

Academic year 2019-2020
3rd year S 5/6

REPRODUCTION SYSTEM MODULE

SESSION 5:

LECTURE: 2

DURATION: 1hr Histological review of male reproductive system

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Learning objective:

1. Describe the functional histology of structures forming male reproductive system

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Testis

Lo1

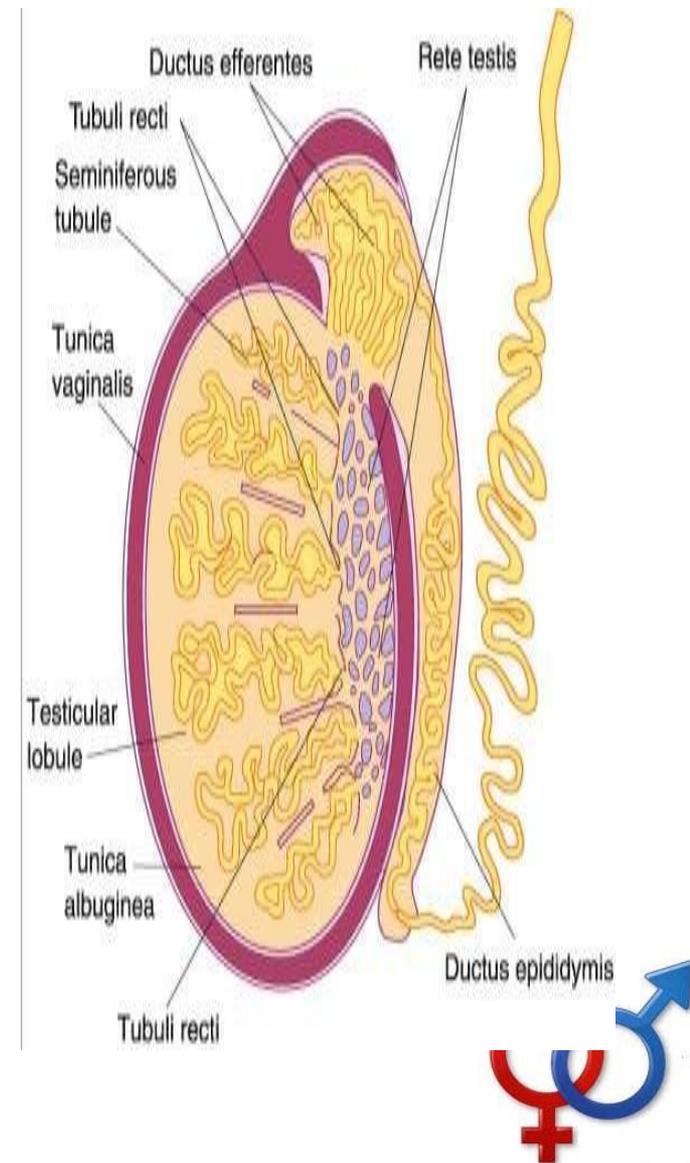
- The **dual** function of the testis is to produce **spermatozoa** and **hormones** . **testosterone** ,its metabolites, **dihydrotestosterone**
- Each testis is surrounded by a thick capsule of dense connective tissue (**tunica vaginalis**)
- **Tunica albuginea** is thickened on the posterior surface of the testis to form the mediastinum testis, from which fibrous septa penetrate the gland, dividing it into about **250** pyramidal compartments called the **testicular lobules**.
- These septa are **incomplete**, and there is **frequent** intercommunication between the lobules.
- Each **lobule** is occupied by **1 - 4 seminiferous tubules** enmeshed in a web of loose connective tissue that is rich in blood and lymphatic vessels, nerves, and interstitial cells, also known as **Leydig cells**.
- Seminiferous tubules produce male reproductive cells, the spermatozoa.



