FEMALE REPRODUCTIVE SYSTEM - PRACTICAL

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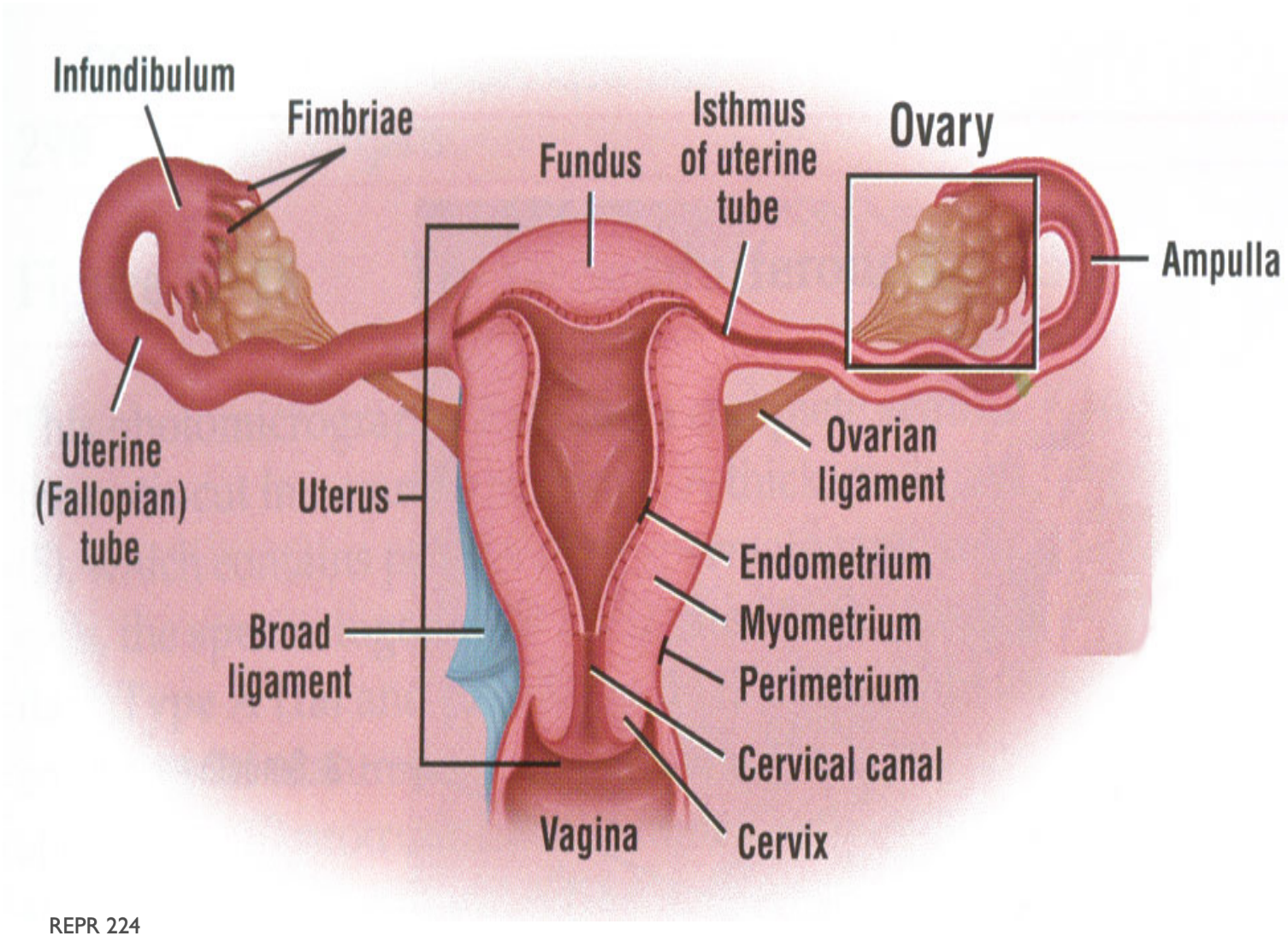
Objectives

At the end of the practical classes, the medical students should be able to:

- Know the normal structures of the female genital systems.
- Acquire the knowledge about the gross appearances and histopathological features of the following diseases in the female genital system.

Female Reproductive System - Diagram



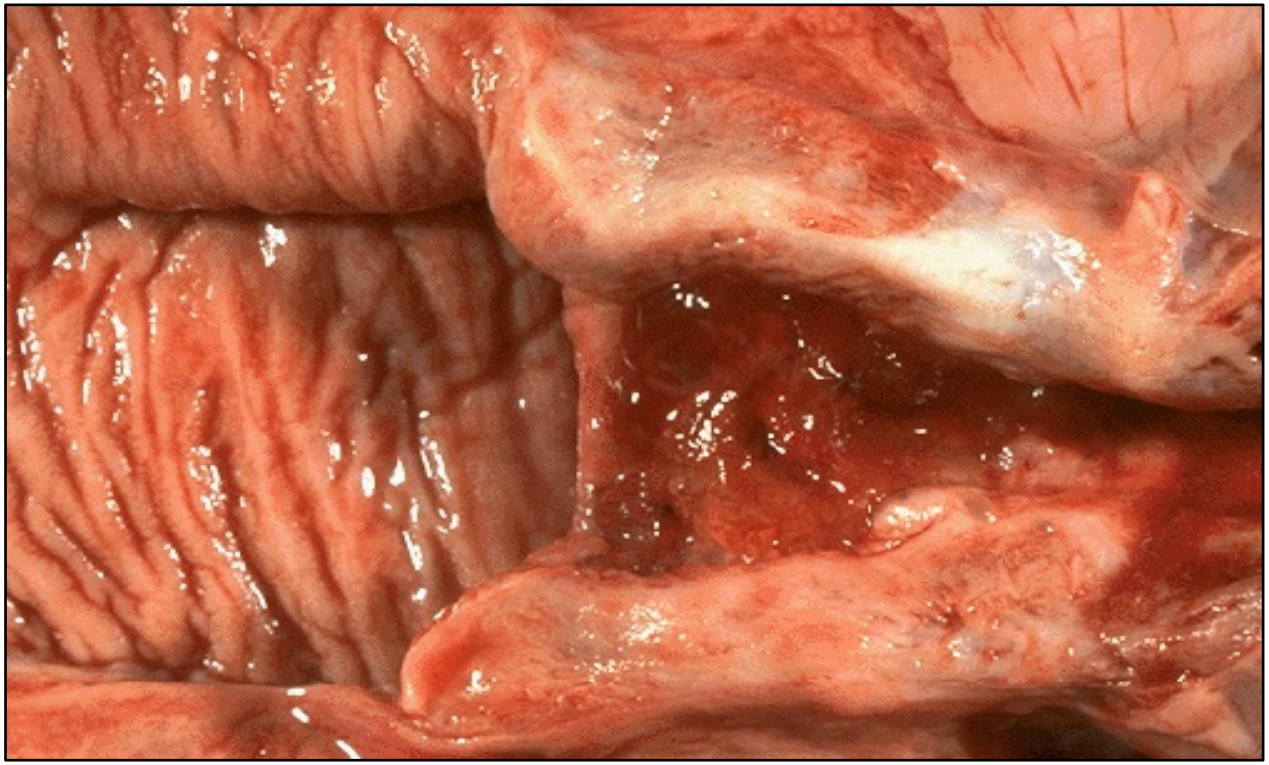
Female Reproductive System - Gross

Uterus with Cervix, Ovaries and Fallopian Tubes

Normal Uterine Cervix - Gross

Normal cervix with a smooth, glistening mucosal surface. There is a small rim of vaginal cuff from this hysterectomy specimen. The cervical os is small and round, typical for a nulliparous woman. The os will have a fish-mouth shape after one or more pregnancies

Normal Vagina & Cervix - Gross Cut section



The normal adult vaginal mucosa with a wrinkled appearance that is seen in women of reproductive years appears at the left. The cervix has been opened to reveal an endocervical canal leading to the lower uterine segment at the right. It has an erythematous appearance extending to the cervical os consistent with chronic inflammation.

