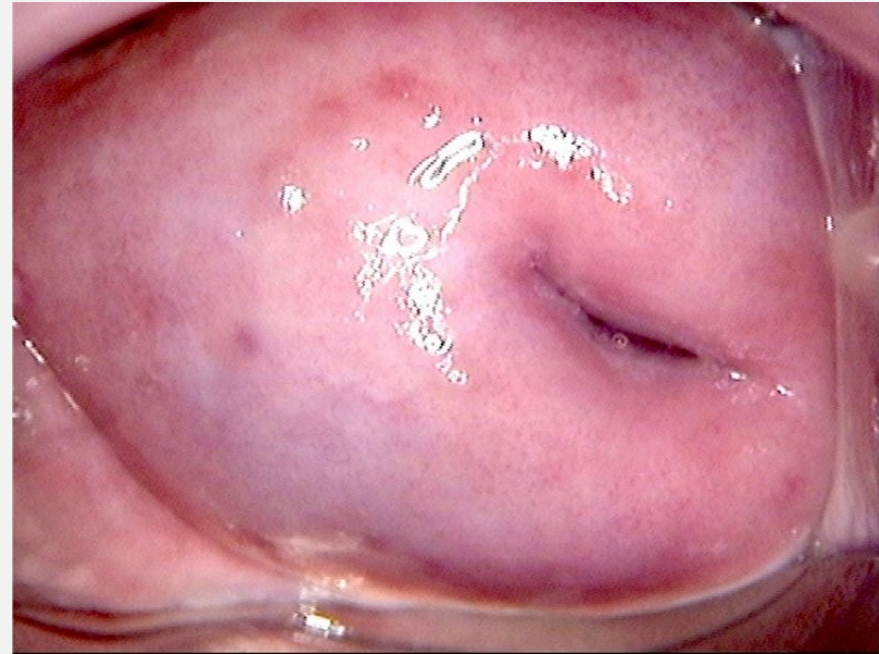
PAP SMEAR PICTURE GALLERY

NORMAL CERVIX

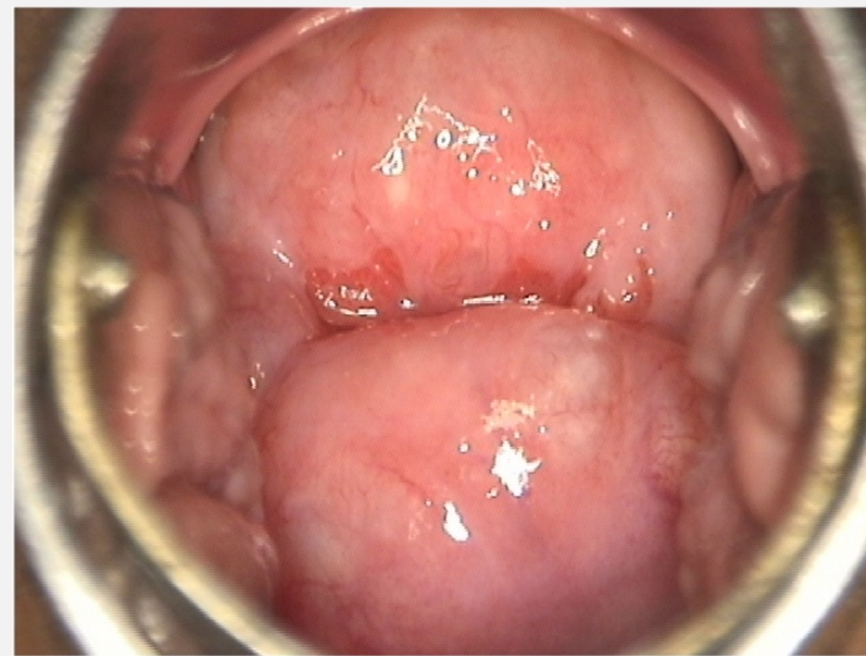
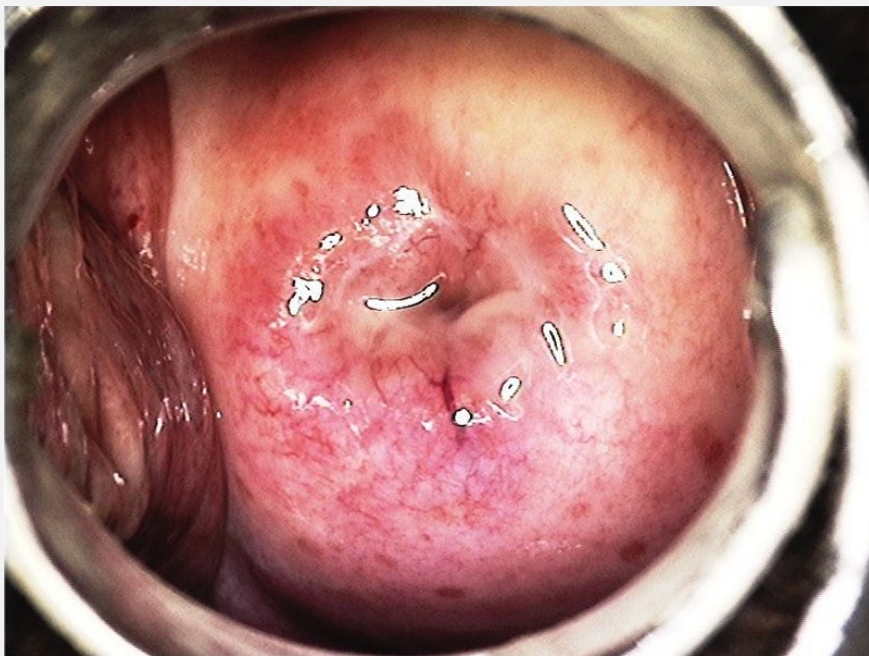
- Smooth surface
- No abnormal/irregular vessels
- Appearance changes with parity
- SCJ changes position with age and parity



