

Pathology of Lower Female Genital System

By

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A Lecturer of Pathology

Aims

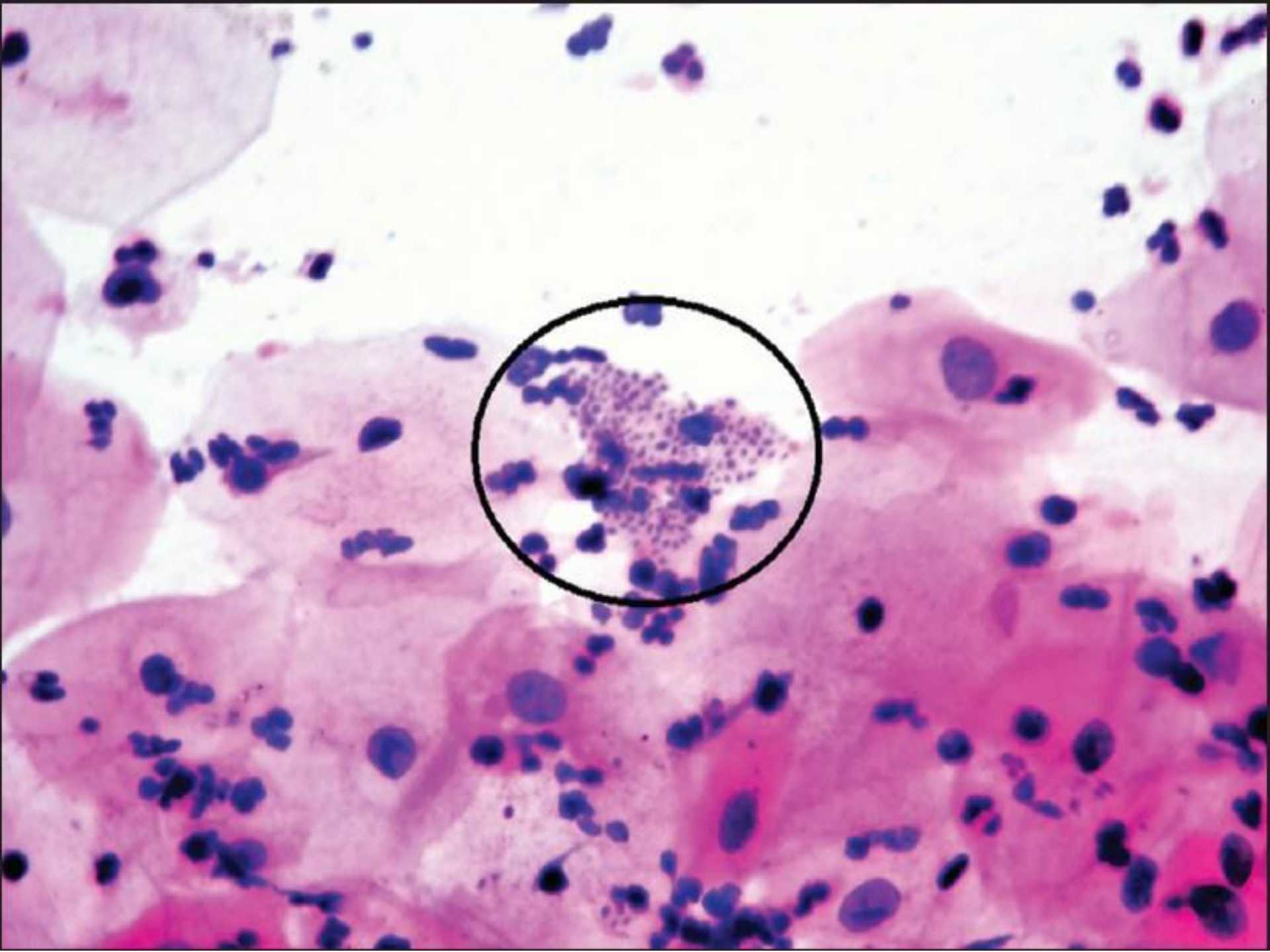
- ❑ Determine different types of inflammatory lesions affecting female genital tract.
- ❑ Classify tumors of vulva, vagina and cervix.
- ❑ Describe gross and microscopic features and effects of cervical squamous cell carcinoma.