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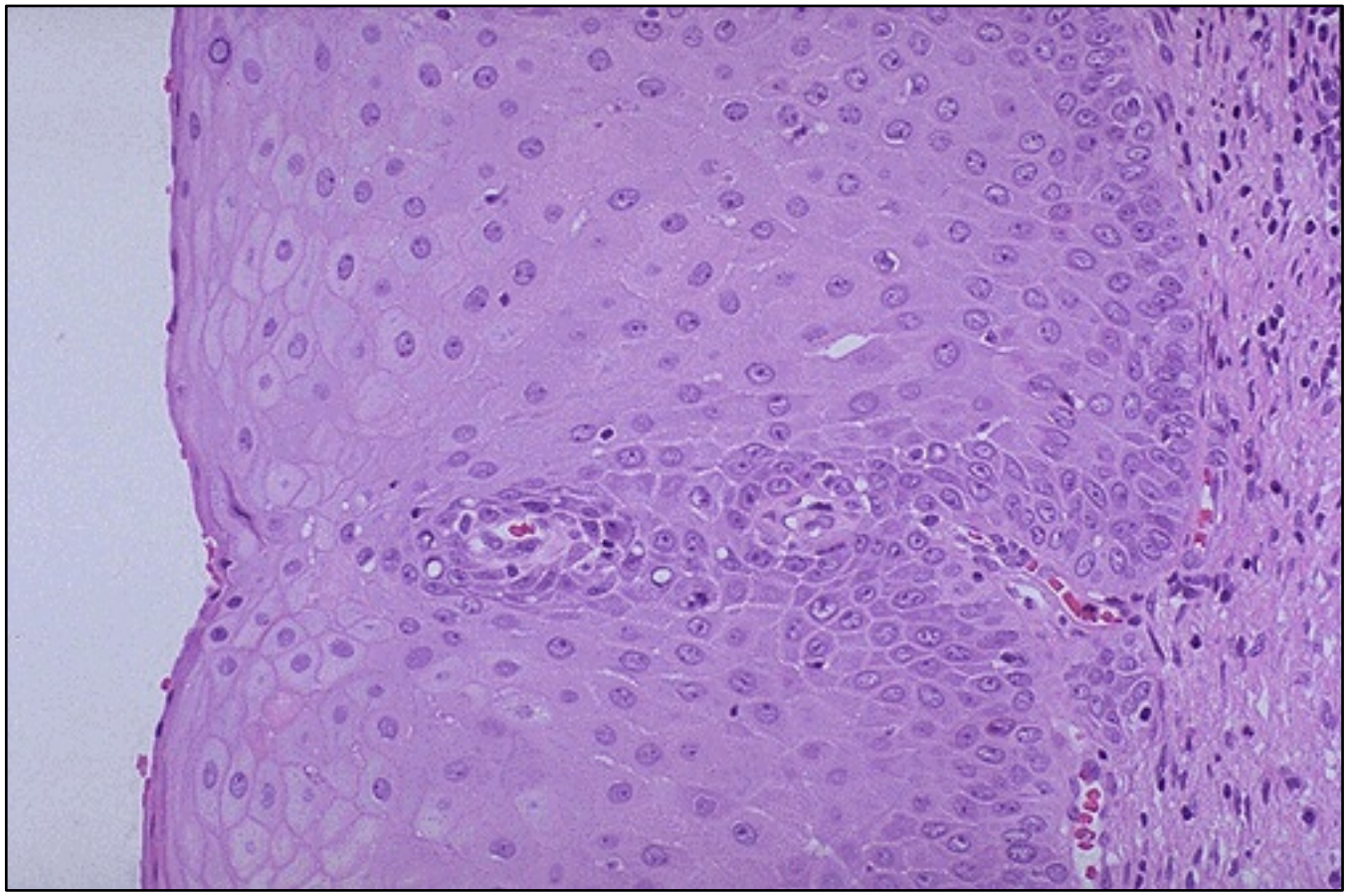
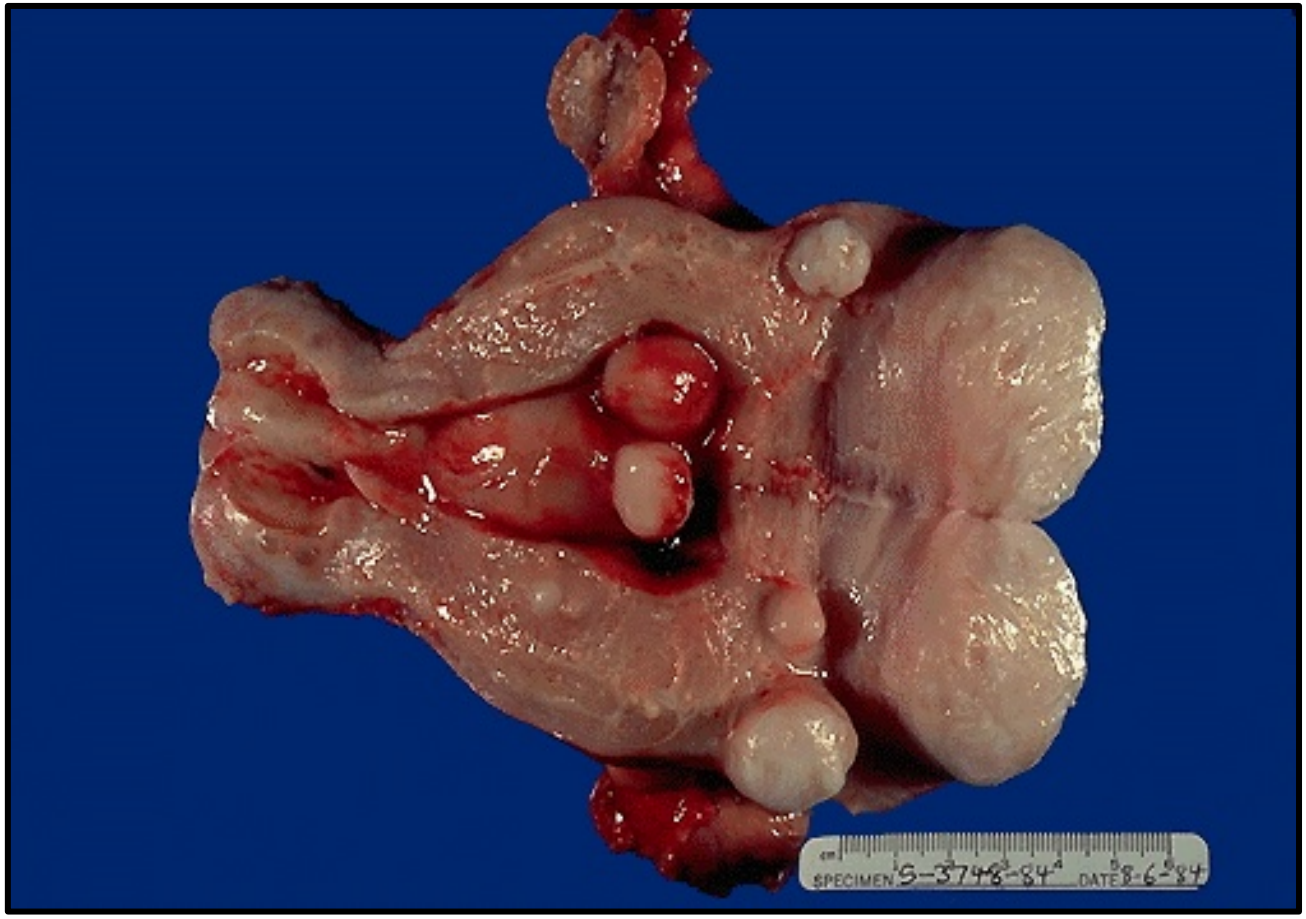
Normal Cervical Mucosa - HPF



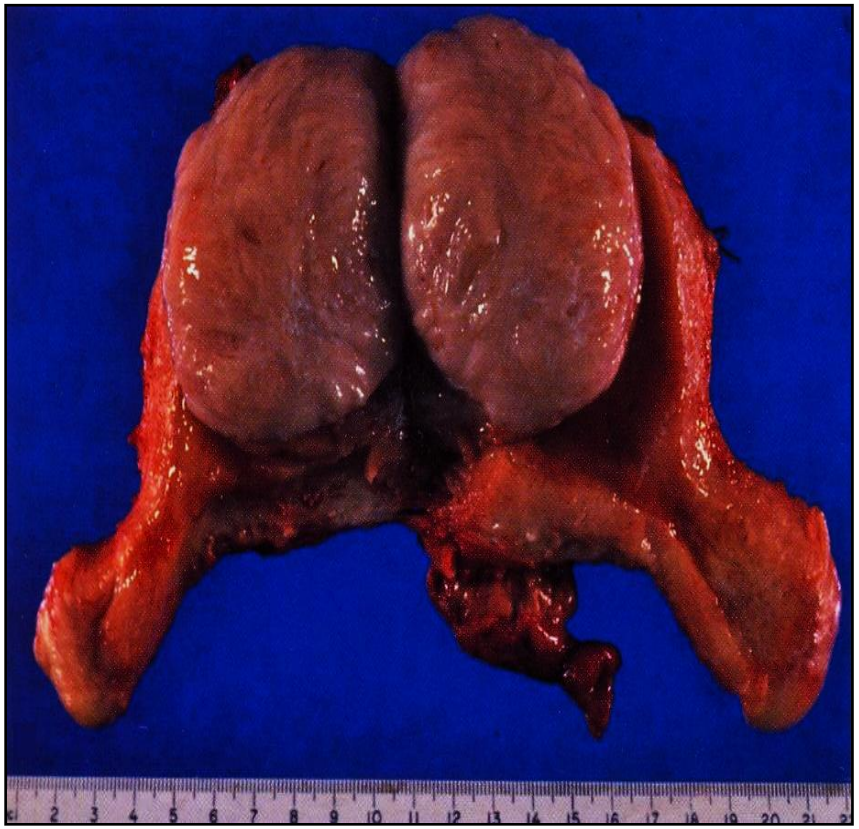
This is normal ectocervical non-keratinizing squamous epithelium. The squamous cells show maturation from the basal layer to the surface

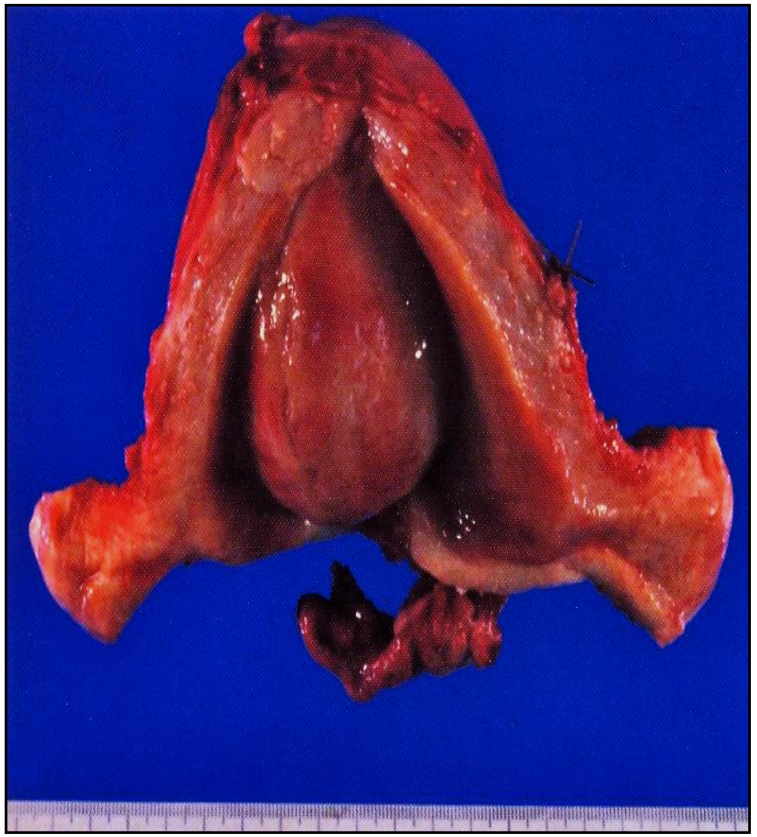
Multiple Uterine Leiomyomata - Gross



Smooth muscle tumors of the uterus are often multiple. They are seen here as submucosal, intramural, and subserosal leiomyomata.