NORMAL CERVIX



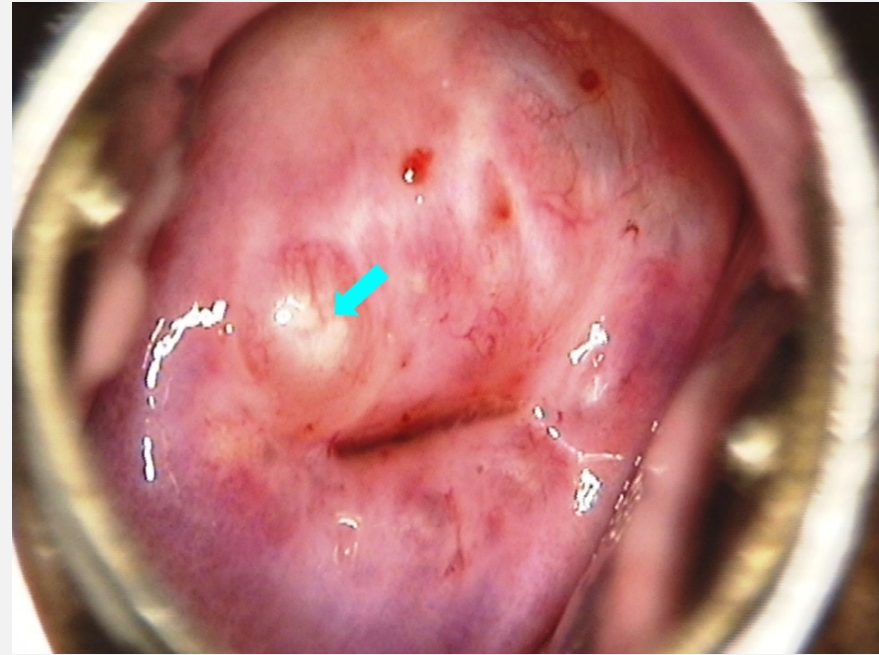
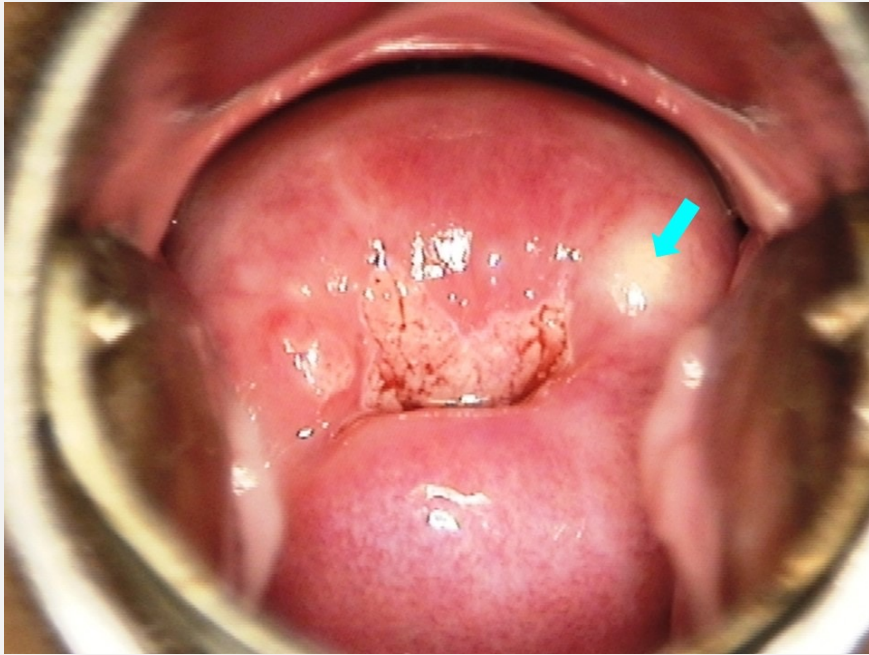
NORMAL CERVIX



THE ABNORMAL APPEARING CERVIX

Benign Findings!

