



HPV DISEASES

Diagnosis, management, therapy



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Training Course in Sexual and Reproductive Health Research
Geneva 2010

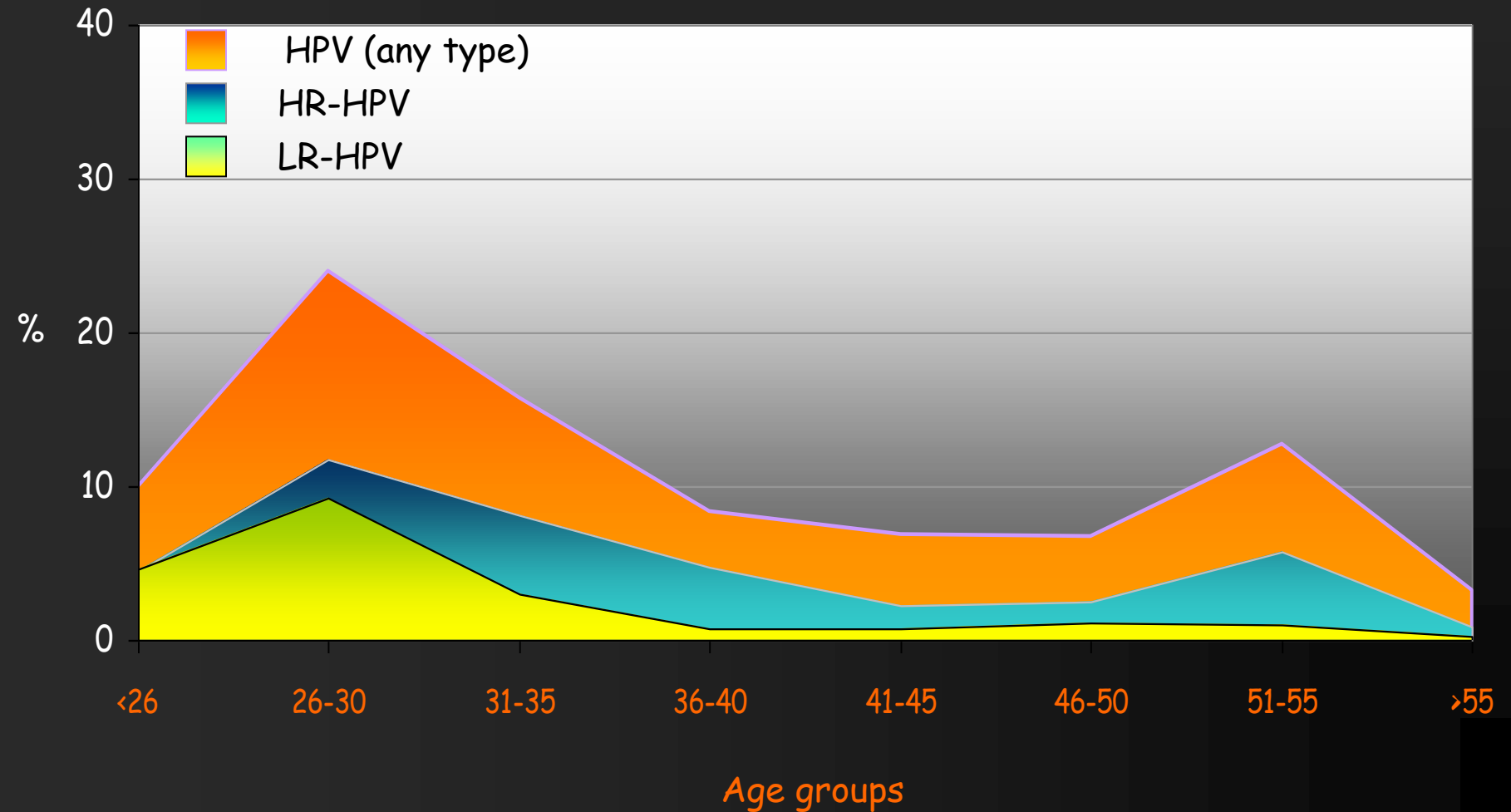


EPIDEMIOLOGY

- ✓ Frequency in sexually-active general population: 3-25%
- ✓ Frequency among 20-35 yrs population 40- 60%
- ✓ Mean clearance time: 8 – 24 months
- ✓ Frequency of multiple infections: 3-25%



AGE SPECIFIC PREVALENCE





HPV DISEASE

Natural history

- ✓ Latent stage
- ✓ Subclinical stage
- ✓ Clinical stage



Epithelial 'trauma'