I- INFLAMMATORY LESIONS OF LOWER FEMALE GENITAL SYSTEM

1- Inflammatory lesions of both
vulva and vagina

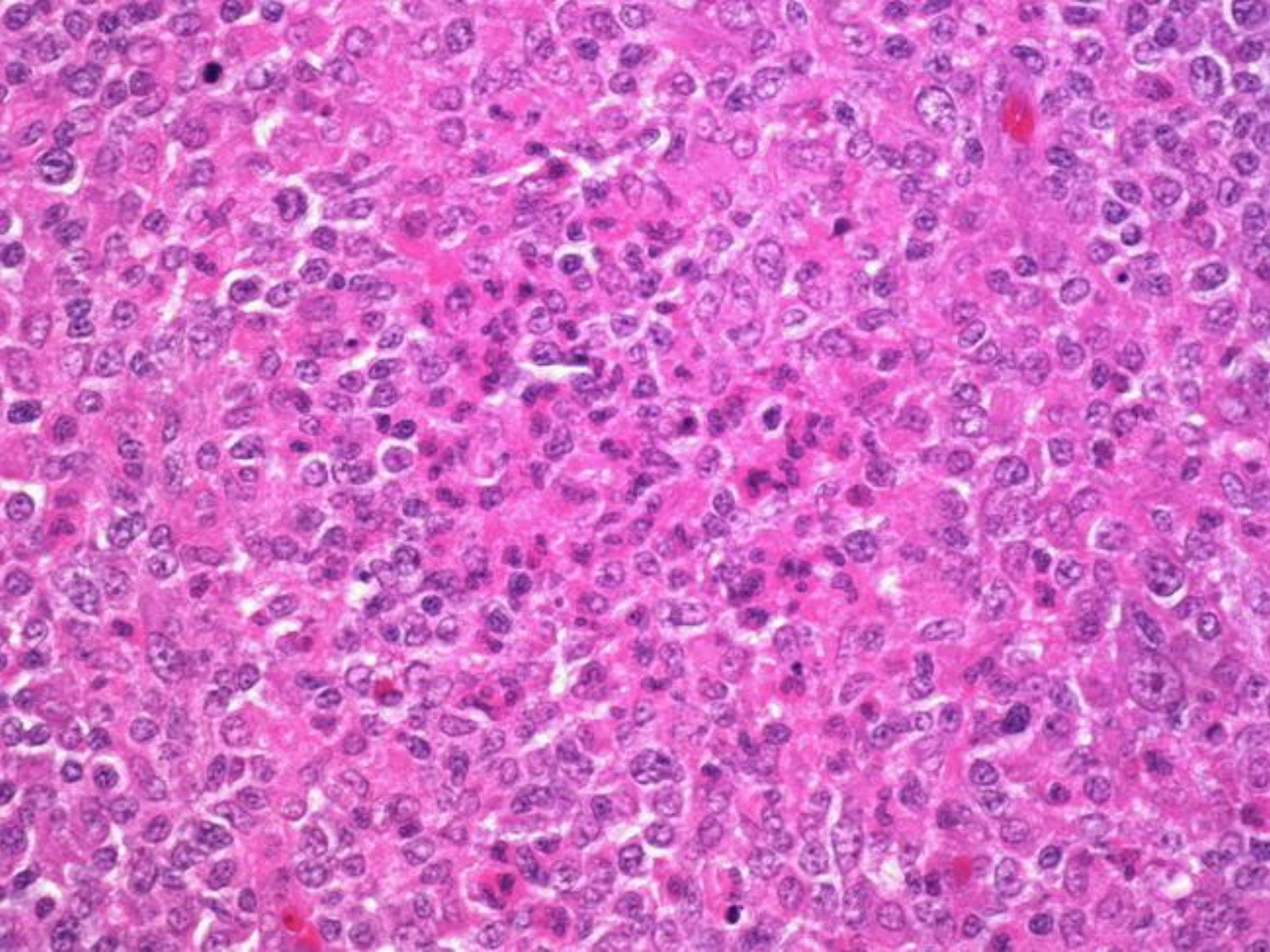
Granuloma inguinale

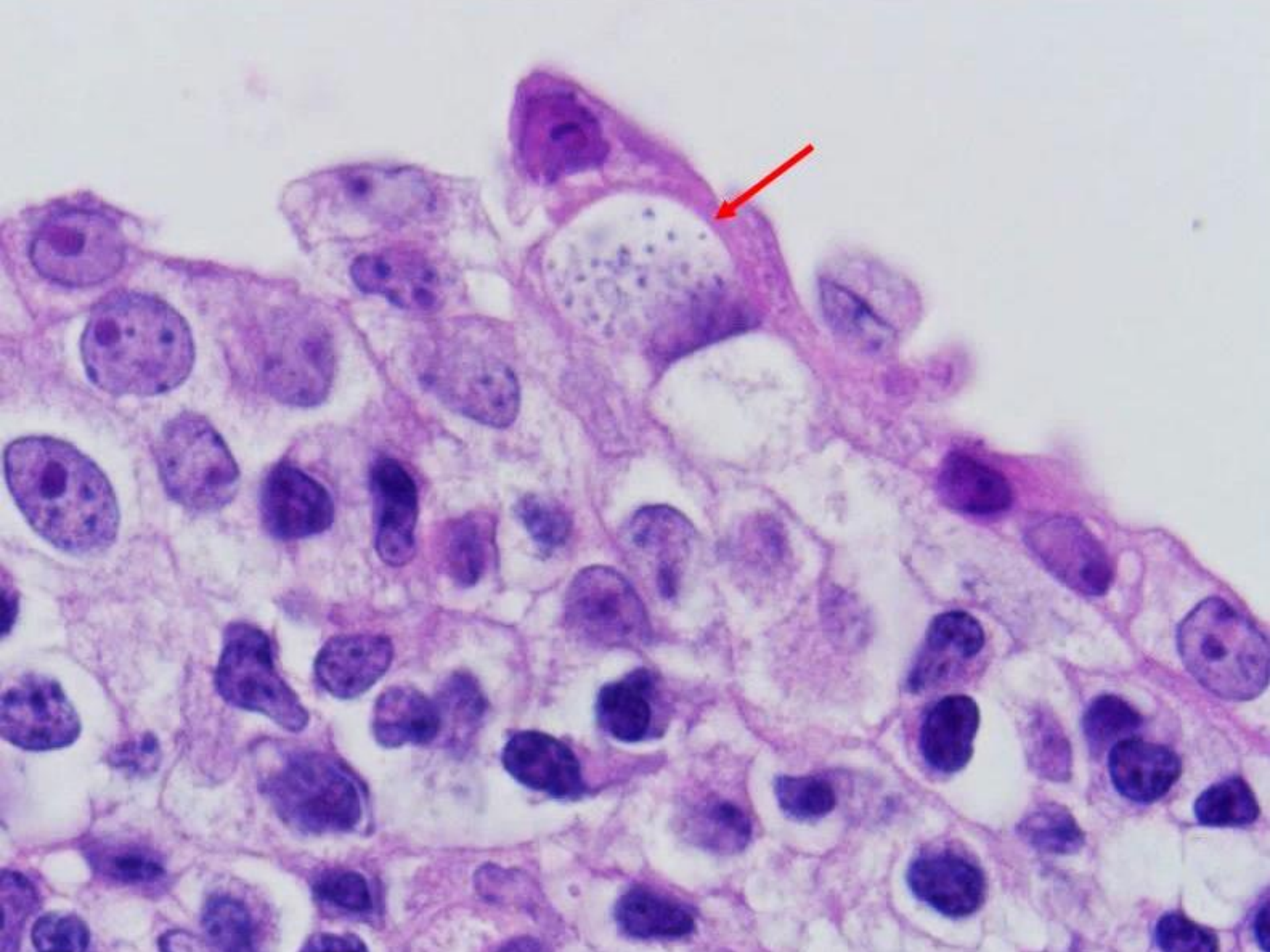
- It is a chronic infection caused by *Klebsiella granulomatis*; a gram negative non-motile, capsulated bacilli.
- It begins as a soft elevated papule which enlarge very slowly than it ulcerates.
- Microscopically: it is characterized by dense dermal inflammatory infiltrate composed of histiocytes and plasma cells with few neutrophilic infiltrate at site of skin ulcerations.
- The diagnosis depends on demonstration of Donovan bodies; small round bodies inside the cytoplasm of the histiocytes.



Lymphogranuloma venereum

- It is a venereal disease caused by *Chlamydia trachomatis* organisms. It mainly affecting lymph vessels and lymph nodes causing swellings of inguinal lymph nodes.
- Microscopically; it shows small abscesses surrounded by pale epithelioid cells.
- Complications: it may results in extensive scarring causing stricture of urethra, vagina and rectum.
- It also may cause fistulas.





2- Cervicitis

- ❑ It means inflammation of cervix, mainly endocervical glands caused by Gonococci, E-coli, Staphylococci and haemolytic Streptococci.

