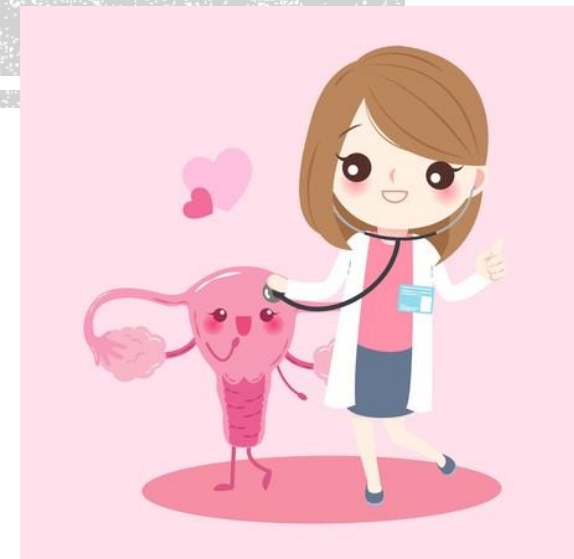




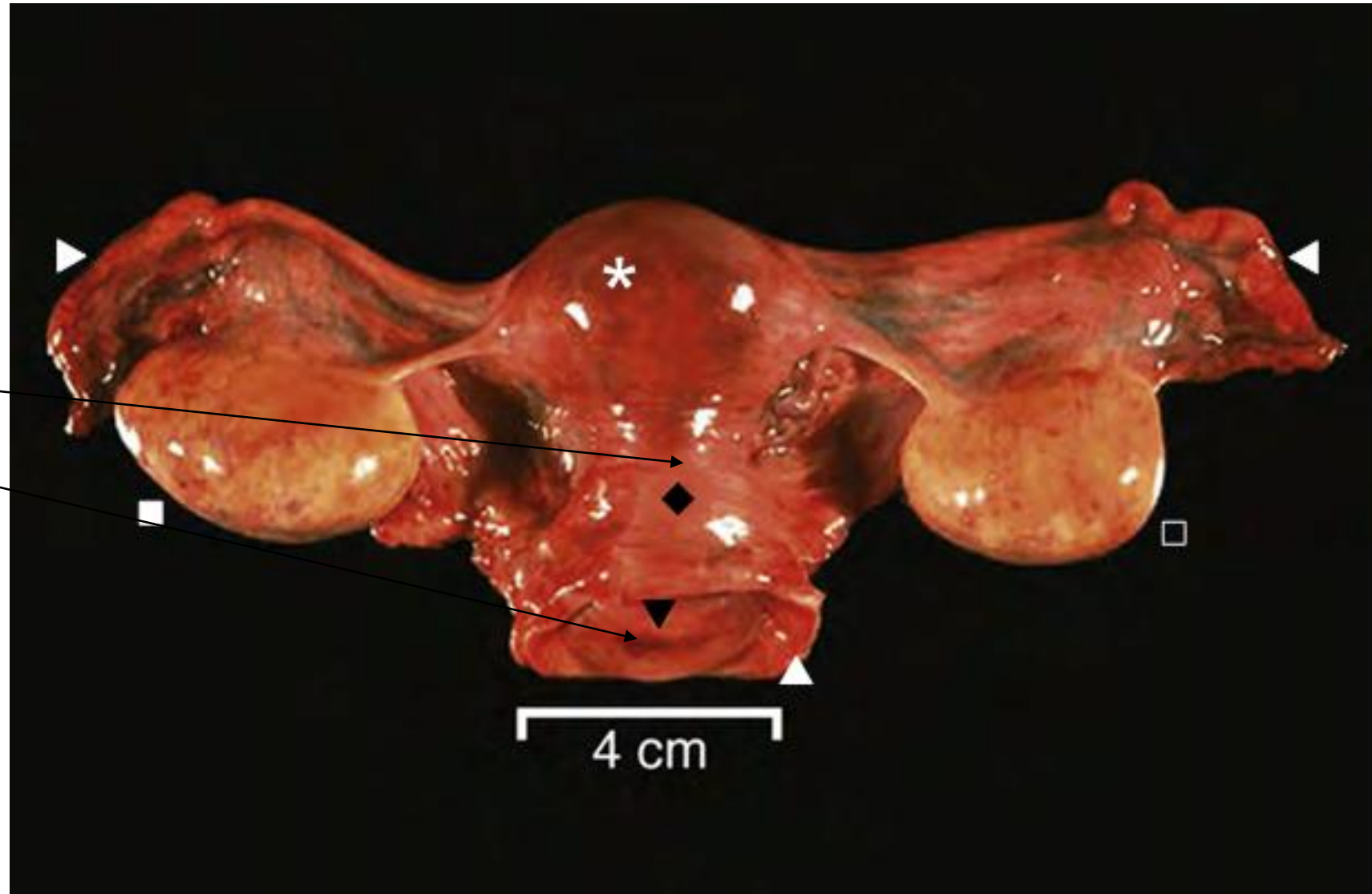
PATHOLOGY OF FEMALE REPRODUCTIVE SYSTEM, LAB4

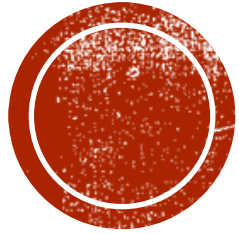
Dr. Manar Rizik Al-Sayyed, M.D, Jordanian board



NORMAL INTERNAL GENITALIA, GROSS

- The gross appearance of a normal uterus from a young woman includes the fundus (*), lower uterine segment, cervix, vaginal cuff, right fallopian tube (▶), left fallopian tube (◀), right ovary, and left ovary.





CERVIX

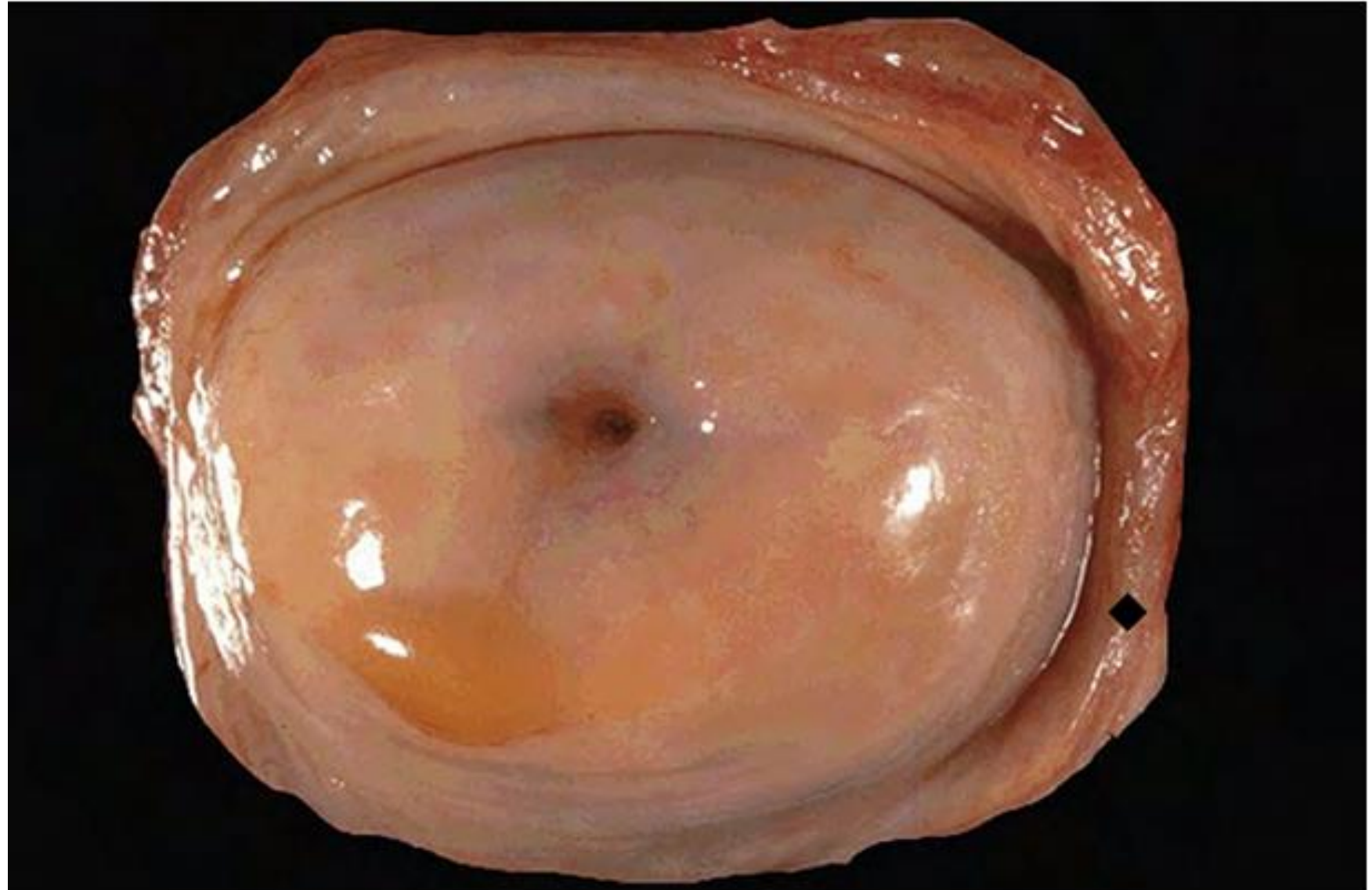


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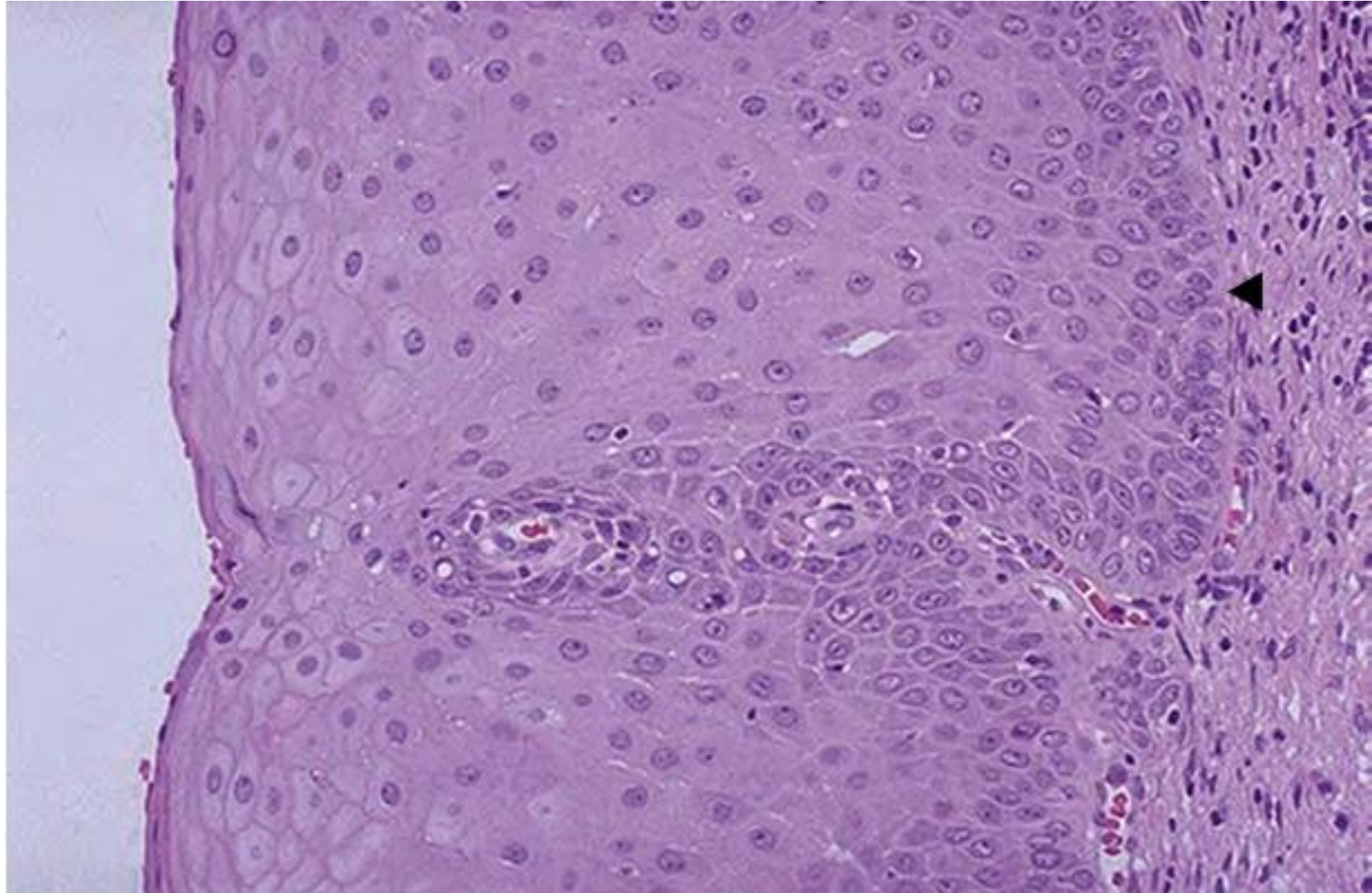
NORMAL CERVIX, GROSS

- The normal cervix has a smooth, glistening mucosal surface. There is a small rim of vaginal cuff in this hysterectomy specimen.



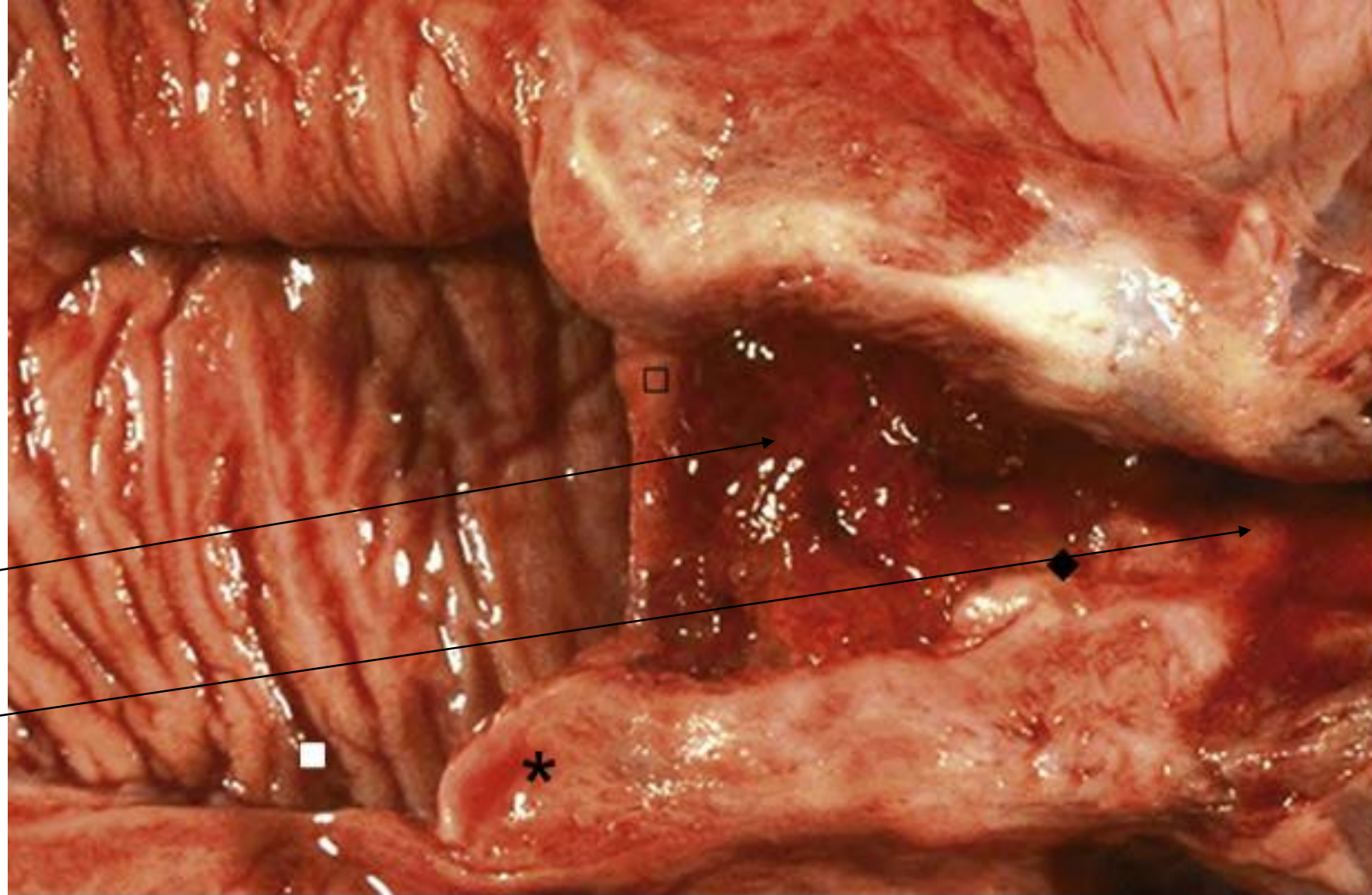
NORMAL CERVIX, MICROSCOPIC

- This is normal cervical nonkeratinizing squamous epithelium.
- The squamous cells show maturation from the basal layer (◀) to the overlying surface.



NORMAL CERVIX AND VAGINA, GROSS

- The normal adult vaginal mucosa in reproductive-age women has a wrinkled appearance.
- The cervix has been opened anteriorly at autopsy to reveal an endocervical canal leading to the lower uterine segment.



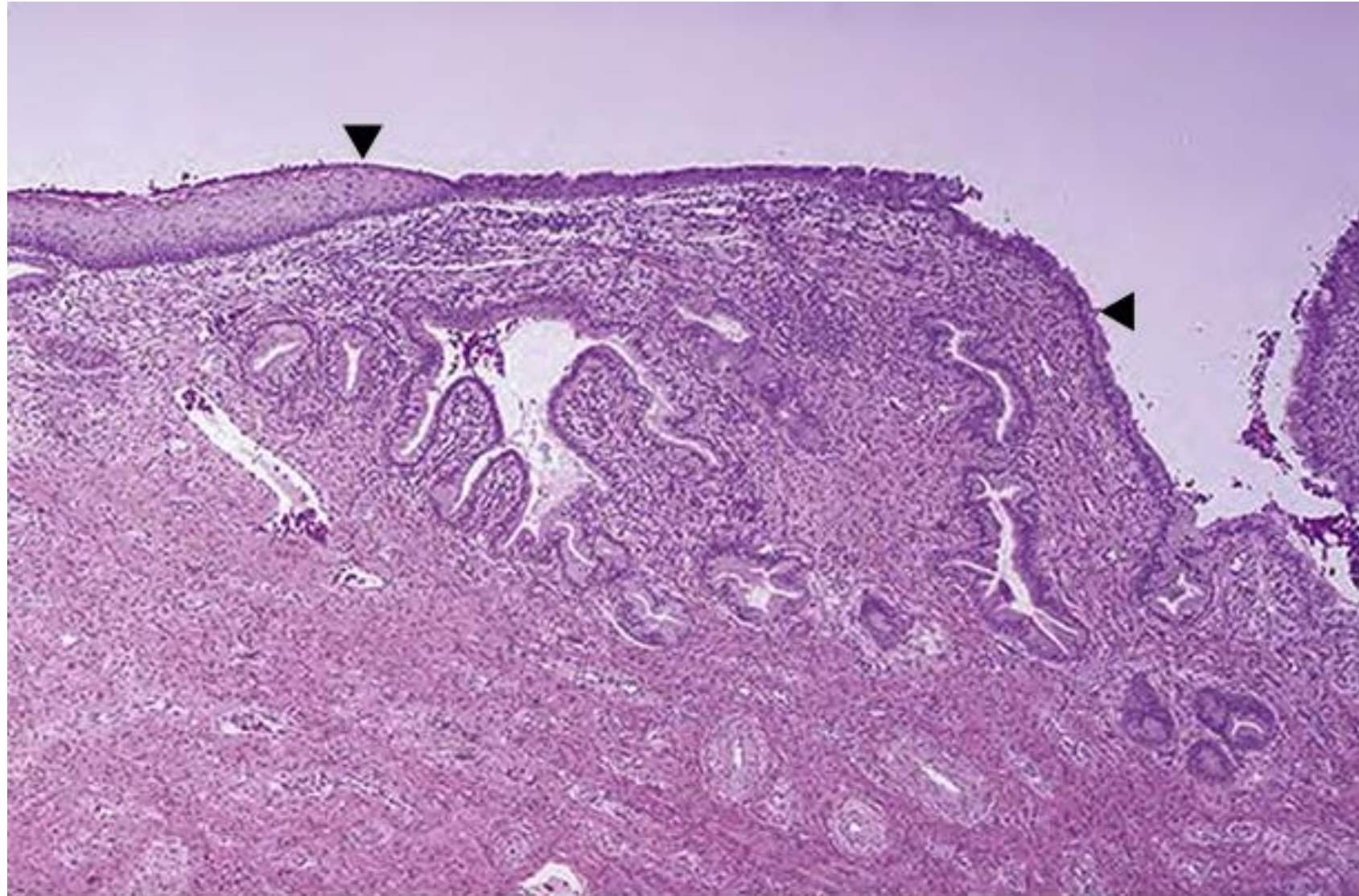
NABOTHIAN CYST, GROSS

- A large translucent nabothian cyst extends from the stroma around the outer endocervical canal in an exophytic manner into the canal. These cysts are benign and filled with a clear, mucoid fluid.



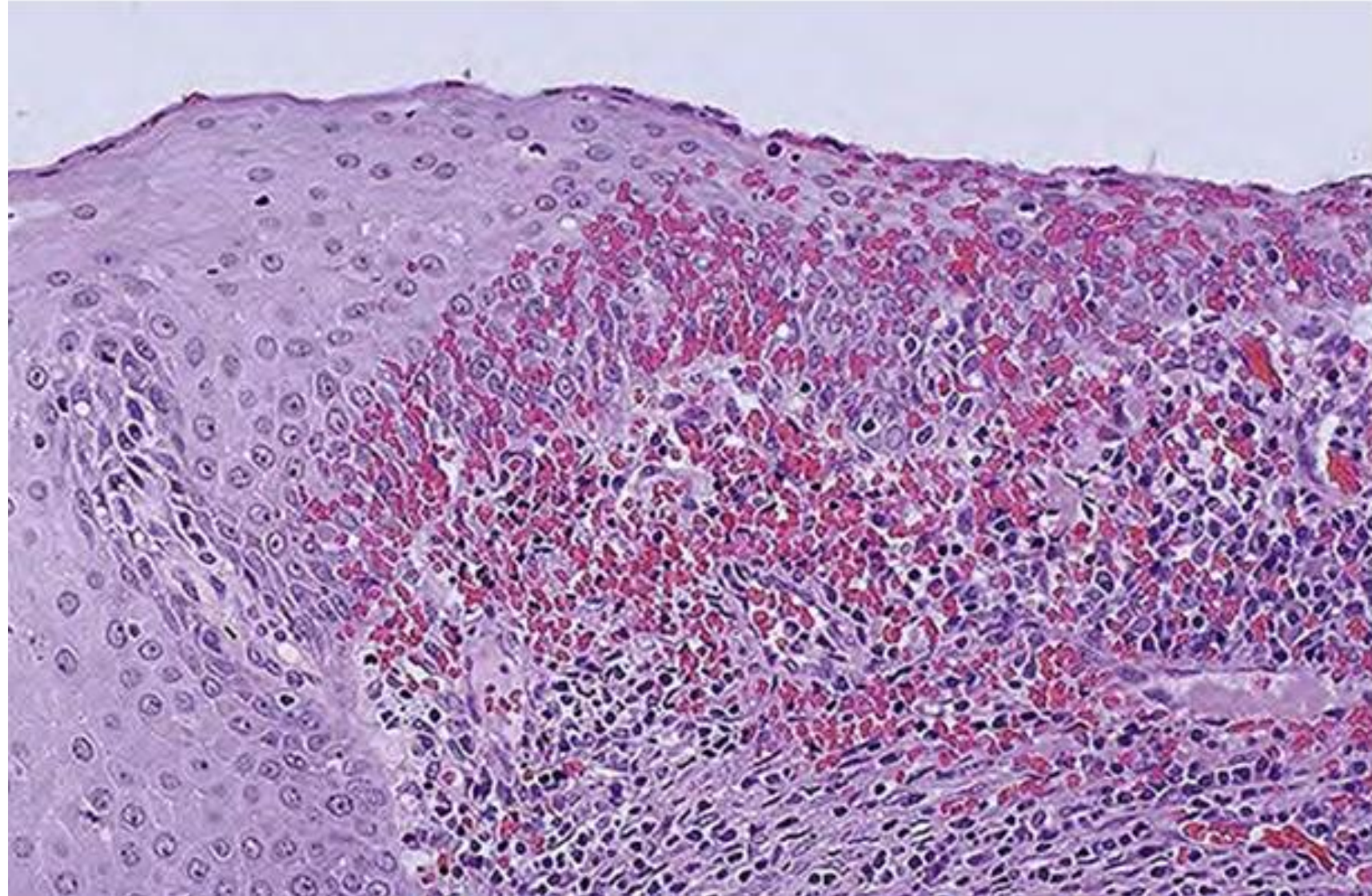
NORMAL CERVICAL TRANSFORMATION ZONE, MICROSCOPIC

- Normal cervix with stratified nonkeratinizing squamous epithelium merges at the transformation zone (squamocolumnar junction) into endocervix lined by tall mucinous columnar cells (◻).