Seminefrous tubules

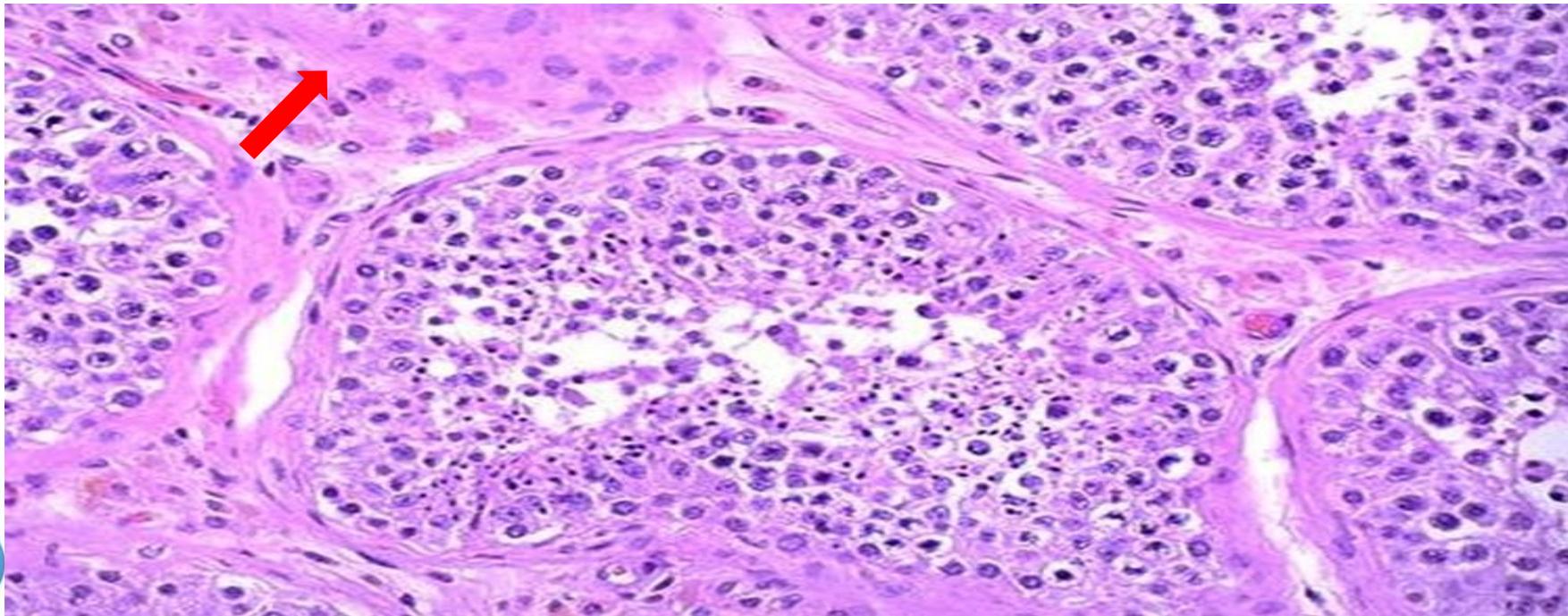
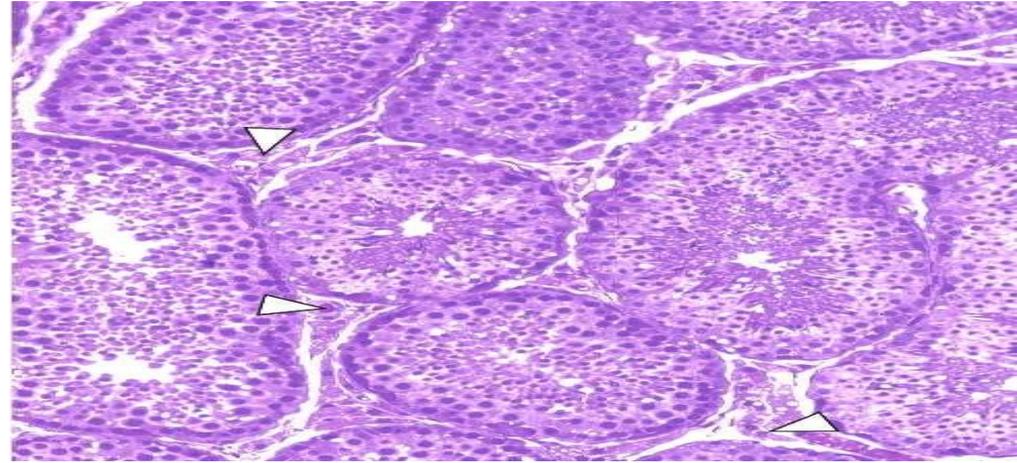
- Spermatozoids are produced in the seminiferous tubules at a daily rate of about 2×10^8 in the adult.
- Each testicle has **250 to 1000** seminiferous tubules that measure about 150 to 250 mm in diameter and 30 to 70 cm in length.
- The combined length of the tubules of one testis is about **250 m**.
- The tubules are convoluted and have the form of loops at whose ends the lumen narrows and continues in short segments, known as **straight tubules**, or **tubuli recti**.
- These tubules connect the seminiferous tubules to an anastomosing labyrinth of epithelium-lined channels, the **rete testis**.
- About 10 to 20 **ductuli efferentes** connect the rete testis to the cephalic portion of the **epididymis**