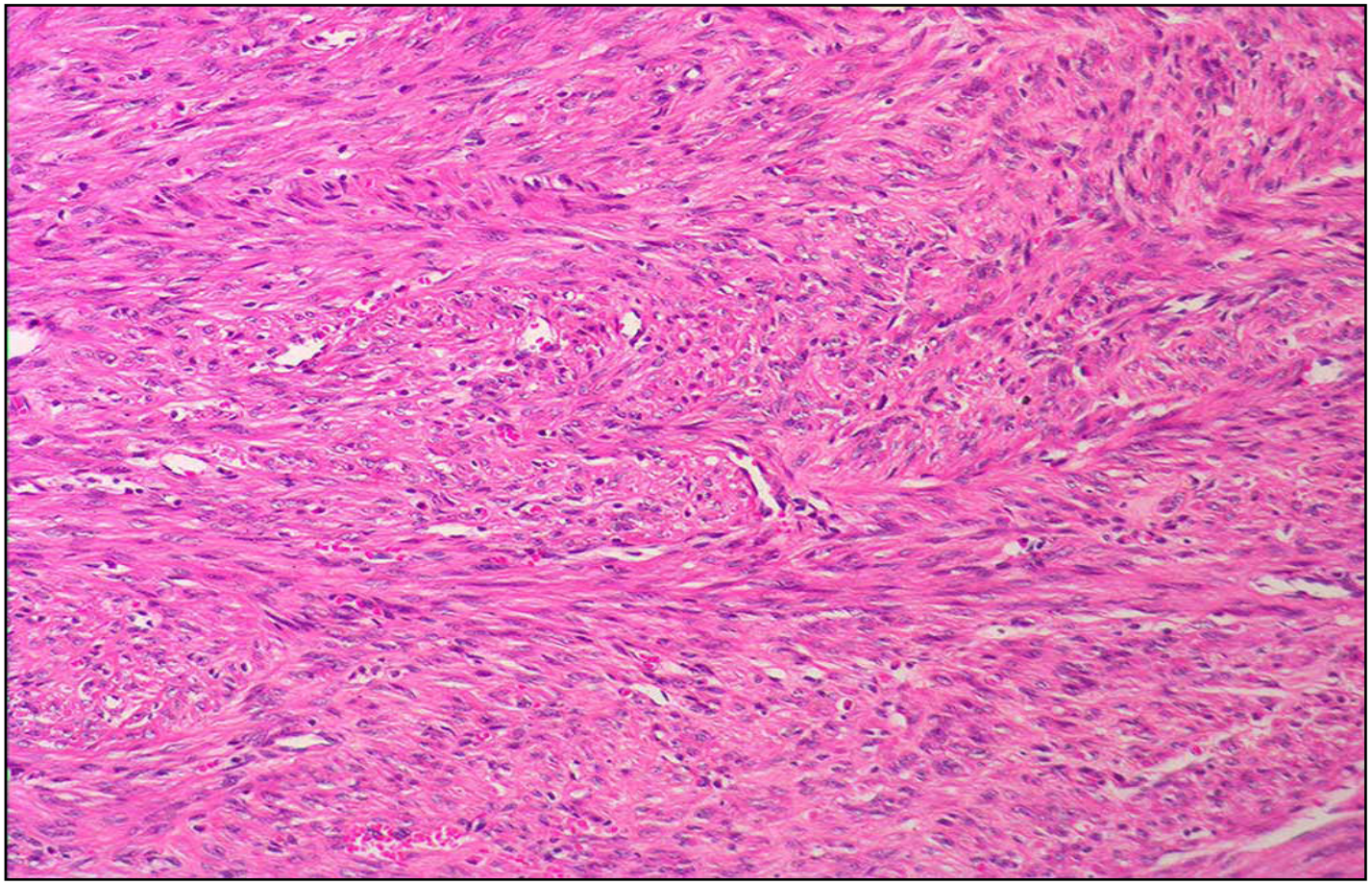
Multiple Uterine Leiomyomata - Gross





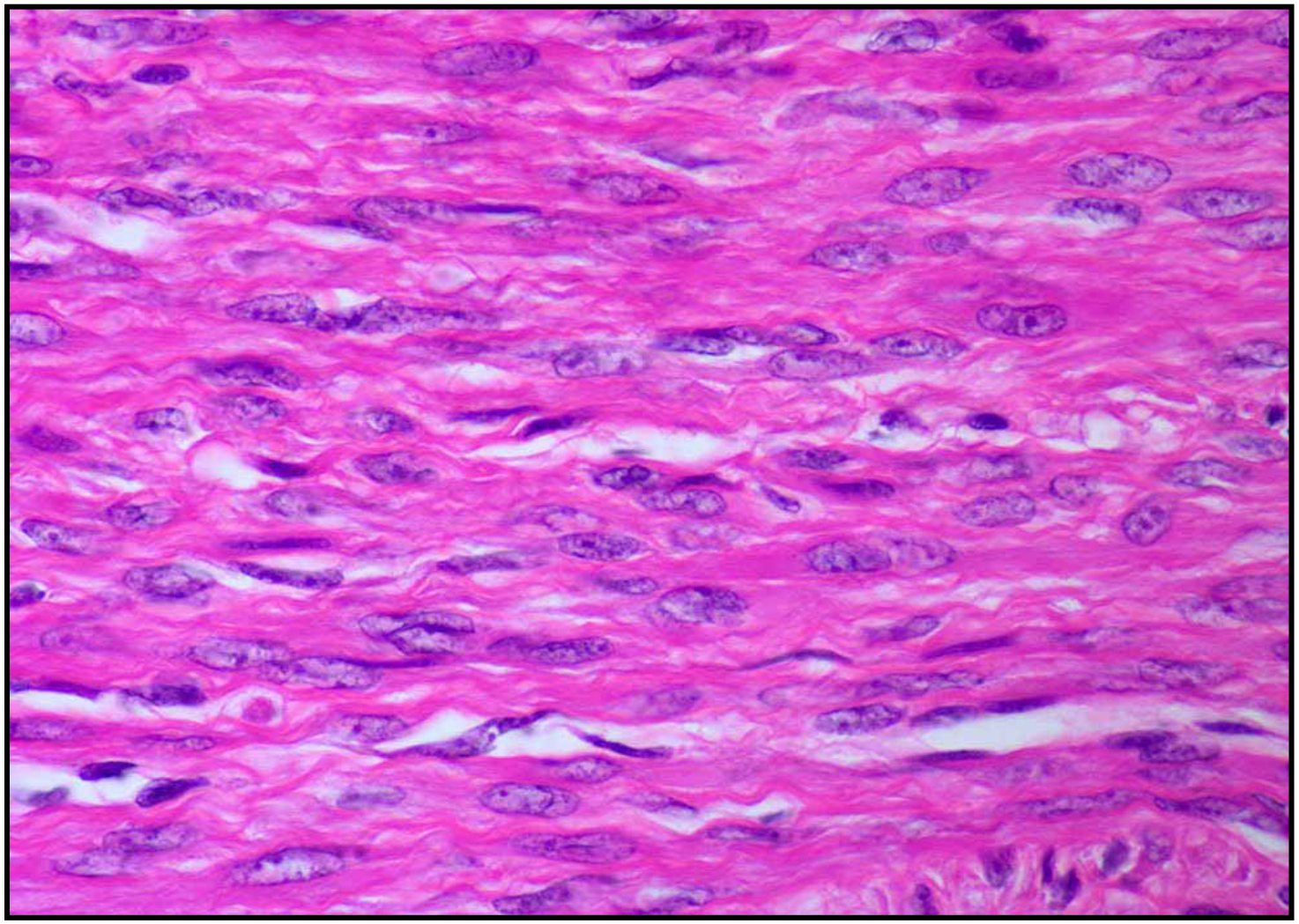
A well demarcated tumour mass in the muscle coat of uterus without a definite capsule.

Uterine Leiomyoma – LPF



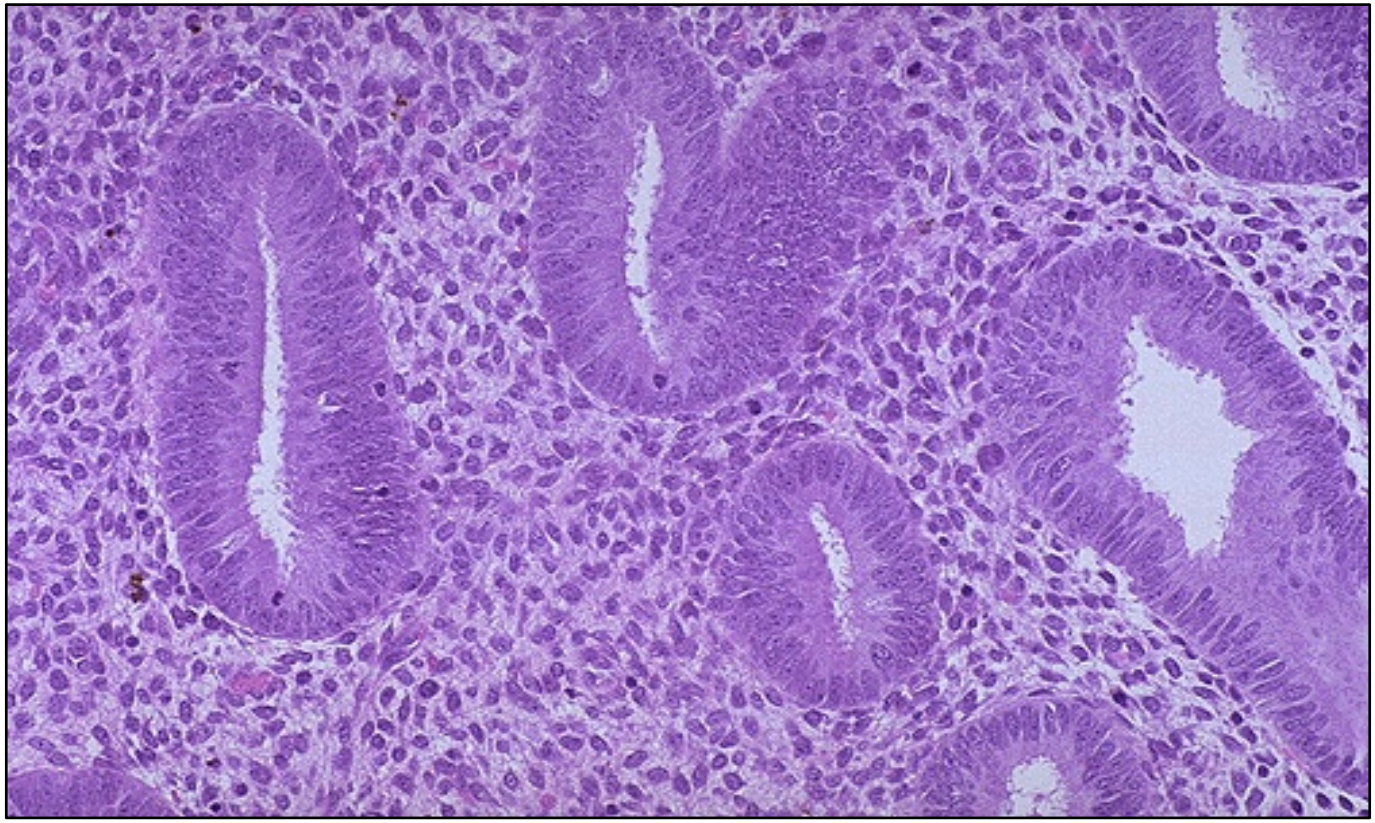
The tumour consists of interlacing bundles of smooth muscle and fibrous tissue. The muscle cells are spindle shaped with elongated nuclei and eosinophilic cytoplasm.

Uterine Leiomyoma – HPF



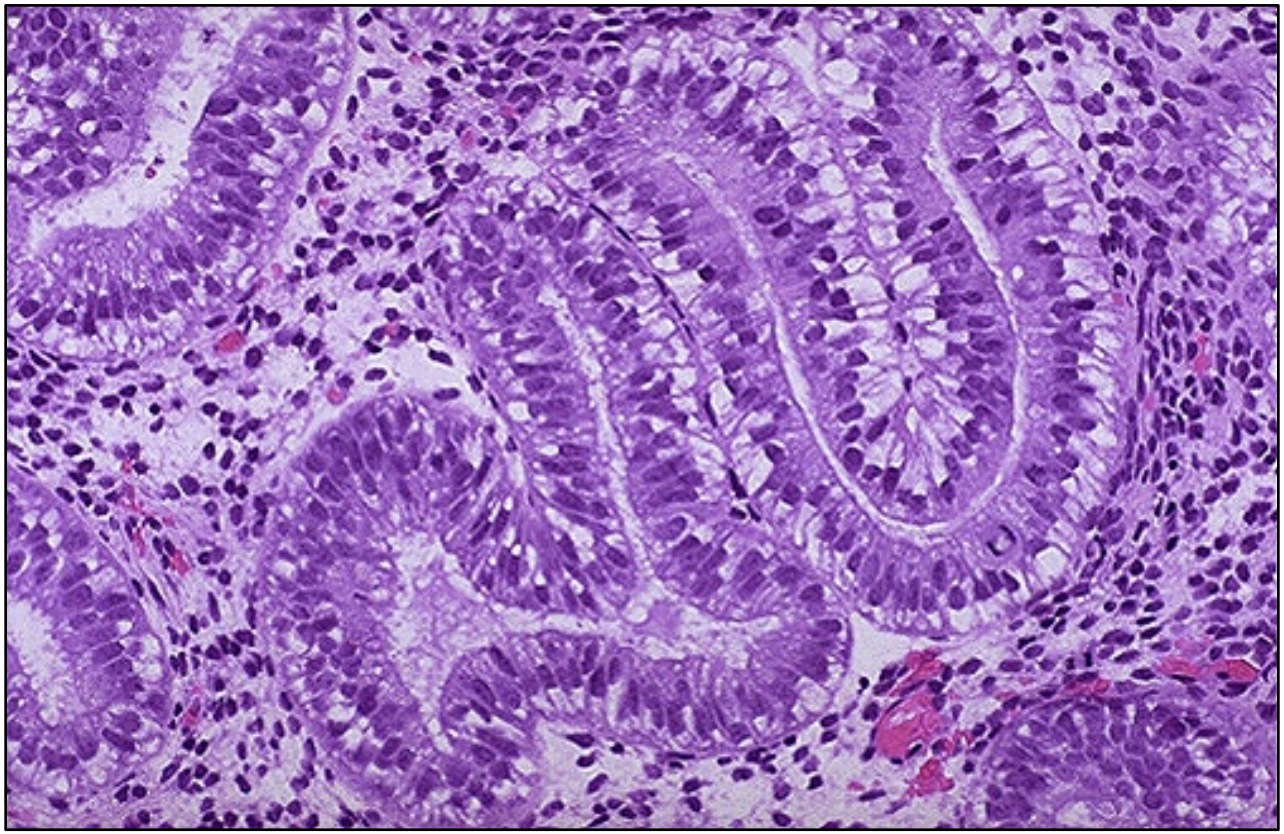
The muscle cells are spindle shaped with elongated nuclei and eosinophilic cytoplasm

Normal Proliferative Endometrium



A normal proliferative endometrium in the menstrual cycle. The proliferative phase is the variable part of the cycle. In this phase, tubular glands with columnar cells and surrounding dense stroma are proliferating to build up the endometrium following the shedding of the previous cycle.