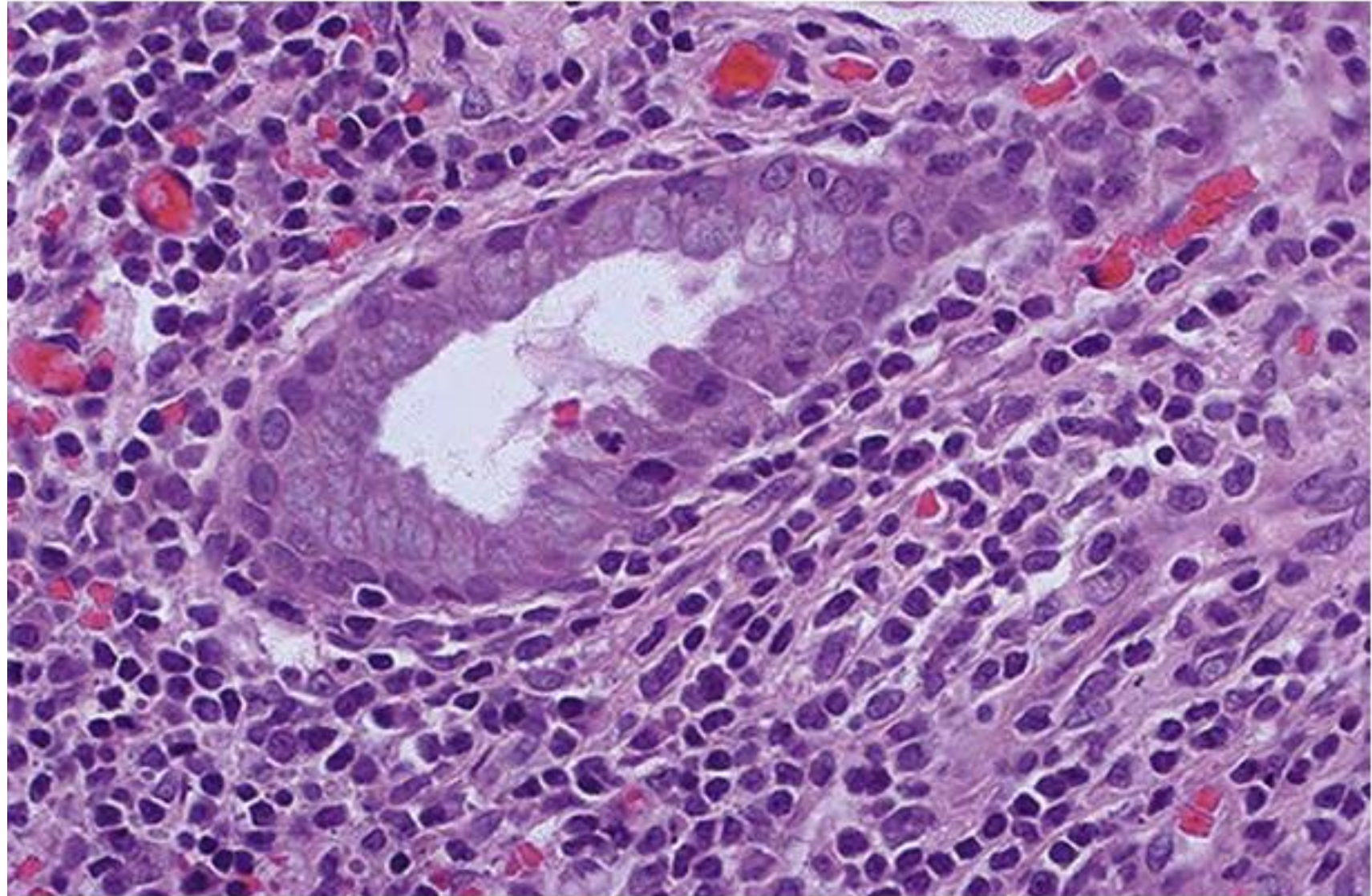
CHRONIC CERVICITIS, MICROSCOPIC

- Chronic cervicitis, shown here at the squamocolumnar junction of the cervix, has small, round, dark-blue lymphocytes in the submucosa; there is also hemorrhage.



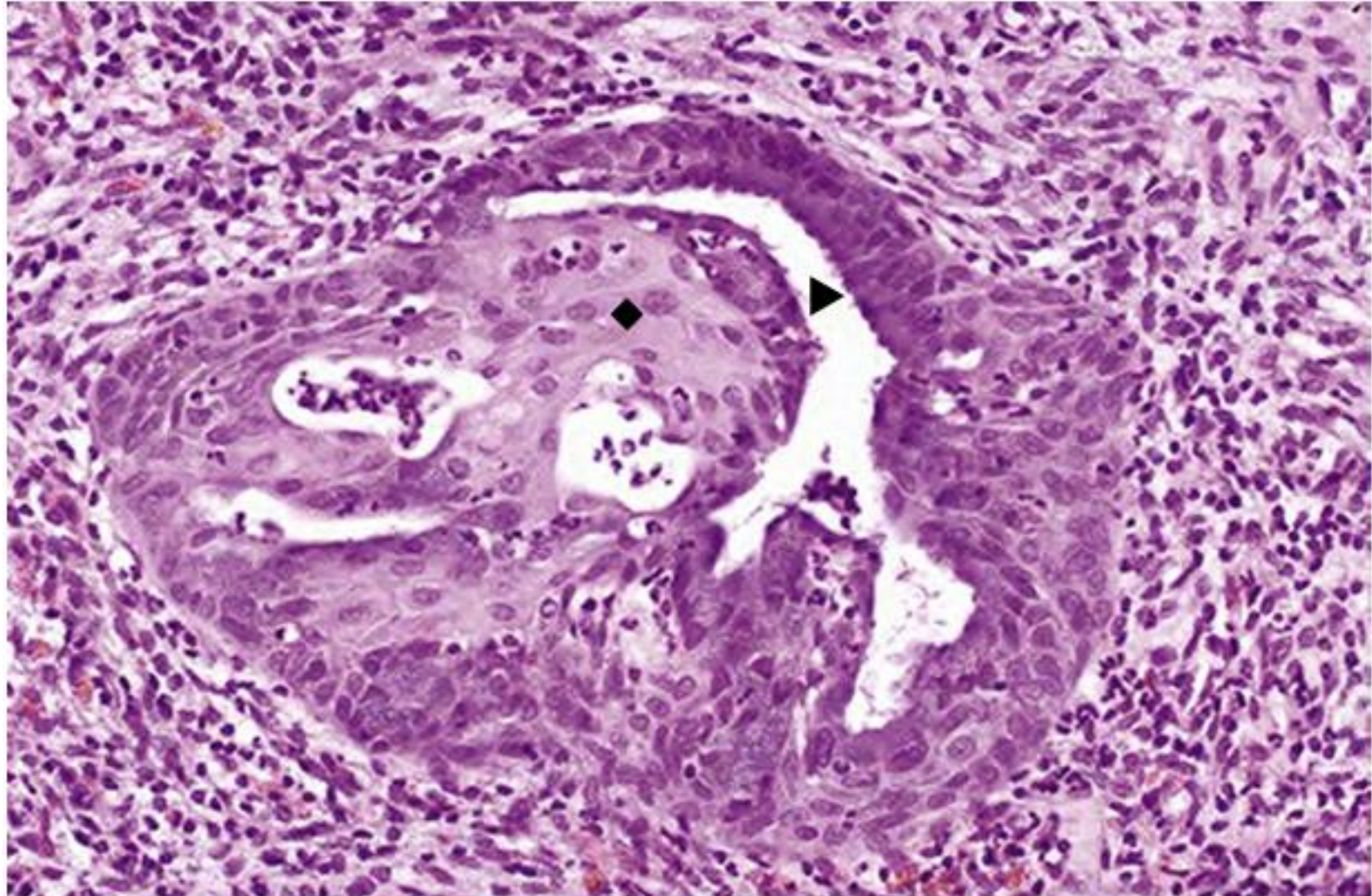
CHRONIC CERVICITIS, MICROSCOPIC

- A predominantly lymphocytic infiltrate extends around this endocervical gland in the stroma of the cervix beneath the epithelium.



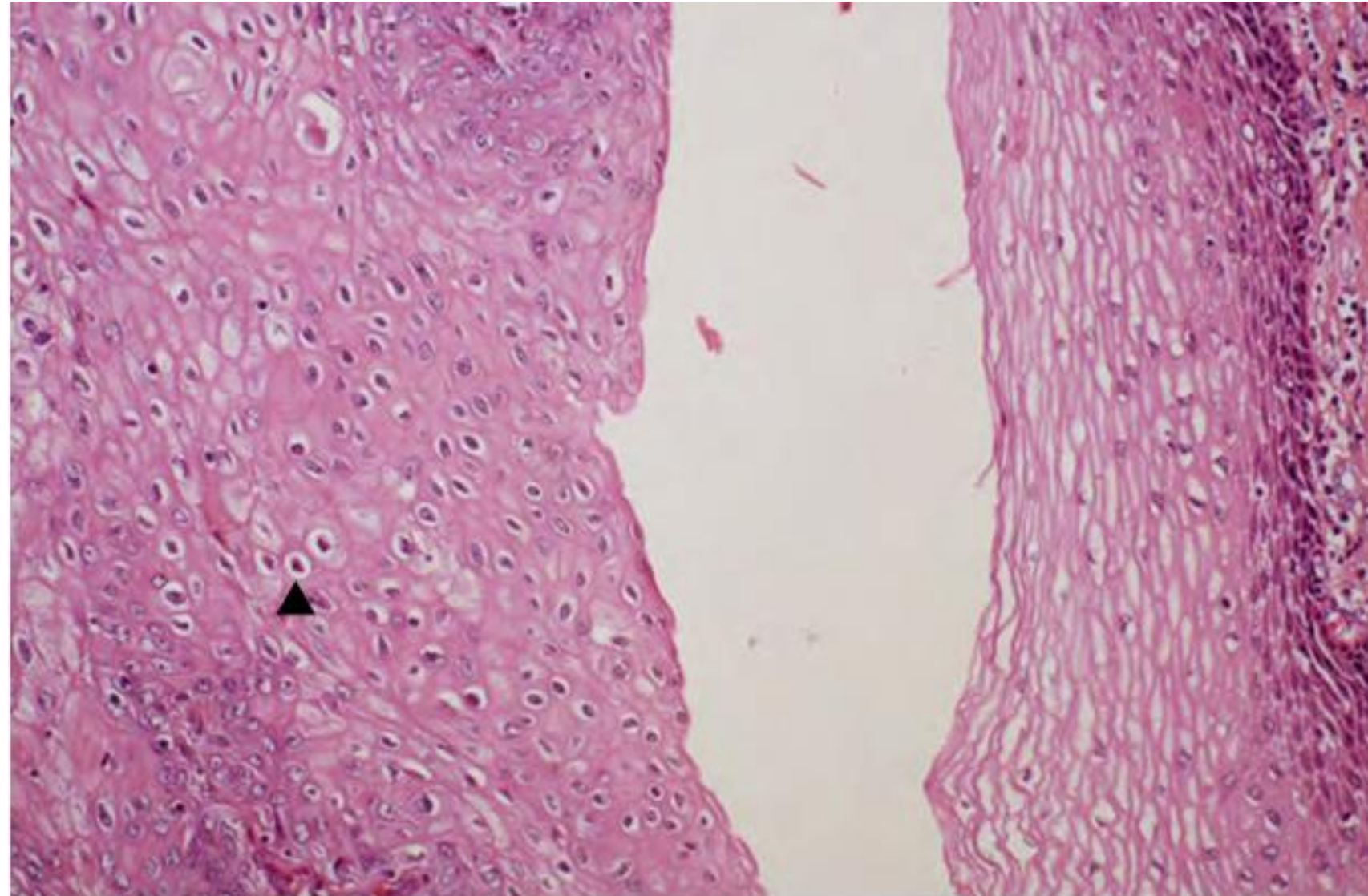
CERVICAL SQUAMOUS METAPLASIA, MICROSCOPIC

- In this endocervical gland, the normal columnar epithelium is transforming to a squamous appearing epithelium as a consequence of the ongoing inflammatory process.



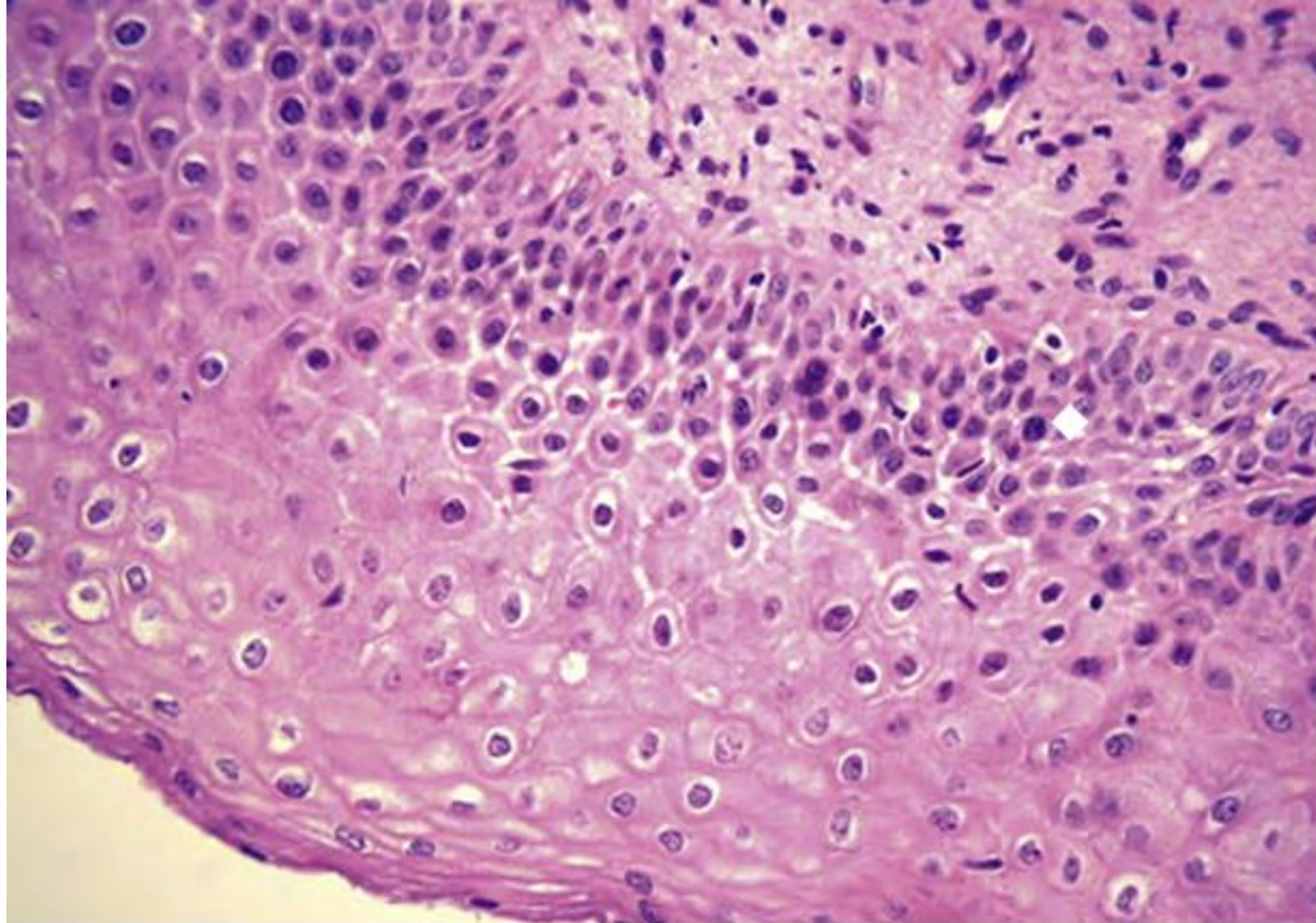
HPV EFFECT, MICROSCOPIC

- This cervical biopsy specimen shows a thickened squamous epithelium at the left with a vacuolated appearance, called **koilocytotic change**.



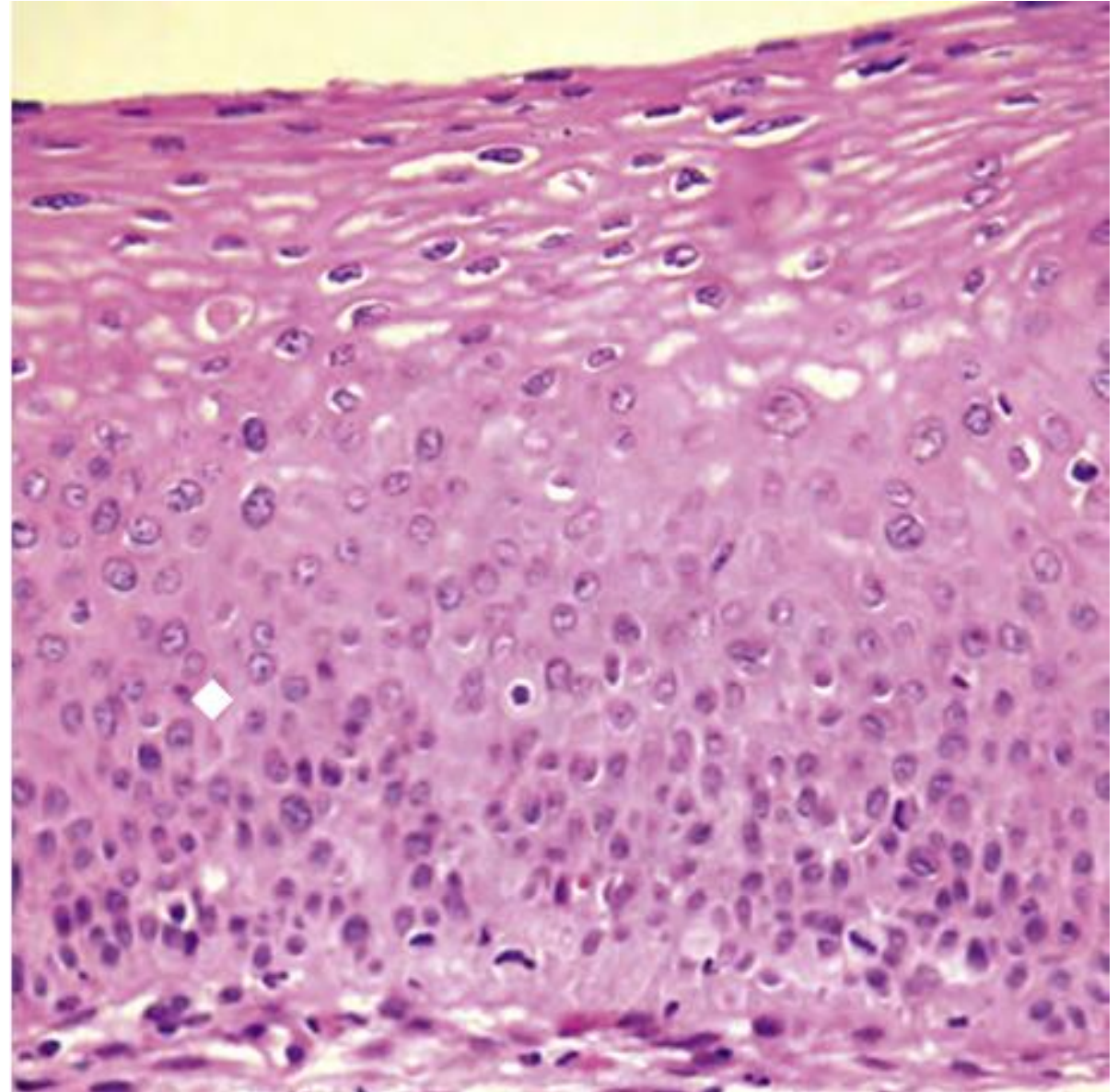
CERVICAL INTRAEPITHELIAL NEOPLASIA (CIN I), MICROSCOPIC

- In this biopsy sample, the dysplastic, disordered cells occupy **less than one third** of the squamous epithelial thickness above the basal lamina, so this is **CIN I**.
- Note the koilocytotic change in some cells, consistent with HPV effect.



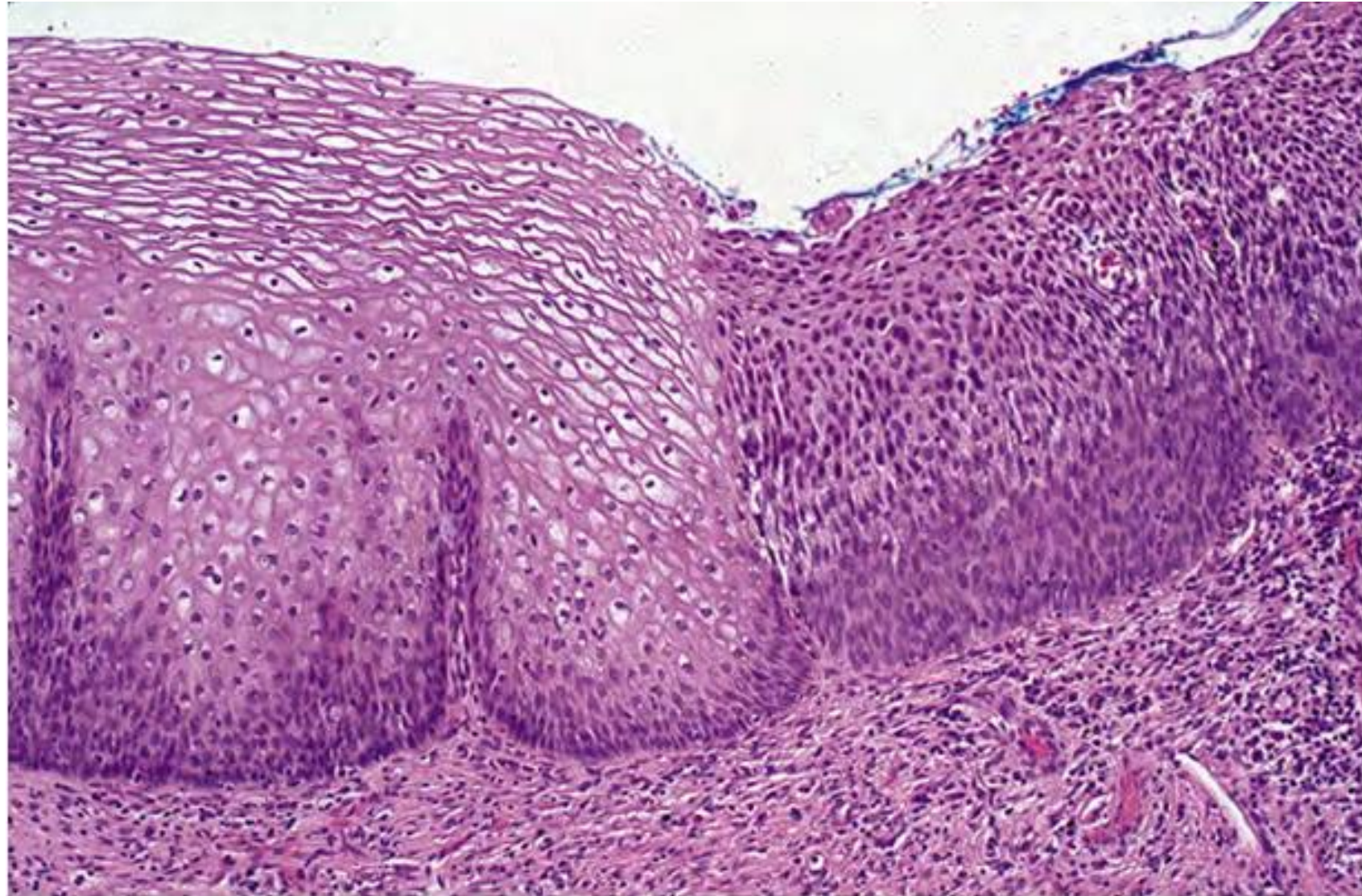
CIN II, MICROSCOPIC

- In this cervical biopsy, the dysplastic, disordered cells occupy about **one third to one half the thickness of the epithelium**, and the basal lamina is still intact, so this is **CIN II**.
- Moderate to severe dysplasias (CIN II and III) tend to correlate with a high-grade squamous intraepithelial lesion (HSIL).