Lo1



Seminefrous tubules

- lined with a complex stratified epithelium called **germinal** or **seminiferous epithelium**.



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Seminefrous tubules

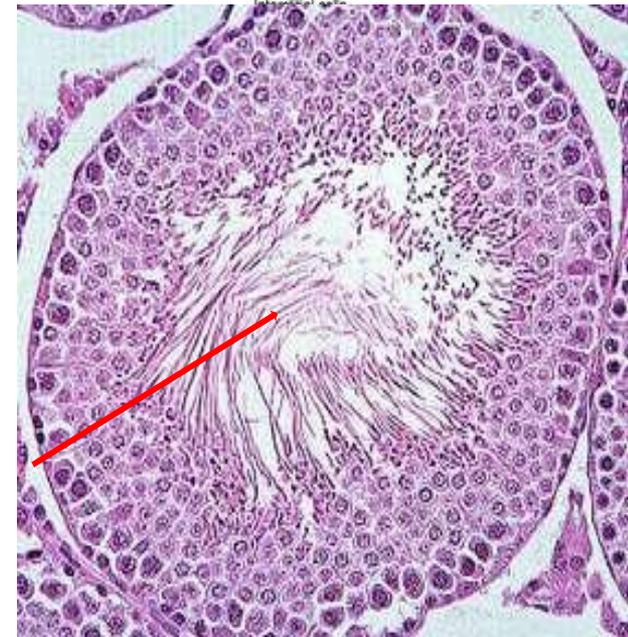
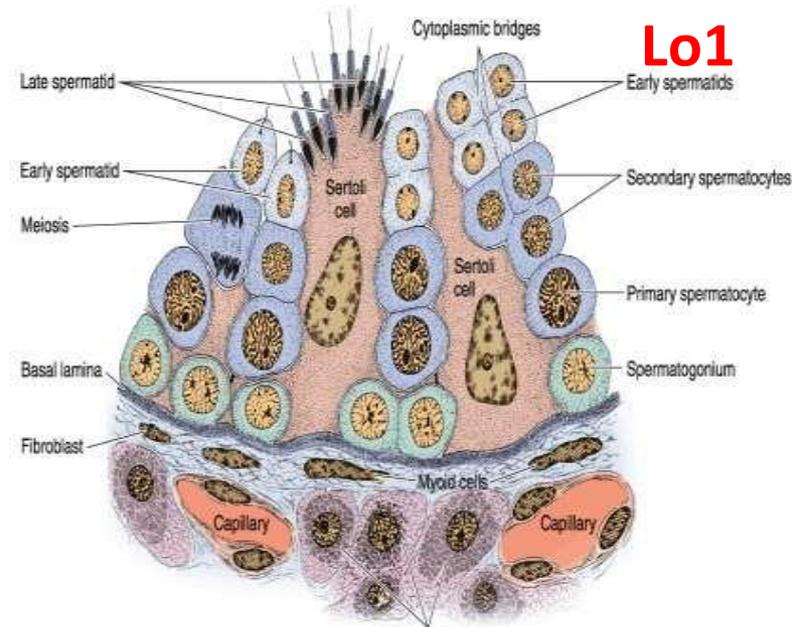
□ Consist of 2 types of cells