HPV entry into basal germinal layer of epithelium



Expression of viral early proteins



Cellular proliferation



Capsid proteins produced in superficial layers of epithelium



HPV DISEASE

Diagnosis

LATENT STAGE

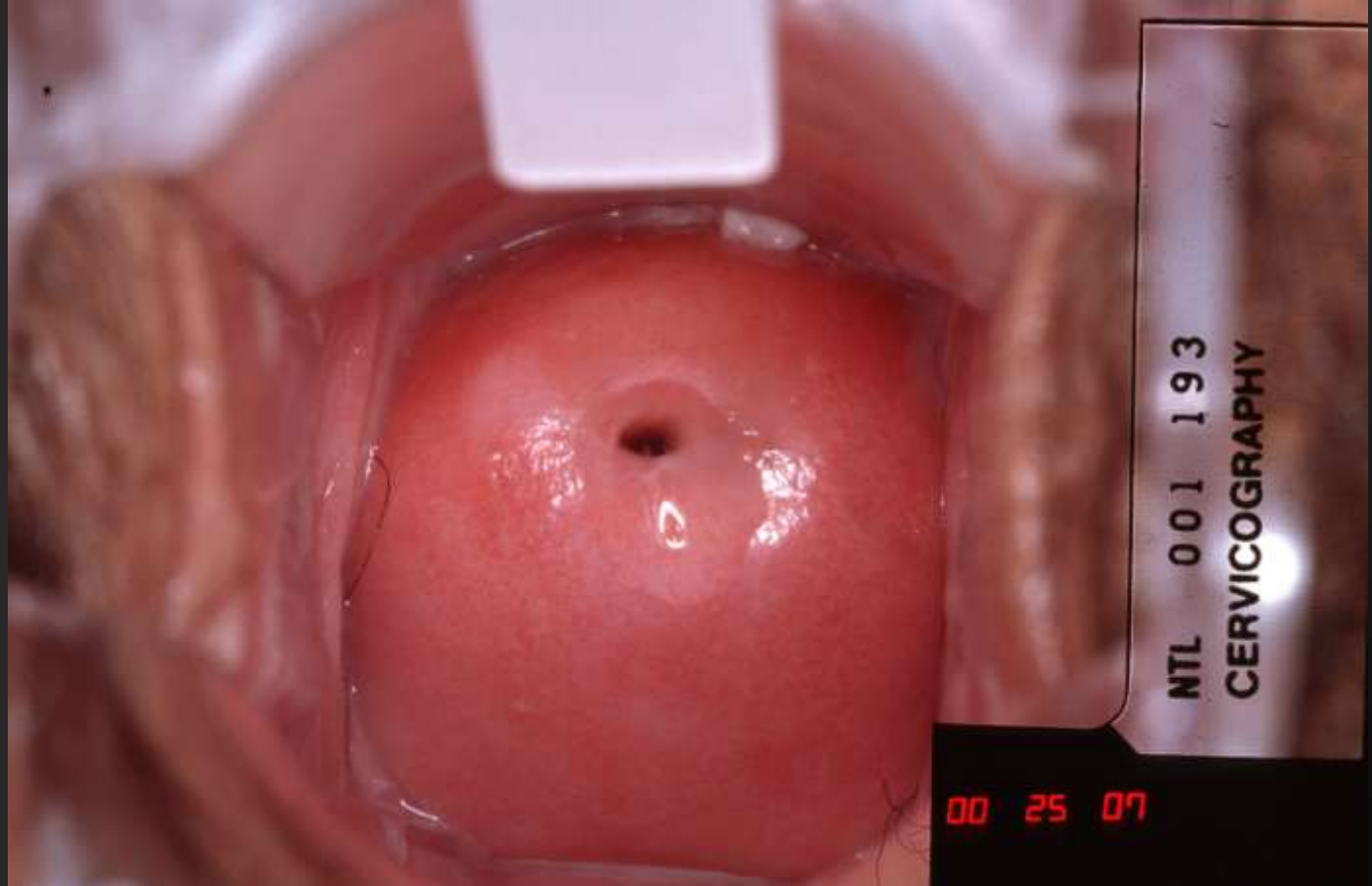
Identified by virus contact but
without clinical or instrumental
evidence of clinical lesions

MOLECULAR BIOLOGY



HPV IS A POOR NATURAL IMMUNOGEN

- ✓ **Non-lytic virus**
 - Little release of antigens to the immune system
 - No local cytokine release to invoke a response
- ✓ **No systemic phase**
 - Little professional antigen presentation