NABOTHIAN CYSTS

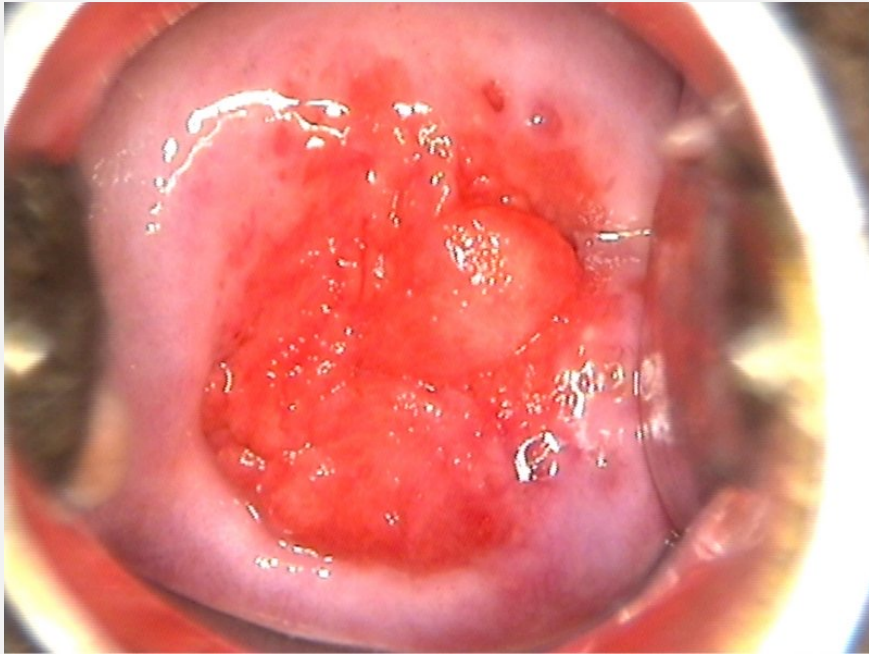




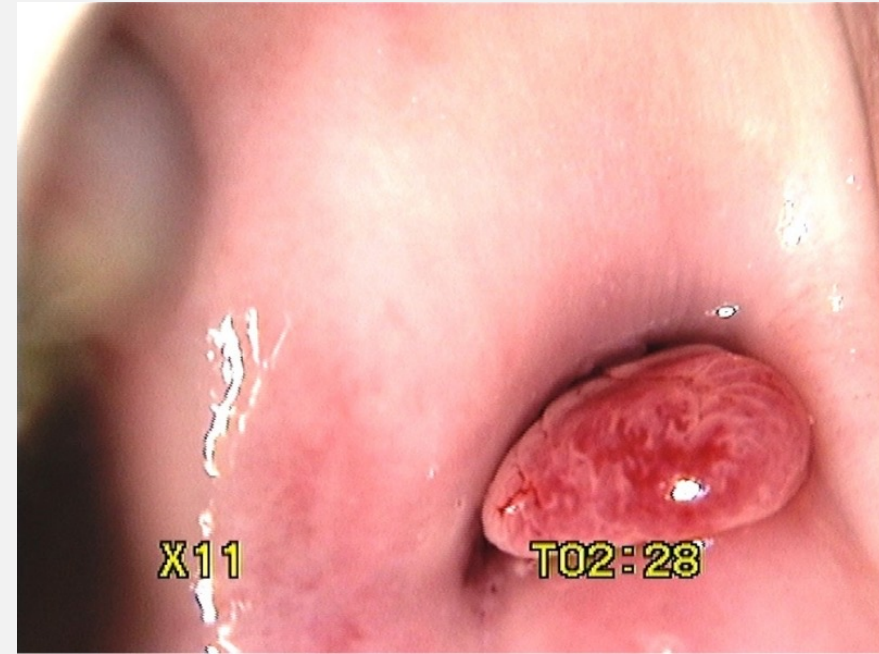
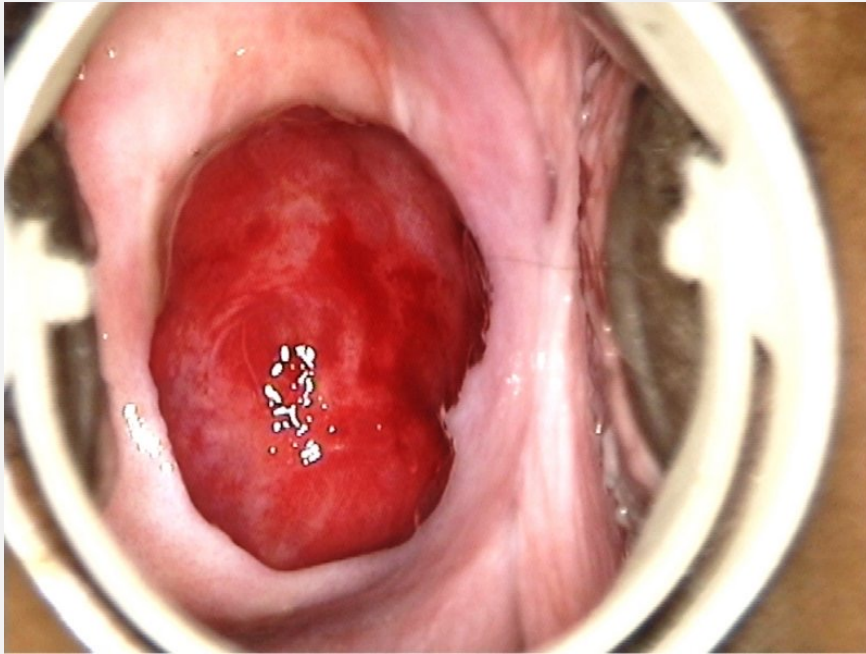
ECTROPION

- Benign finding
- More common in younger women
- More common with prolonged estrogen exposure (OCP)
- May be cause of chronic nuisance post-coital bleeding