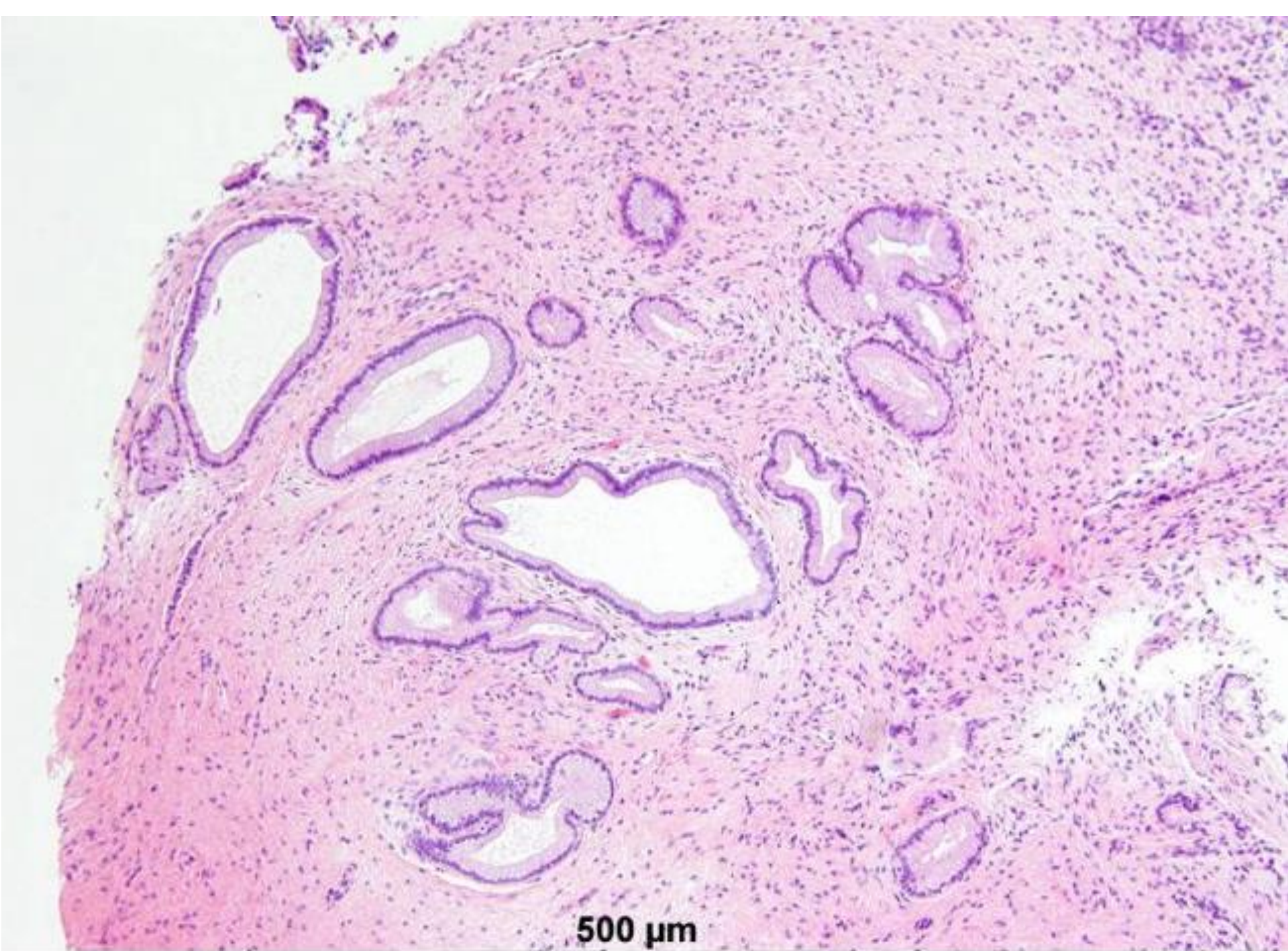
Acute cervicitis

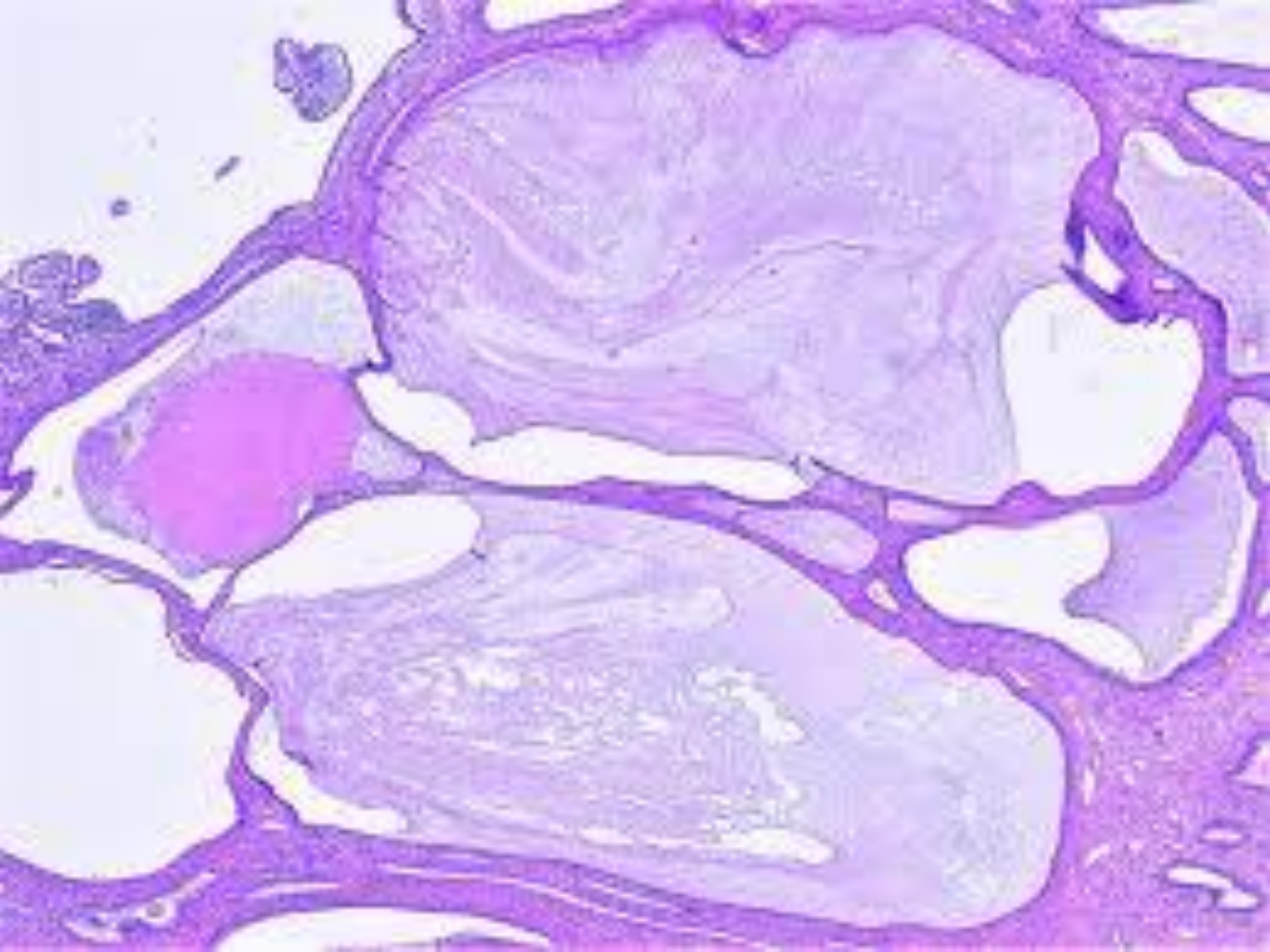
- ❑ The cervix become congested, swollen and show profuse purulent discharge. The acute inflammation commonly passes to a chronic stage.