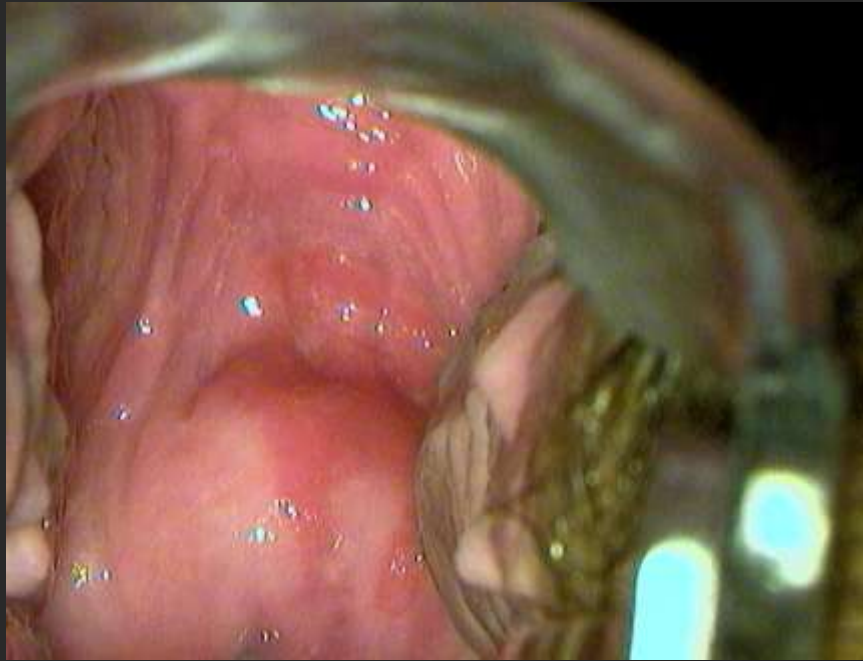
HPV DISEASE

Diagnosis

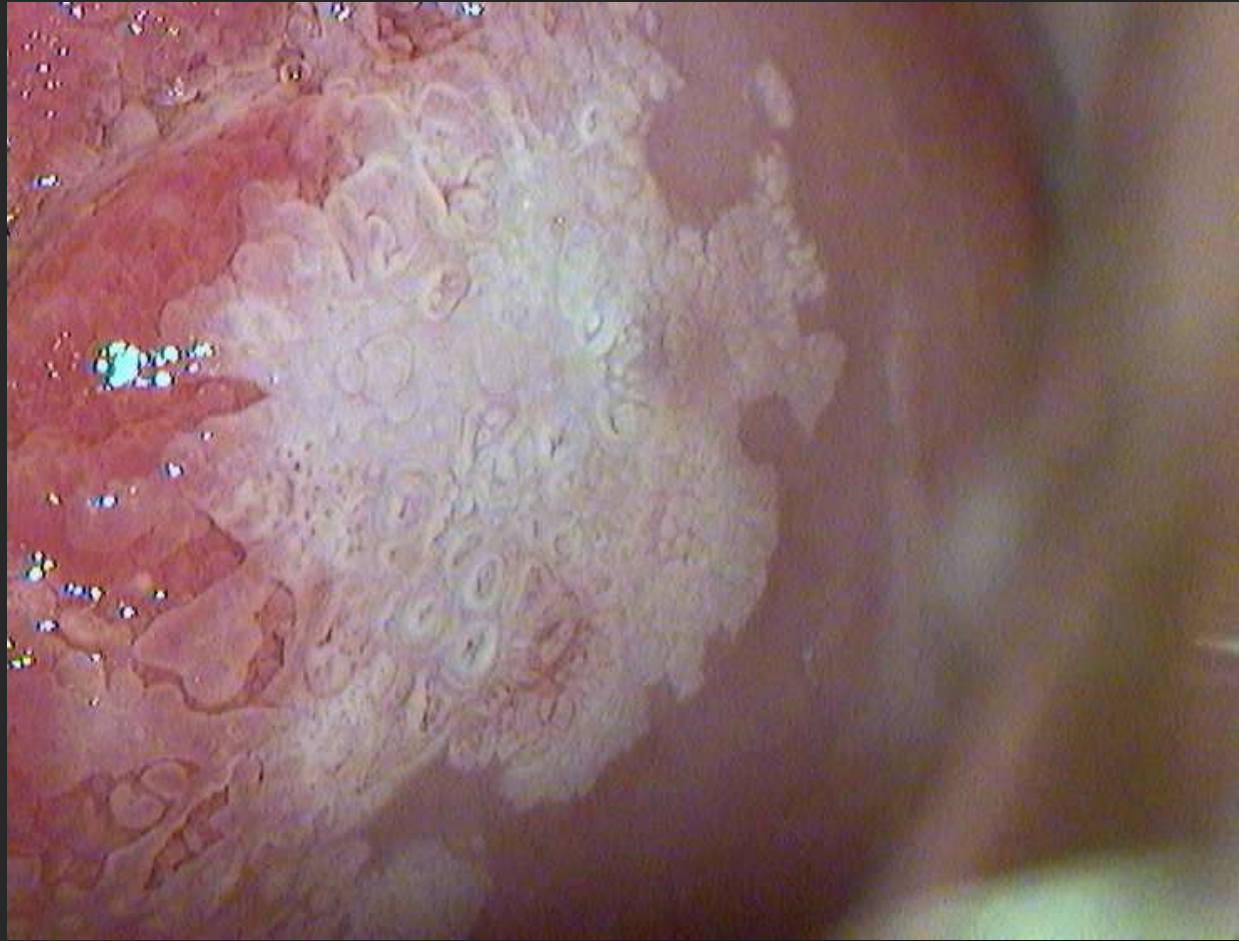
SUBCLINICAL STAGE

Identified by virus contact and
with instrumental-only evidence
of early genital lesions