1. Sertoli cells

2. Ledge cells

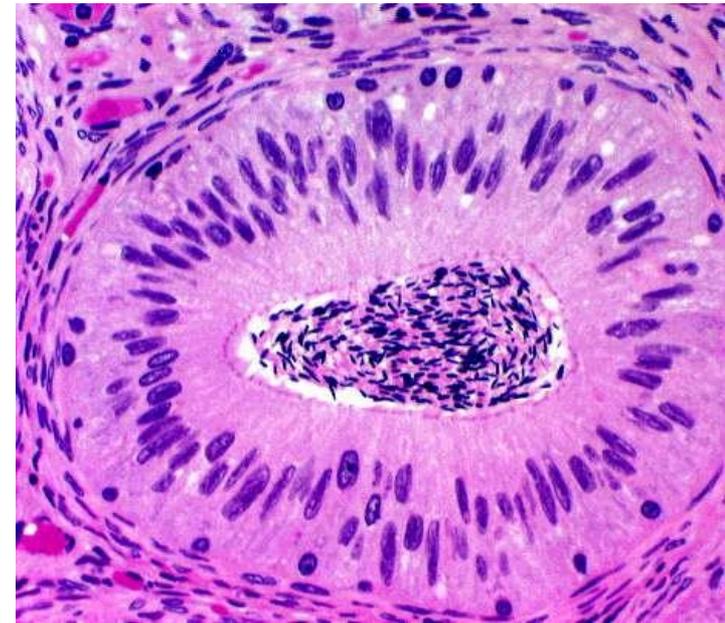
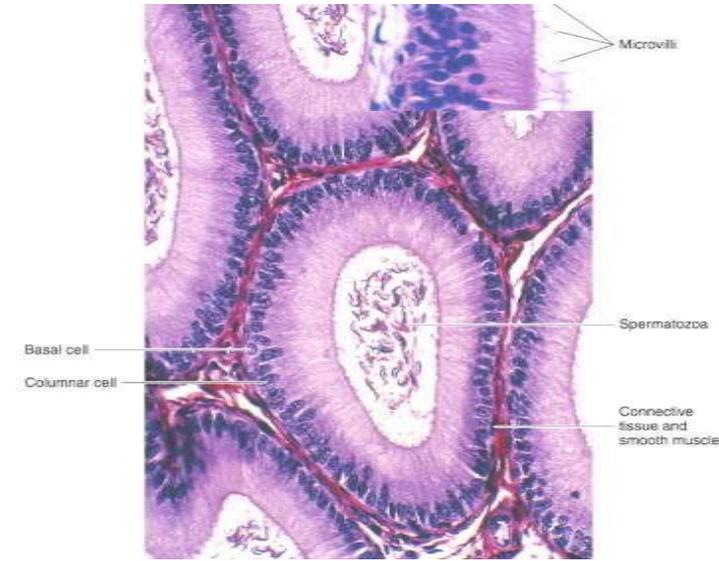
3 cells constitute spermatogenic lineage
spermatogenic lineage.

- The cells of the spermatogenic lineage are stacked in four to eight layers; their function is to produce spermatozoa.
- The production of spermatozoa is called **spermatogenesis**,
- final differentiation of spermatozooids, is called **spermiogenesis**.