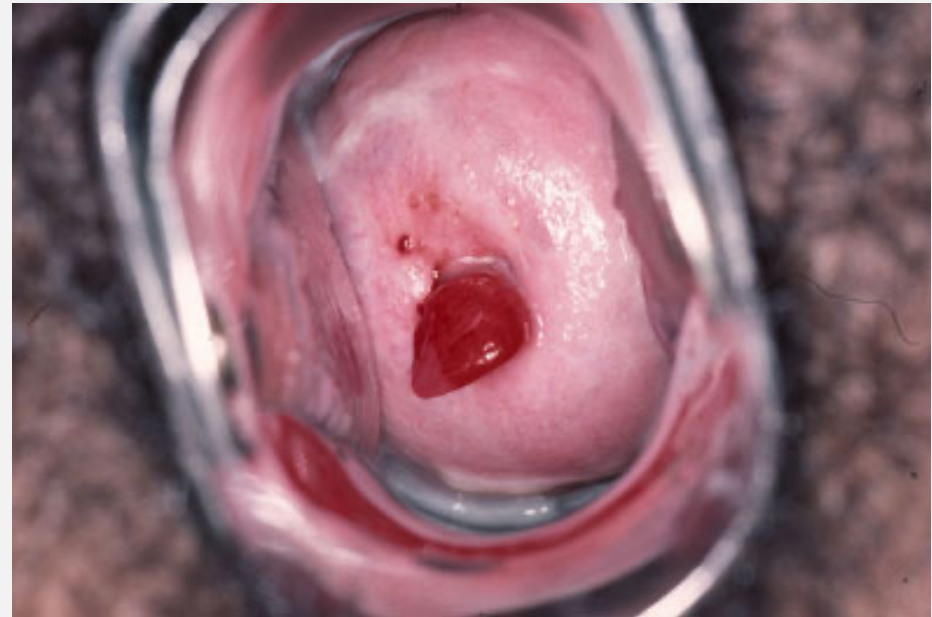
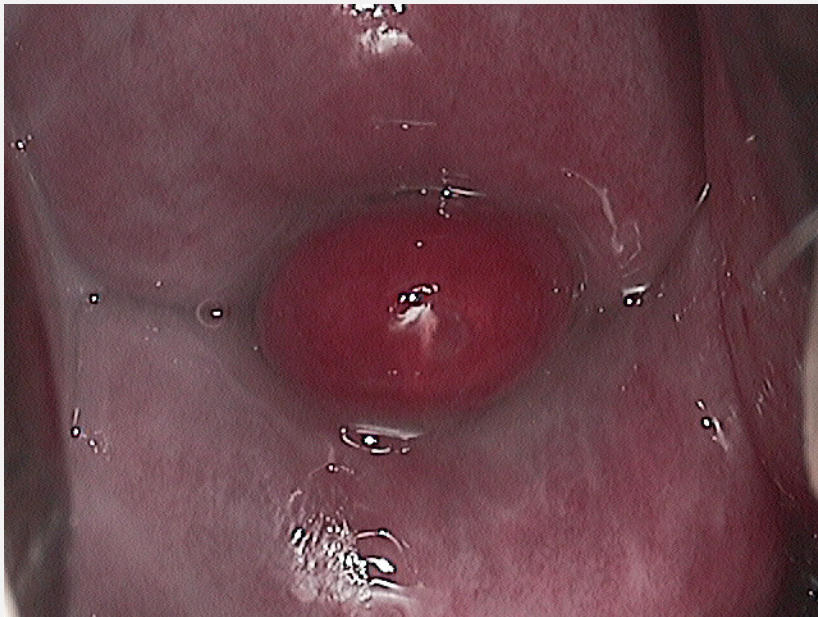
ECTROPION



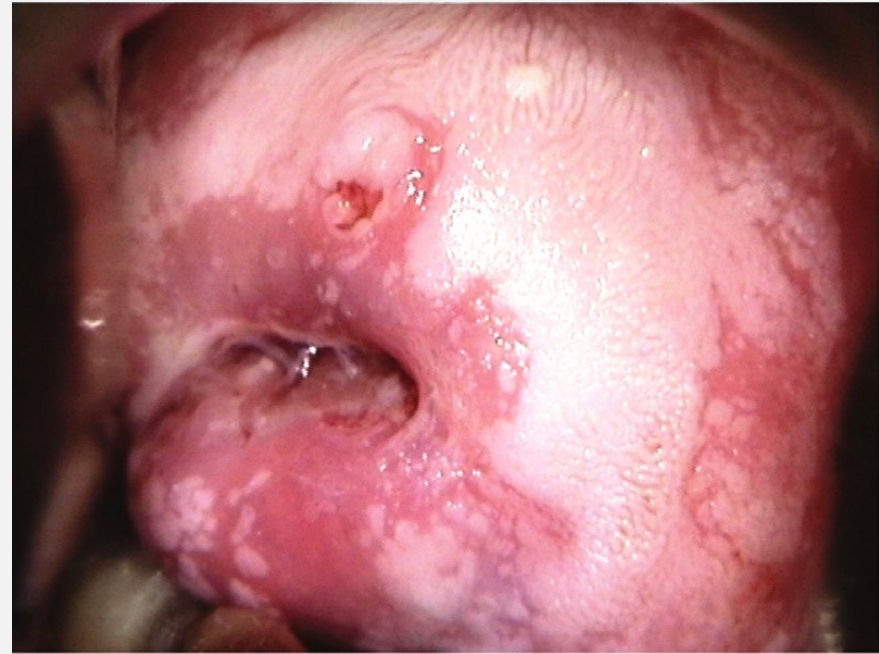
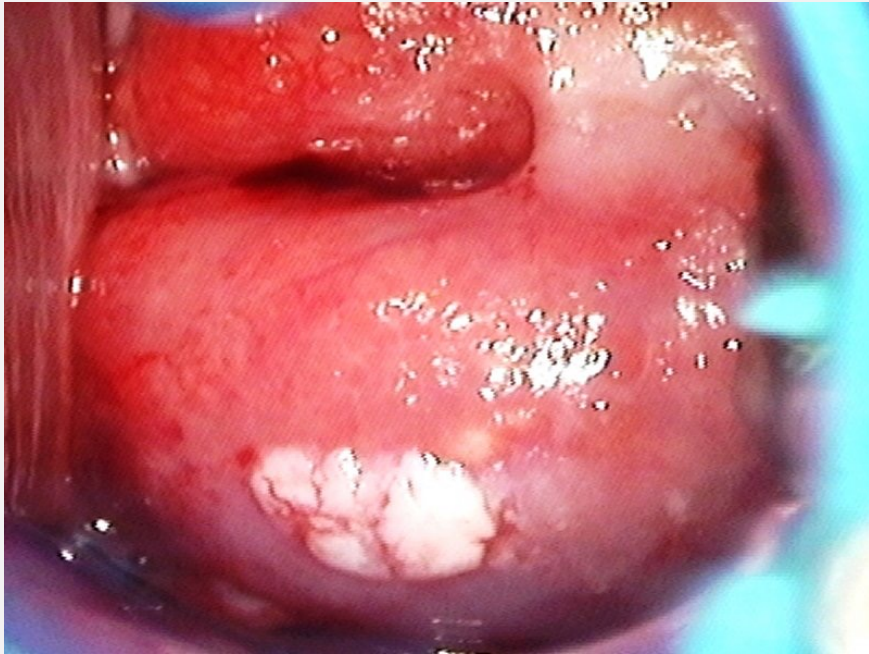
CERVICAL POLYPS