COLPOSCOPY – HISTOLOGY – MOLECULAR BIOLOGY



5% Acetic acid application effect





HPV DISEASE

Diagnosis

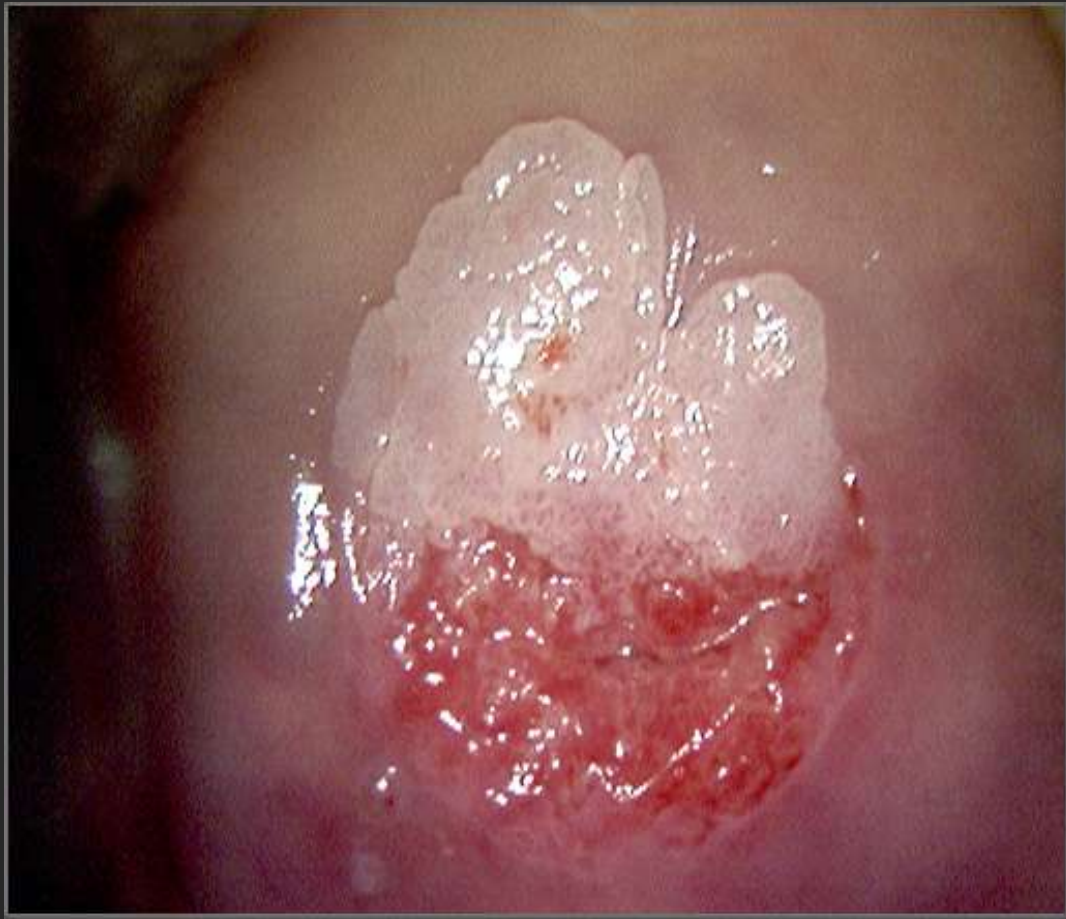
CLINICAL STAGE

Identified by virus contact and
clinical evidence of genital
lesions

INSPECTION – COLPOSCOPY – HISTOLOGY
MOLECULAR BIOLOGY









Management

LATENT STAGE

Identified by virus contact but
without clinical or instrumental
evidence of clinical lesions

**THIS SHOULD NOT BE CONSIDERED AS REAL
DISEASE BUT "HIGHER RISK" EXPOSURE**

BACK TO SCREENING PROGRAMS

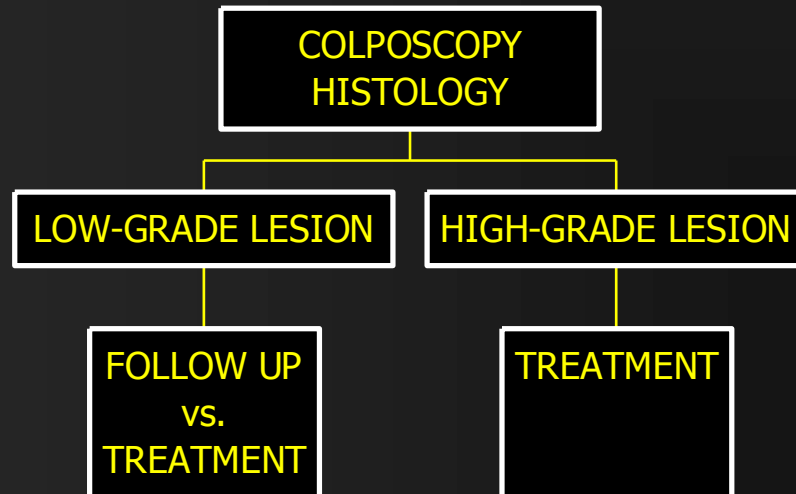


Management

SUBCLINICAL STAGE

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Titolo diagramma



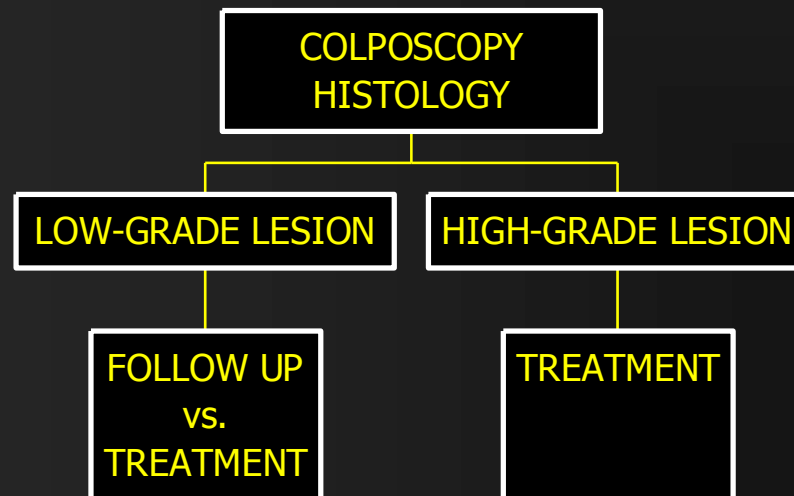


Management

CLINICAL STAGE

Identified by virus contact and
clinical evidence of genital
lesions

Titolo diagramma







HPV DISEASE

Natural history

- ✓ early regression
- ✓ persistence
- ✓ fluctuation
- ✓ late regression
- ✓ progression
- ✓ recurrence



EFFICACY OF TREATMENT

- ✓ Cure rate
- ✓ Recurrence rate
- ✓ Patient's compliance
- ✓ Costs/benefits ratio



THERAPY CONCEPTS

- ✓ Lesions removal
- ✓ HPV persistence
- ✓ High recurrence rate
- ✓ Need for multiple treatments



Problem approach

Treatment by anatomical site

- ✓ vulva and perineum
- ✓ vagina
- ✓ cervix

Treatment by type of lesion

- ✓ subclinical lesion
- ✓ warty lesion
- ✓ preneoplastic lesion



Treatment options

Medical options

Podofilin

Podofilotoxin

Tricloroacetic acid

5-fluorouracil

Imiquimod 5%



Treatment options

Surgical options

Cold knife surgery

Criotherapy

Diatermy surgery

LEEP - LLETZ

Radiofrequency surgery

CO₂ Laser



EFFICACY OF MEDICAL CHOICE

Treatment	% Immediate cure rate	% after 3 mth cure rate	Recurrence rate
Podofilin	35-75	25-75	10-70
Podofillosin	45-90	35-75	10-90
Tricloroacetic acid	50-80	70	35
5-FU	10-70	40	35
Imiquimod	70	70	10