Early Secretory Endometrium



The appearance with prominent subnuclear vacuoles in cells forming the glands is consistent with post-ovulatory day 2 of the luteal phase. The histologic changes following ovulation are quite constant over the 14 days to menstruation and can be utilized to date the endometrium.

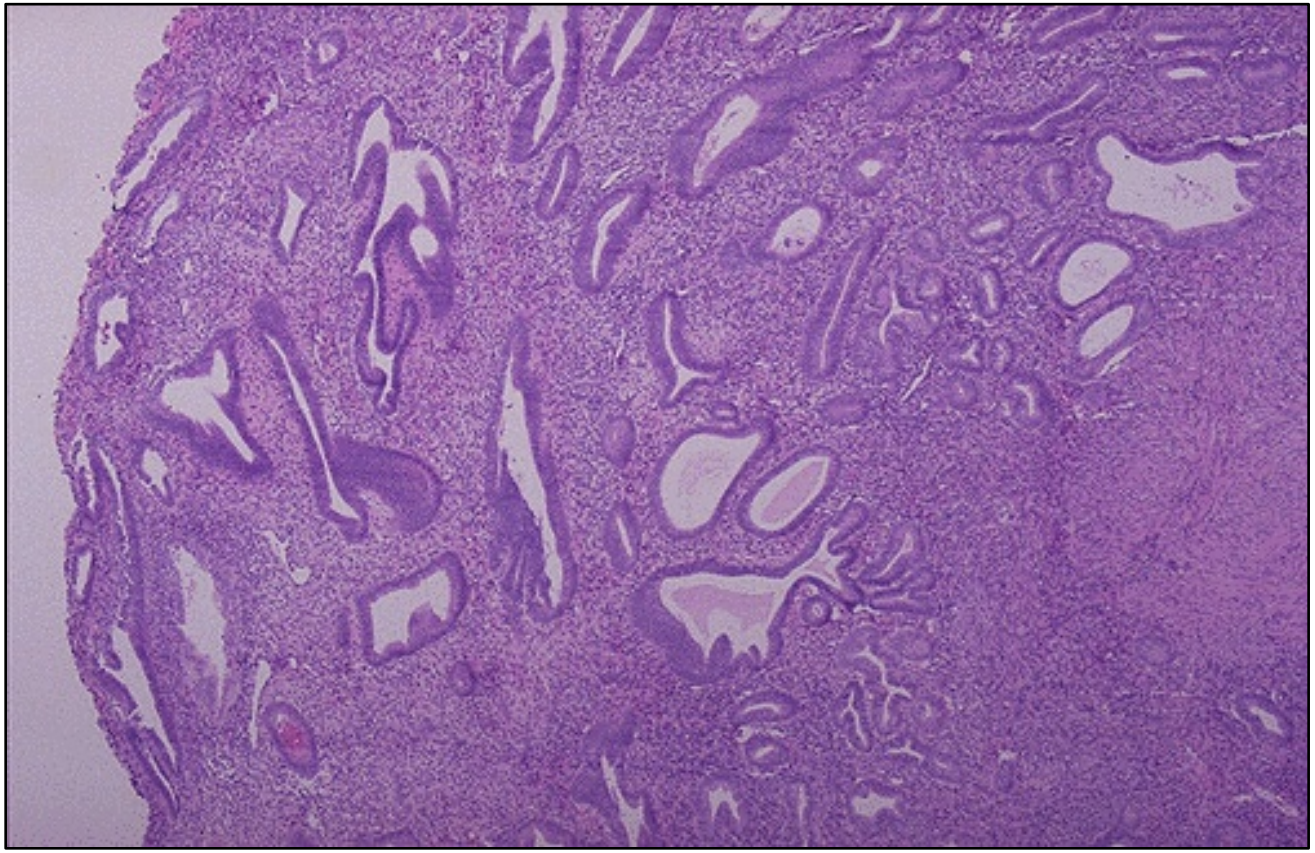
Endometrial Hyperplasia - Gross

- **Thick and hyperplastic endometrium.**
- **Areas of hemorrhage.**

The endometrial cavity is opened to reveal fronds of hyperplastic endometrium. Endometrial hyperplasia and carcinoma usually results with conditions of prolonged estrogen excess and can lead to metrorrhagia (uterine bleeding at irregular intervals), menorrhagia (excessive bleeding with menstrual periods), or menometrorrhagia.

Endometrial Hyperplasia without atypia (Simple and cystic endometrial hyperplasia) - LPF

- **Cystic and elongated glands.**
- **Increased glands to stromal ratio.**
- **Irregular glands lined by columnar cells.**



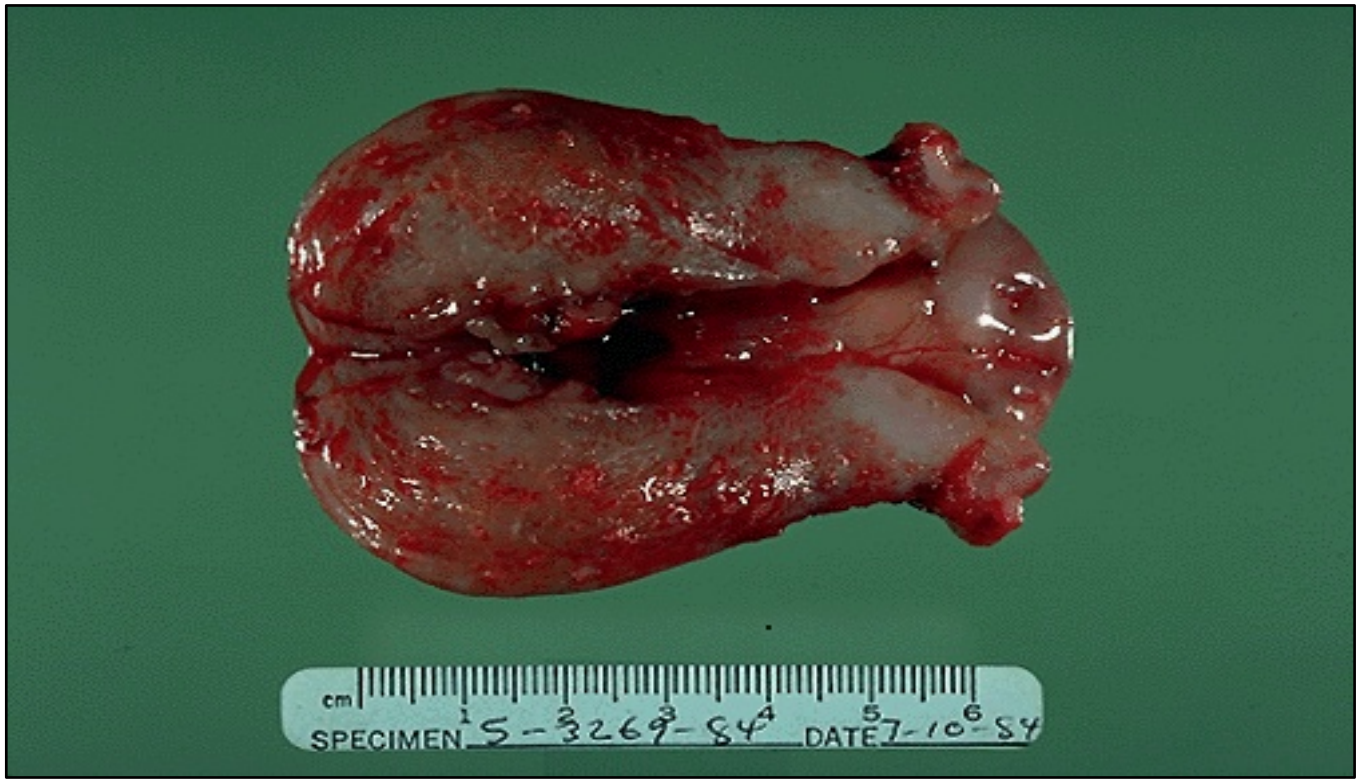
The amount of endometrium is abnormally increased and not cycling as it should. The glands are enlarged and irregular with columnar cells. Hyperplasia can cause bleeding.

Endometrial Hyperplasia

- Endometrial hyperplasia is placed in two categories based on the presence of cytologic atypia: hyperplasia without atypia and hyperplasia with atypia.

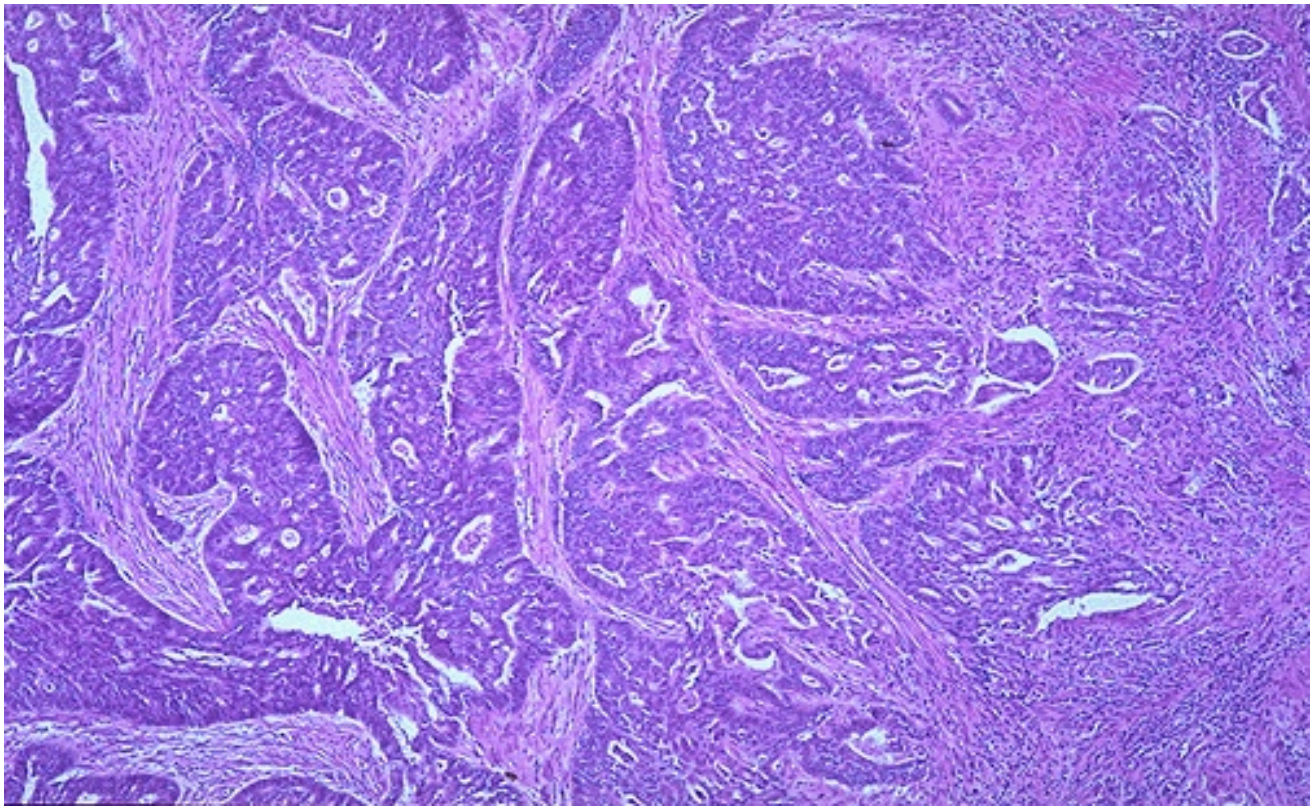
- Hyperplasia without cellular atypia carries a low risk (between 1% and 3%) for progression to endometrial carcinoma, whereas hyperplasia with atypia, also called endometrial intraepithelial neoplasia (EIN), is associated with a much higher risk (20%–50%).