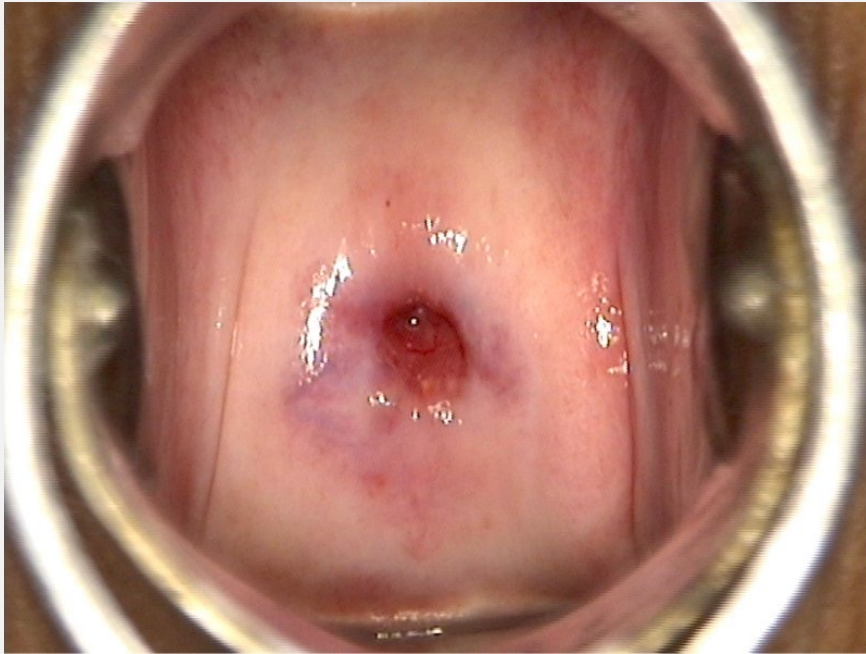
CERVICAL POLYPS



CERVICAL CONDYLOMA (HPV)

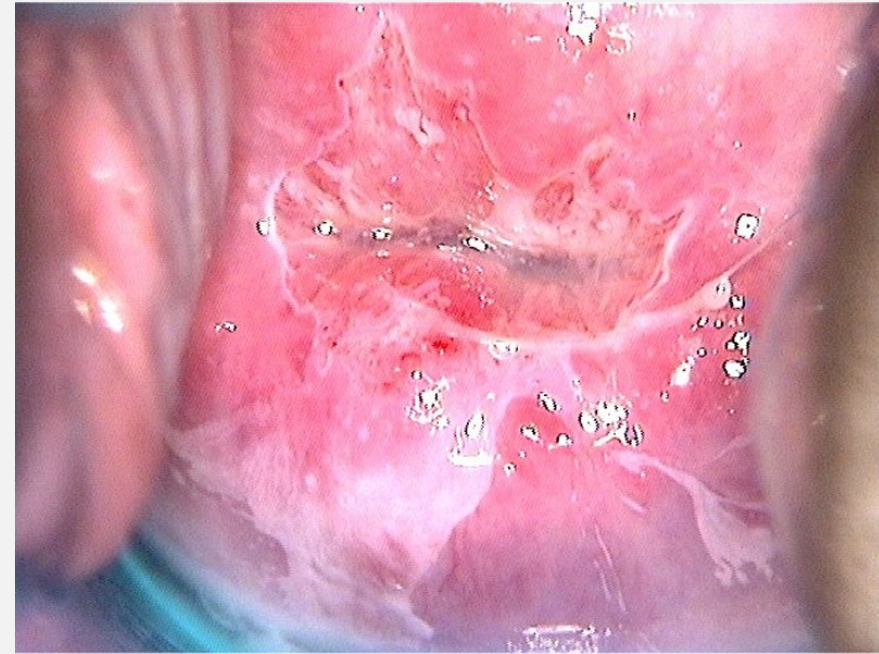
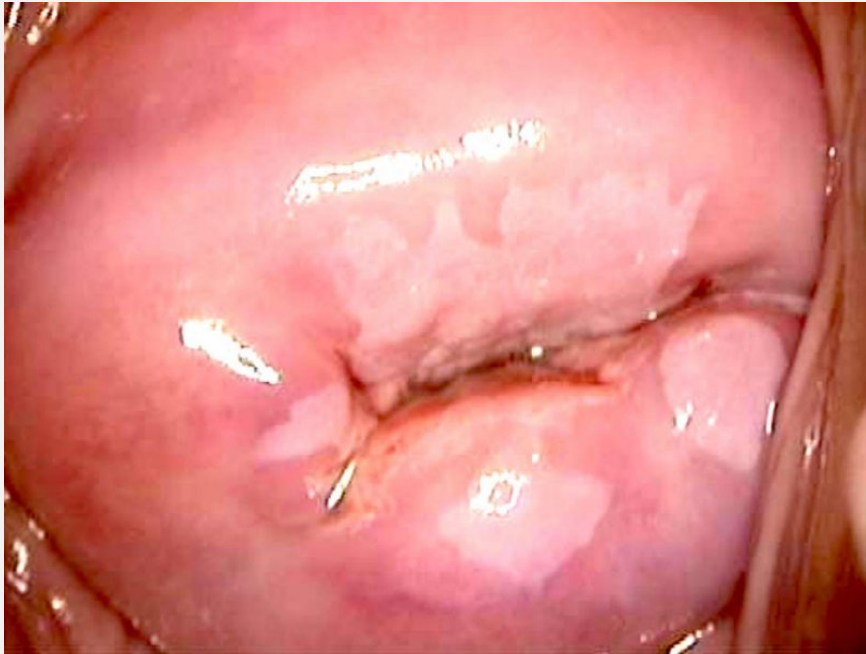