Chronic cervicitis

It is an extremely common condition in adult females. It affects specifically squamocolumnar junction and endocervix. The following pathological lesions may develop.

- **Cervical erosion:** the stratified squamous epithelium of the ectocervix is shed and get covered by columnar epithelium from endocervix. The transparent columnar epithelium show underlying hyperaemic tissue. the ectocervix becomes intense red and bleeds easily on touch.
- **Nabothian follicles (Retention cysts):** the openings of some cervical glands are blocked with retention of their secretions and subsequent formation of small cystic swellings.





3- Chronic endometritis

- ❑ It may follow pregnancy, abortion or as a result of intrauterine device. Some cases are associated with underlying submucous leiomyoma.
- ❑ **Symptoms:** it is usually asymptomatic. Some patients may present with vaginal bleeding or pelvic pain. Others may complain of infertility or recurrent implantation failure.

❑ **Microscopically:** Endometritis is characterized by infiltration of the endometrium by lymphocytes and plasma cells with minor contribution of eosinophiles. It should be remembered that lymphocytic infiltration of the endometrium is a normal finding. *So, diagnosis of endometritis is dependent mainly on identification of plasma cells.*

4- Inflammation of fallopian tubes

- Bacterial infection of fallopian tube is a rather common disease. It may follow invasive procedure as curettage or insertion of intrauterine device. It is also may results from ascending infection. Tubal inflammation may results in intraluminal obstructions that may result in infertility. The tubal lumen get filled with purulent secretions (pyosalpinx). Spread of infection to the ovary may cause ovarian abscess.
- Chronic tubal inflammation resulting in marked tubal fibrosis and serosal adhesions.

II- Classification of Tumors of Lower Female Genital Tract

Classification of tumors of uterine cervix

Epithelial tumors

Benign epithelial tumors

- **Condyloma acuminatum**
- Squamous cell papilloma

Malignant epithelial tumors

- Squamous cell carcinoma
- Adenocarcinoma

Mesenchymal tumors

Benign mesenchymal tumors

- Leiomyoma
- Genital rhabdomyoma

Malignant mesenchymal tumors

- Leiomyosarcoma
- **Sarcoma botryoides.**

Classification of tumors of vagina

Epithelial tumors

Benign epithelial tumors

➤ **Condyloma acuminatum**

➤ Squamous cell papilloma

Malignant epithelial tumors

➤ Squamous cell carcinoma

➤ Clear cell adenocarcinoma

➤ Mucinous adenocarcinoma

Mesenchymal tumors

Benign mesenchymal tumors

➤ Leiomyoma.

Malignant mesenchymal tumors

➤ **Sarcoma botryoides.**

➤ Leiomyosarcoma.

Classification of tumors of the vulva

Epithelial tumors

Benign epithelial tumors

- **Condyloma acuminatum**
- Vestibular papilloma

Malignant epithelial tumors

- Squamous cell carcinoma
- Basal cell carcinoma
- Glandular tumors as Paget disease.

Mesenchymal tumors

Benign mesenchymal tumors

- Leiomyoma.

Malignant mesenchymal tumors

- **Sarcoma botryoides.**
- Leiomyosarcoma.
- Liposarcoma.

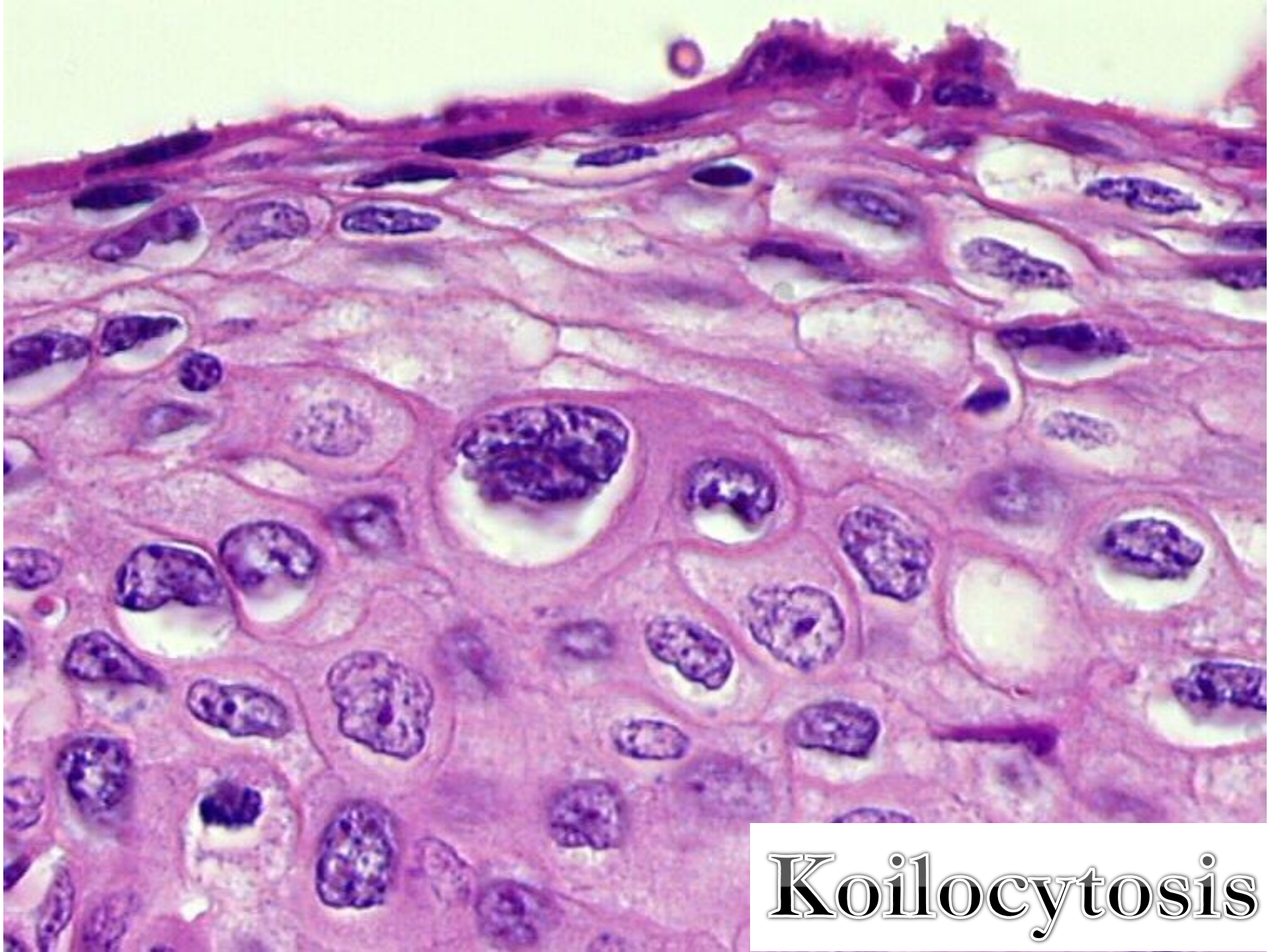
Tumors from skin appendages.