Endometrial Adenocarcinoma - Gross



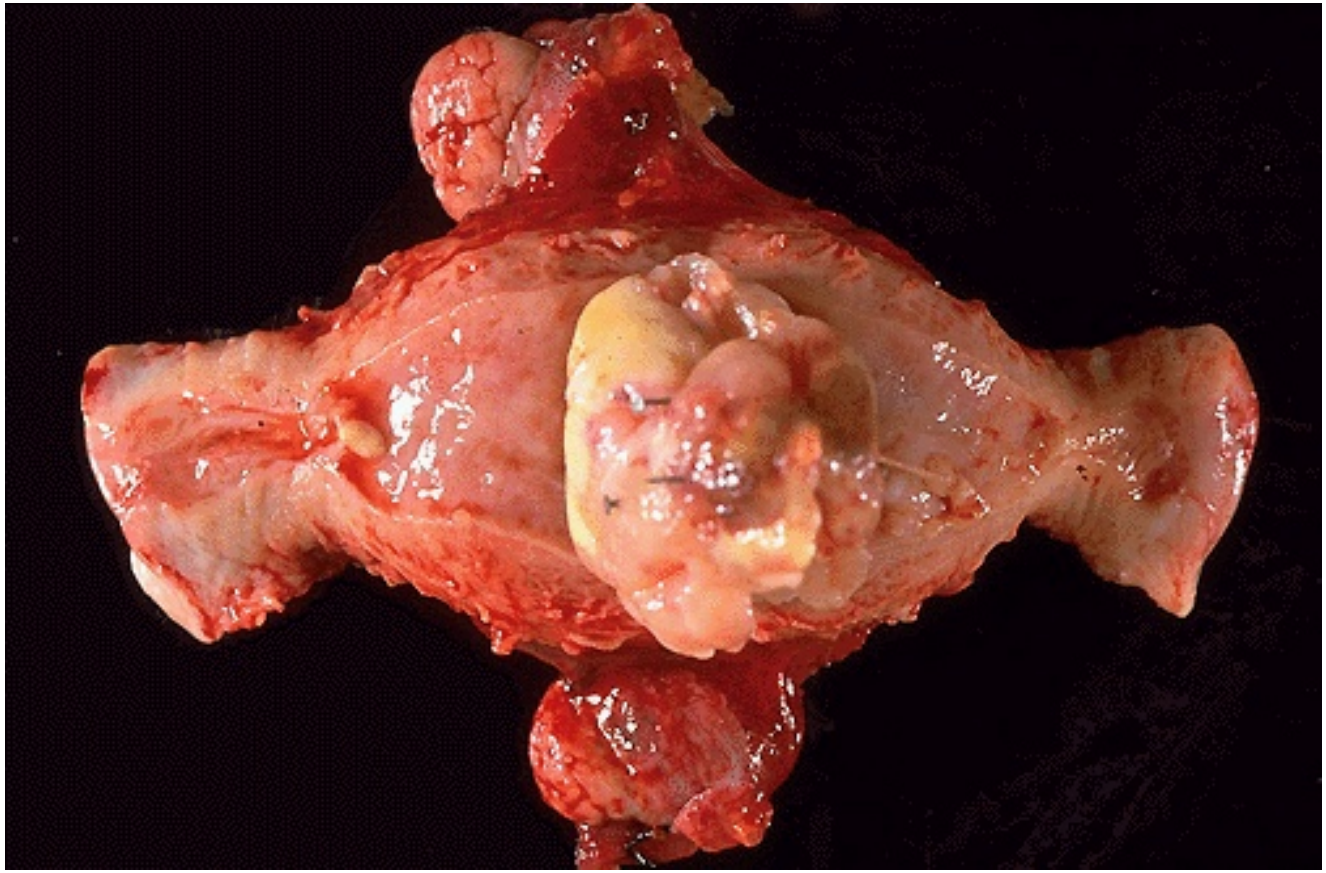
This uterus is not enlarged, but there is an irregular mass in the upper fundus that proved to be endometrial adenocarcinoma on biopsy. Such carcinomas are more likely to occur in postmenopausal women. Thus, any postmenopausal bleeding should make you suspect that this lesion may be present.

Endometrial Adenocarcinoma - LPF



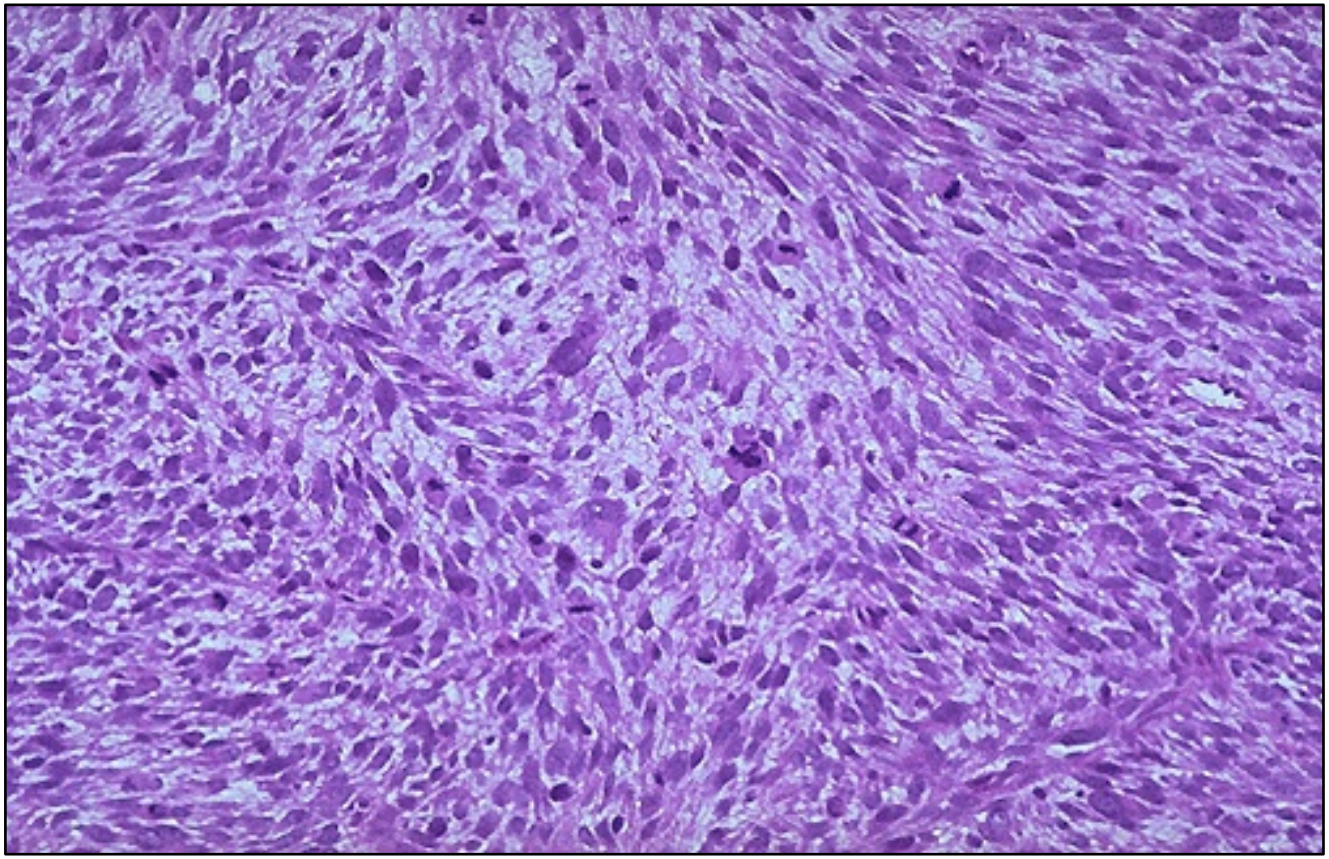
This is an endometrial adenocarcinoma which can be seen invading into the smooth muscle bundles of the myometrial wall of the uterus. This neoplasm has a higher stage than a neoplasm that is just confined to the endometrium

Endometrial Leiomyosarcoma - Gross



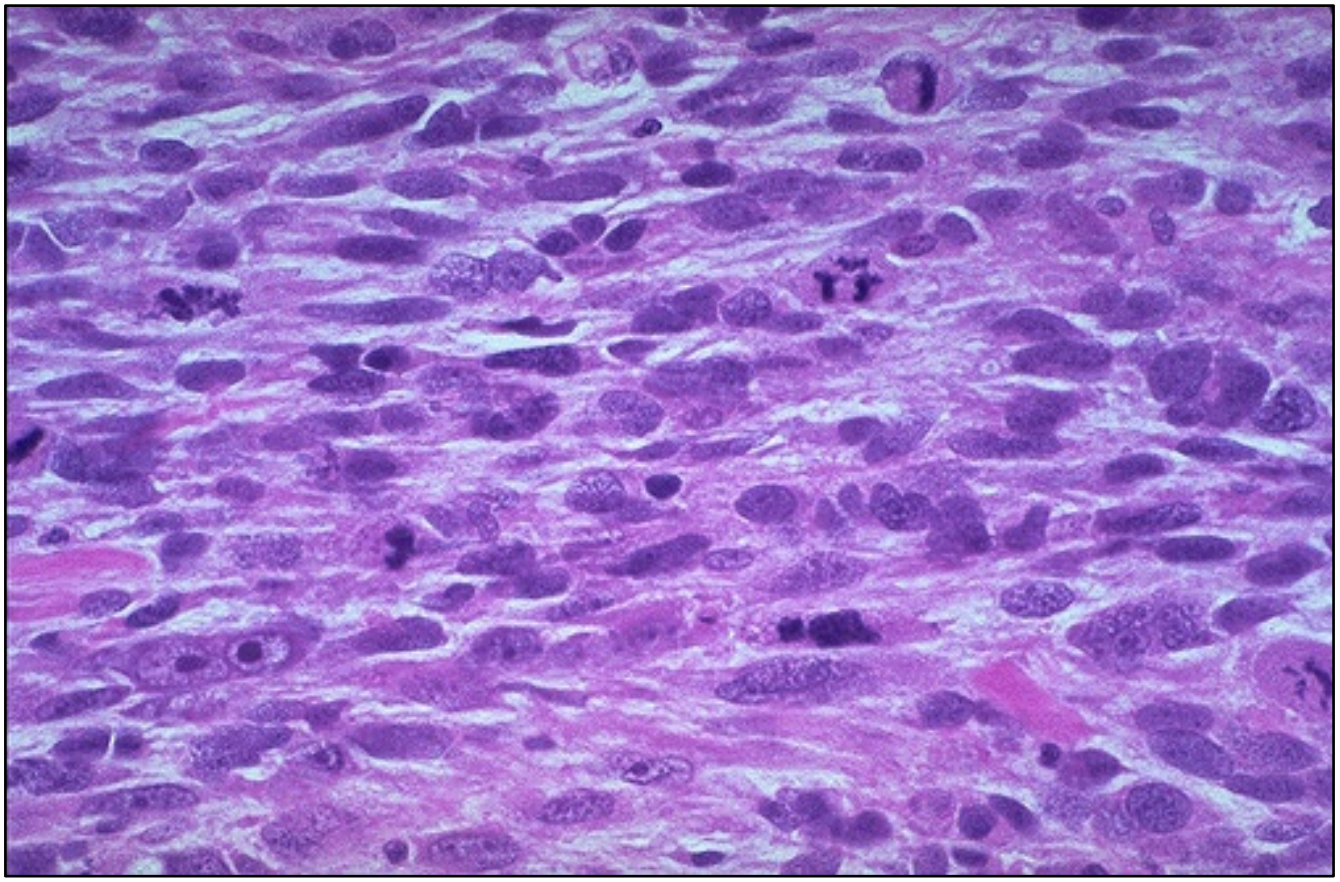
A large pale irregular mass protruding from myometrium.