ATROPHIC CHANGES



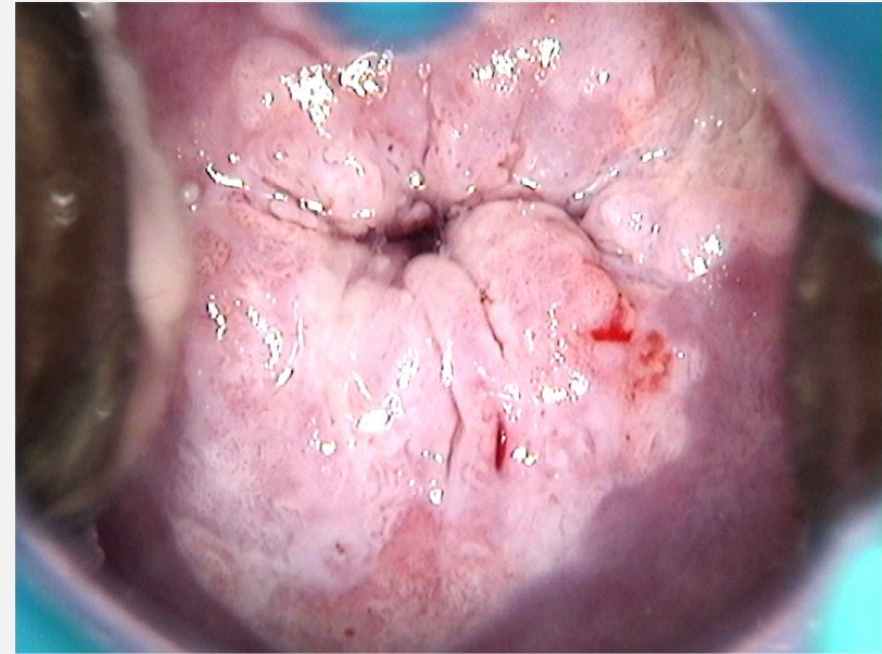
DYSPLASIA & MALIGNANCY

CERVICAL DYSPLASIA - LSIL

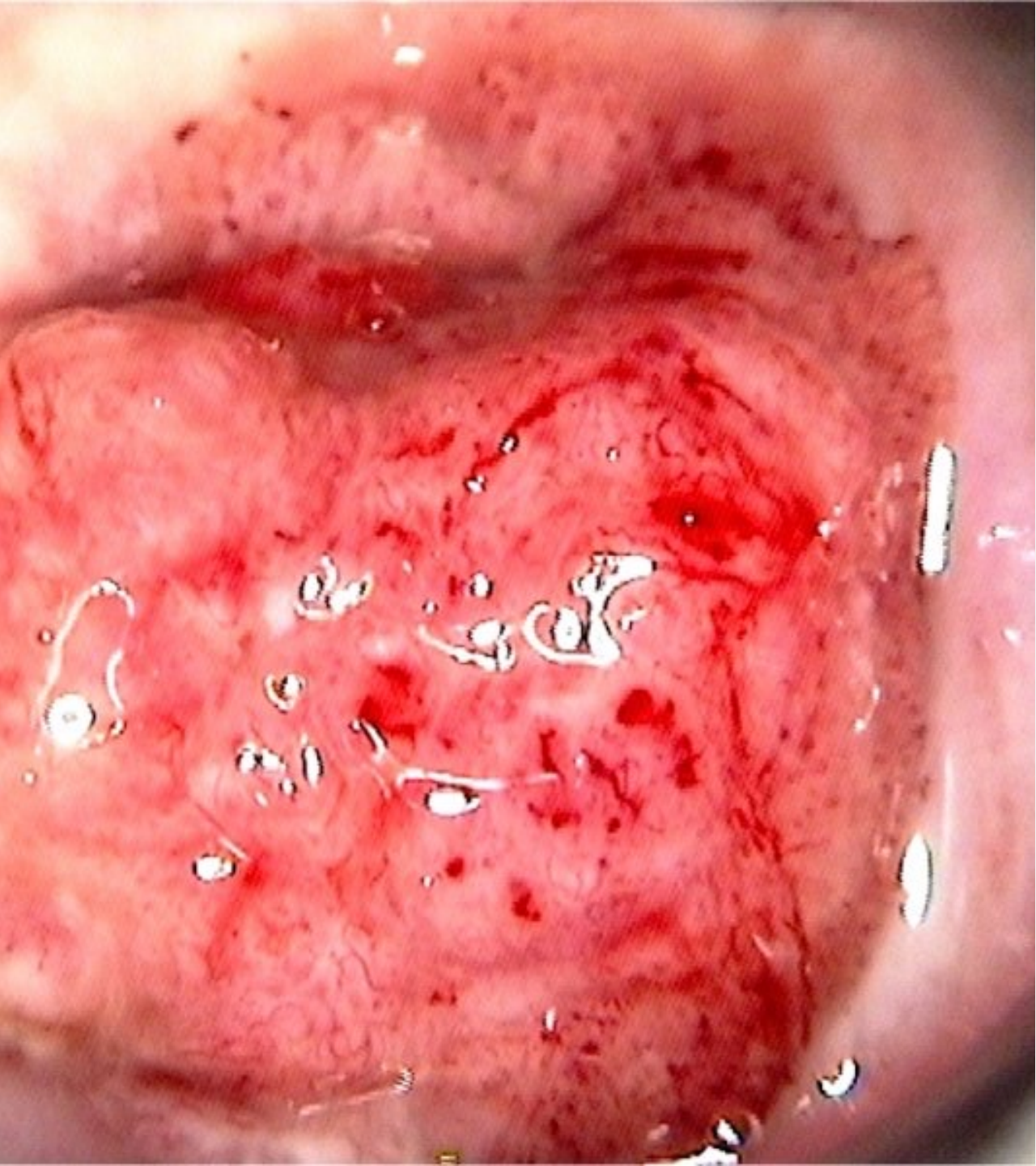


Colposcopy images with acetic acid — low grade dysplasia is