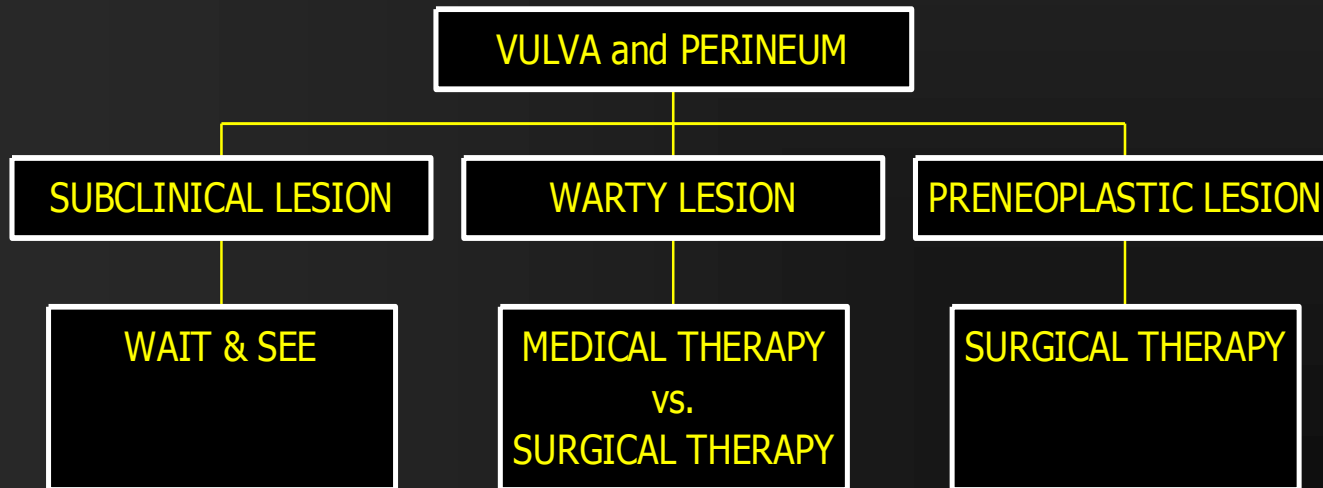
EFFICACY OF SURGICAL CHOICE

Treatment	% Immediate cure rate	% after 3 mth cure rate	Recurrence rate
Cold knife surgery	90-95	35	0-30
Criotherapy	65-90	65-95	0-40
DTC	95	80-90	25
LEEP	30-90	-	15-50
CO ₂ Laser	90-95	70	20-30