HPV and lower female genital tract

- ❑ The role of HPV in pathogenesis of both condyloma and carcinoma is well established. It has now been demonstrated that more than 99% of cervical carcinomas are associated with oncogenic HPV.
- ❑ HPV is a DNA virus that can be classified into several genotypes. Some HPV genotypes transmitted by sexual contact. Some of these are low risk and cause condyloma acuminata as HPV genotypes 6 and 11. While others are considered as high risk genotypes as HPV-16 & 18.

➤ Genital HPV are epitheliotropic. Viral particles must reach the basal layer of the squamous epithelium of the lower female genital tract. This is achieved by micro injury to this epithelium. Once the viral particles taken up by the basal epithelial cells; the infection may become silent as the viral genome do not transcribed inside the epithelial cells, or productive infection occurs when the viral genome being transcribed as the host squamous cell mature which finally resulting in reaching with subsequent release of viral particles at the epithelial surface. This is typically associated with koilocytic change as a viral cytopathic effect on host cell.

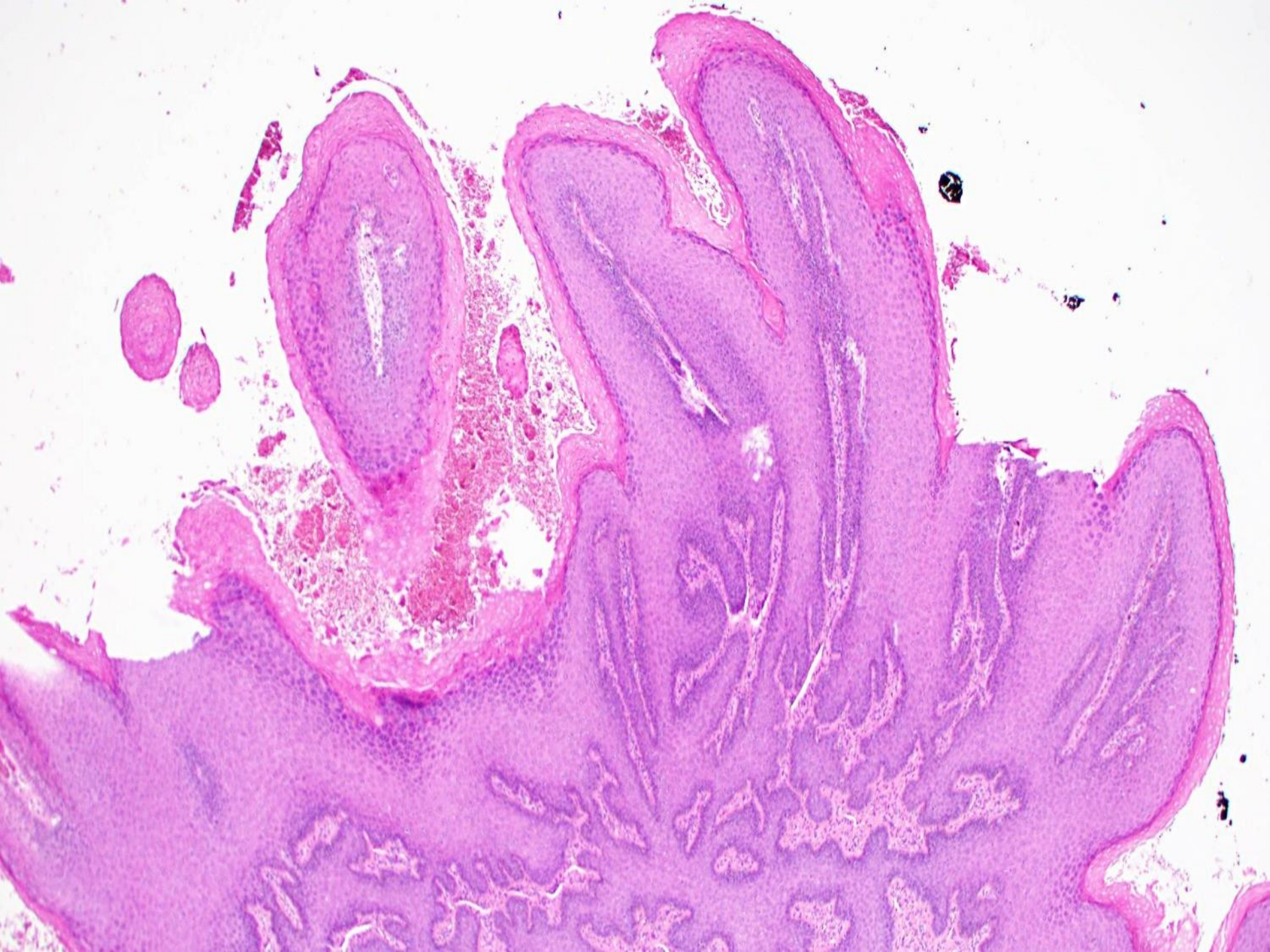
➤ The koilocytic cell is a superficial or intermediate mature squamous cell characterized by sharply outlined perinuclear vacuolation, densely stained peripheral cytoplasm and enlarged nucleus with irregular (undulating) nuclear membrane, binucleation or multinucleation may also occur.