typically not appreciable with gross inspection

CERVICAL DYSPLASIA - HSIL



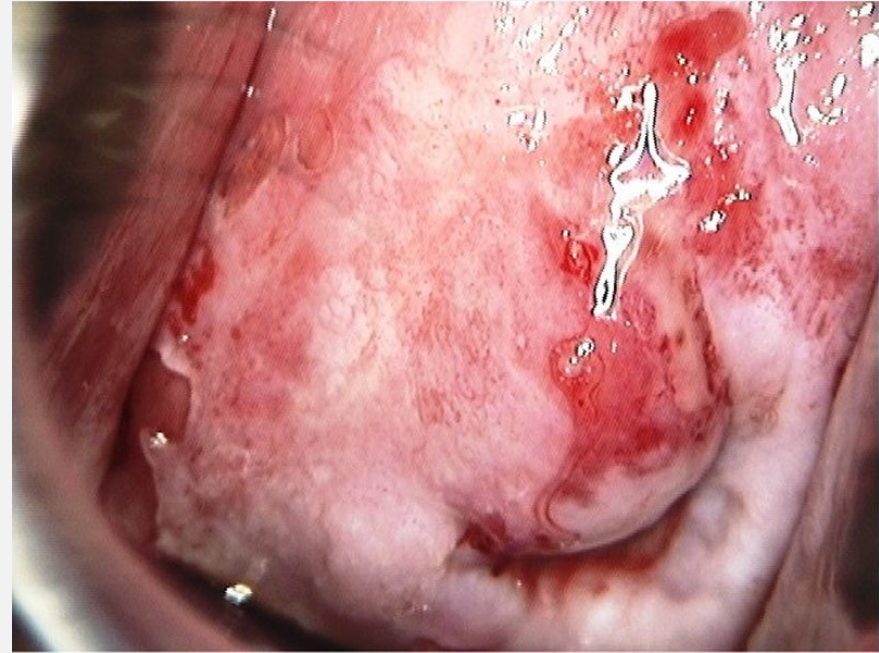
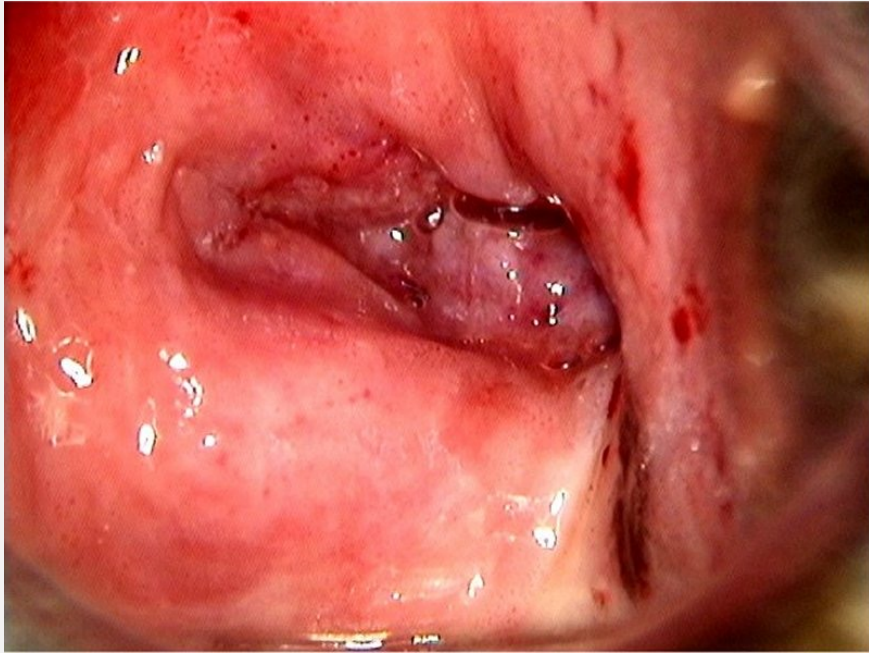
Colposcopy images after application of acetic acid