THERAPY CONCEPTS

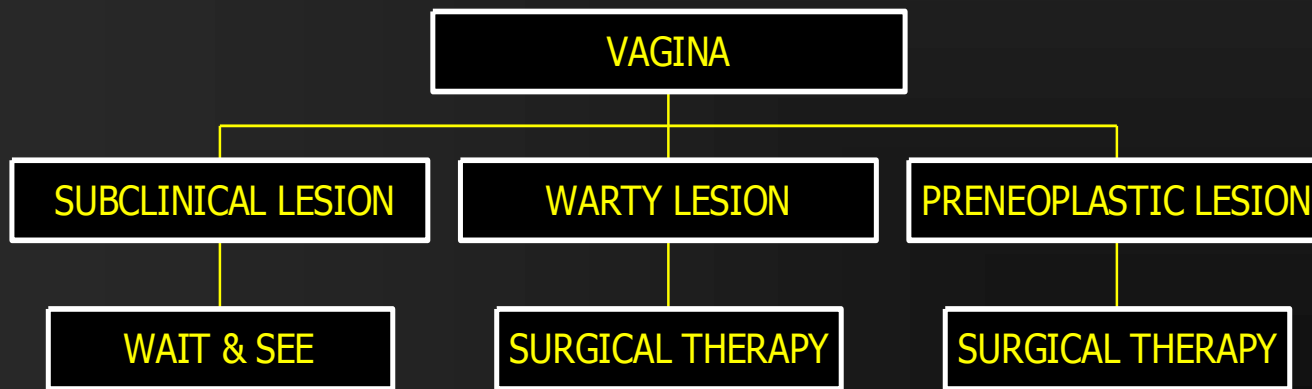
BY ANATOMICAL SITE AND TYPE OF LESION





THERAPY CONCEPTS

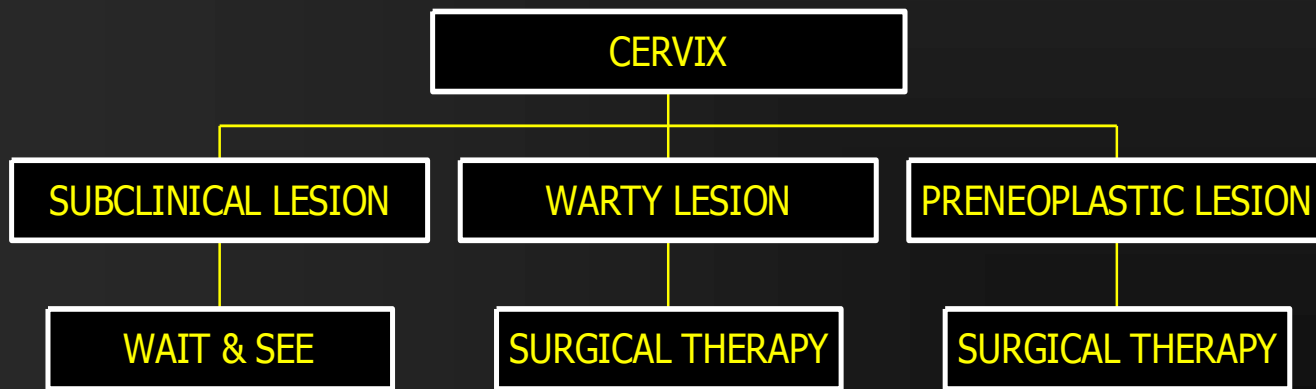
BY ANATOMICAL SITE AND TYPE OF LESION

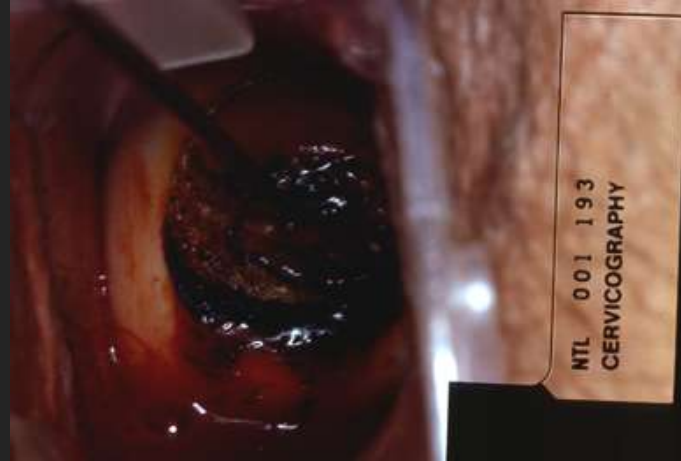
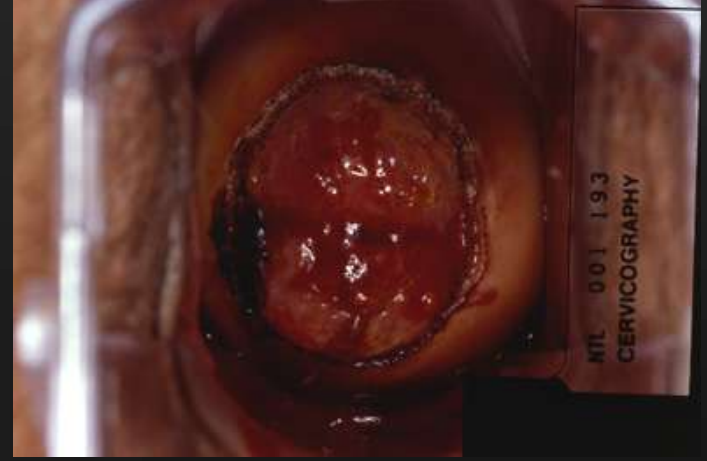