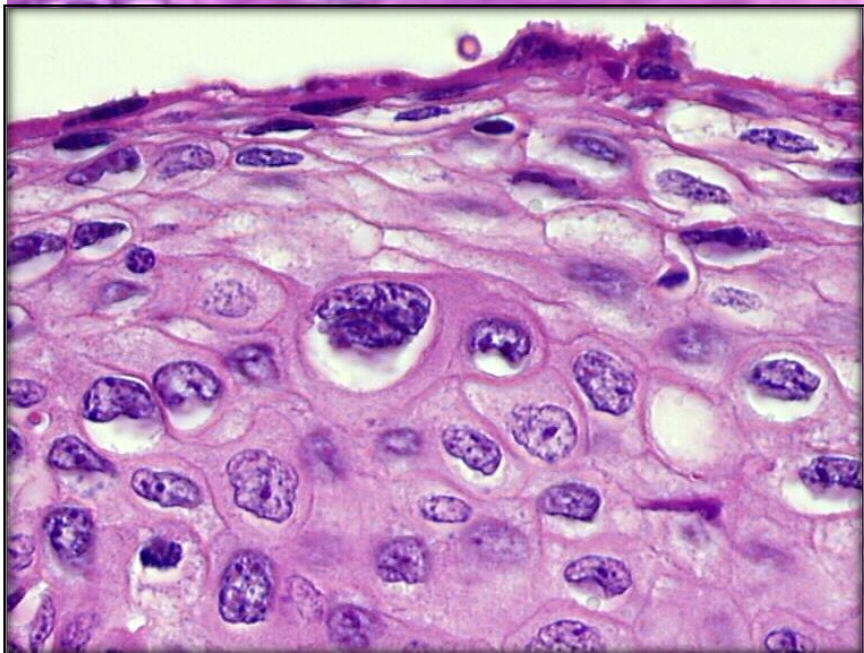
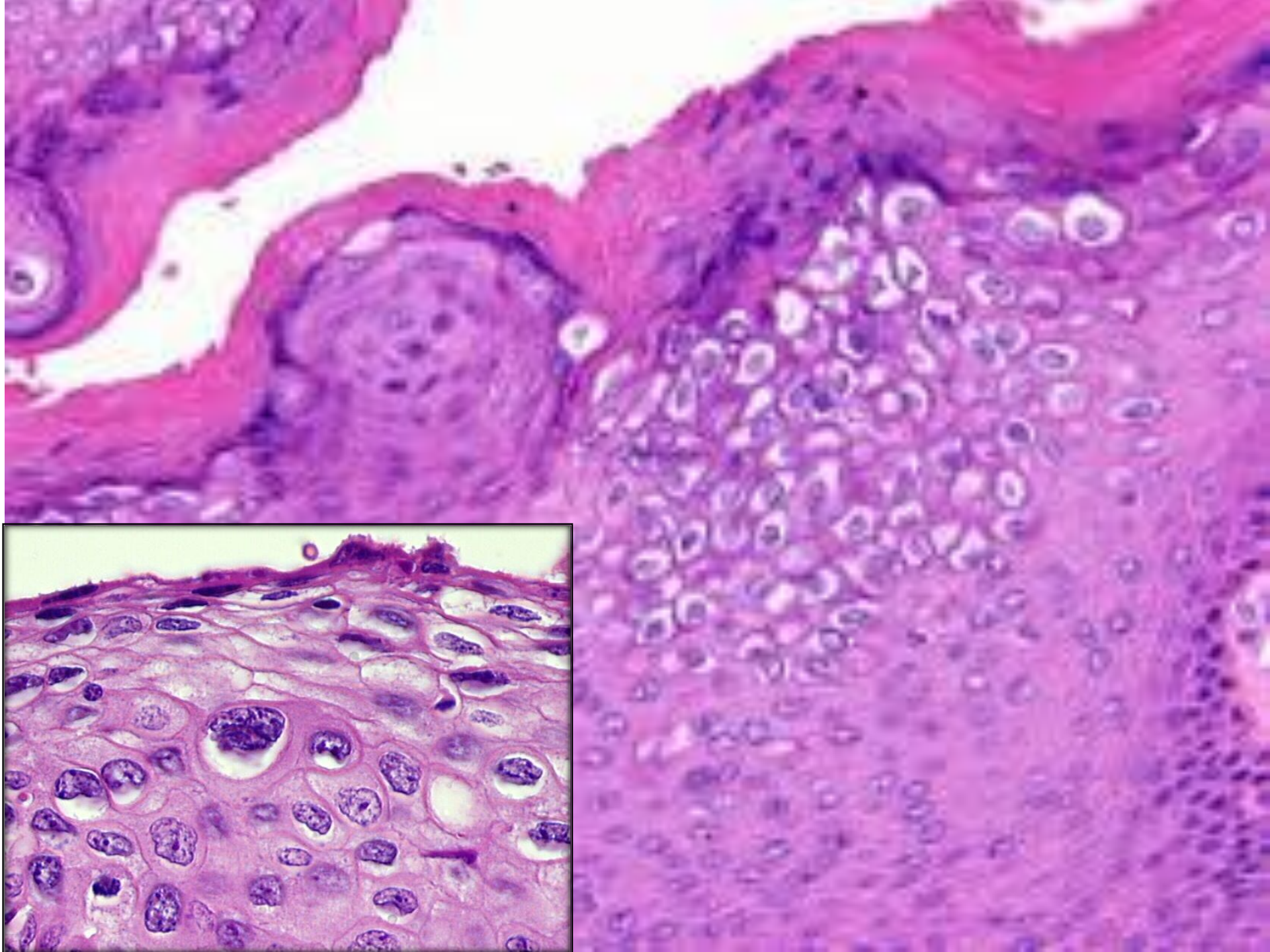


Koilocytosis

Condyloma acuminatum

- ❑ Grossly: it appears as one or several soft elevated masses of variable sizes.
- ❑ Microscopically: it may be of *flat* or *complex papillary architectural* patterns. **Flat pattern** is much more common. The **papillae** have delicate fibrovascular cores rich in inflammatory cells and covered by well differentiated squamous epithelium. Both forms have koilocytosis of the surface epithelial cells and lymphocytic infiltration of the stroma.





Invasive cervical squamous cell carcinoma

General features: It is a common malignant tumor of female genital tract in western countries. Almost all cases are HPV associated.