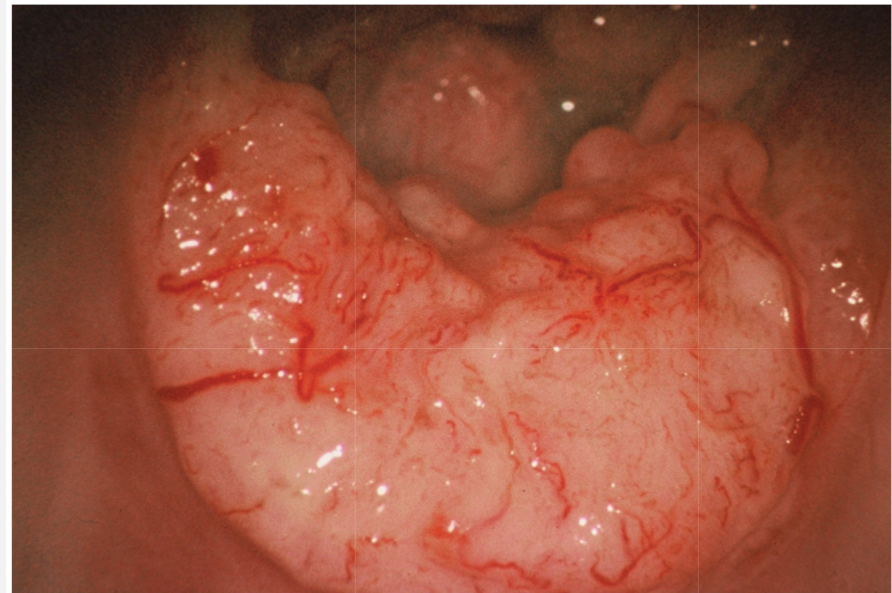
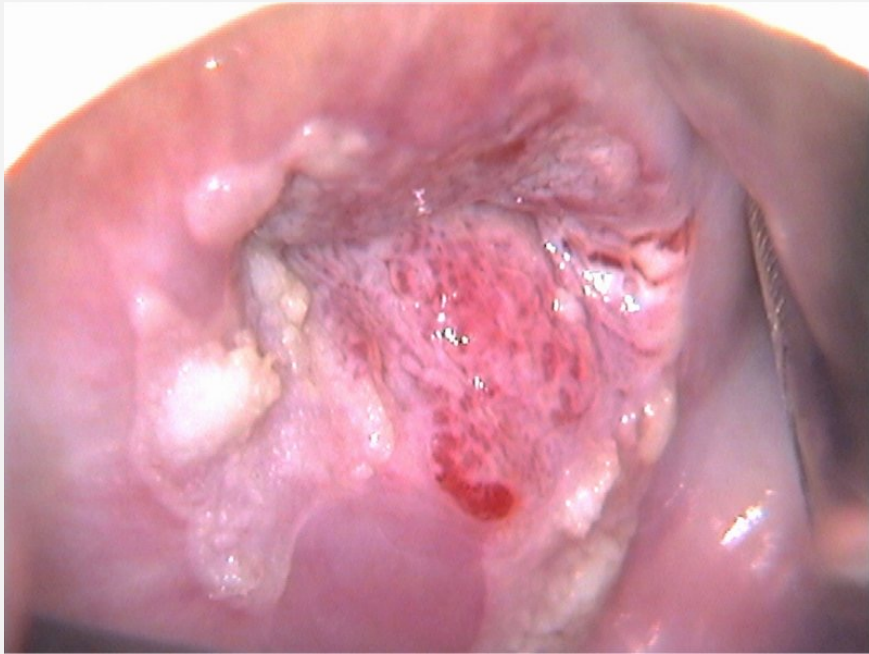
CERVICAL CANCER

- Exophytic or ulcerative growth
- Abnormal vascular pattern
- Grossly visible
- VERY friable – bleeds easily
- Pap smear may show HSIL only

CERVICAL CANCER



CERVICAL CANCER



CERVICAL CANCER

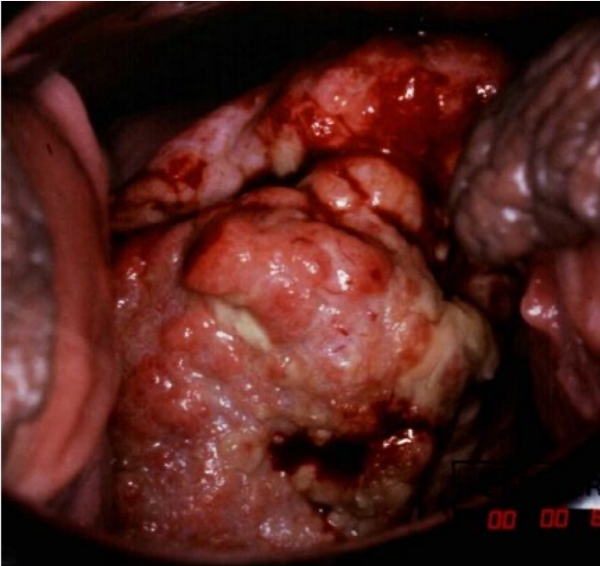


FIGURE 3.4: Invasive cervical cancer



BIMANUAL EXAMINATION

CANADIAN TASK FORCE RECOMMENDATIONS

- 2016 – adopted the 2014 American recommendations
 - Recommend AGAINST routine screening pelvic examinations in asymptomatic women
 - Strong recommendation with moderate quality evidence
- Pelvic examination remains appropriate for:
 - Women presenting with symptoms
 - Follow up of previously diagnosed conditions

No. 385, August 2019

No. 385-Indications for Pelvic Examination

SOGC RECOMMENDATIONS

SOGC RECOMMENDATIONS

- Symptomatic gynecologic complaints MUST be investigated with pelvic examination
- No study published to date has evaluated pelvic examination alone as a screening method
- Women undergoing pap smear screening may benefit from screening visual and bimanual examination

PRACTICAL RECOMMENDATIONS

- Examine ALL women who have symptoms:
 - Pelvic pain/pressure
 - Abnormal uterine bleeding
 - Abnormal vaginal discharge
 - Abdominal bloating confirmed on examination
- Routine examination healthy, asymptomatic women likely to be low yield
- Have a low threshold to perform bimanual examination!

THANKS!!

Any Questions?

HELPFUL REFERENCES

- <https://www.cancercareontario.ca/en/guidelines-advice/cancer-continuum/screening/resources-healthcare-providers>
- <https://screening.iarc.fr/atlascolpo.php>
- <https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/2156>