HSIL (CIN III), MICROSCOPIC

- In this biopsy specimen, there is severe cervical squamous dysplasia extending from the center to the right, compared with nondysplastic epithelium at the left.
- This dysplastic process **involves the full thickness** of the epithelium, but the basal lamina is intact.



SQUAMOUS CELL CARCINOMA (SCC), GROSS

- This hysterectomy specimen shows the gross appearance of a cervical squamous cell carcinoma (▶) that is still limited to the cervix (stage I).



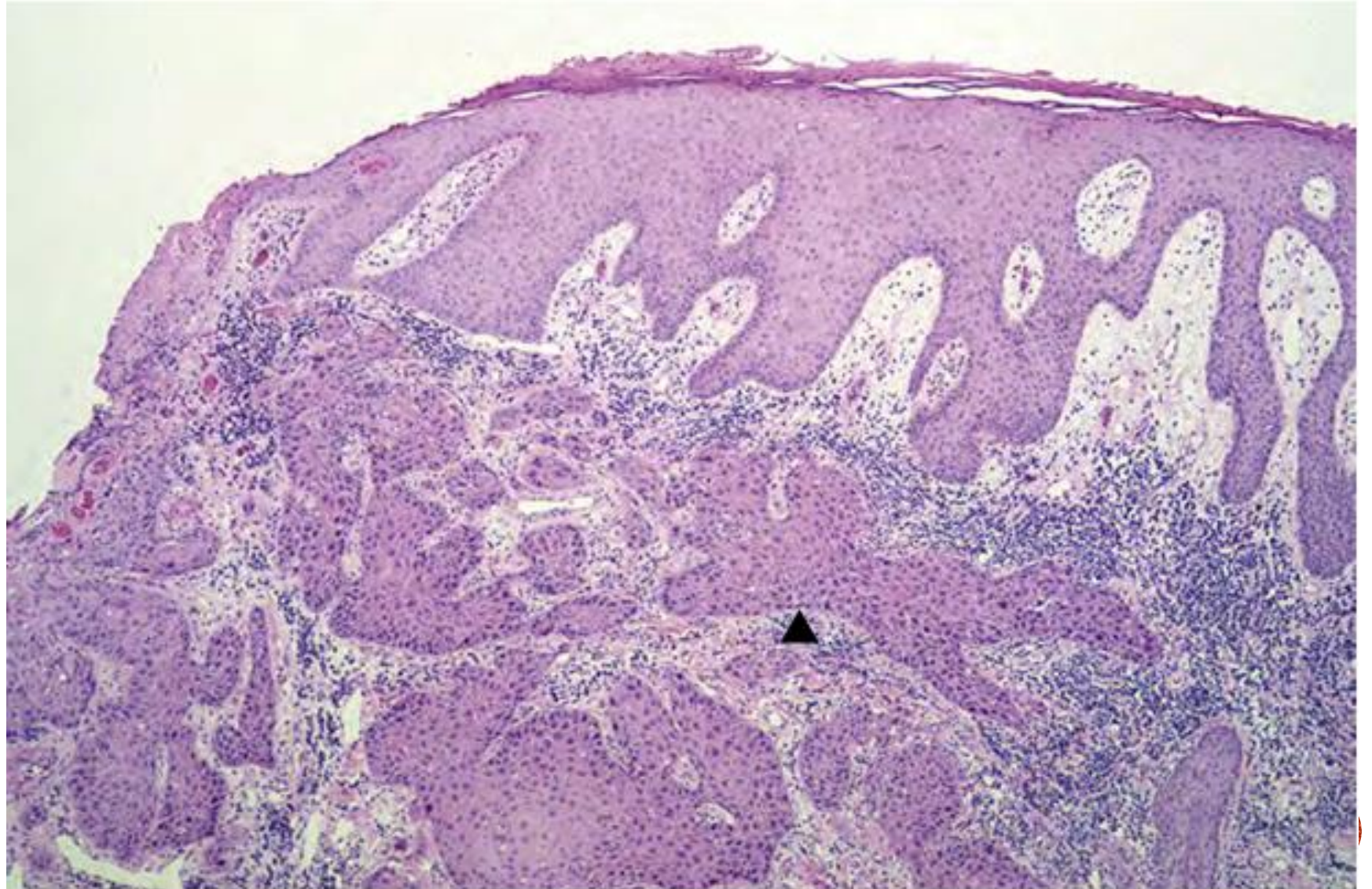
SCC, GROSS

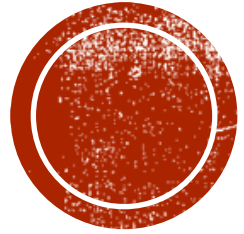
- This TAH-BSO on sectioning in half shows an advanced cervical SCC that has spread to the vagina.
- This stage II cervical carcinoma has **extended beyond the cervix**, but not to the pelvic side wall.



SCC, MICROSCOPIC

- Nests of squamous cell carcinoma are **invading downward** and undermining the mucosa.
- There is loss of the epithelial surface from ulceration at the left.

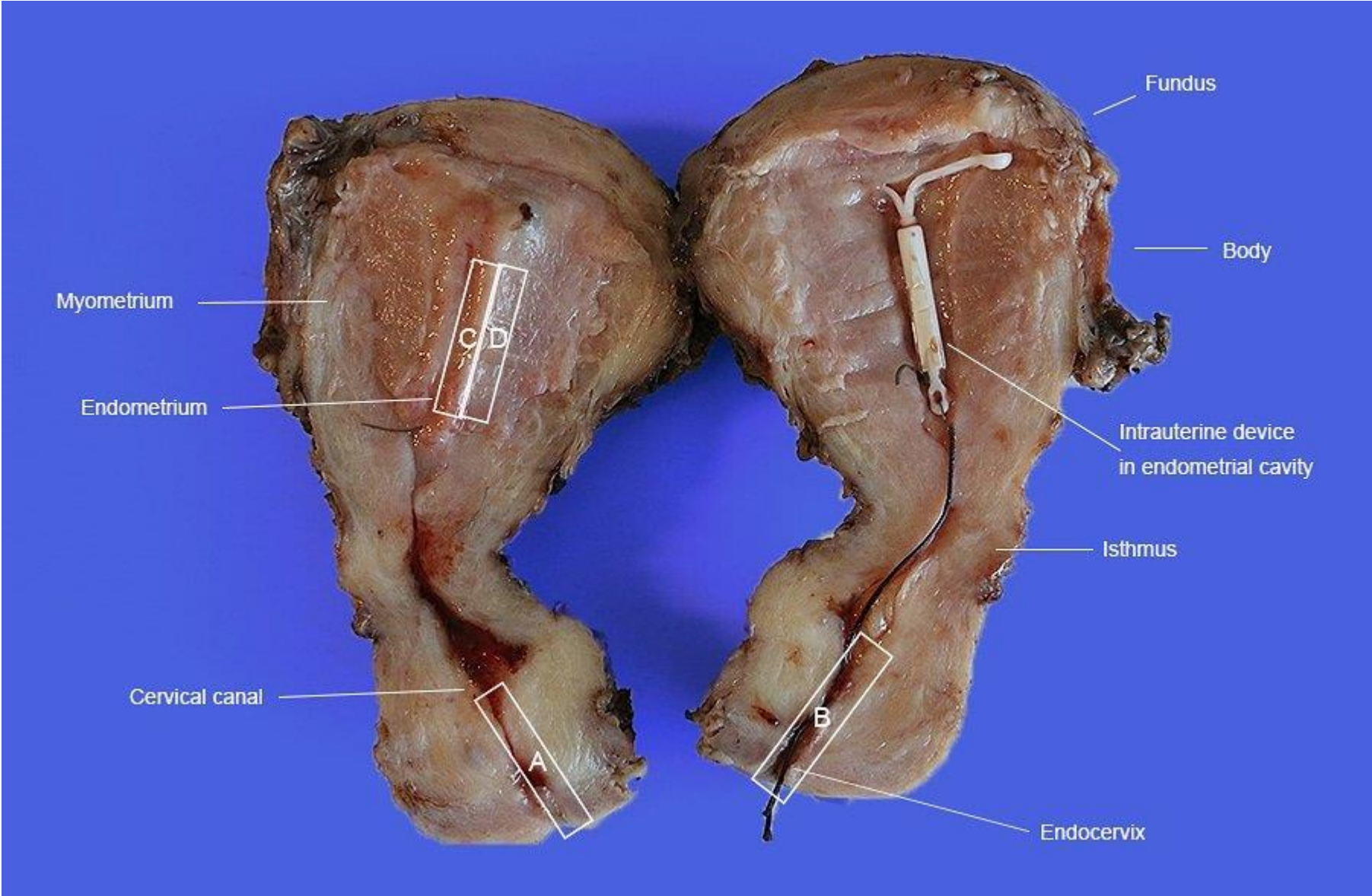




UTERUS

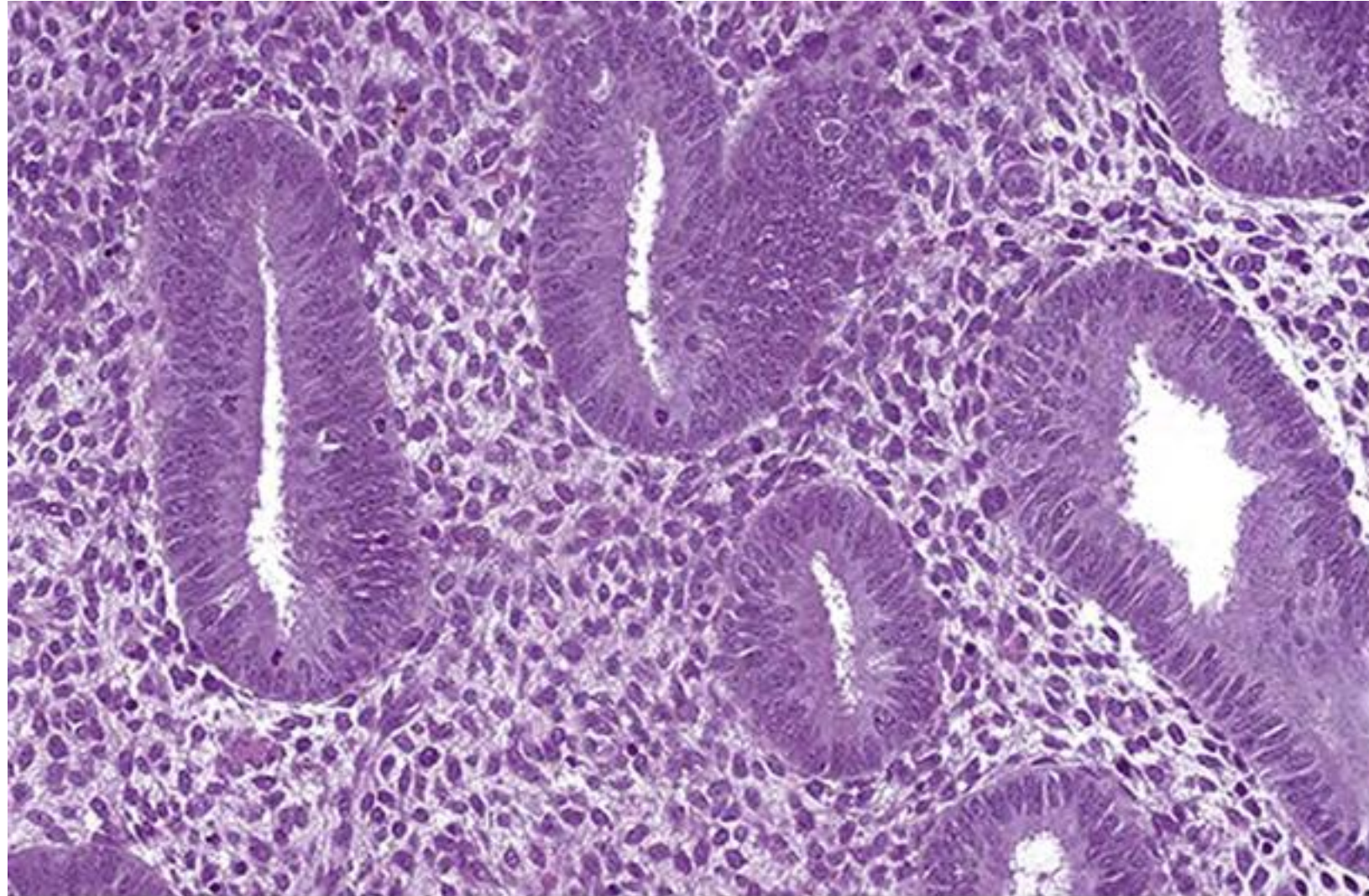


NORMAL UTERUS, GROSS



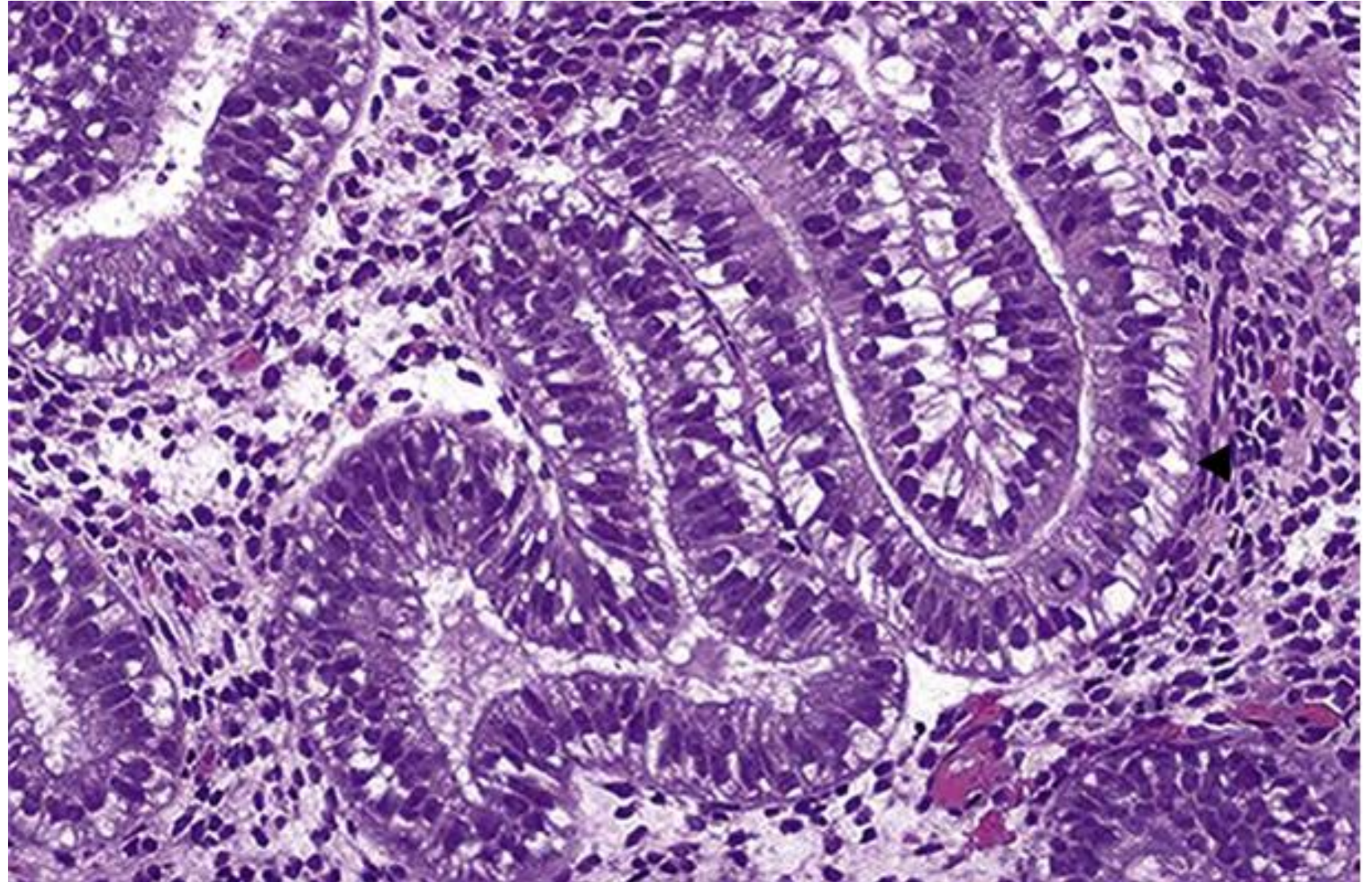
ENDOMETRIUM, PROLIFERATIVE

- The proliferative (follicular) phase is the variable part of the menstrual cycle but averages about 14 days.
- In this phase, **tubular endometrial glands** lined by tall columnar cells and surrounded by a dense stroma. **Mitoses** within these proliferating glands are seen.



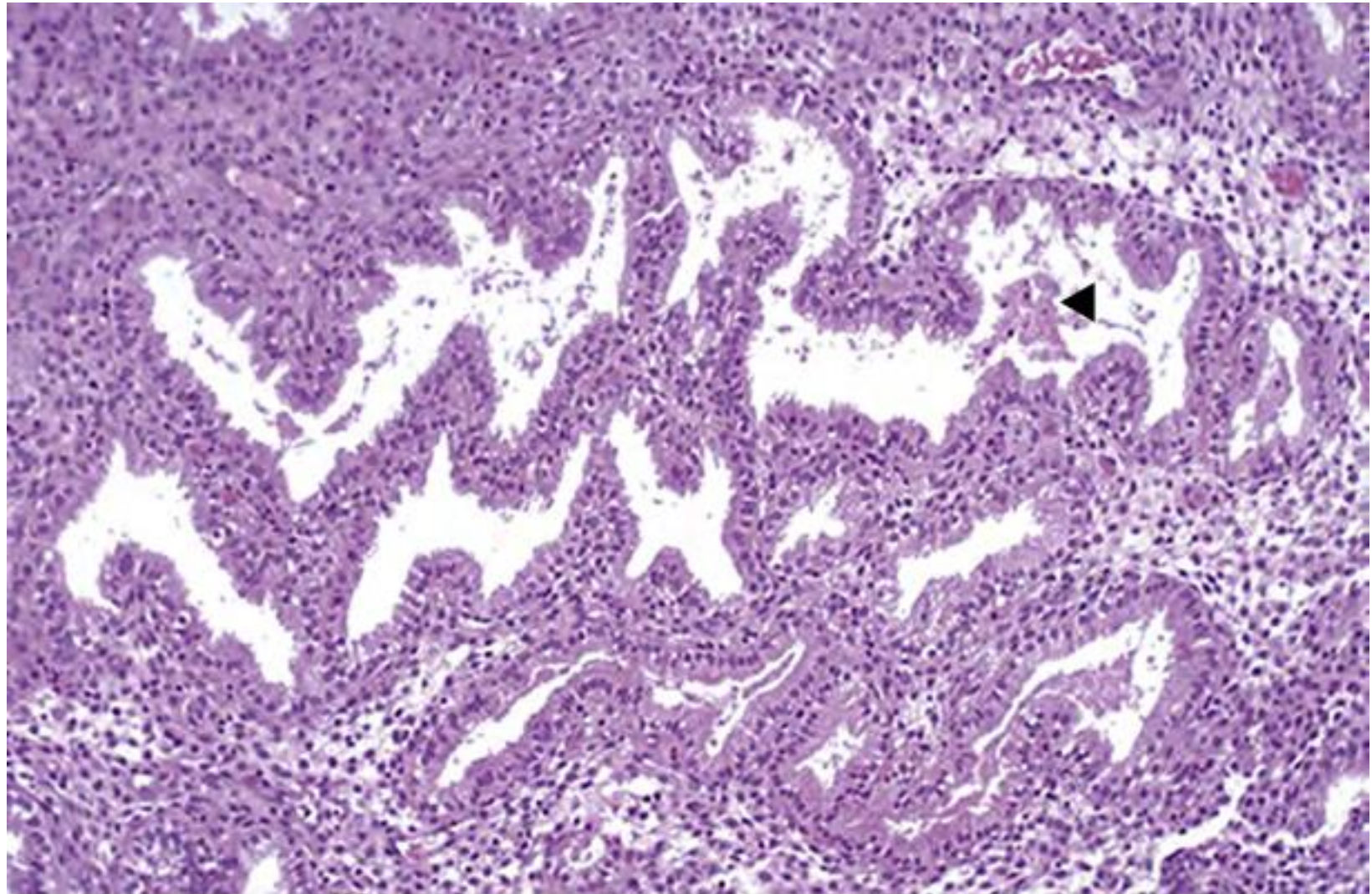
ENDOMETRIUM, EARLY SECRETORY

- This appearance with prominent **subnuclear vacuoles** (◀) in the tall columnar cells lining these larger endometrial glands is consistent with **postovulatory day 2** of the luteal phase of the menstrual cycle.



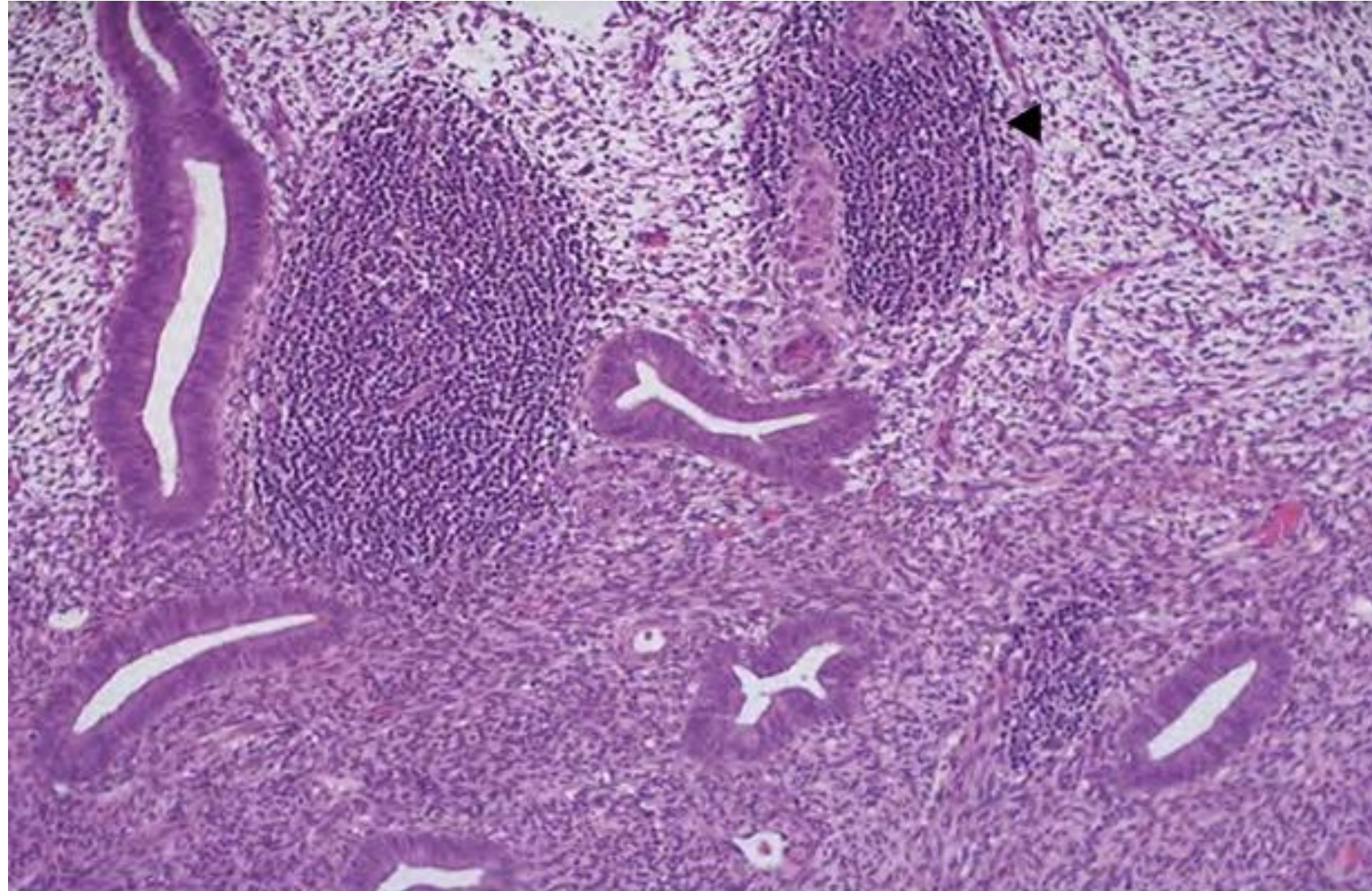
ENDOMETRIUM, LATE SECRETORY

- The **tortuosity** of the endometrial glands is apparent in this late secretory endometrium of the luteal phase of the normal menstrual cycle, and there are **intraluminal secretions** (◀) within the glands.
- There is more pronounced pink **decidualization** of the surrounding stroma.