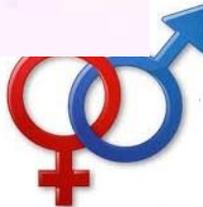
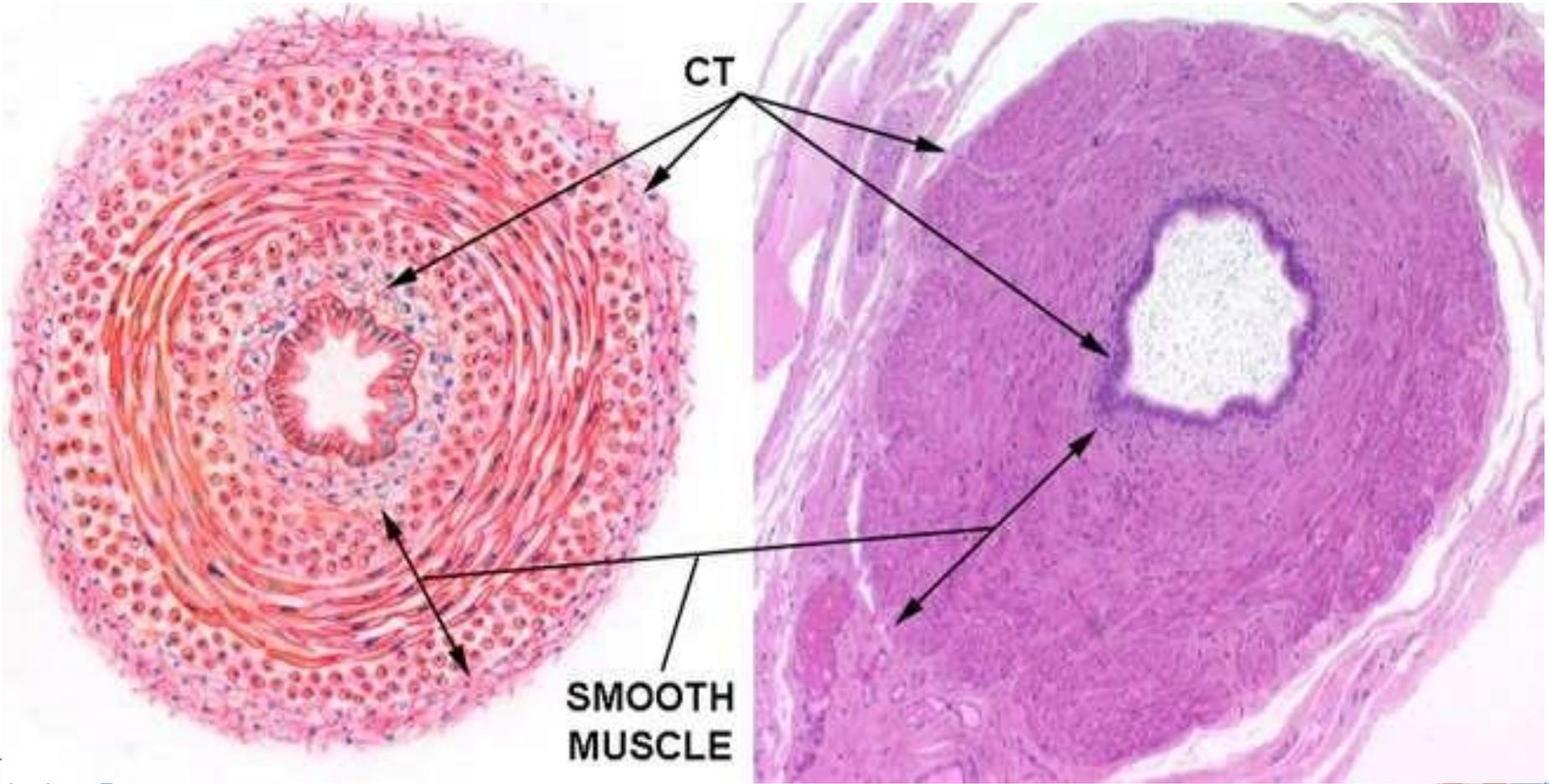


• Excretory genital ducts:

- ❑ Transport **spermatozoa** produced in the testis toward the penile meatus.
- ❑ These ducts are the **ductus epididymidis**, the **ductus (vas) deferens**, and the **urethra**.
- ❑ The **ductus epididymidis** is a single highly coiled tube (4-6 m in length).
- ❑ Together with surrounding connective tissue and blood vessels, this long canal forms the body and tail of the **epididymis**.
- ❑ lined with **pseudostratified columnar** epithelium composed of rounded basal cells and columnar cells.
- ❑ These cells are supported on a basal lamina surrounded by smooth muscle cells, whose **peristaltic** contractions help to move the sperm along the duct, and by loose connective tissue **rich in blood** capillaries. Their surface is covered by long, branched, irregular microvilli called **stereocilia**.