Endometrial Leiomyosarcoma - LPF



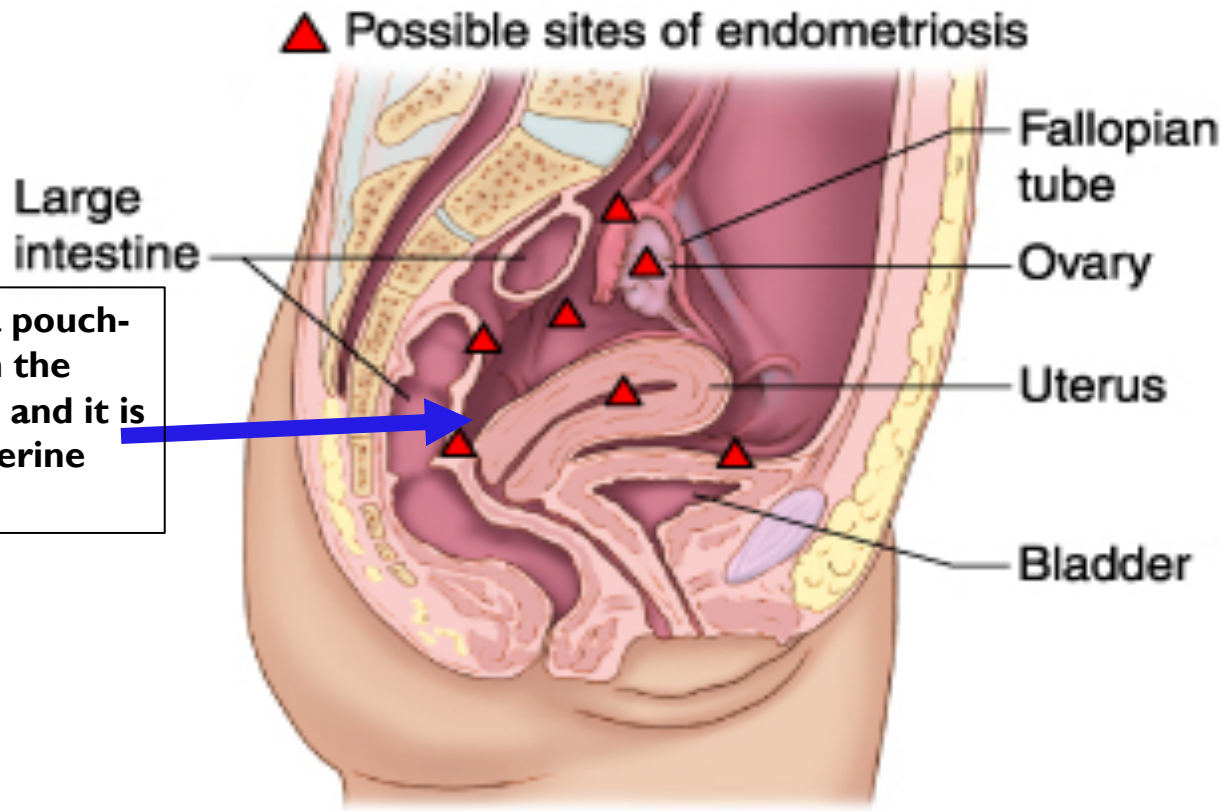
It is much more cellular and the cells have much more pleomorphism and hyperchromatism than a benign leiomyoma. An irregular mitosis is seen in the center

Endometrial Leiomyosarcoma - HPF



Spindle cells with nuclear and cellular pleomorphism and mitoses.

Endometriosis sites - Diagram



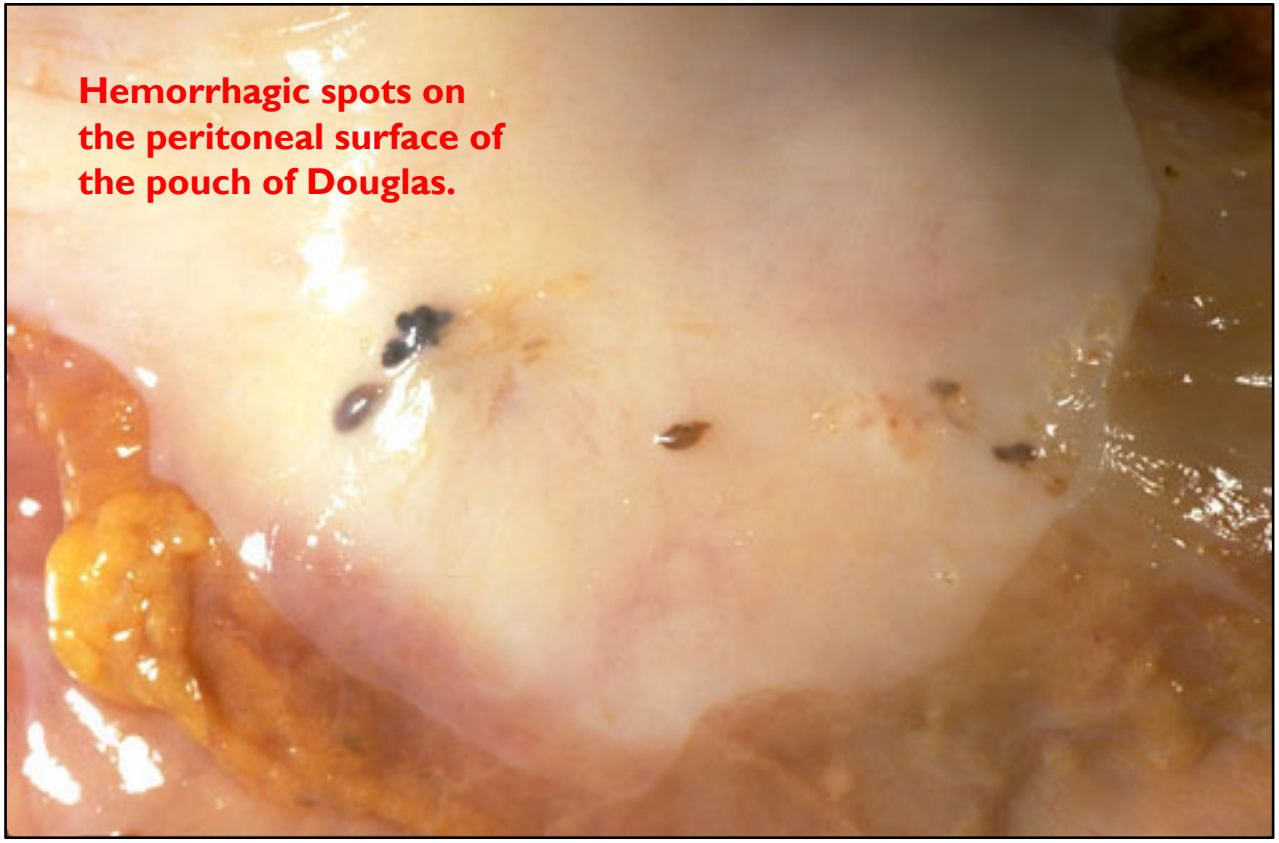
Pouch of Douglas: **a pouch-like space between the rectum and uterus and it is also called rectouterine pouch.**

Endometriosis, a chronic noncancerous disorder of the female reproductive system, develops when the endometrium grows outside the uterus. Common sites for endometriosis include ovaries, fallopian tubes, external genitalia (vulva), ligaments supporting the uterus, intestine, bladder, cervix, and vagina.

Endometriosis - Gross

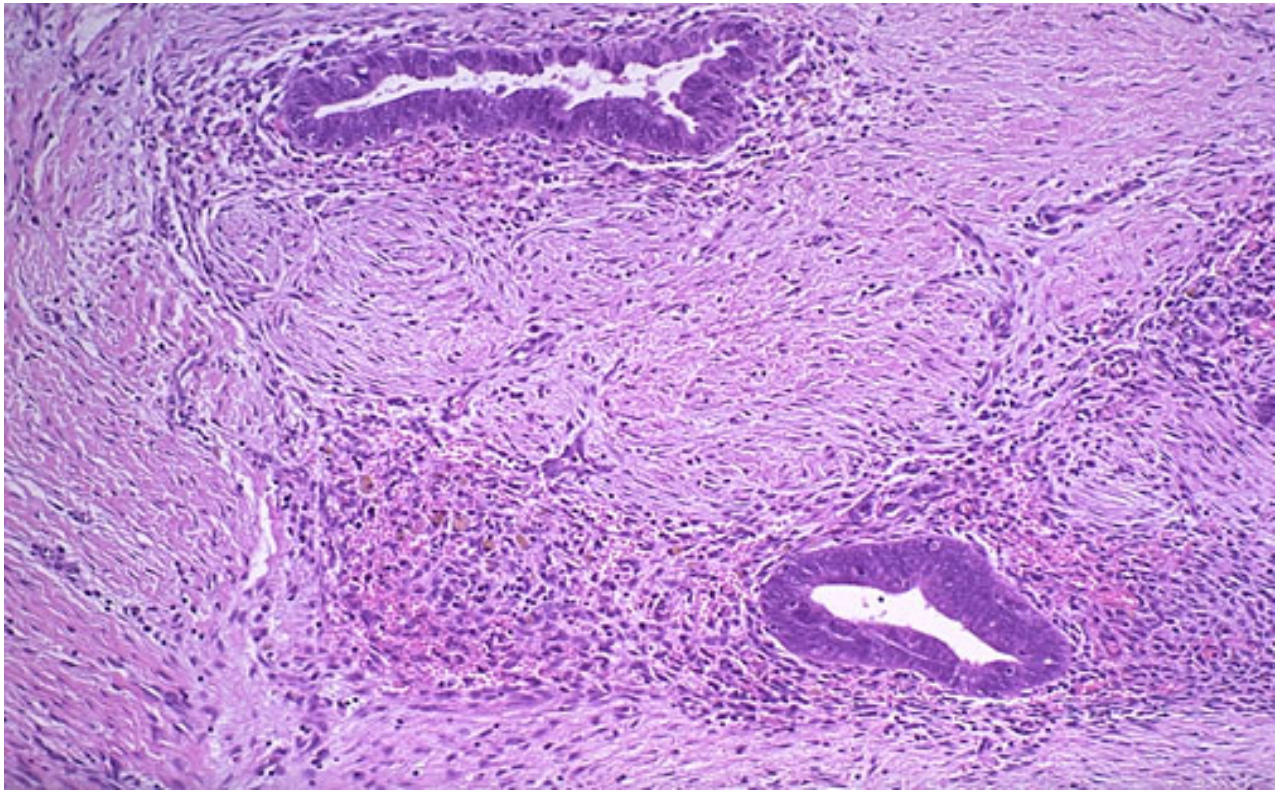
Grossly, in areas of endometriosis the blood is darker and gives the small foci of endometriosis the gross appearance of "powder burns". Small foci are seen here just under the serosa of the posterior uterus in the pouch of Douglas.