CHRONIC ENDOMETRITIS, MICROSCOPIC

- Collections of **lymphocytes** (◻◀) within the endometrial stroma are shown. At higher magnification, **plasma cells** would be identified.



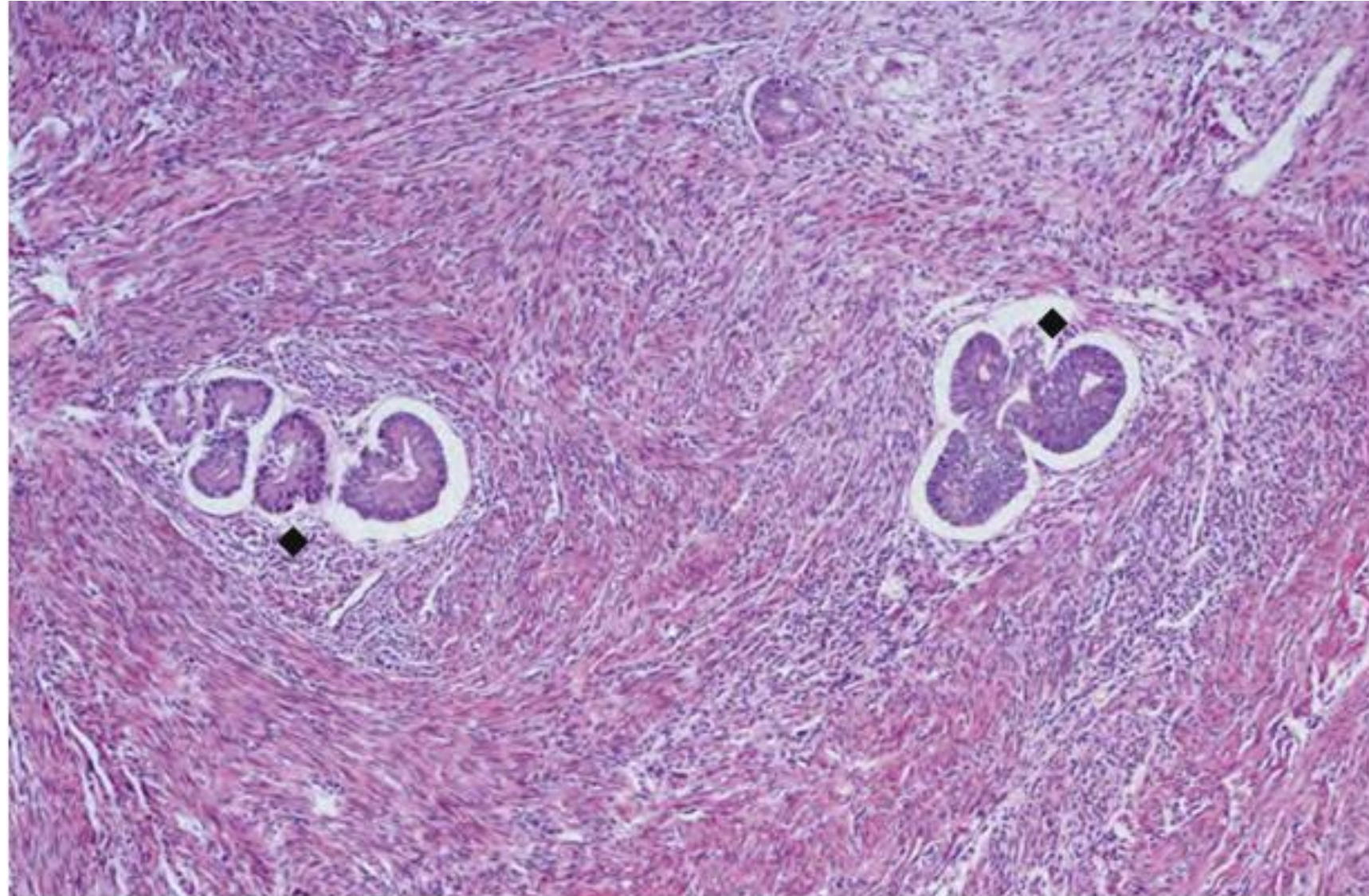
ADENOMYOSIS, GROSS

- The **thickened and spongy**-appearing myometrial wall of this sectioned uterus is typical of adenomyosis, a condition in which endometrial glands with (or without) stroma are located within the myometrium
- A small round white leiomyoma [] also is shown.



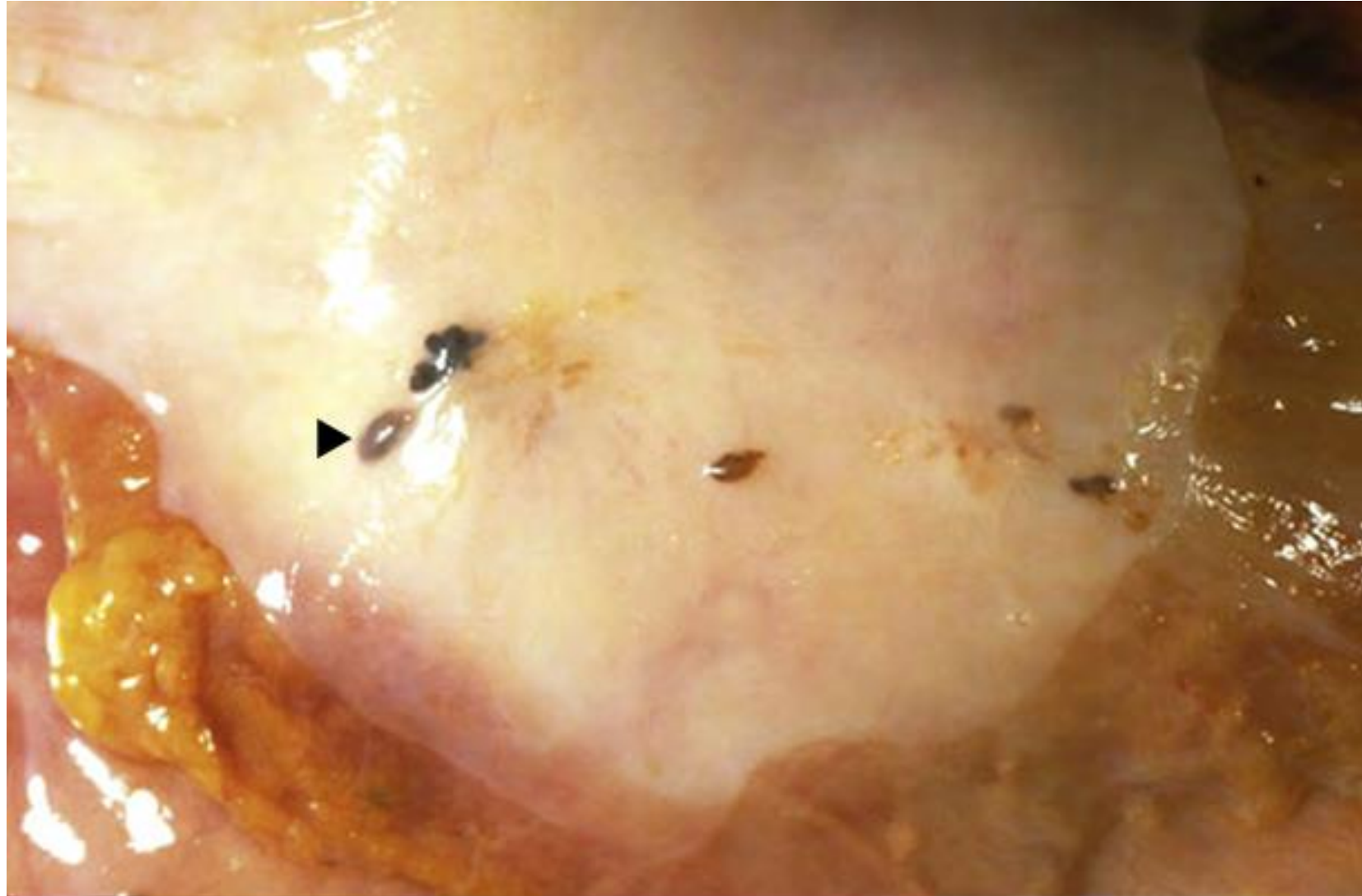
ADENOMYOSIS, MICROSCOPIC

- Down-growth of the endometrium more than 2 mm from the stratum basale into the myometrium may account for adenomyosis.
- In this section through the myometrium, a cluster of endometrial tissue can be seen with glands and surrounding stroma.



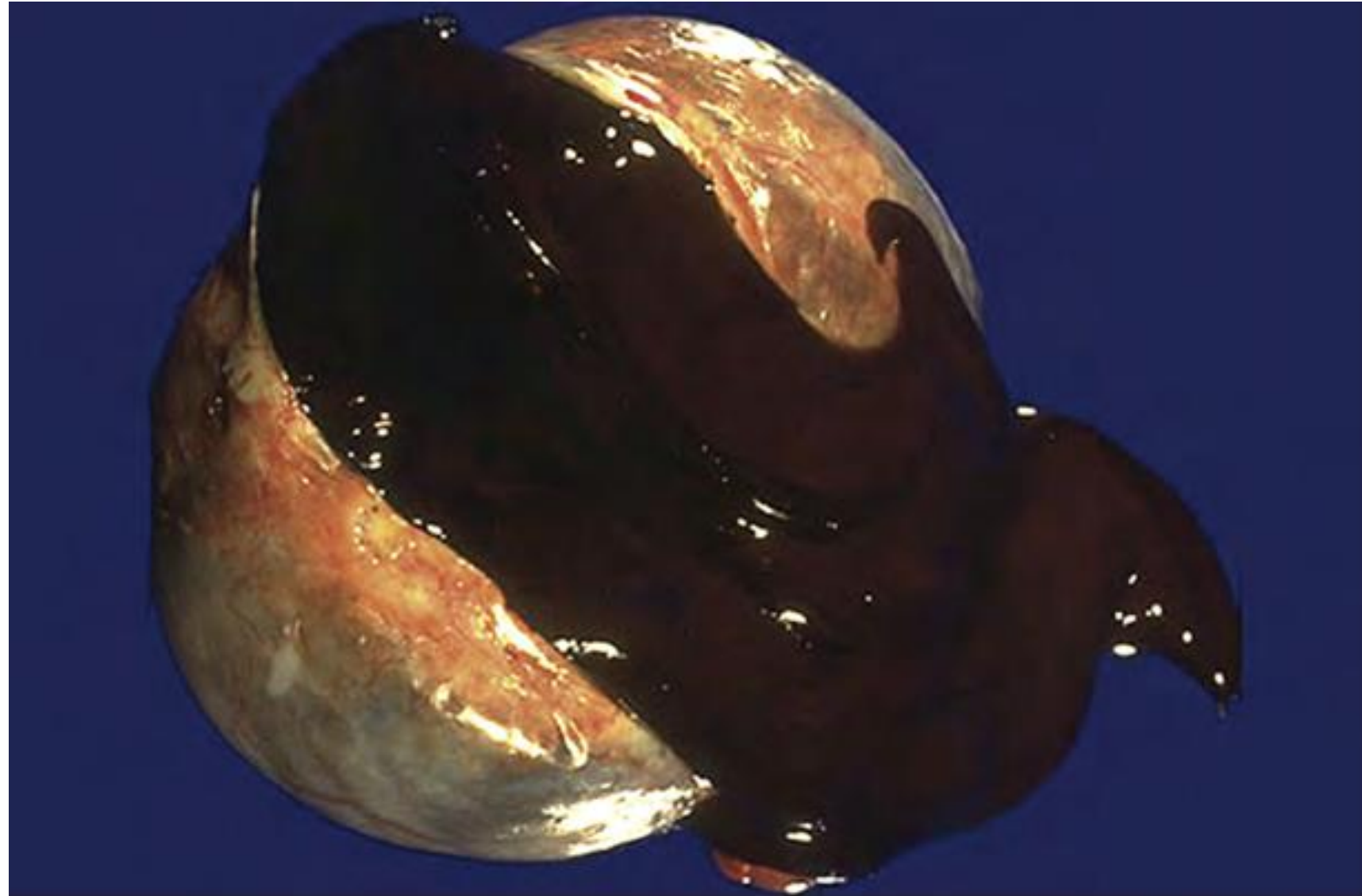
ENDOMETRIOSIS, GROSS

- About 10% of women have endometrial glands and stroma found **outside the uterus**.
- There is bleeding into these foci of endometriosis, giving them the gross appearance of **powder burns**. The small nodular foci here (▶) are just beneath the serosa of the posterior uterus in the pouch of Douglas.



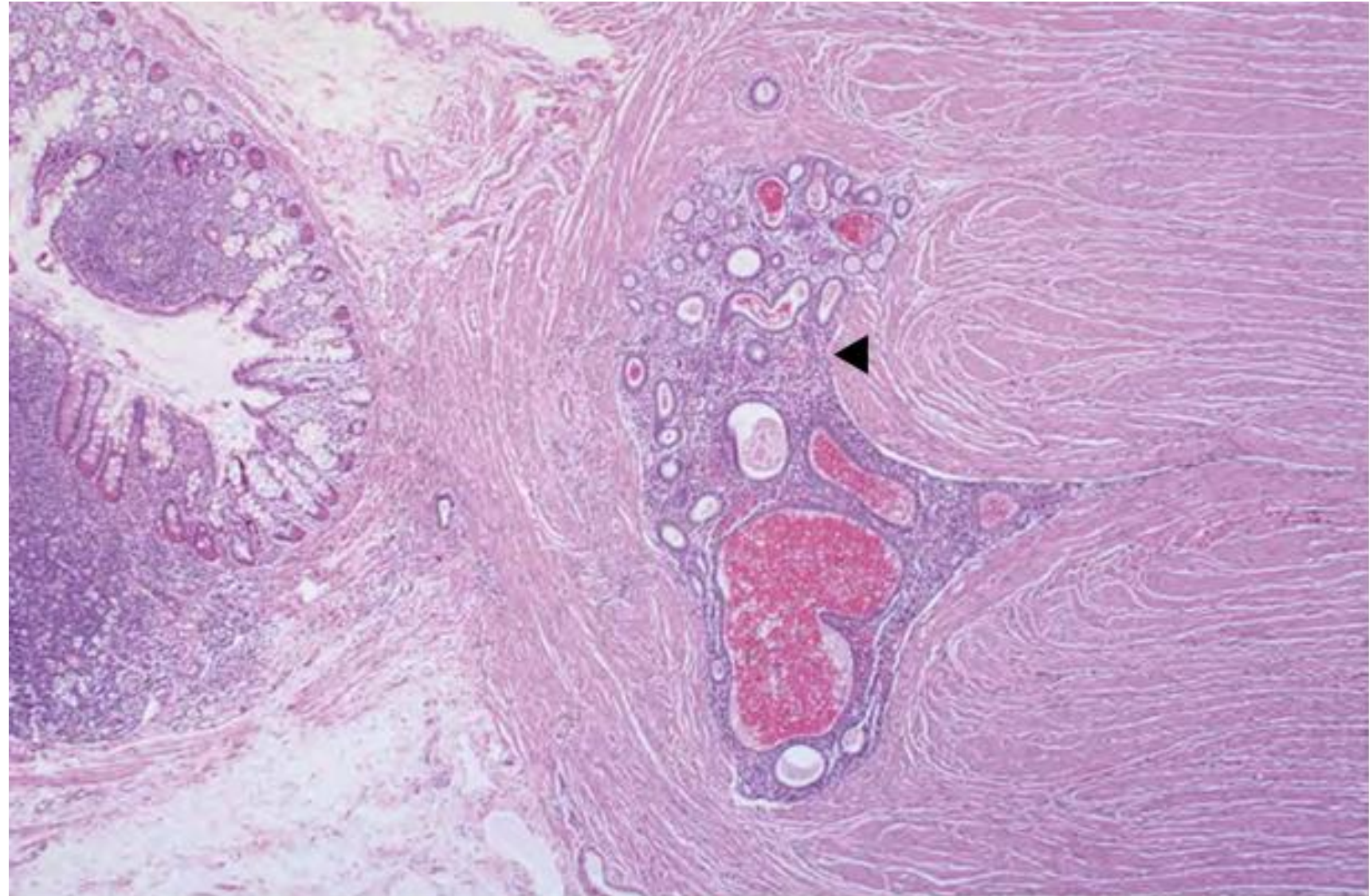
ENDOMETRIOSIS, GROSS

- This is a section through an enlarged 12-cm ovary to show a cystic cavity filled with old blood typical of endometriosis with formation of an **endometriotic or chocolate cyst**.



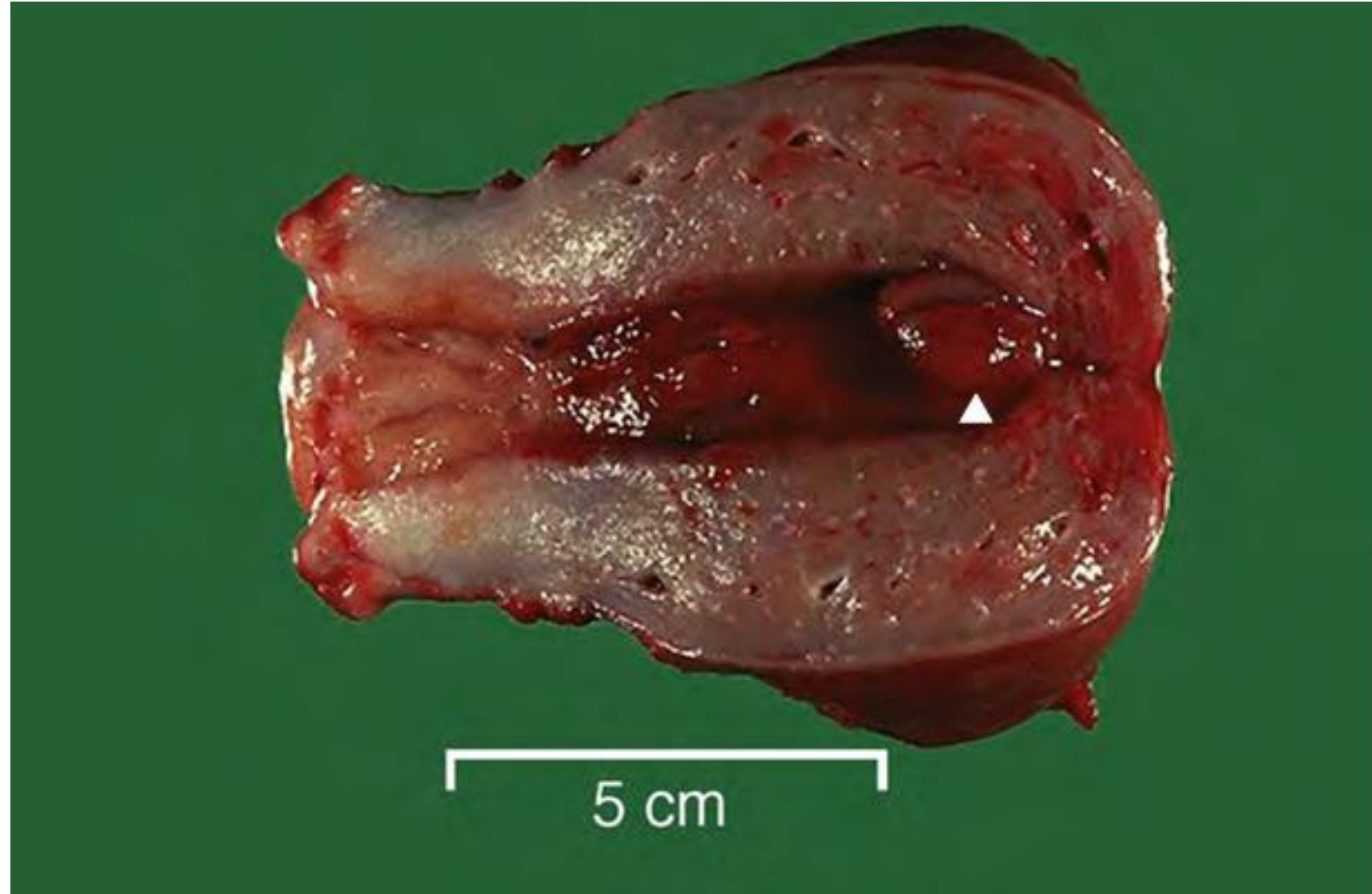
ENDOMETRIOSIS, MICROSCOPIC

- A focus of endometriosis (◻◀) with a small cluster of endometrial glands and stroma with hemorrhage appears in the center, adjacent to appendix at the left.



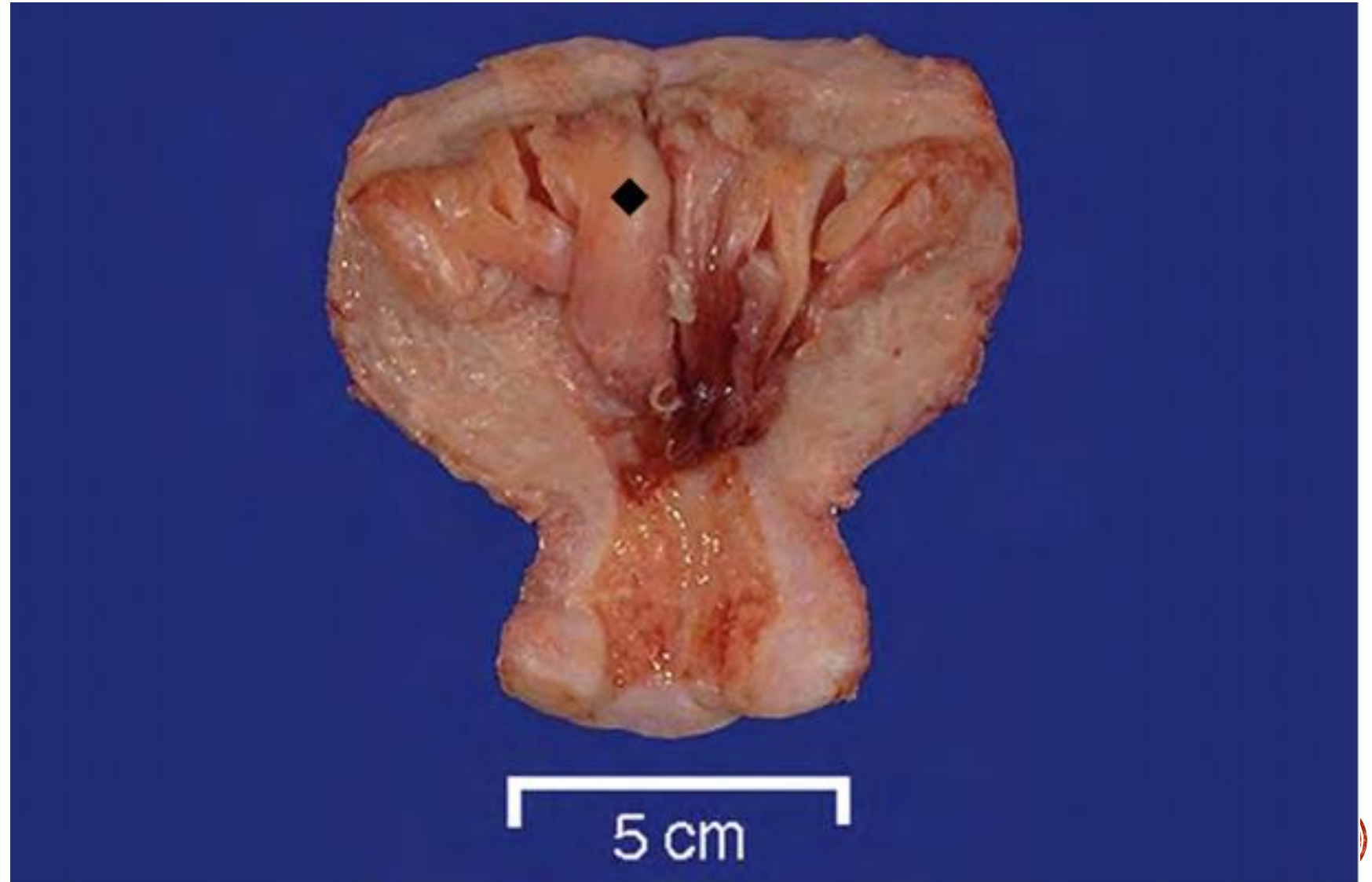
ENDOMETRIAL POLYP, GROSS

- This uterus has been opened anteriorly through the cervix and into the endometrial cavity.
- High in the fundus and projecting into the endometrial cavity is a small endometrial polyp.