Risk factors:

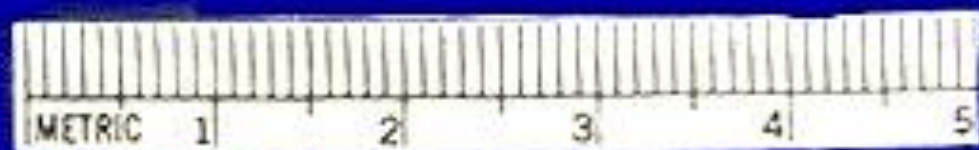
- ✓ HPV exposure.
- ✓ Age at first intercourse.
- ✓ Early marriage.
- ✓ Multiparity.
- ✓ Low socioeconomic level.
- ✓ Cigarette smoking.
- ✓ Impaired immune system: immunosuppressant therapy and HIV infection are associated with 5-10 fold increased risk for cervical neoplasia.

Pathological features

❑Grossly:

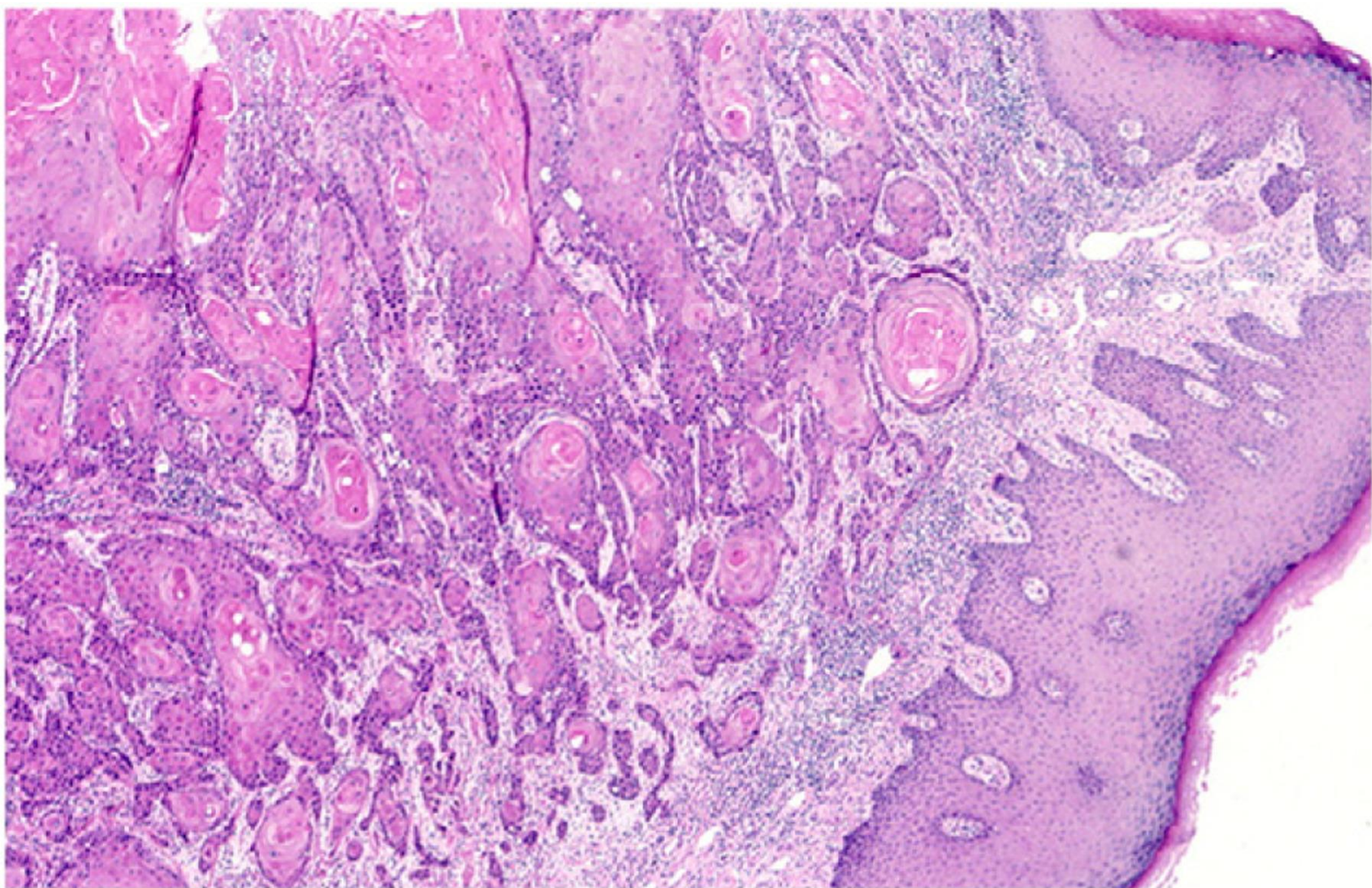
- I. Cervical carcinomas may be polypoid, bulky mass grows out of the cervix.
- II. It may be deeply infiltrative into the underlying tissues.
- III. Some cases are clinically inapparent or simply missed by the examiner and discovered accidentally on pathological examination of a uterus removed (with its cervix) for a benign condition.