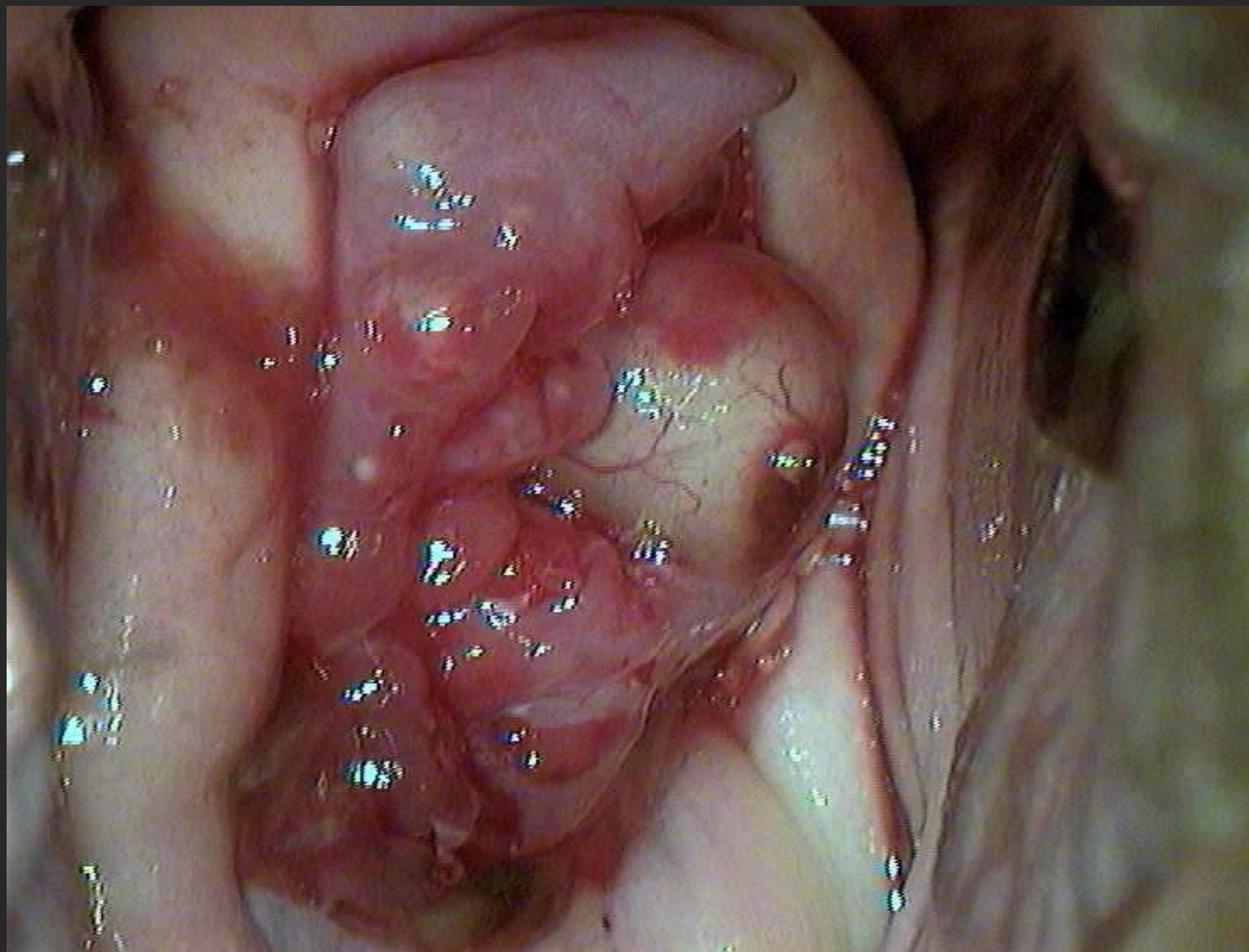


THERAPY CONCEPTS

BY ANATOMICAL SITE AND TYPE OF LESION









Cervical Cancer

- ✓ Estimated incidence and mortality in the United States (2007)¹

11,150 new cases

3,670 deaths

1:168 Lifetime risk



Cervical cancer

- International estimates
 - Approximately 570,000 cases expected worldwide each year
 - 275,000 deaths
 - Number one cancer killer of women worldwide



Cervical CA Etiology

- ✓ Cervical cancer is a sexually transmitted disease.
- ✓ HPV DNA is present in virtually all cases of cervical cancer and precursors.
- ✓ Some strains of HPV have a predilection to the genital tract and transmission is usually through sexual contact (16, 18 High Risk).
- ✓ Little understanding of why small subset of women are affected by HPV.
- ✓ HPV may be latent for many years before inducing cervical neoplasia.



Pap Smear

With the advent of the Pap smear, the incidence of cervical cancer has dramatically declined



Cervical cancer





but ...

- ✓ Single Pap false negative rate is 20%.
- ✓ The latency period from dysplasia to cancer of the cervix is variable.
- ✓ 50% of women with cervical cancer have never had a Pap smear.
- ✓ 25% of cases and 41% of deaths occur in women 65 years of age or older



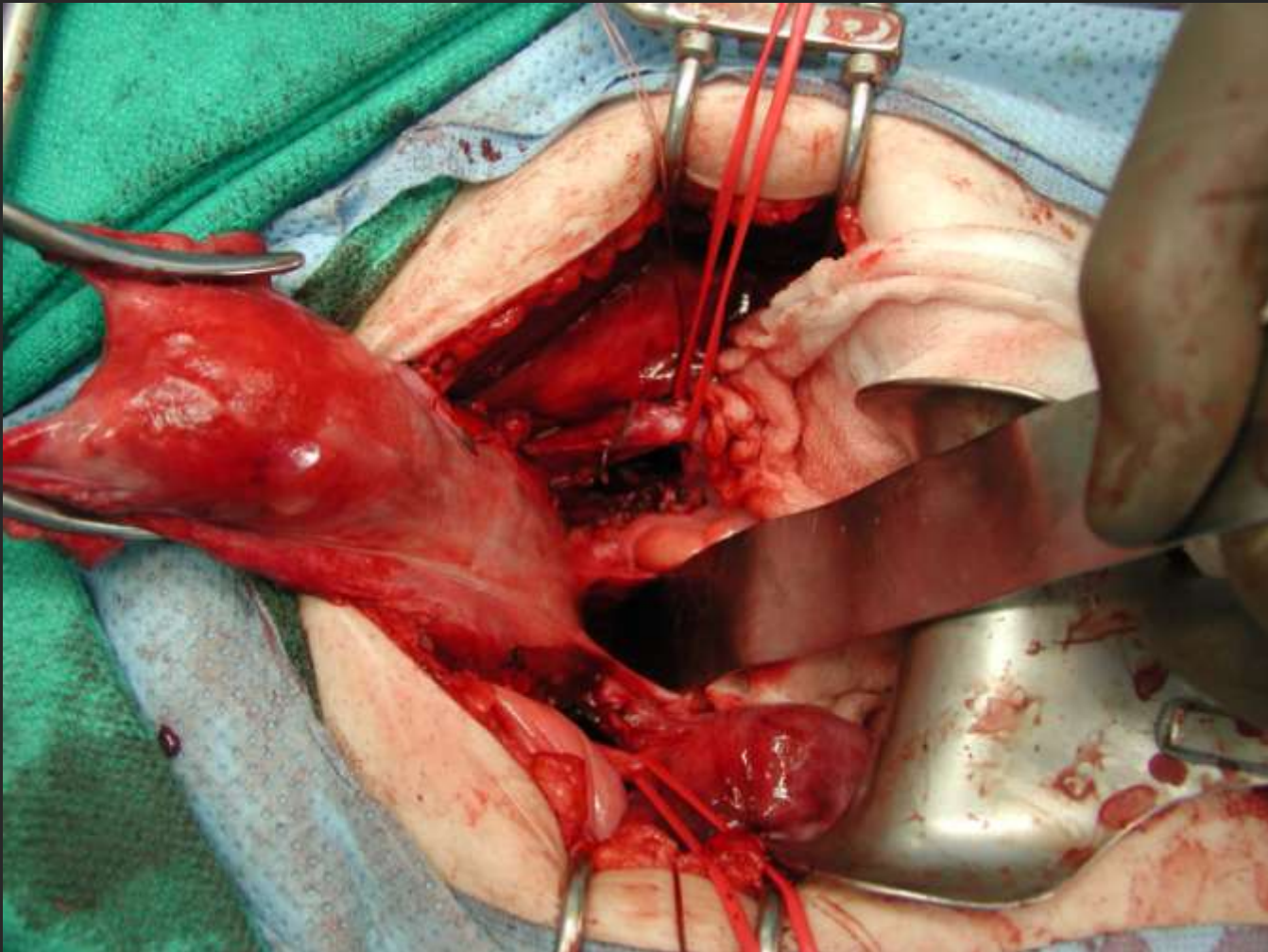
Cell Type

- ✓ Squamous Cell Carcinoma 80-85%
- ✓ AdenoCarcinoma 15%
- ✓ Adenosquamous
- ✓ Others