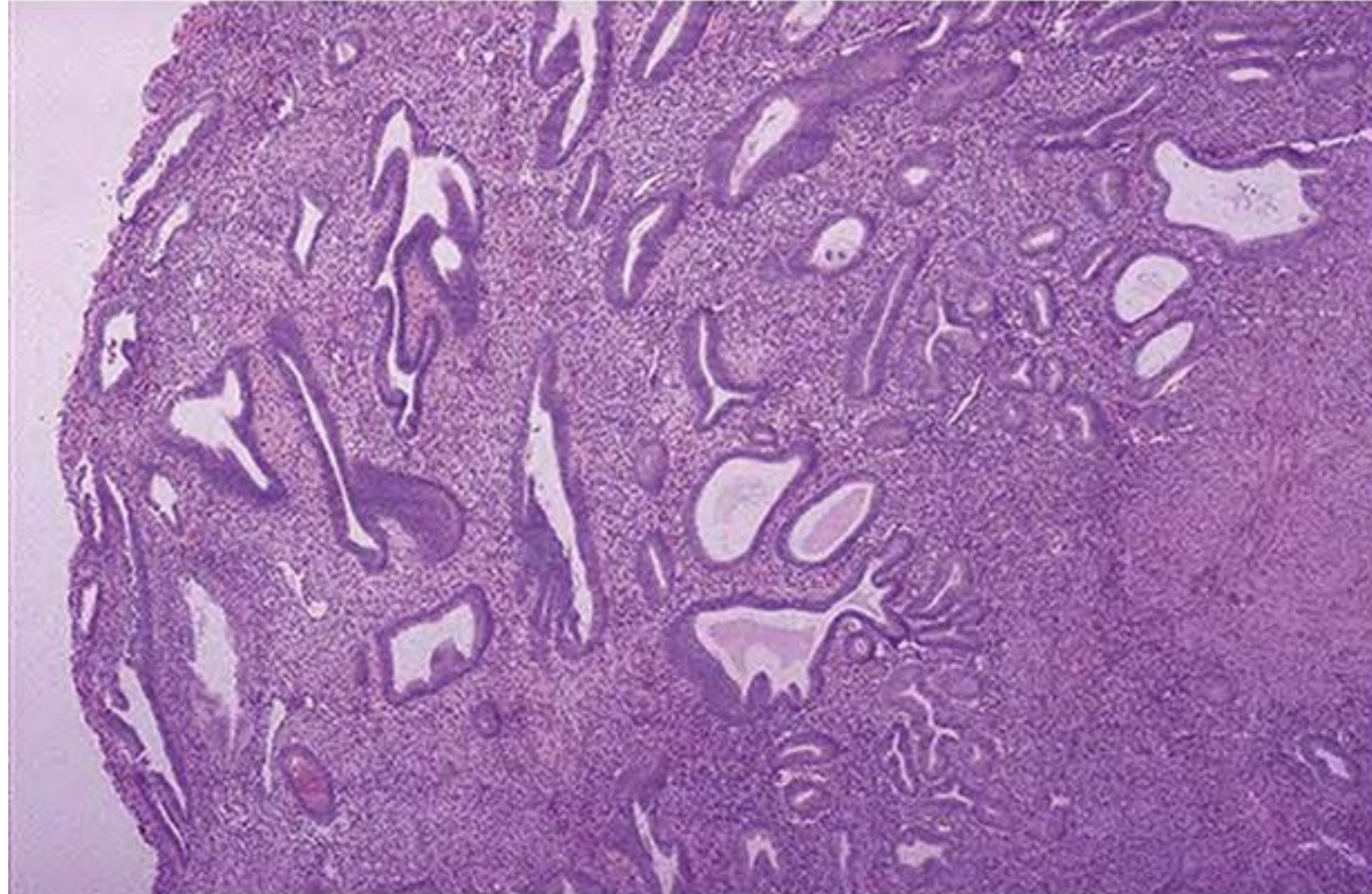
ENDOMETRIAL HYPERPLASIA, GROSS

- This normal-sized uterus is opened to reveal an endometrial cavity filled with lush fronds of hyperplastic endometrium.



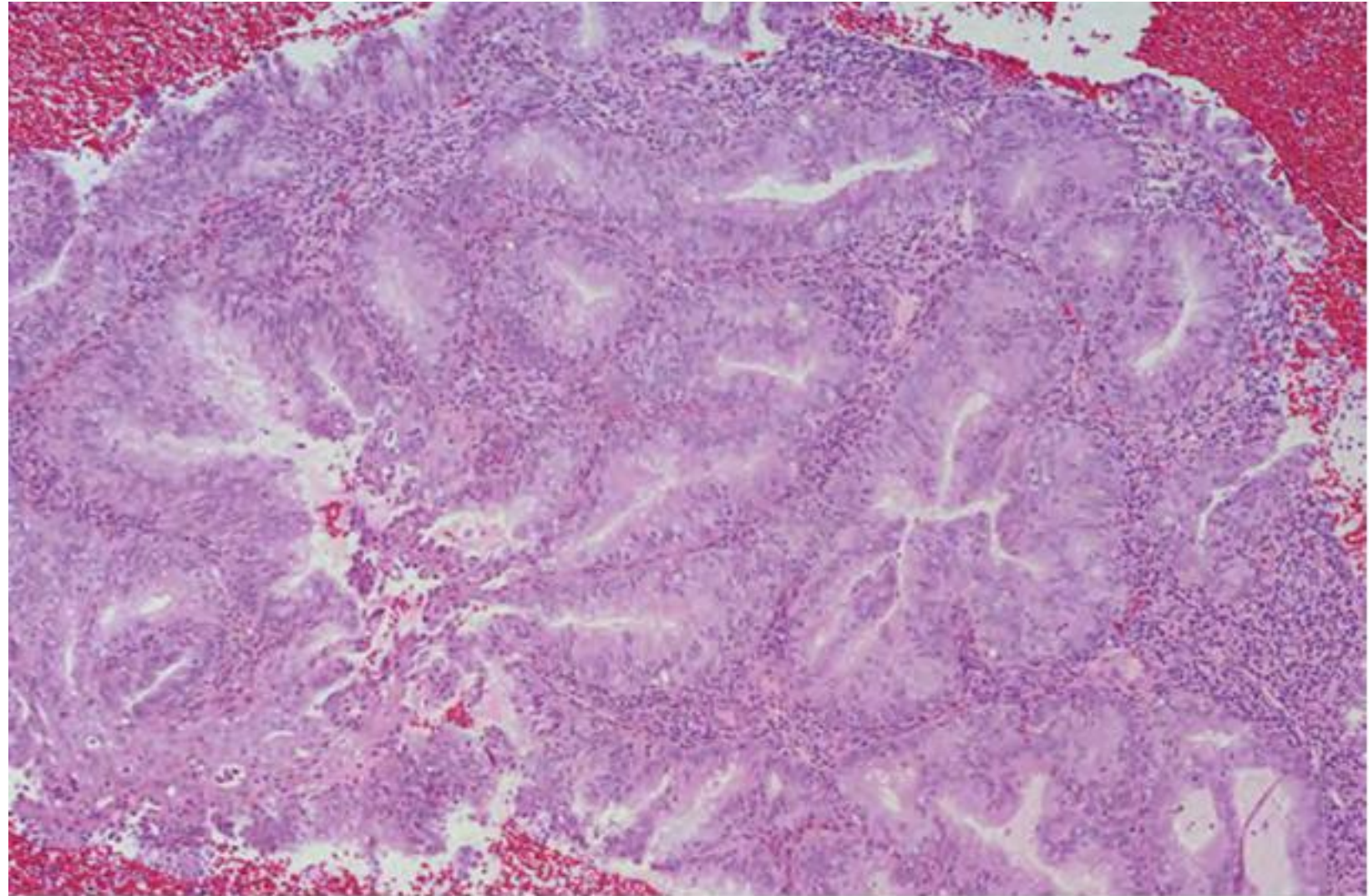
ENDOMETRIAL HYPERPLASIA, MICROSCOPIC

- In endometrial hyperplasia, the amount of endometrium is abnormally **increased** and not cycling as it should.
- The glands are **enlarged and irregular**. Some glands are cystic. This is the pattern of **non-atypical** hyperplasia.



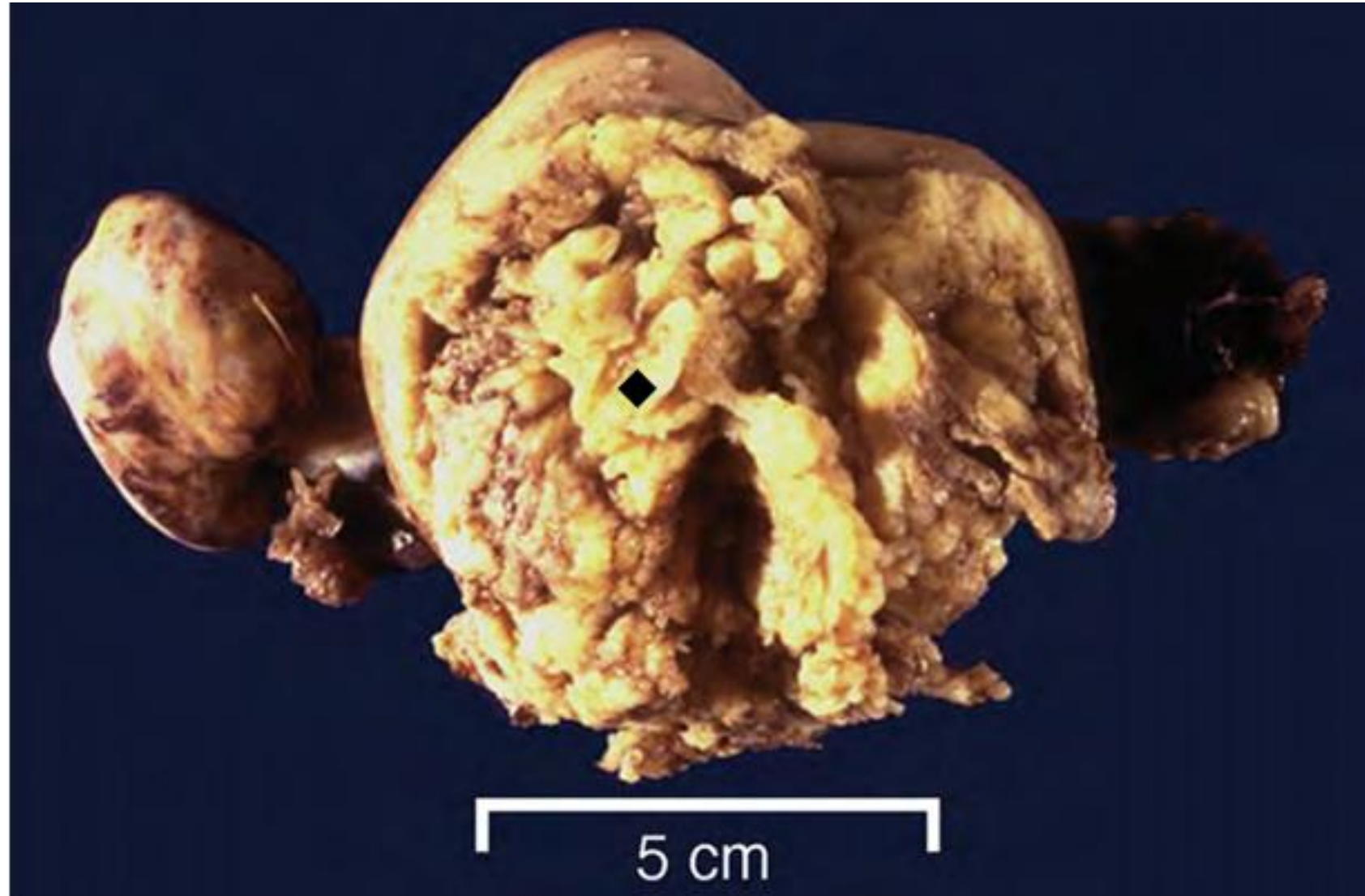
ATYPICAL ENDOMETRIAL HYPERPLASIA, MICROSCOPIC

- This biopsy specimen shows a complex proliferation of **back-to-back glands** branching structures.
- These glands are lined by columnar cells with **crowded hyperchromatic nuclei**, indicating that the hyperplasia of the endometrium has **atypical** features.



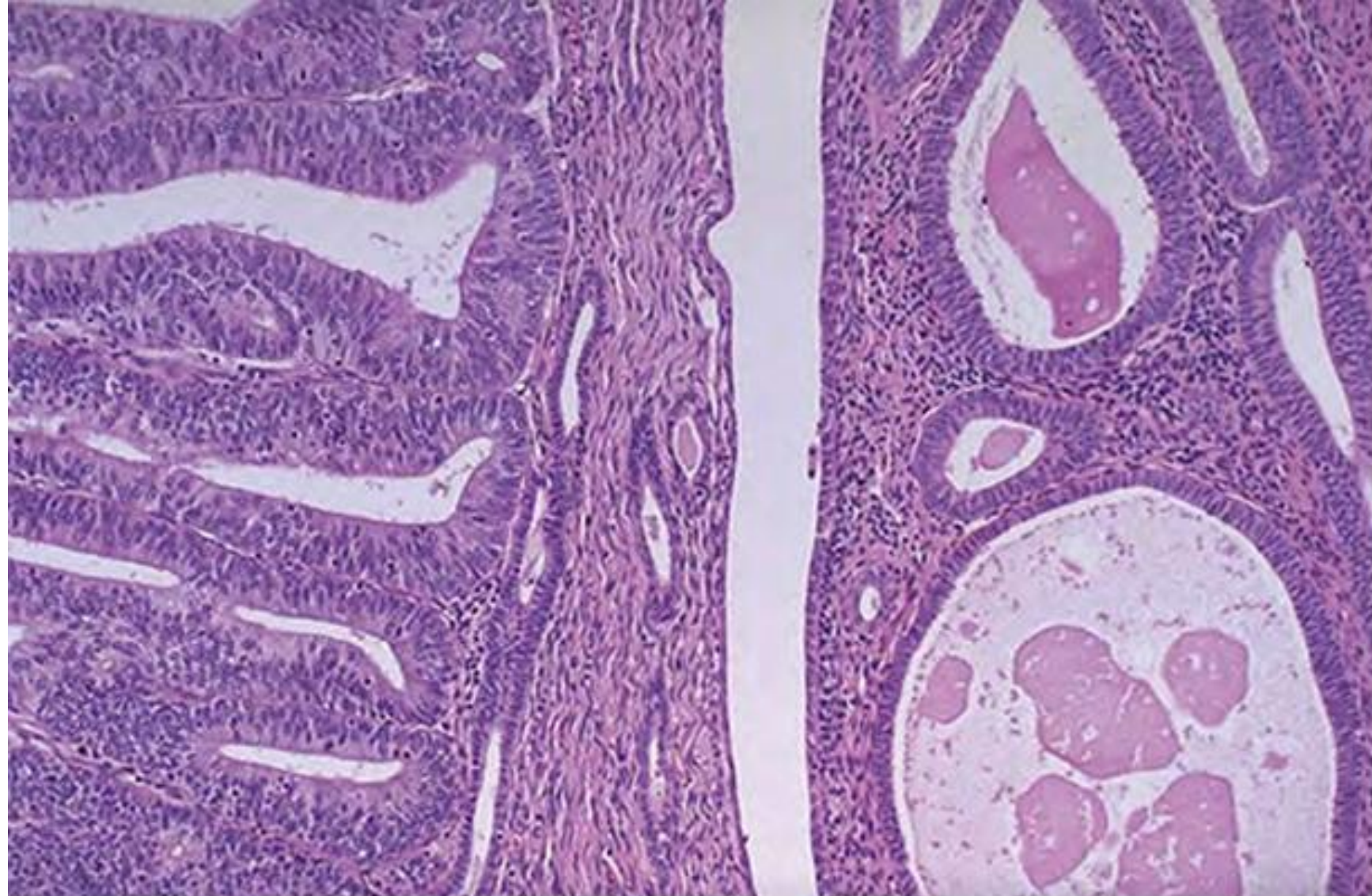
ENDOMETRIAL CARCINOMA, GROSS

- This total abdominal hysterectomy specimen shows an advanced adenocarcinoma of the endometrium that enlarges the entire uterus.
- Irregular masses of white tumor are filling and expanding the endometrial cavity and extending into the uterine wall.



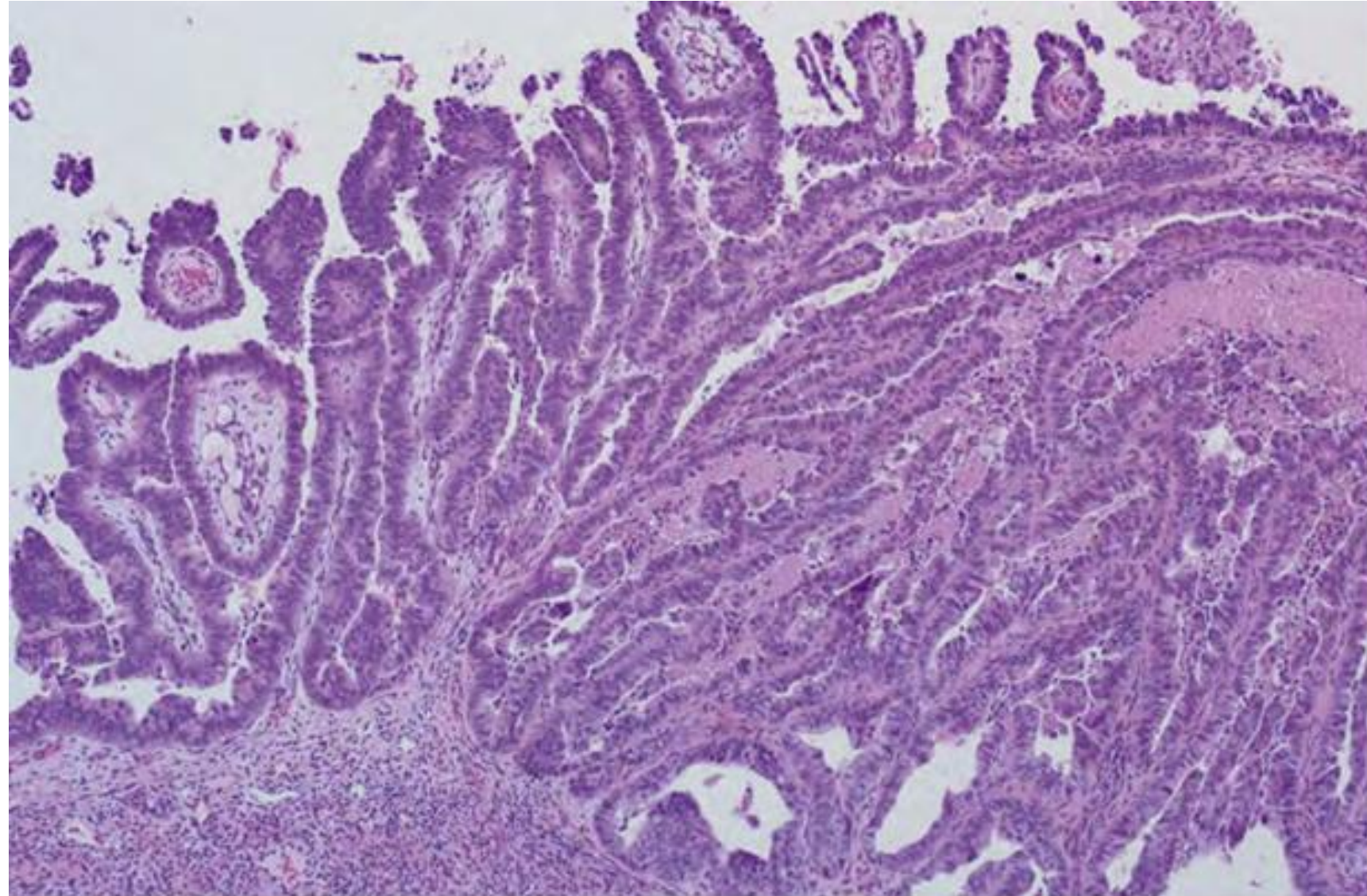
ENDOMETRIAL CARCINOMA, TYPE I

- The adenocarcinoma on the left is **moderately differentiated** because a glandular structure can still be discerned.
- Note the architectural **atypia, cellular crowding with hyperchromatism, and pleomorphism** of the cells compared with the underlying endometrium with cystic hyperplasia on the right.



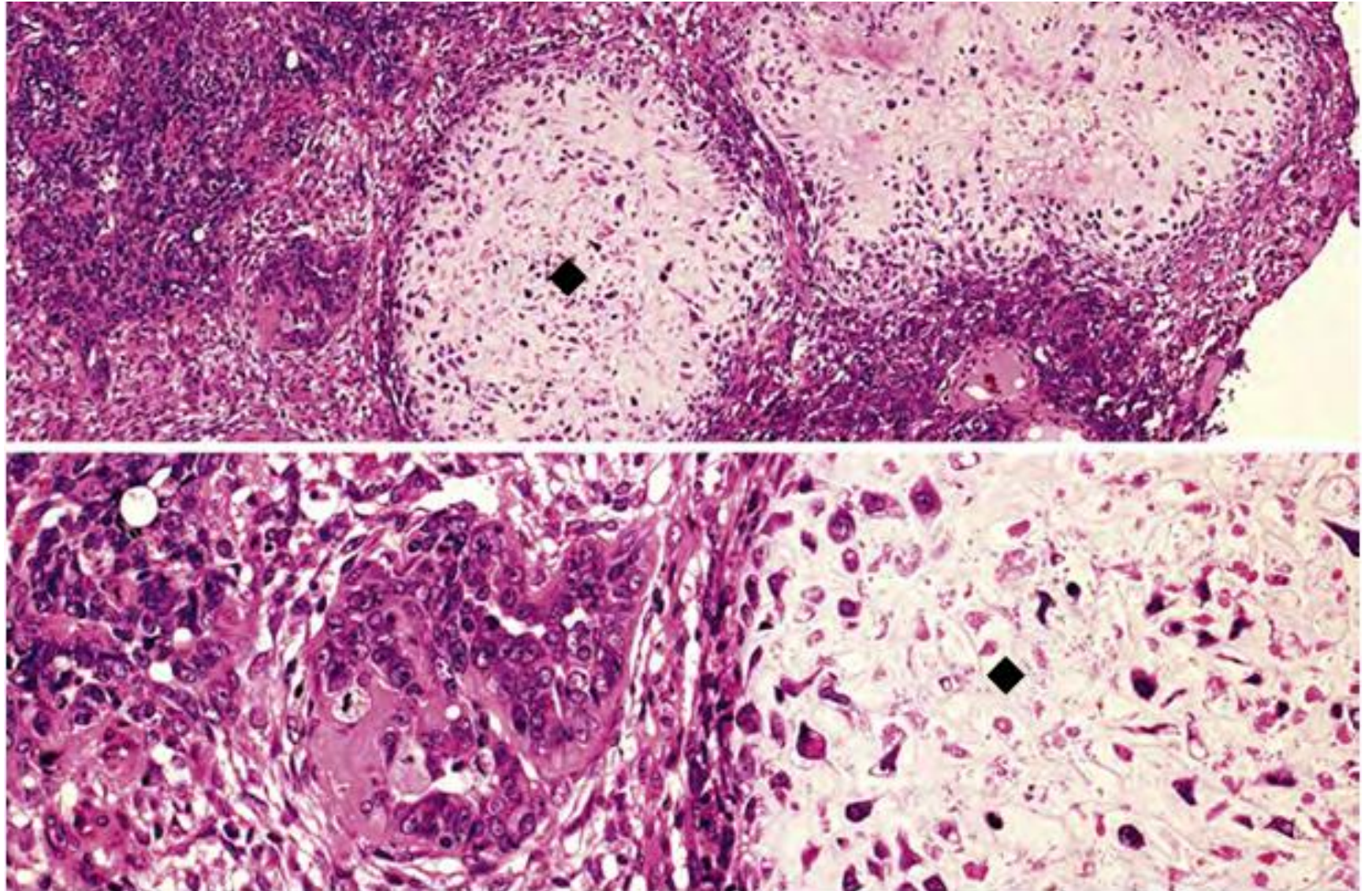
ENDOMETRIAL CARCINOMA, TYPE II

- The papillations with cuboidal epithelium are characteristic for the **serous type** of endometrial carcinoma.
- It occurs about 10 years later than type I and **follows endometrial atrophy**.