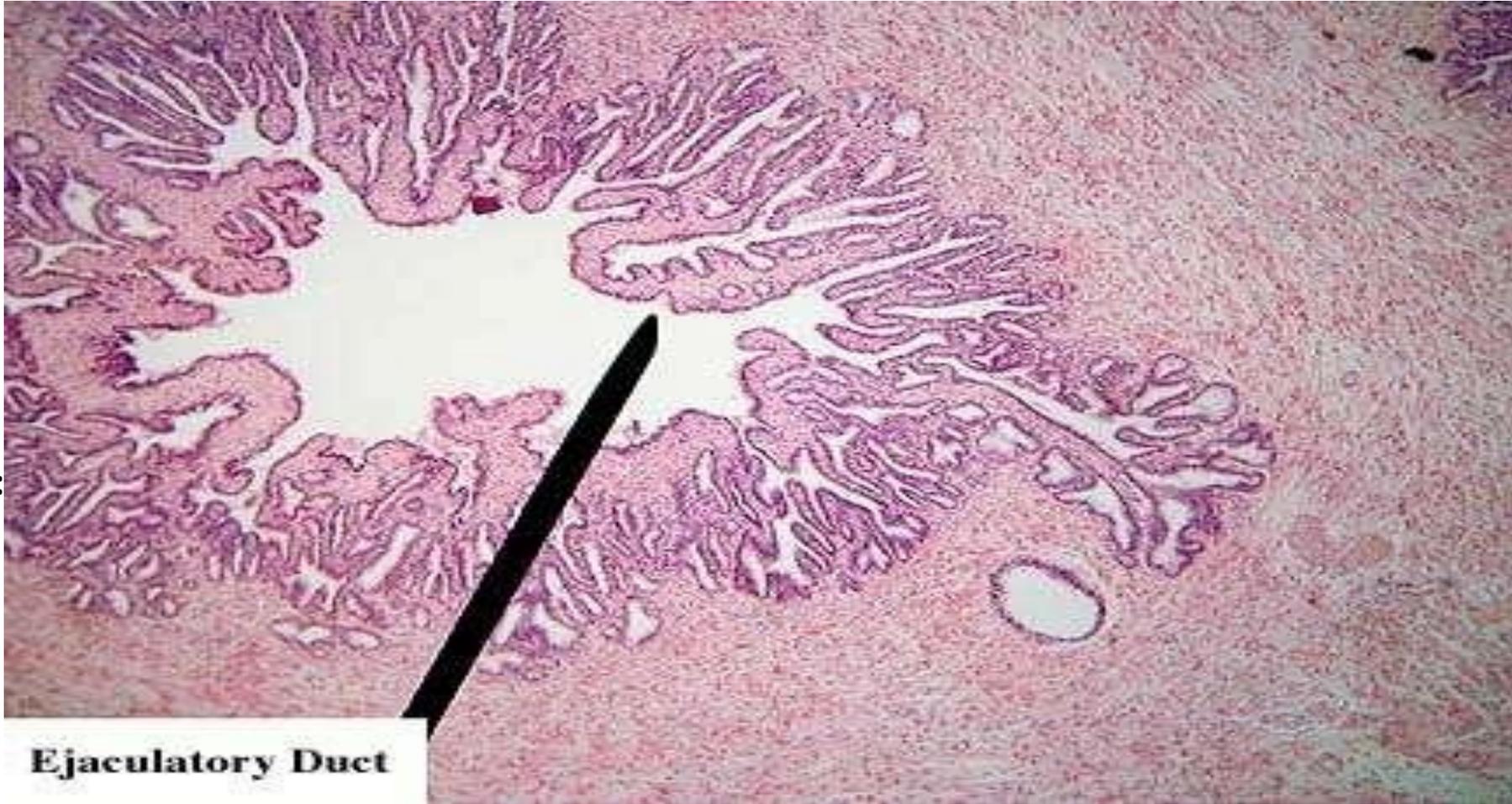


Ductus deference



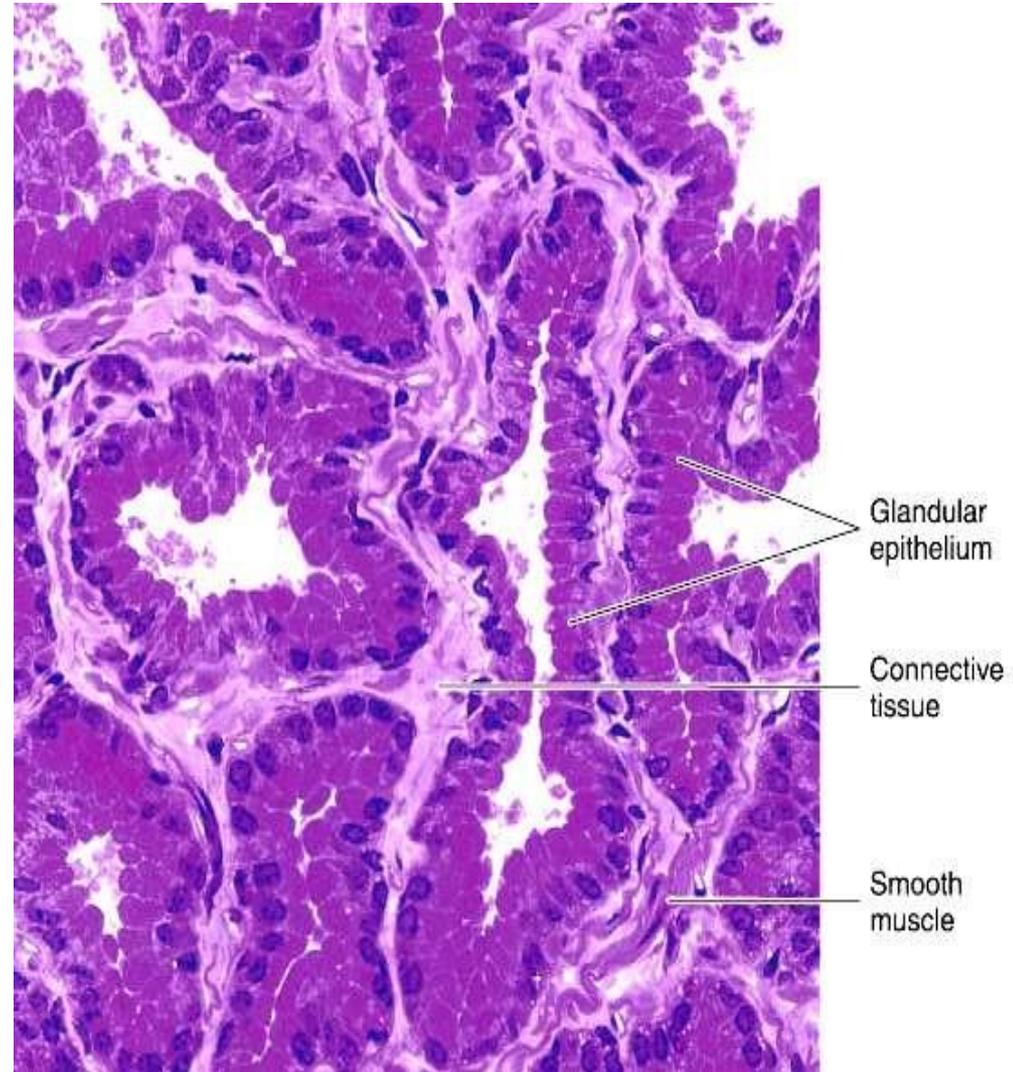
Ejaculatory ducts

Lo1



Prostate

- The **tubuloalveolar glands** of the prostate are formed by a **cuboidal or a columnar pseudostratified epithelium**.
- rich **fibromuscular stroma** surrounds the glands.
- The prostate is surrounded by a **fibroelastic capsule** rich in smooth muscle.
- **Septa** from this capsule penetrate the gland and divide it into lobes that are indistinct in adult men



Penis

- ❖ Three cylindrical masses of erectile tissue, surrounded by skin
- ❖ 2 are corpora cavernosa placed dorsally
- ❖ Other is corpora spongiosum located ventrally and surround the urethra
- ❖ its end dilates, forming the **glans penis**
- ❖ Most of the **penile urethra** is lined with **pseudostratified columnar epithelium**;
- ❖ in the **glans penis**, it becomes **stratified squamous epithelium**.
- ❖ Mucus-secreting **glands of Littre** are found throughout the length of the penile urethra.