Endometriosis - Gross



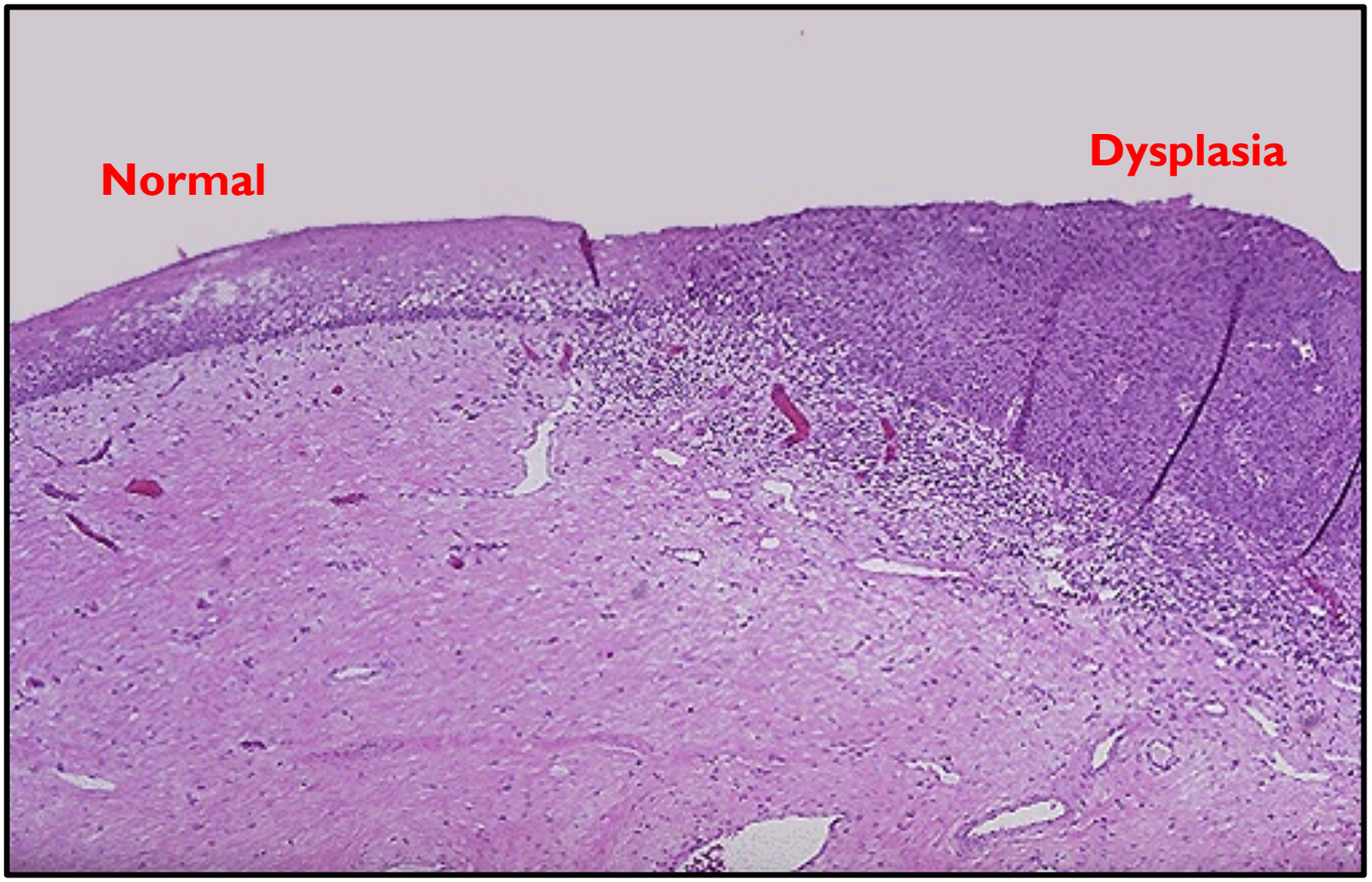
Upon closer view, these five small areas of endometriosis have a reddish-brown to bluish appearance. Typical locations for endometriosis include: ovaries, uterine ligaments, rectovaginal septum, pelvic peritoneum, and laparotomy scars

Endometriosis - HPF Microscopy



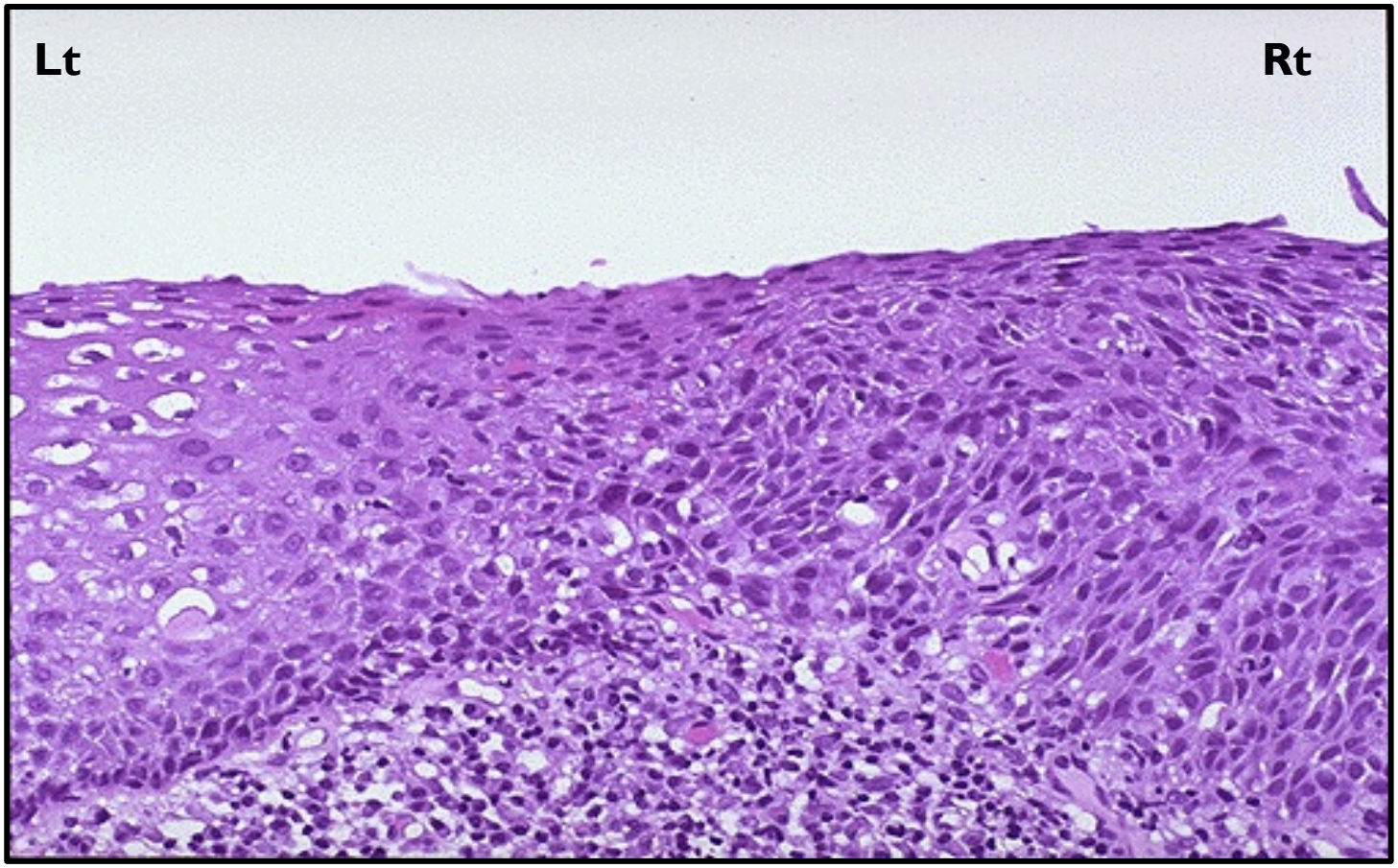
Endometrial glands along with stroma with fibrosis.

Normal and Dysplastic Cervical Squamous Epithelium



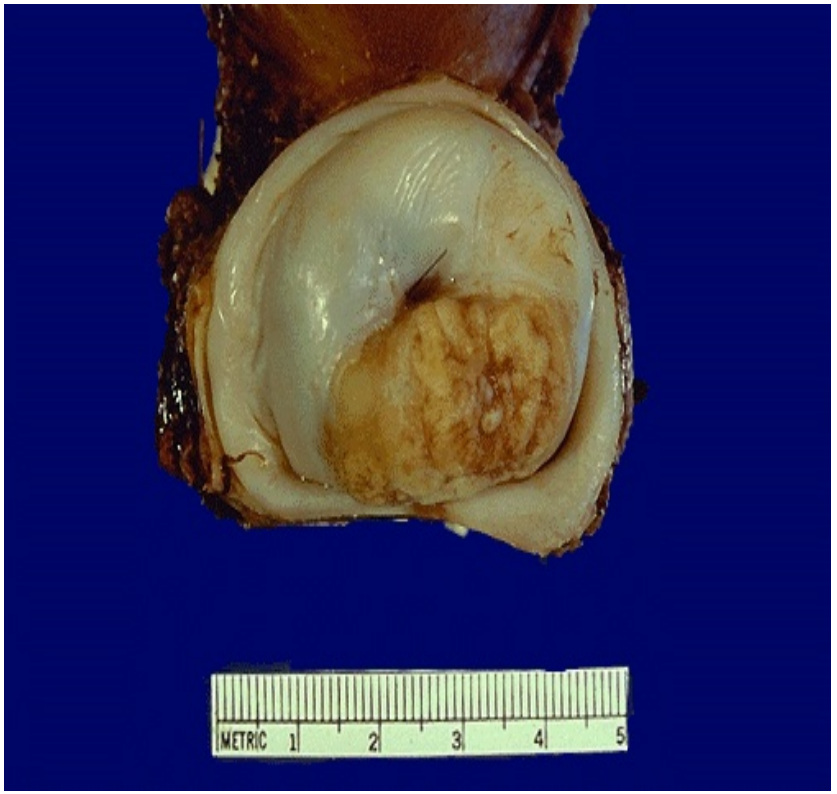
The normal cervical squamous epithelium at the left transforms to dysplastic changes on the right with underlying chronic inflammation. The diagnosis is: CIN/SIL.