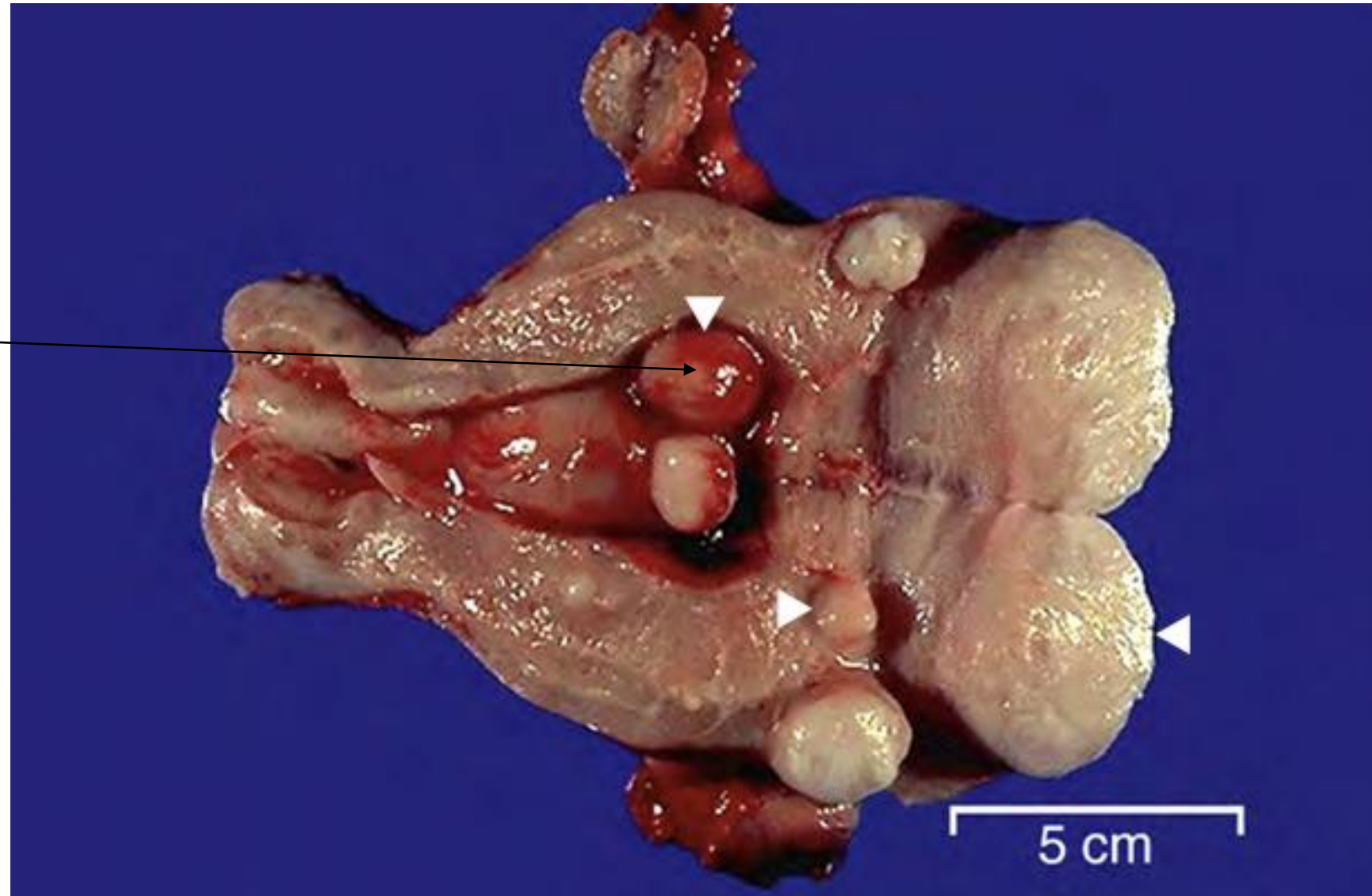
CARCINOSARCOMA, MICROSCOPIC

- There are carcinomatous elements along with “heterologous” sarcomatous elements (here resembling chondrosarcom).



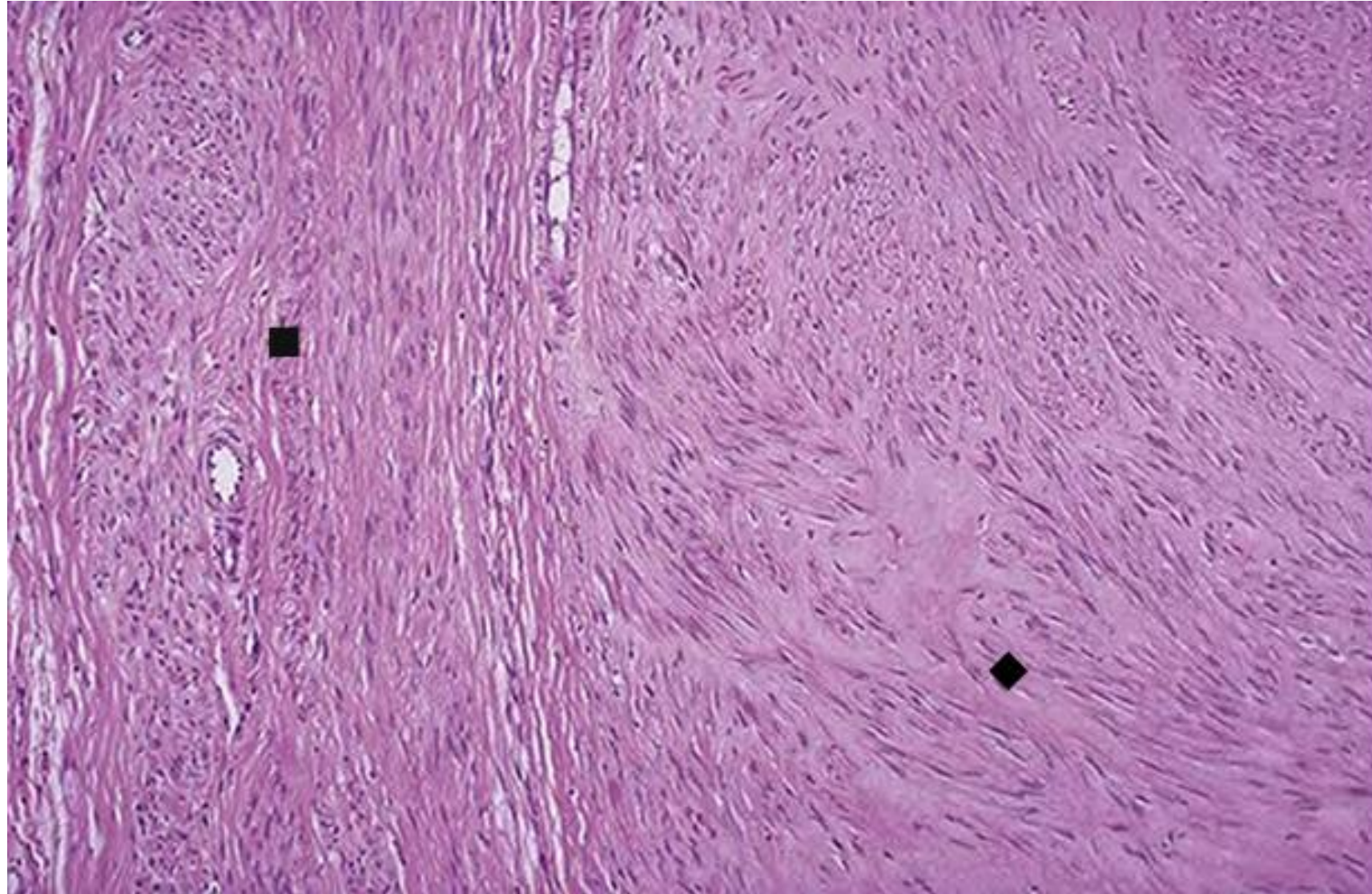
LEIOMYOMATA, GROSS

- These neoplasms are sharply circumscribed, firm, and white on cut section. Submucosal, intramural (▶), and subserosal (◀) leiomyomata are shown here.



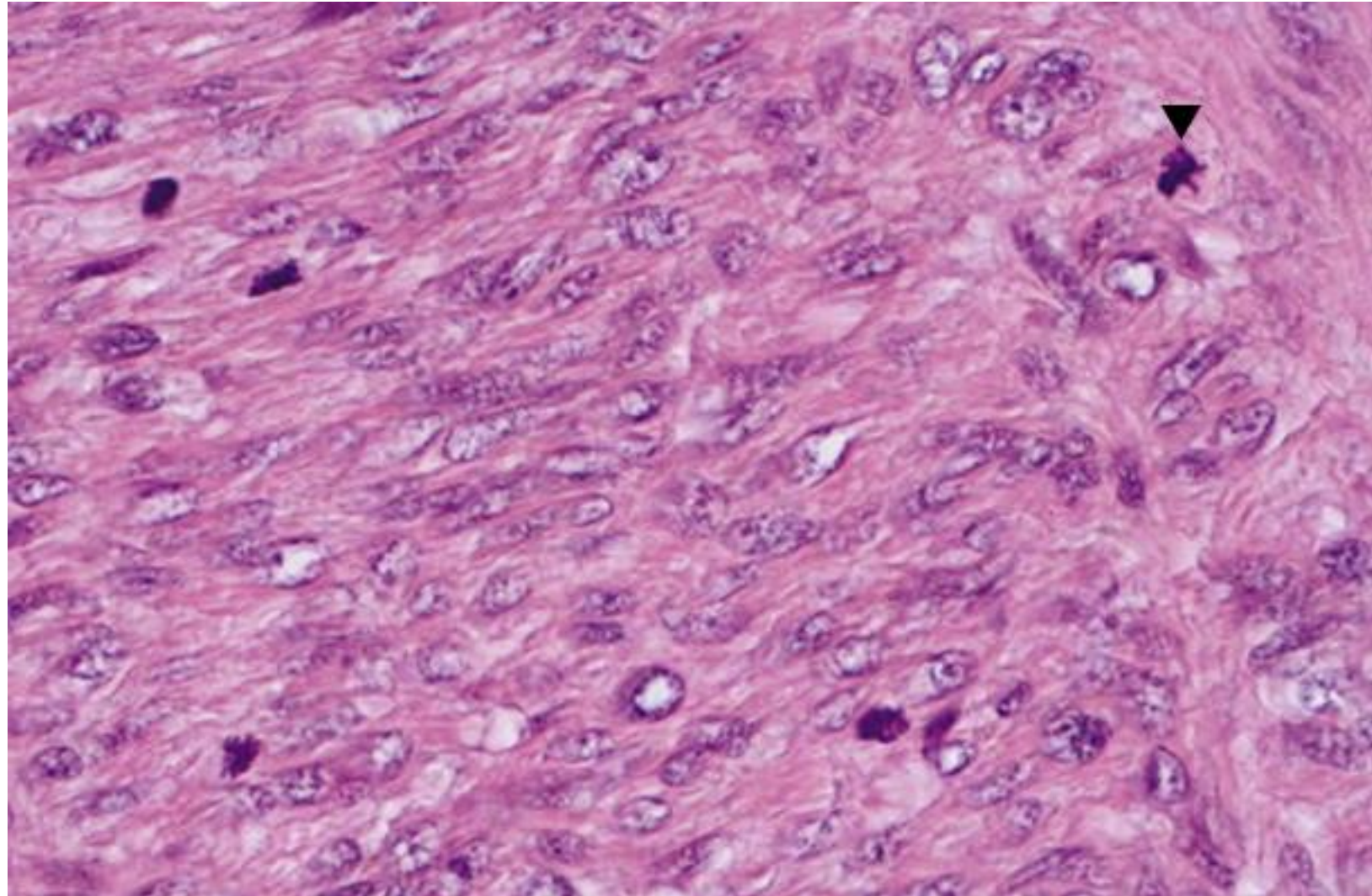
LEIOMYOMA, MICROSCOPIC

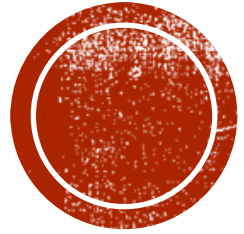
- Interlacing bundles of **uniform spindle cells resembling smooth muscle** compose this benign leiomyoma. Mitoses do not appear here.



LEIOMYOSARCOMA, MICROSCOPIC

- This malignant smooth muscle neoplasm is much **more cellular** than a leiomyoma, and the cells shown here display **pleomorphism and hyperchromatism**. **Multiple mitoses** are present— five in just one field.
- The degree of cellular atypia, the number of mitoses, and the presence of zonal necrosis aid in making this diagnosis.





OVARIES AND TUBES



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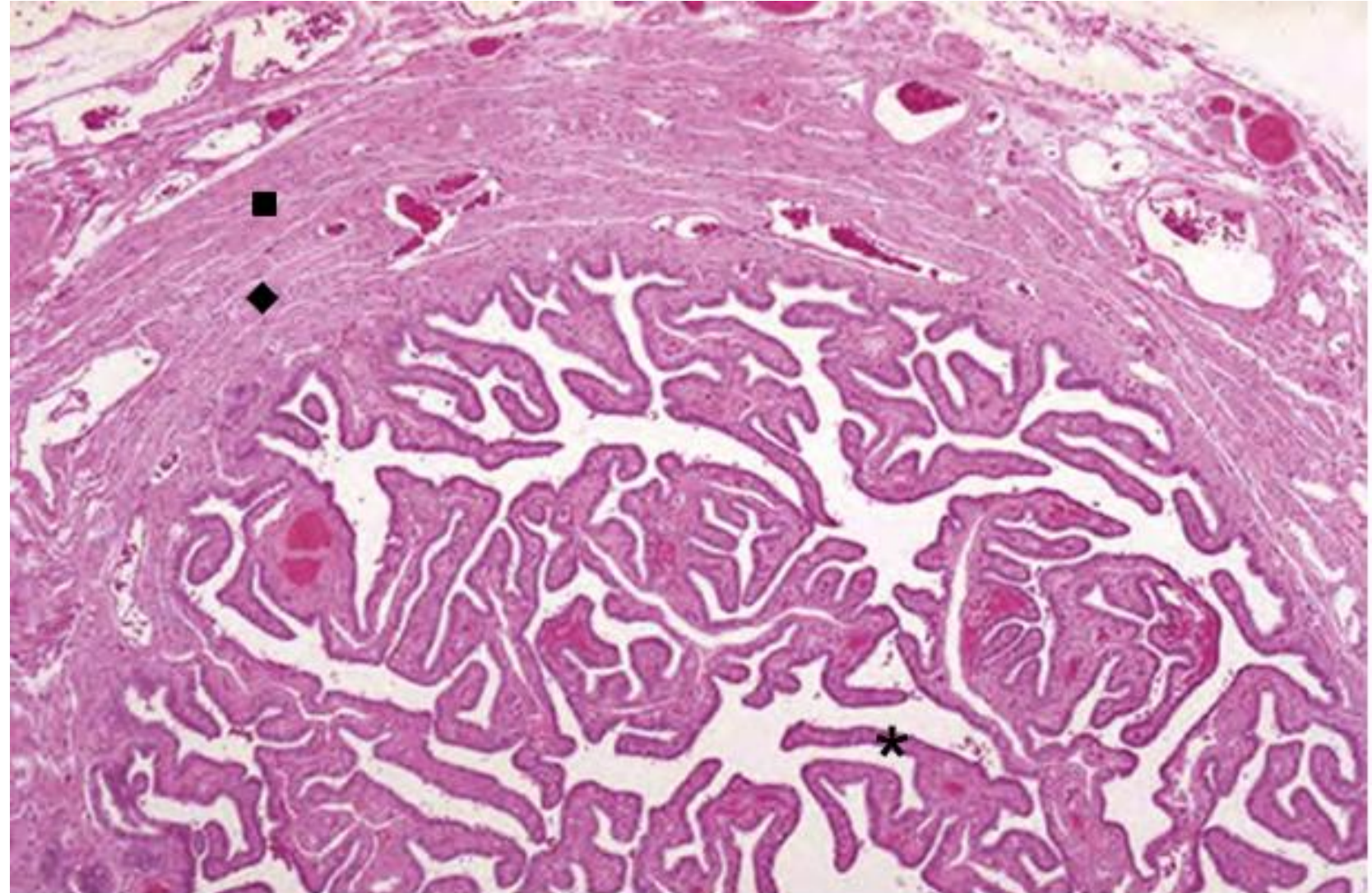
NORMAL OVARY AND FALLOPIAN TUBE, GROSS

- There is a small **paratubal cyst**; a common incidental finding.
- Sometimes such simple cysts are found adjacent to the ovary and are called parovarian cysts.



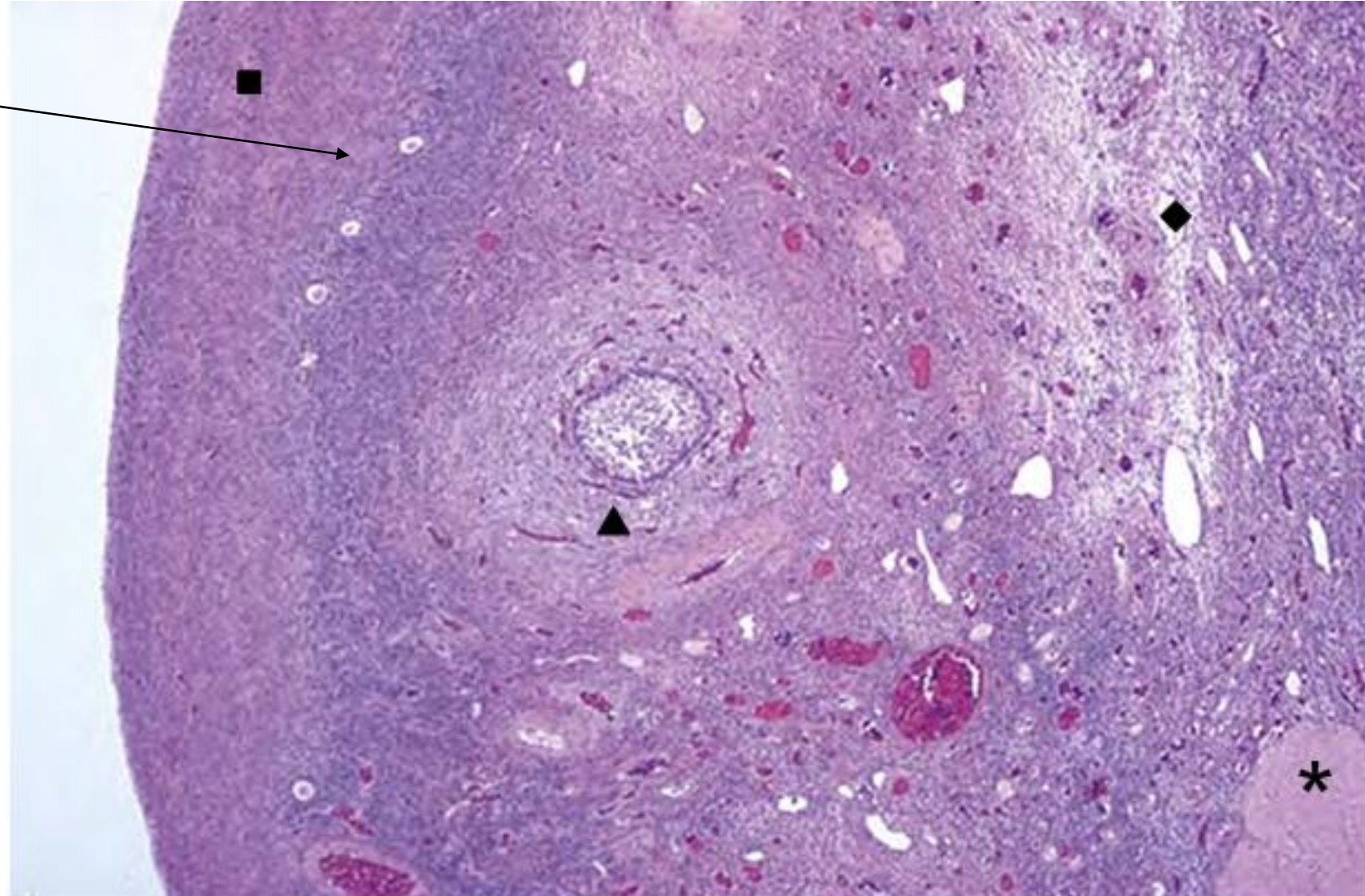
NORMAL FALLOPIAN TUBE, MICROSCOPIC

- Note the smooth muscular coat composed of ill-defined inner circular and outer longitudinal layers, and an inner complex branching pattern of finger-like projections of connective tissue lined by a tall columnar epithelium.



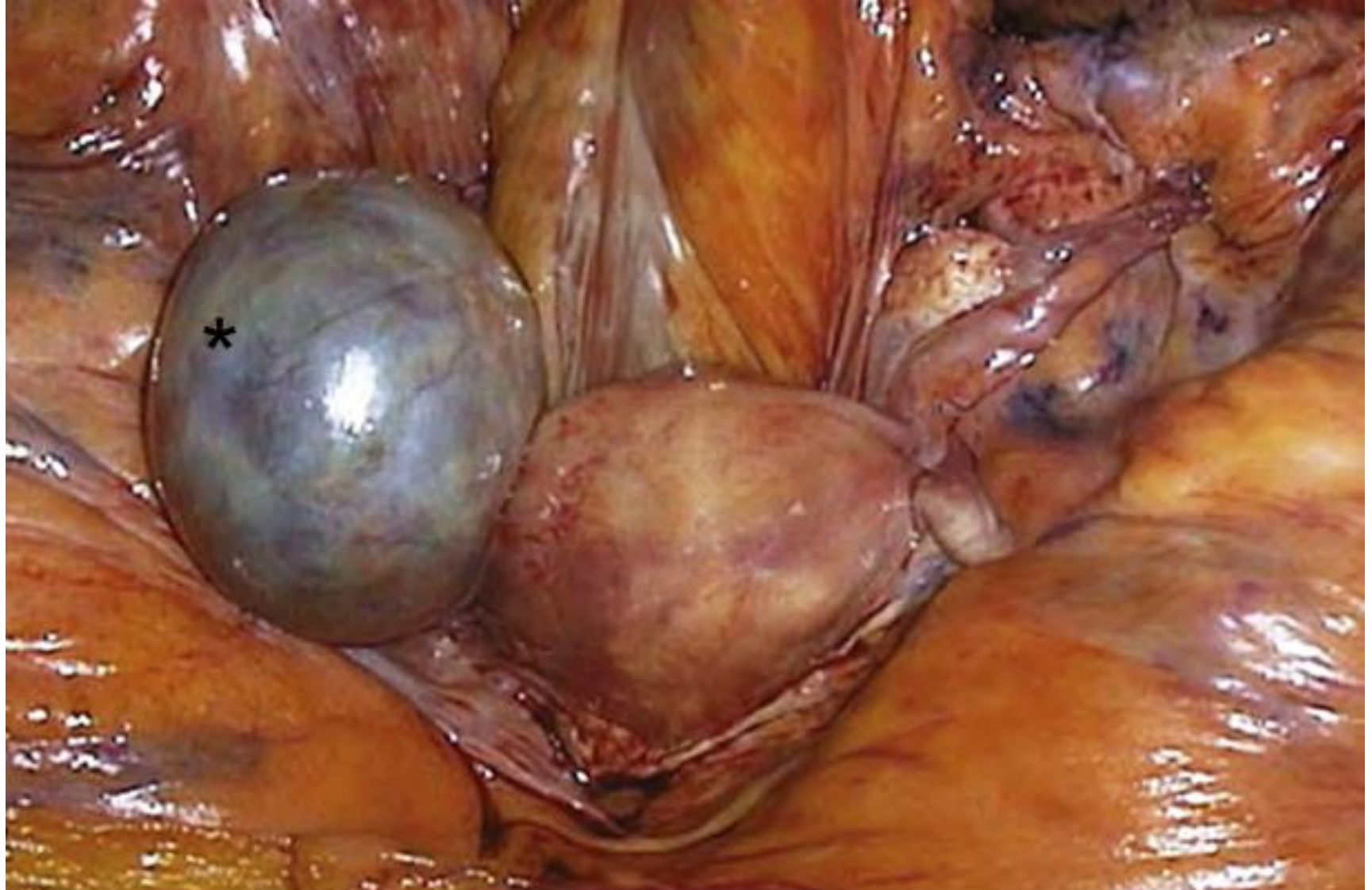
NORMAL ADULT OVARY, MICROSCOPIC

- The adult ovary consists of a cortex and a medulla. A primordial follicle consists of just the oocyte surrounded by a flattened layer of stromal cells.
- Shown here is ovarian cortex with **abundant dense stroma and few follicles**.
- At the lower right is a pink cloudlike corpus albicans (*).