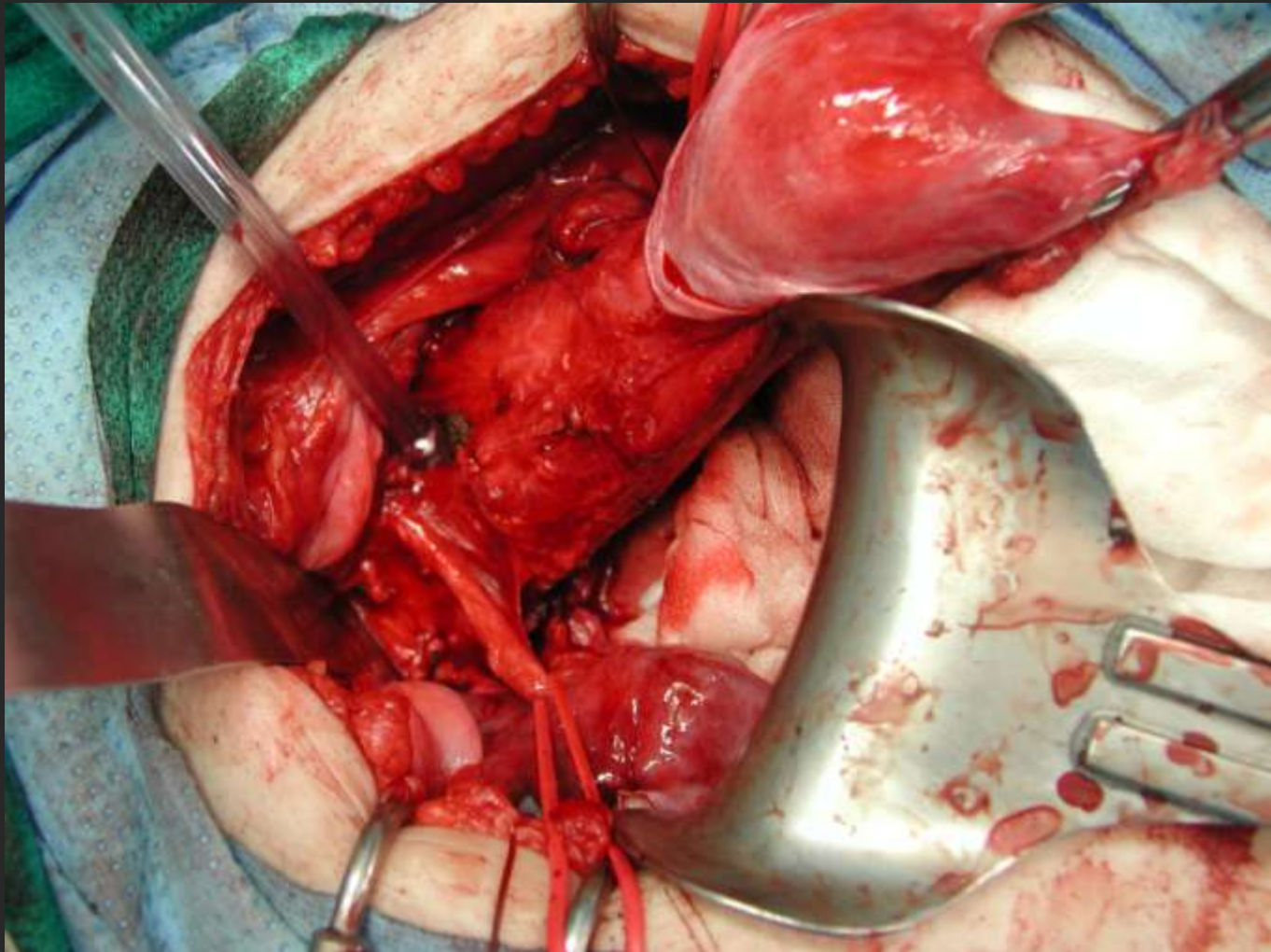
Cervical cancer Risk Factors

- ✓ Early age of intercourse
- ✓ Number of sexual partners
- ✓ Smoking
- ✓ Lower socioeconomic status
- ✓ High-risk male partner
- ✓ Other sexually transmitted diseases
- ✓ Up to 70% of the U.S. population is infected with HPV





Università Vita-Salute
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Prevention

- ✓ Educate all providers, men and women regarding HPV and the link to cervical cancer.
- ✓ Adolescents are an especially high-risk group due to behavior and cervical biology.
- ✓ Delay onset of sexual intercourse.
- ✓ Condoms may help prevent sexually transmitted disease.



Screening Guidelines for the Early Detection of Cervical Cancer, American Cancer Society 2003

- ✓ Screening should begin approximately three years after a woman begins having vaginal intercourse, but no later than 21 years of age.
- ✓ Screening should be done every year with regular Pap tests or every two years using liquid-based tests.
- ✓ At or after age 30, women who have had three normal test results in a row may get screened every 2-3 years. However, doctors may suggest a woman get screened more if she has certain risk factors, such as HIV infection or a weakened immune system.
- ✓ Women 70 and older who have had three or more consecutive Pap tests in the last ten years may choose to stop cervical cancer screening.
- ✓ Screening after a total hysterectomy (with removal of the cervix) is not necessary unless the surgery was done as a treatment for cervical cancer.



thank you



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