Endocervical Squamous Dysplasia



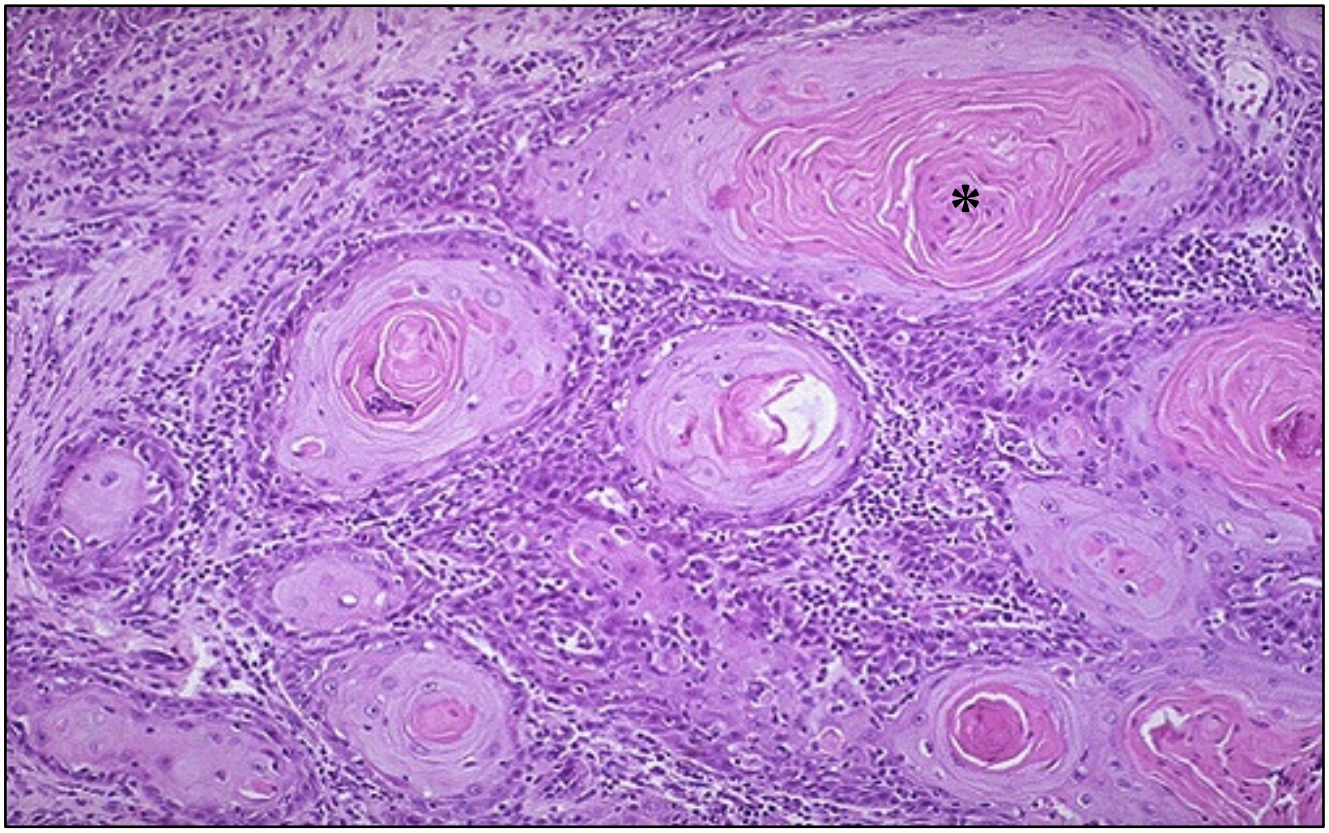
Note the disordered cells with loss of polarity, dysplastic cells/nuclei and the large and dark nuclei. Chronic inflammatory cells are also present.

Cervical Squamous Cell Carcinoma



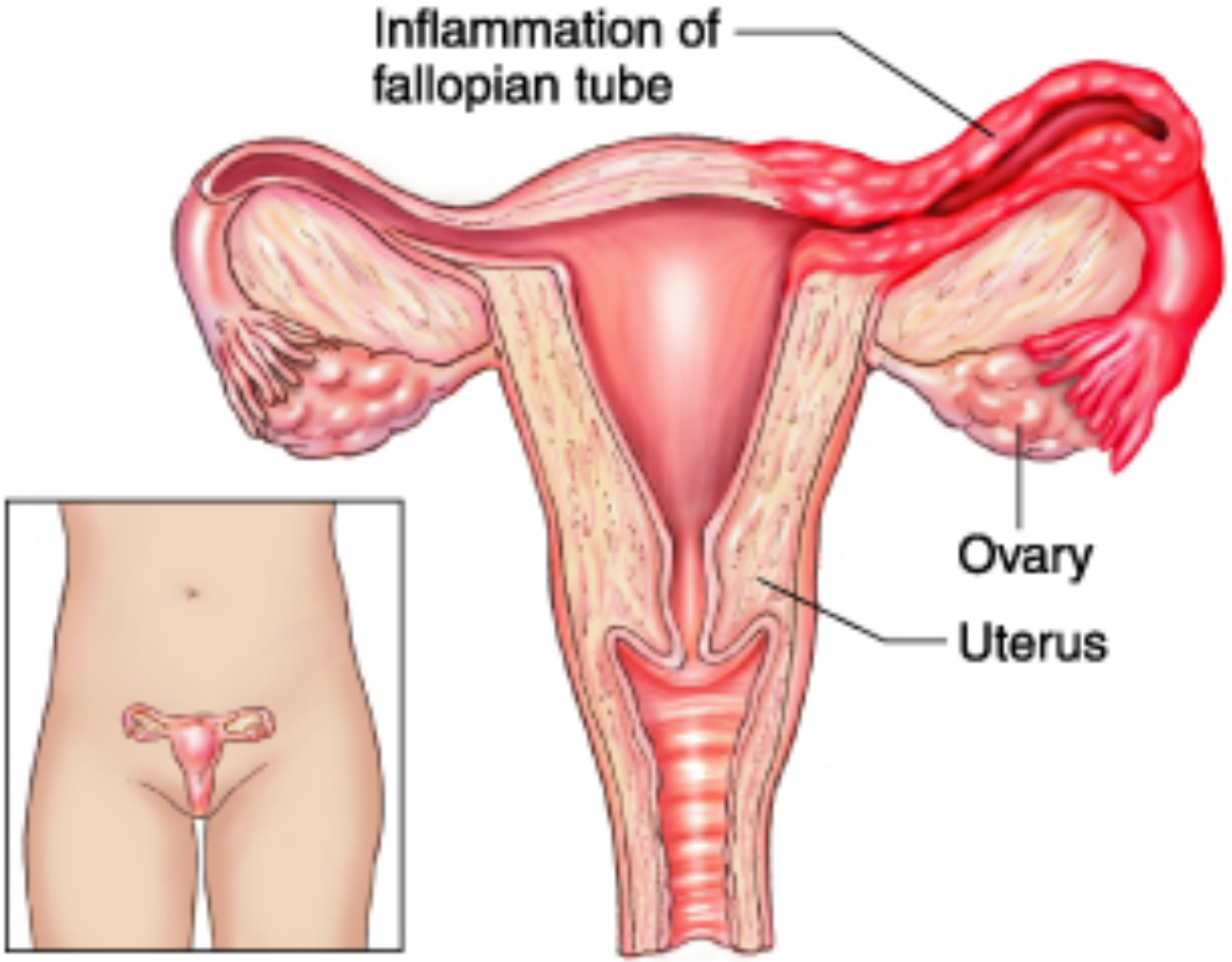
This is the gross appearance of a cervical squamous cell carcinoma that is still limited to the cervix (stage I). The tumor is a fungating red to tan to yellow mass.

Cervical Squamous Cell Carcinoma - HPF



At high magnification, nests of neoplastic squamous cells are separated by a chronically inflamed stroma. This cancer is well-differentiated, as evidenced by the keratin pearls (*) within nests of tumor cells. However, most cervical squamous carcinomas are non-keratinizing.

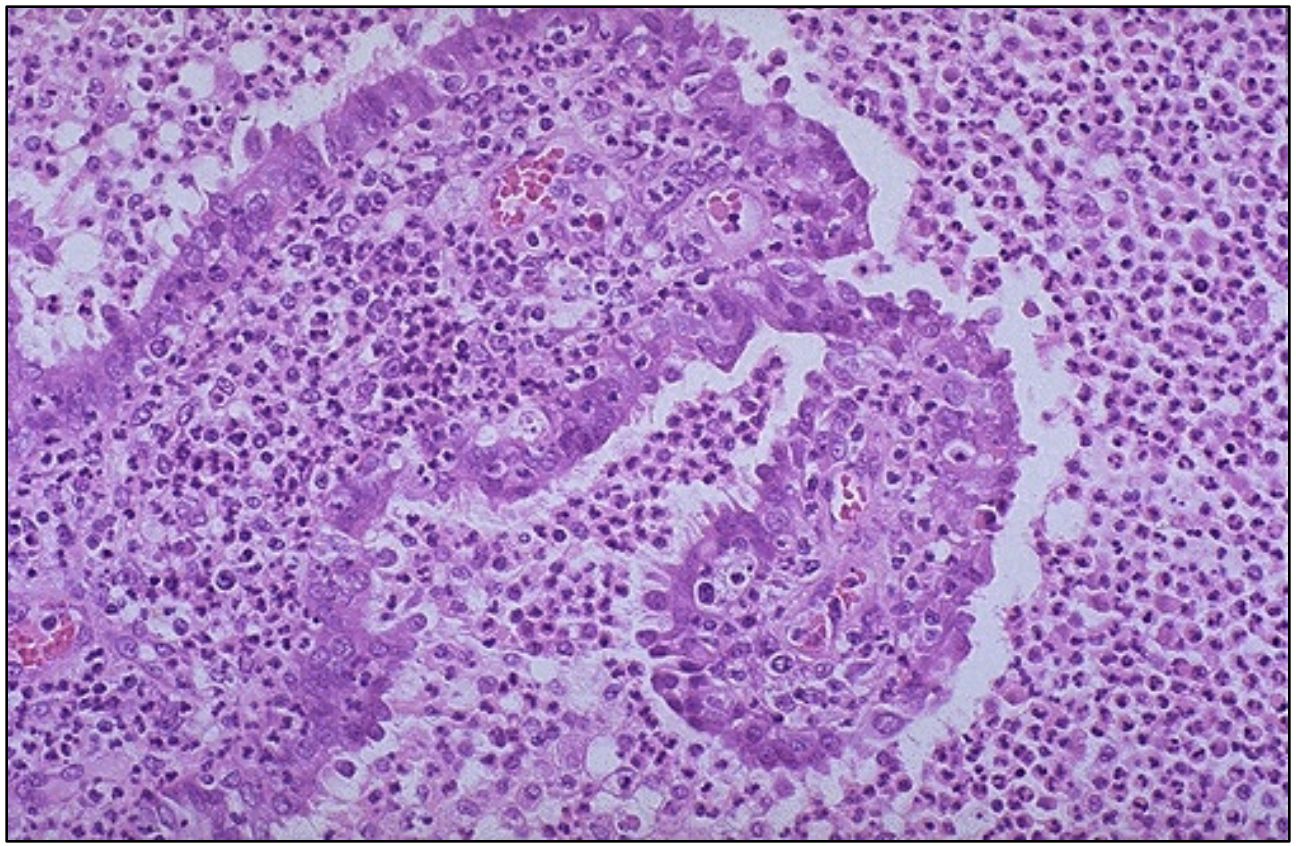
Normal vs Inflamed Fallopian Tube



Acute Salpingitis - Gross

Acute salpingitis: Excised congested swollen fallopian tube with hemorrhagic patches

Acute Salpingitis - Microscopic



A remnant of tubal epithelium is seen here surrounded and infiltrated by numerous neutrophils. This is acute salpingitis. Neisseria gonorrheae was cultured.

END OF SESSION

Thank You