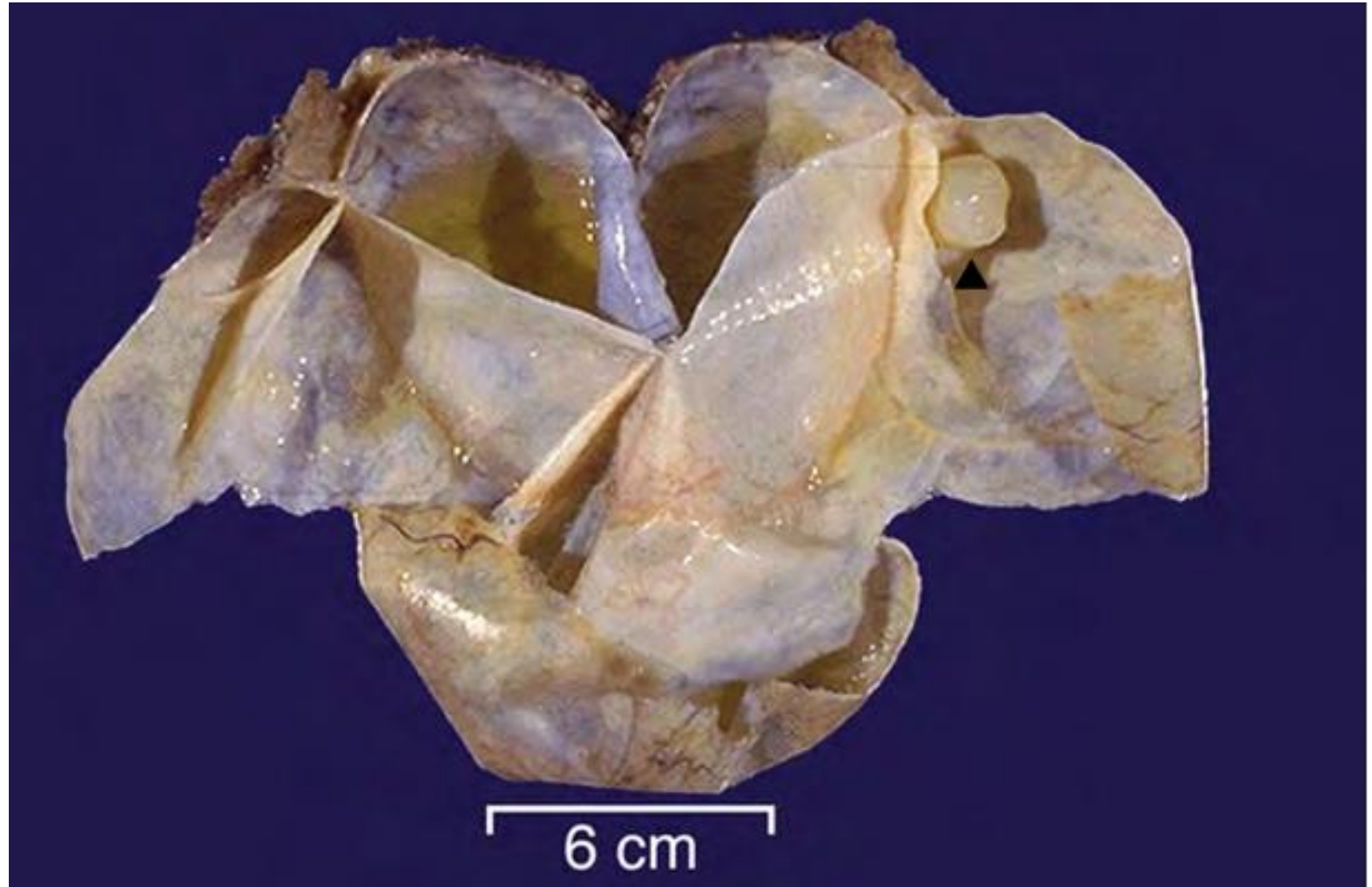
SEROUS CYSTADENOMA, GROSS

- A smooth-surfaced tumor (*) arising from ovarian müllerian surface epithelium.



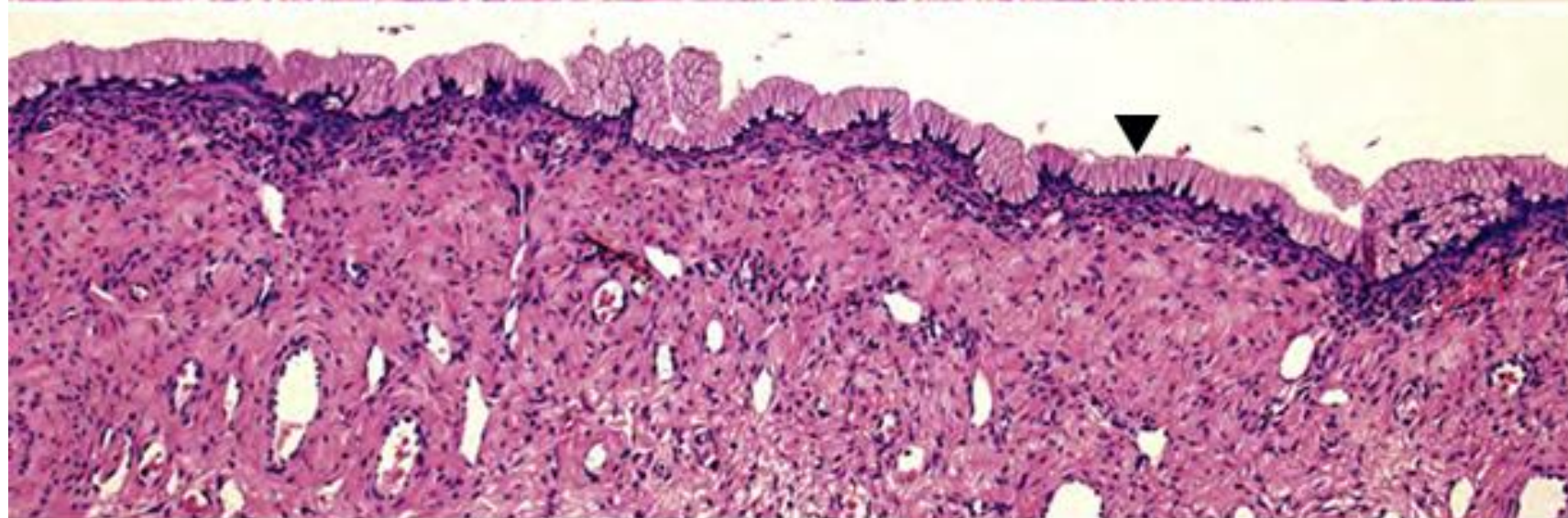
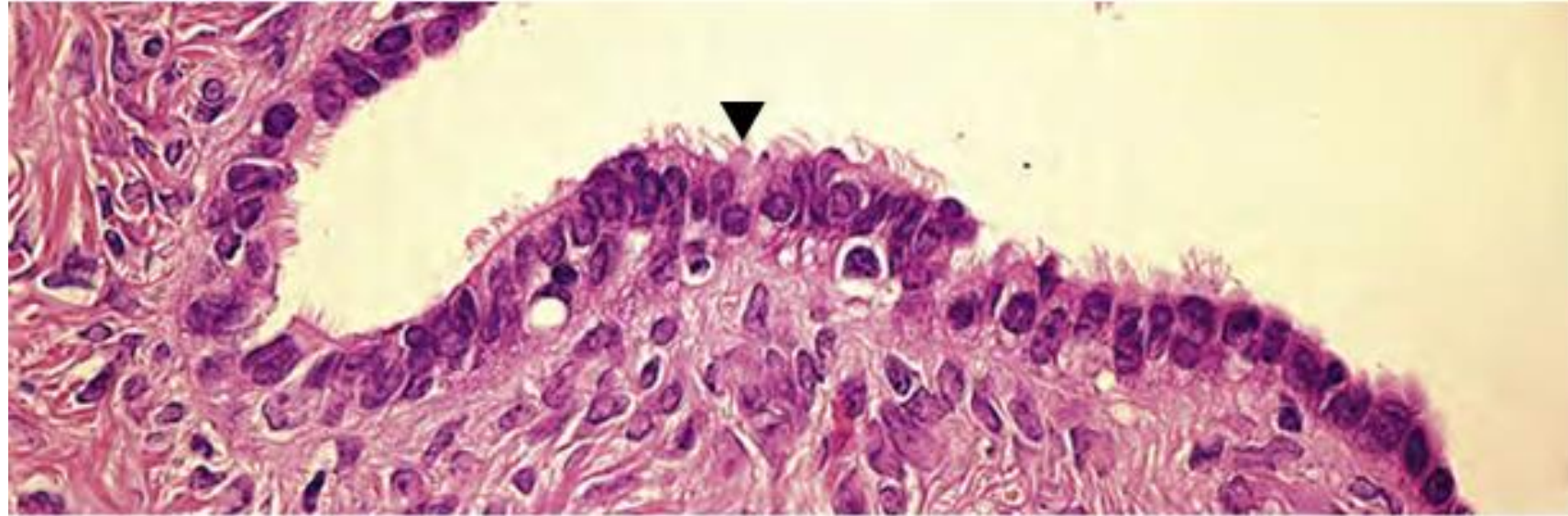
MUCINOUS CYSTADENOMA, GROSS

- This ovary has been sectioned to reveal multiple fluid-filled cavities (**multiloculated ovarian tumor**), which are smooth-surfaced with a rare nodular excrescence.



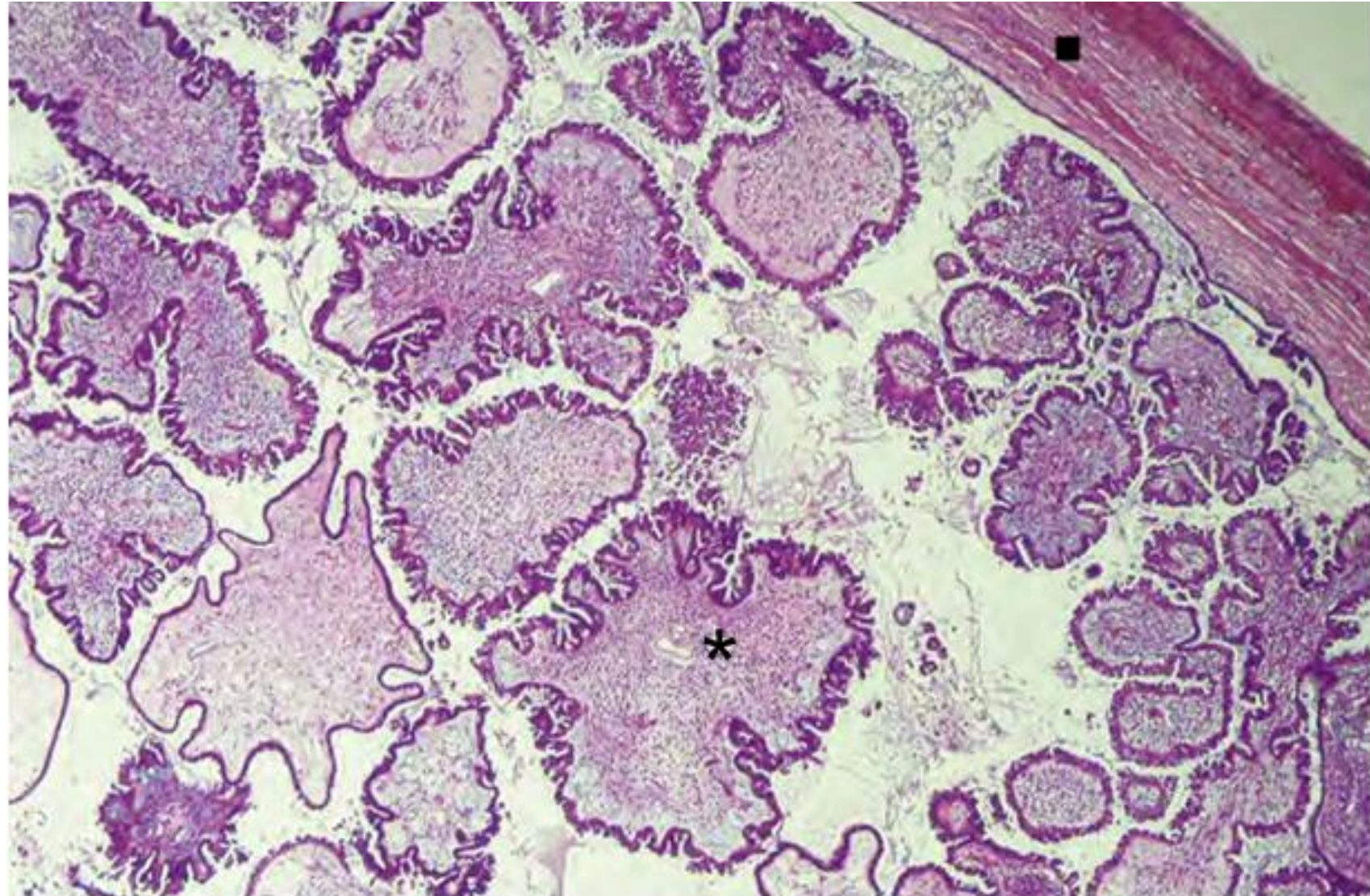
CYSTADENOMA, SEROUS AND MUCINOUS, MICROSCOPIC

- In the **top** panel is a thin epithelial lining of **tall, ciliated cuboidal cells** with minimal infolding and complexity overlying a fibromuscular wall that is not invaded by these epithelial cells.
- In the **bottom** panel the epithelium lining is **mucinous**, resembling endocervical mucosa.



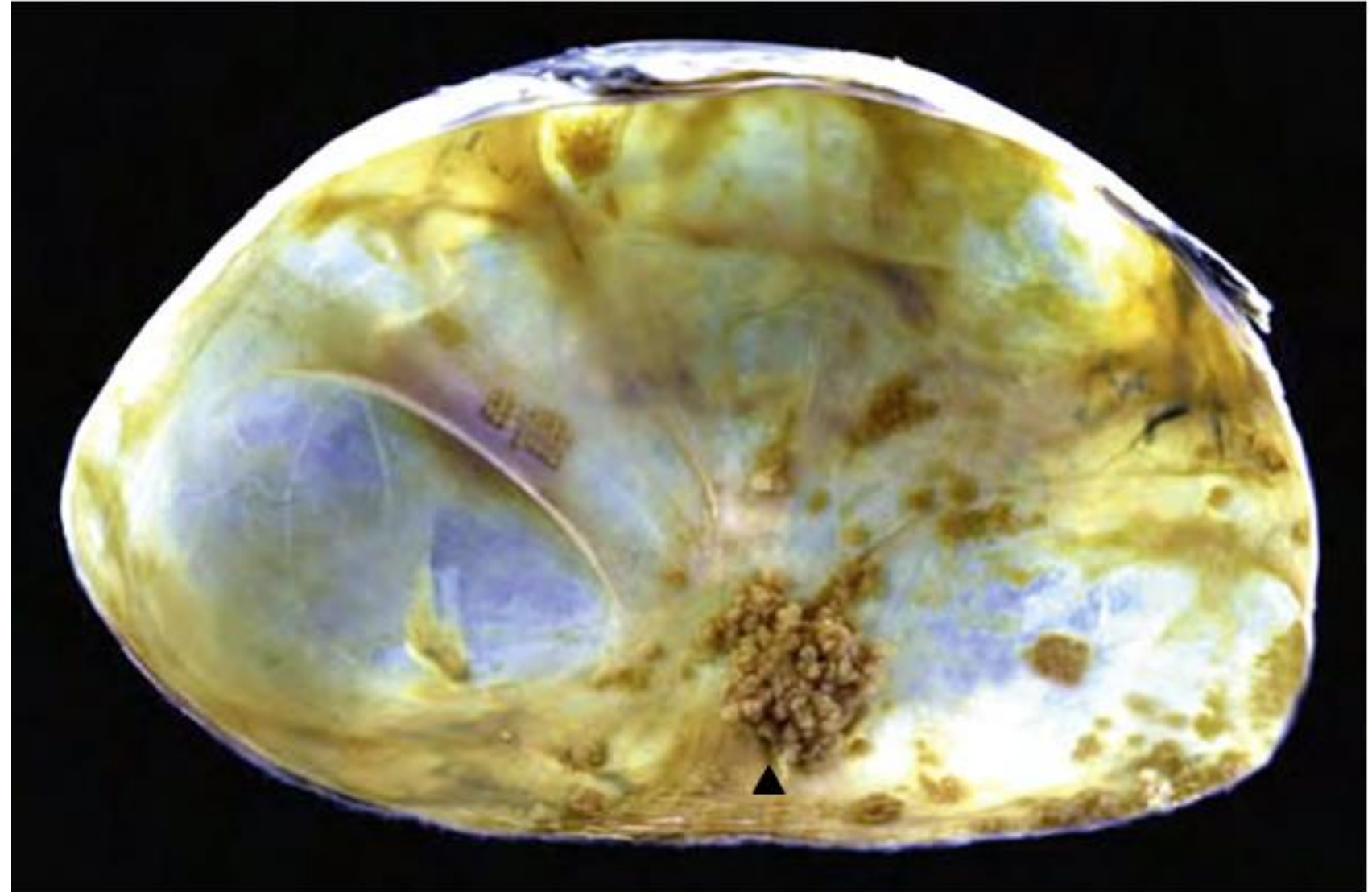
BORDERLINE SEROUS TUMOR, MICROSCOPIC

- Here are increased numbers of **papillations with complex borders**, but with one or two cell layers and minimal atypia.
- A thick collagenous **capsule has not been invaded.**



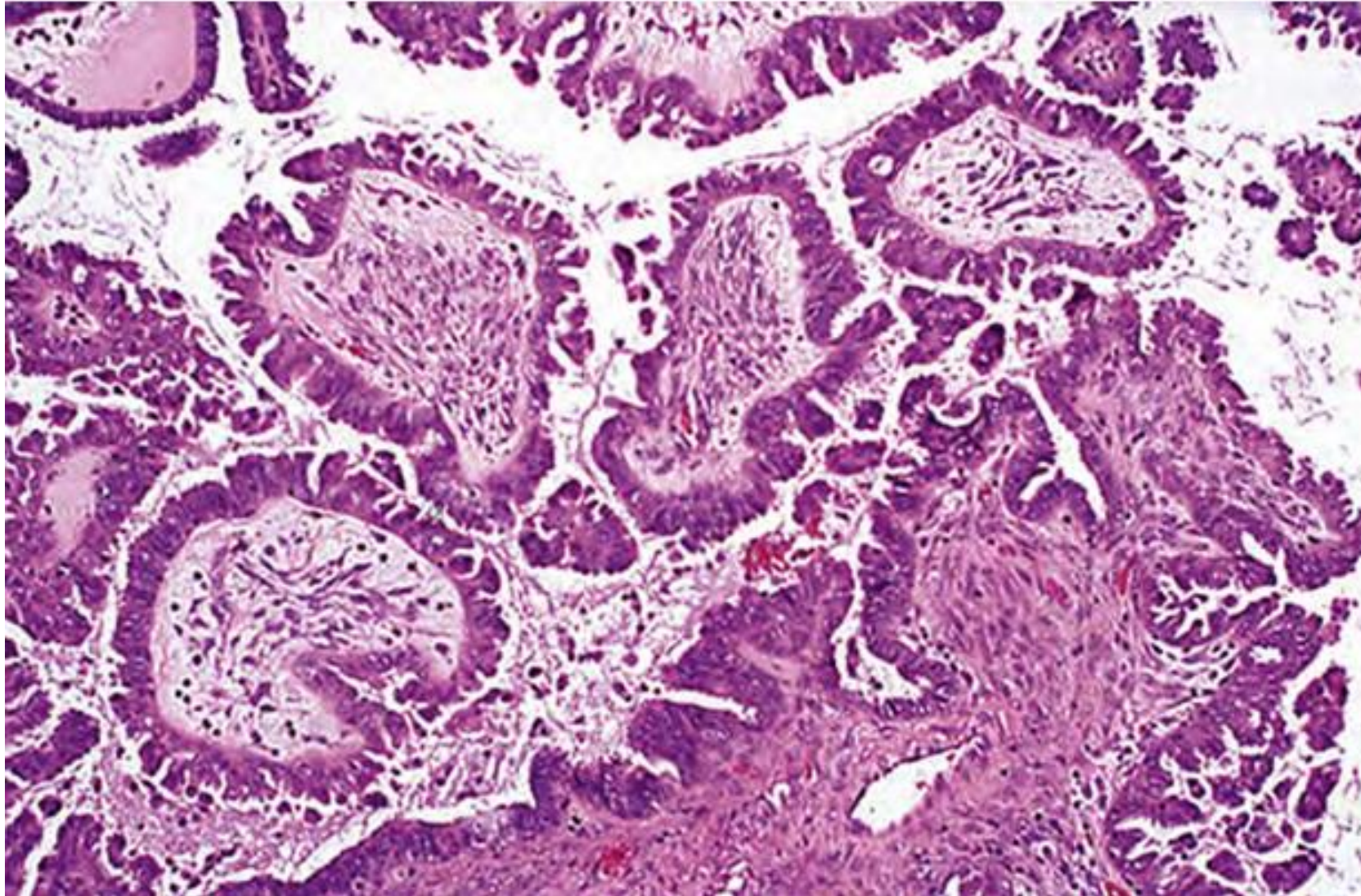
CYSTADENOCARCINOMA, GROSS

- Papillations are visible on the surface of the wall of this neoplasm.
- These invade through the wall.



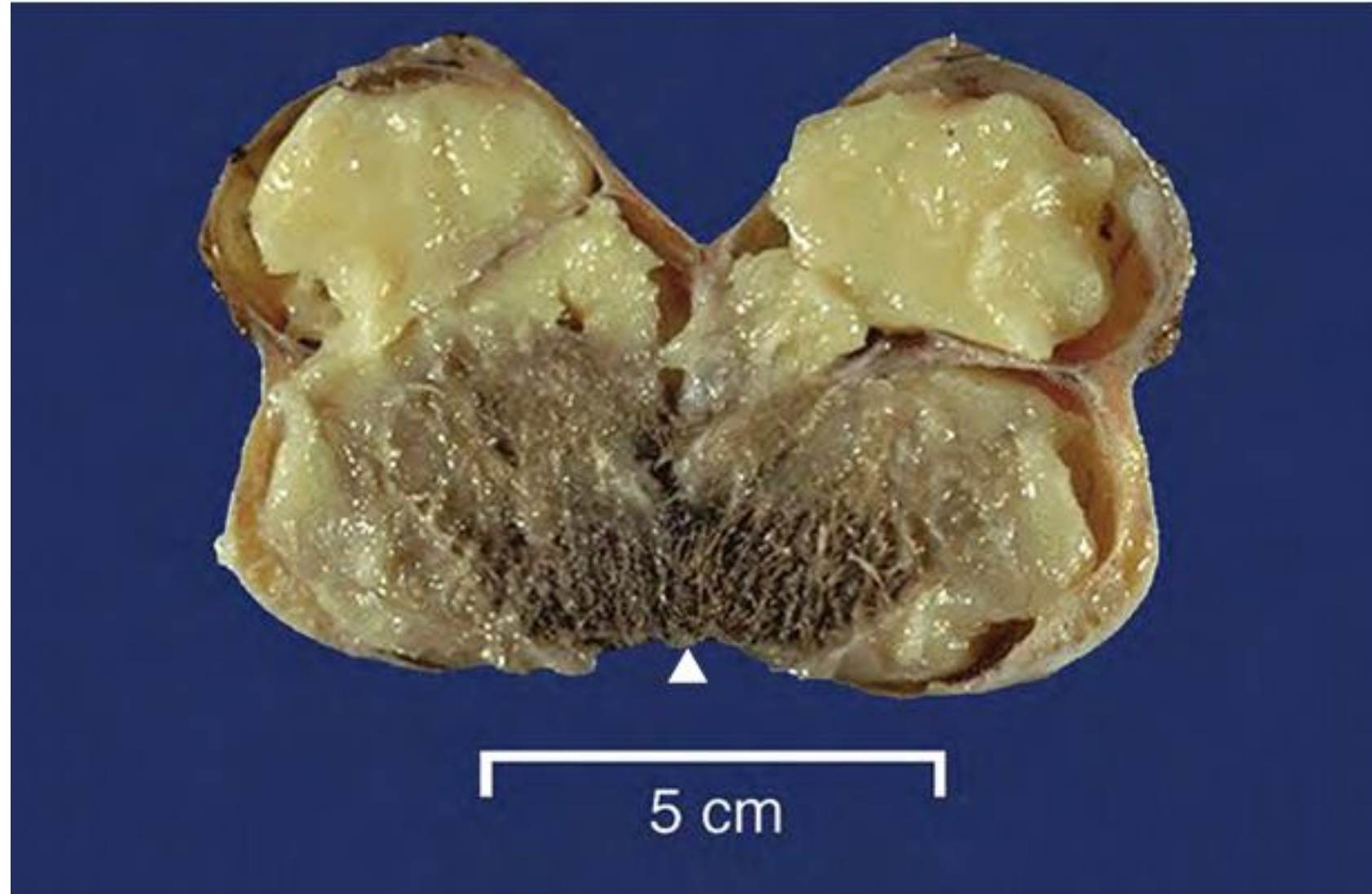
CYSTADENOCARCINOMA, MICROSCOPIC

- Note the pronounced papillary growth pattern, more complex infolding, more layers of cells, and cells with **more mitoses, hyperchromatism, and pleomorphism.**
- **Invasion** is also likely to be present into the underlying stroma or through the capsule.