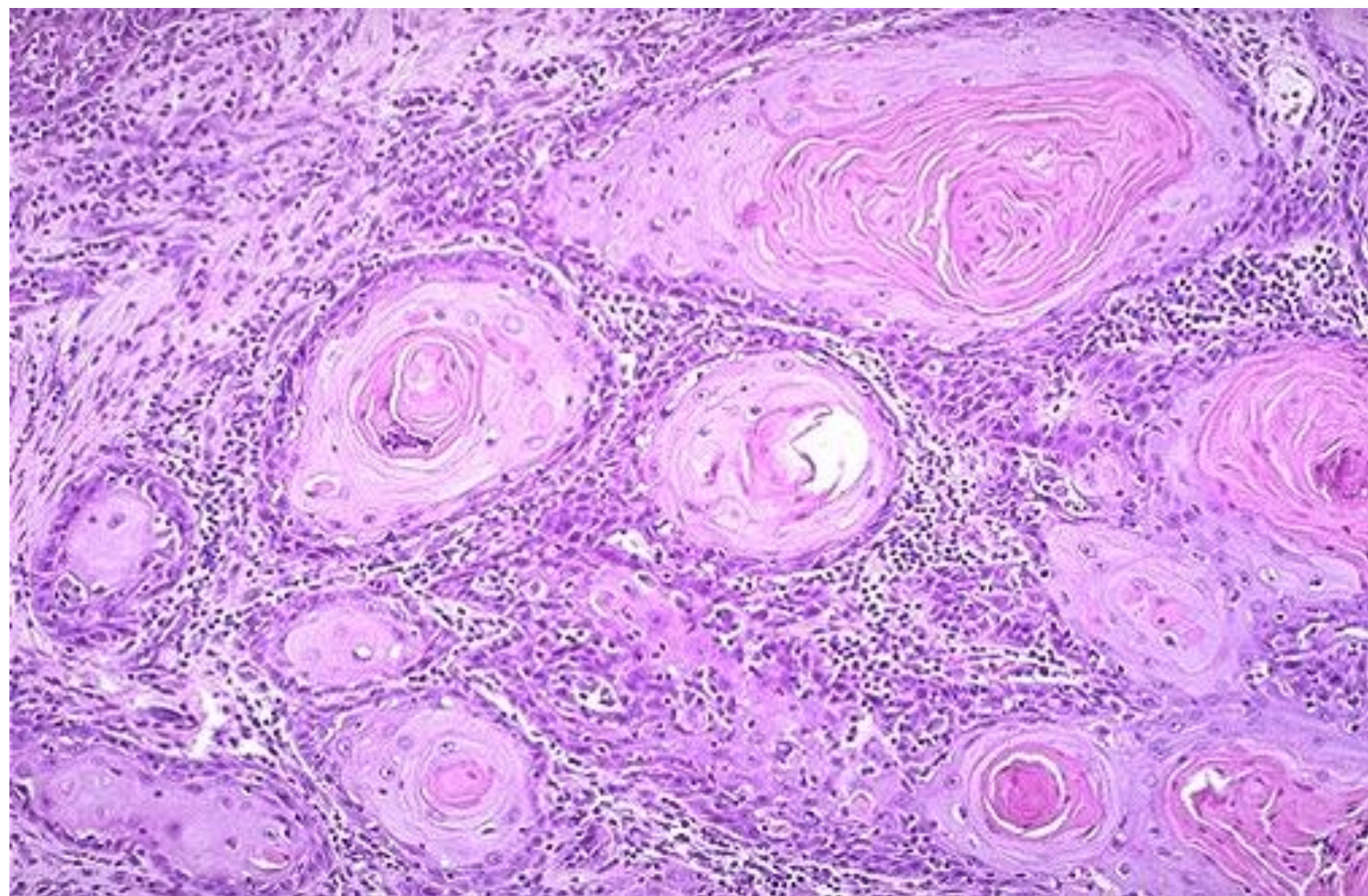


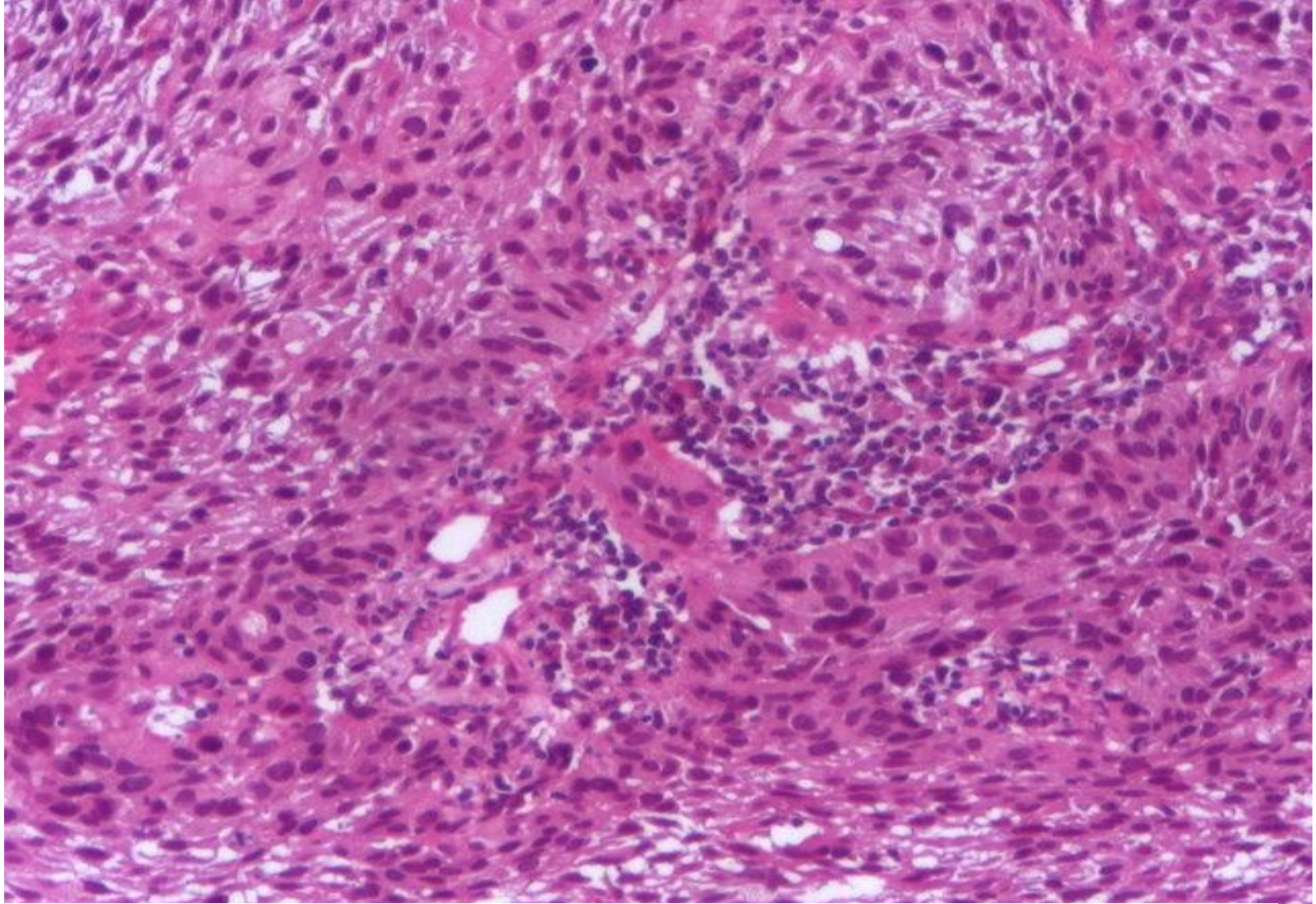


Microscopically

Three cellular variants of cervical squamous cell carcinoma exist, usually admixed together, large cell non-keratinizing, keratinizing and small cell type.







Non-Keratinizing squamous cell carcinoma

Spread of cervical squamous cell carcinoma

Direct spread:

- Downwards to upper part of vagina.
- Upward obstructing cervical canal causing pyometra, may involve uterine body.
- Anteriorly to bladder and ureteric ends resulting in vesicovaginal fistula or ureteric obstruction and uraemia.
- Posteriorly to the rectum which may result in rectovaginal fistula.

Distant spread:

- Lymphatic route: to the external iliac, hypogastric and sacral lymph nodes.
- Blood spread: to lung in 9% and bone in 4% of cases.

Complications

1. Pyometra.
2. Chronic renal failure.
3. Vesico-vaginal or recto-vaginal fistulae.



Thank You