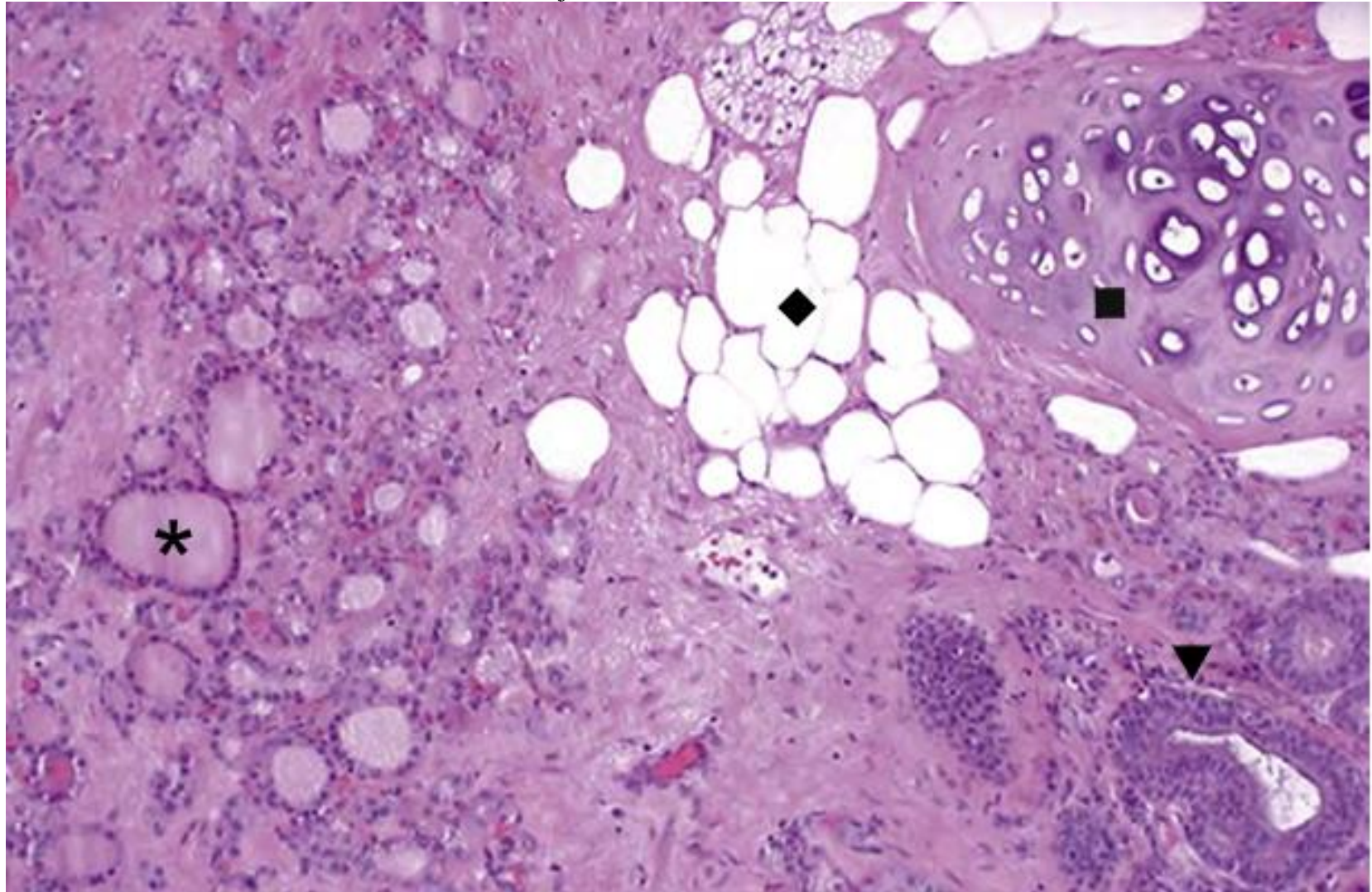
MATURE CYSTIC TERATOMA, GROSS

- This cystic mass has been opened to reveal mostly **ectodermal** elements; the most frequently found tissue element in these cysts is skin, so large amounts of hair and sebum are produced, as shown.



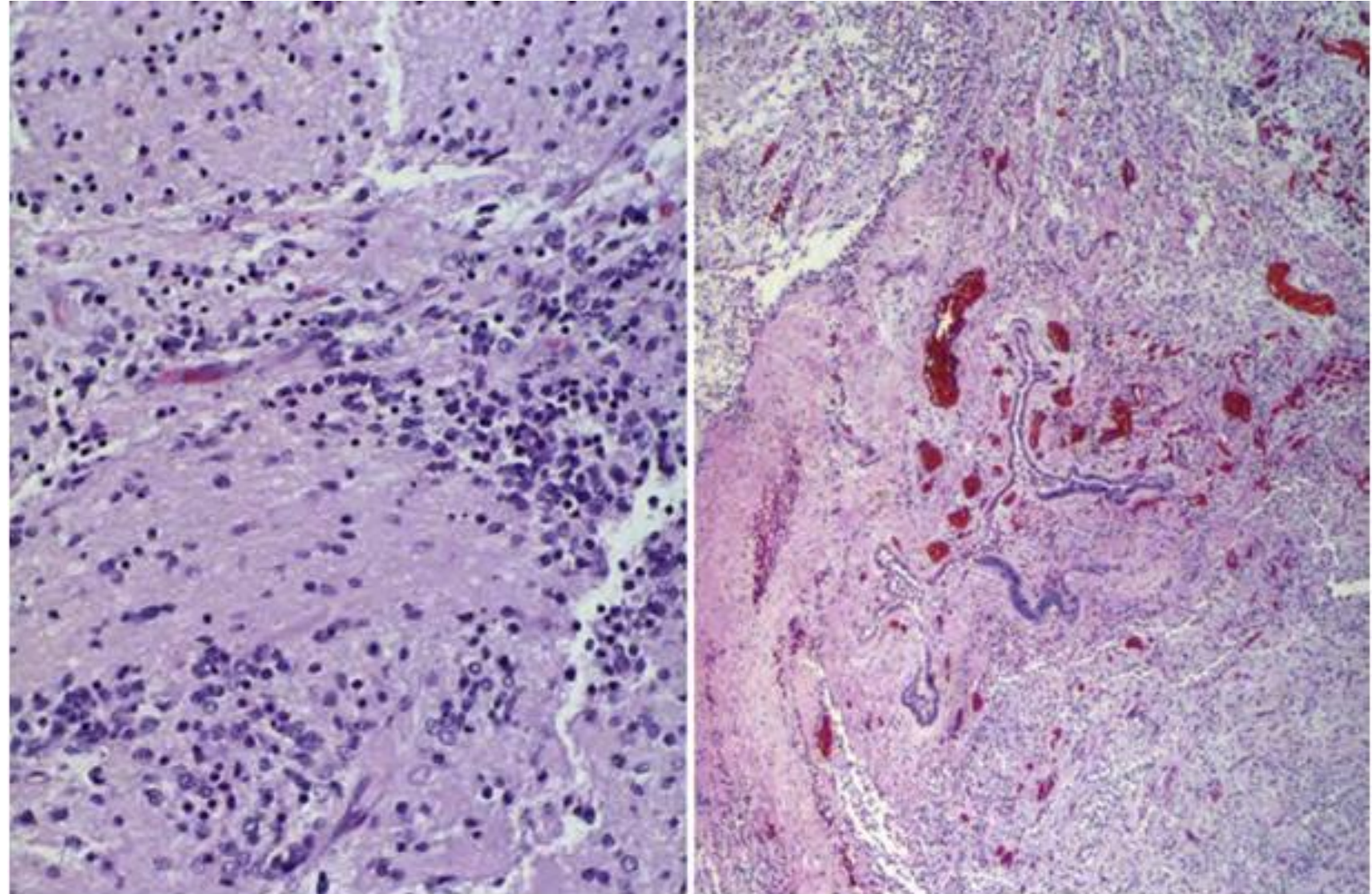
MATURE CYSTIC TERATOMA, MICROSCOPIC

- Histologically, teratomas contain tissues with differentiation that resembles all three embryonic germ layers (mesoderm, endoderm, and ectoderm).
- The benign teratoma shown here contains cartilage, adipose tissue, and intestinal glands on the right, and numerous thyroid follicles on the left.



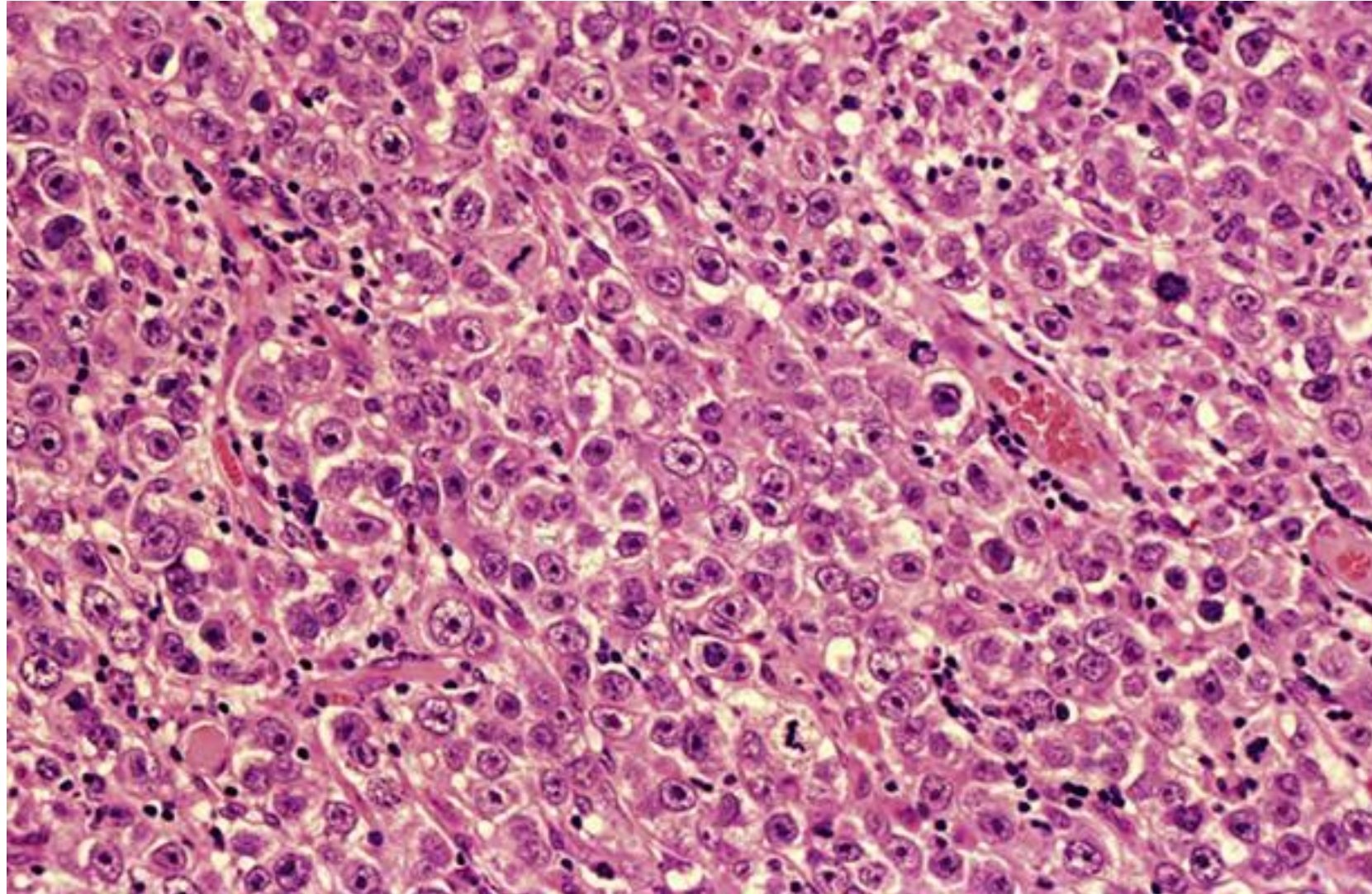
IMMATURE TERATOMA, MICROSCOPIC

- There are neuroepithelial elements (right panel) that have increased cellularity (left panel) resembling primitive and disorganized brain tissue.



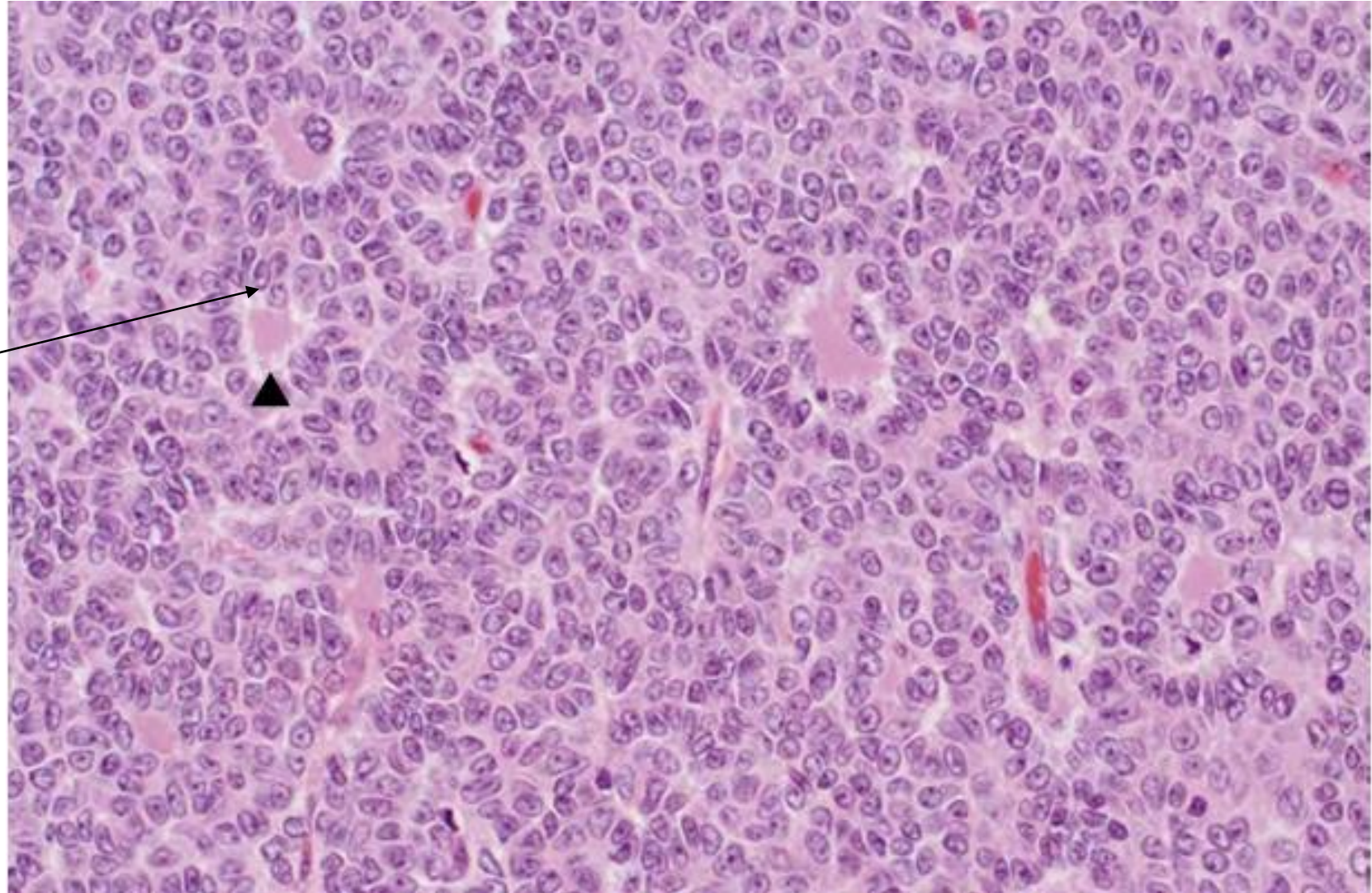
DYSGERMINOMA, MICROSCOPIC

- This neoplasm is composed of sheets and cords of large polyhedral cells with large nuclei and pale pink to watery vesicular cytoplasm. There is a scant lymphoid infiltrate and virtually no fibrous stroma.



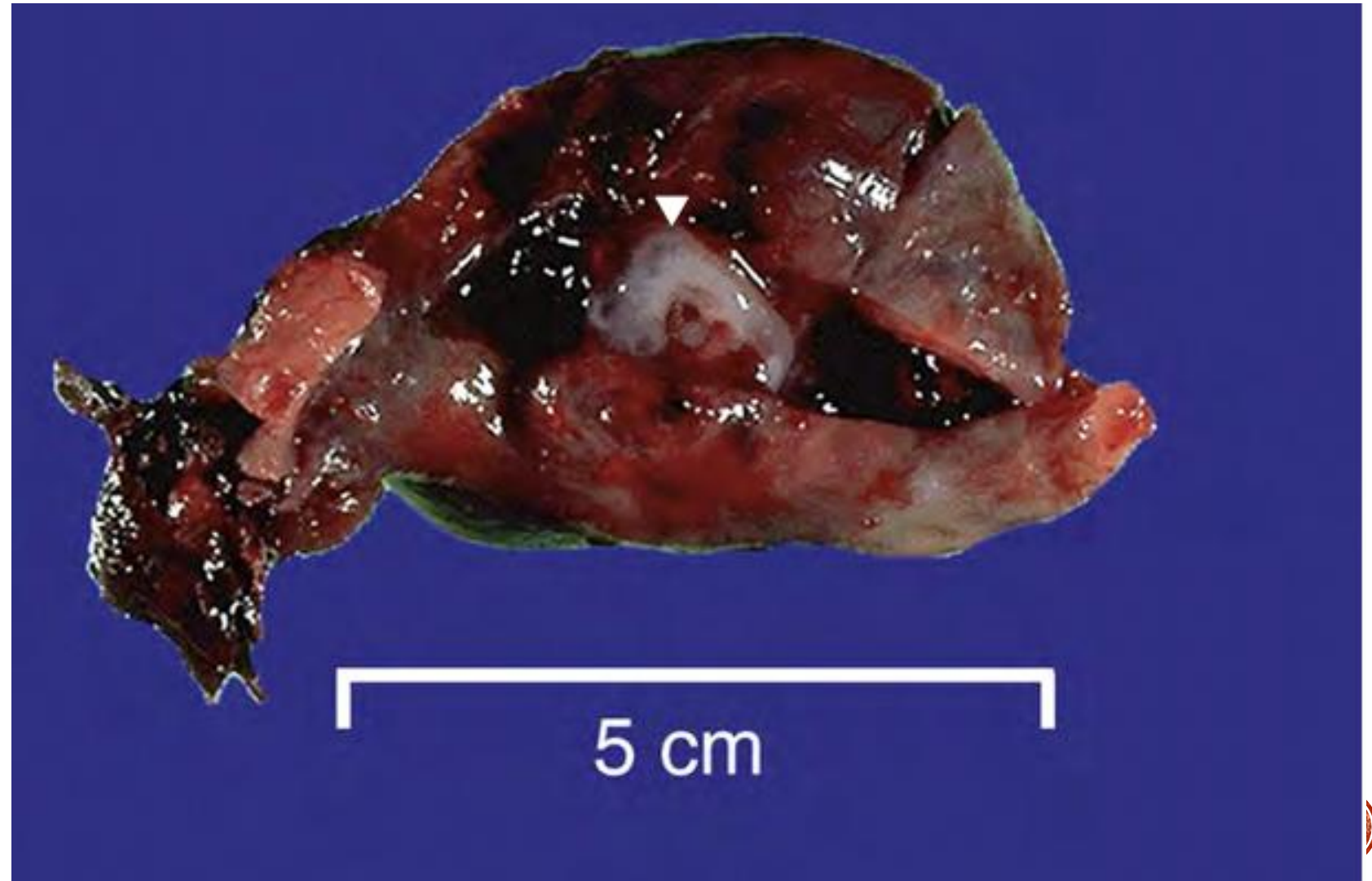
GRANULOSA CELL TUMOR, MICROSCOPIC

- This tumor has nests of cells that are forming primitive follicles filled with an acidophilic material, termed **Call-Exner bodies**.
- Most of these tumors are histologically benign, but all are potentially malignant.



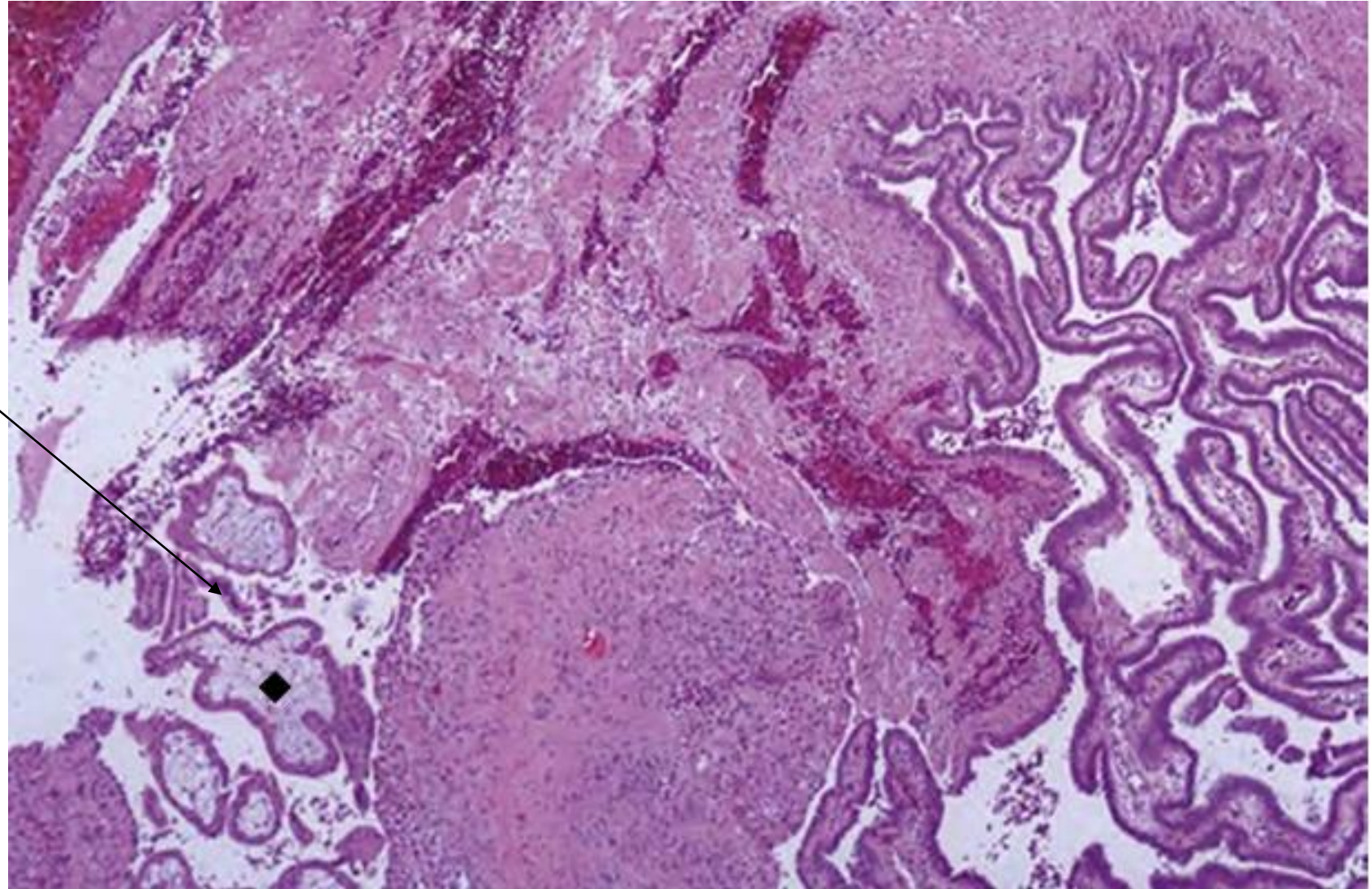
ECTOPIC PREGNANCY, GROSS

- Note the small embryo within the blood clot emanating from the point of rupture in this resected fallopian tube.



ECTOPIC PREGNANCY, MICROSCOPIC

- Shown here is normal tubal epithelium on the right, with rupture site and chorionic villi on the lower left.
- These chorionic villi are characteristic of an early pregnancy.



THANK YOU

