D II / Hons / Zoology. Paper IV Gr-A.

Lecture-27

By
Dr (Mrs) Prabhavati.
Asso. Prof.
Marwari college
Patratu
prabhavati91@gmail.com
28.4.2020.

MAMMALIAN TESTIS

The male reproductive system is located in the pelvis region. It includes a pair of testis along with accessory ducts, glands and the external genitalia. The testis also called testicles are situated outside the abdominal cavity within a pouch called scrotum. The scrotum helps in maintaining low temperature of testis (2-2.5°c lower than the normal internal body temperature) necessary for spermatogenesis. In adults each testes is oval in shape. There are two main functions of testis (i) the storage of sperm till maturation and (ii) produce a male sex hormone testosterone.

Structure :- In adults, each testis is oval in shape, with a length of about 4 to 5 cm and a width of about 2 to 3 cm. The testis is covered by a dense covering. Each testis has about 250 compartments called testicular lobules. Each lobule contains 1-3 highly coiled seminiferous tubules in which sperms are produced.

(1) Seminiferous tubules :- These are coiled tubes that make up most of each testis. The cells and tissues in the tubules are responsible for spermatogenesis. These tubules are lined with a layer of tissue called epithelium. This layer is made up of Sertoli cells

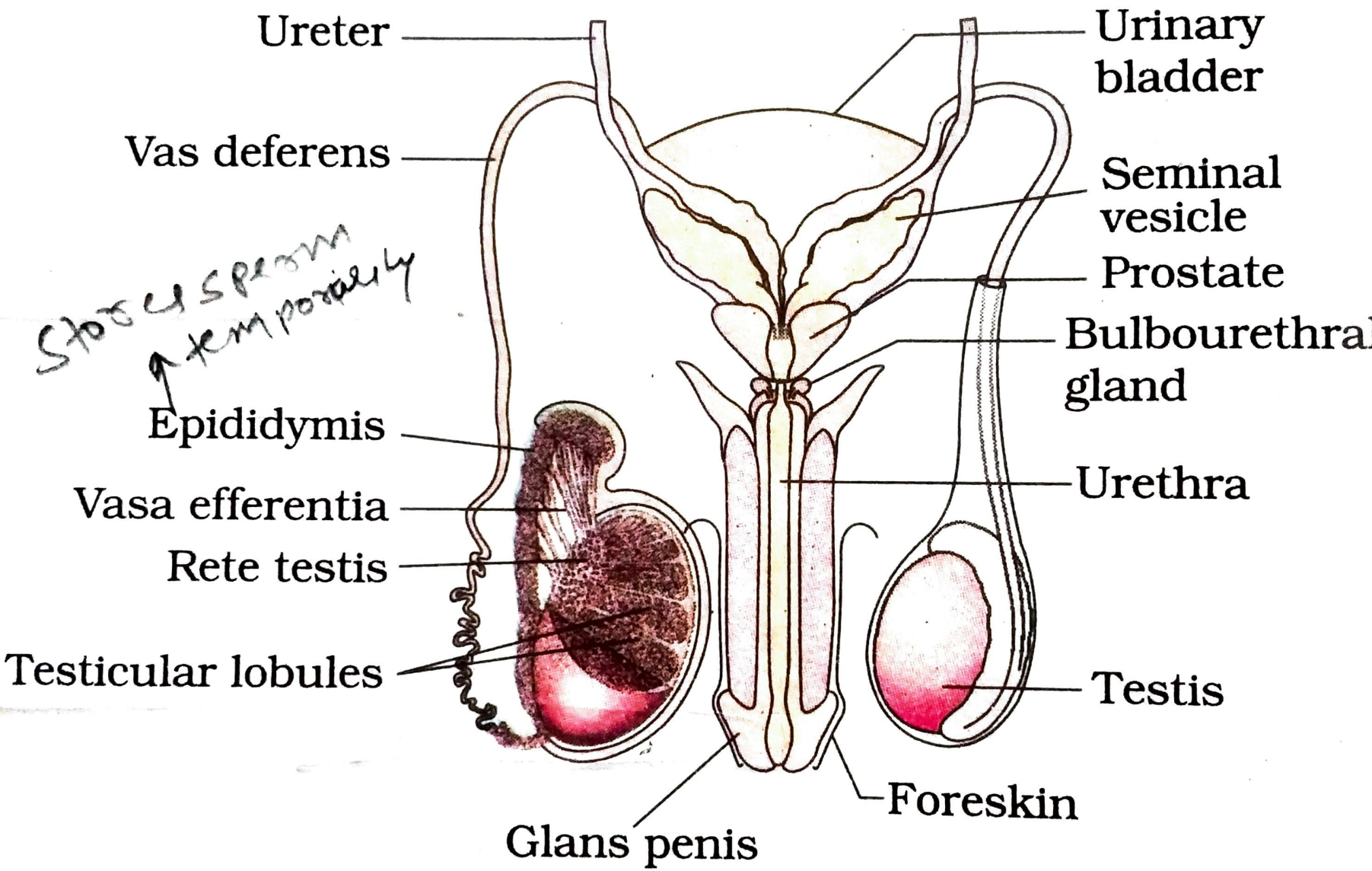

Figure 3.1(b) Diagrammatic view of male reproductive system (part of testis is open to show inner details)

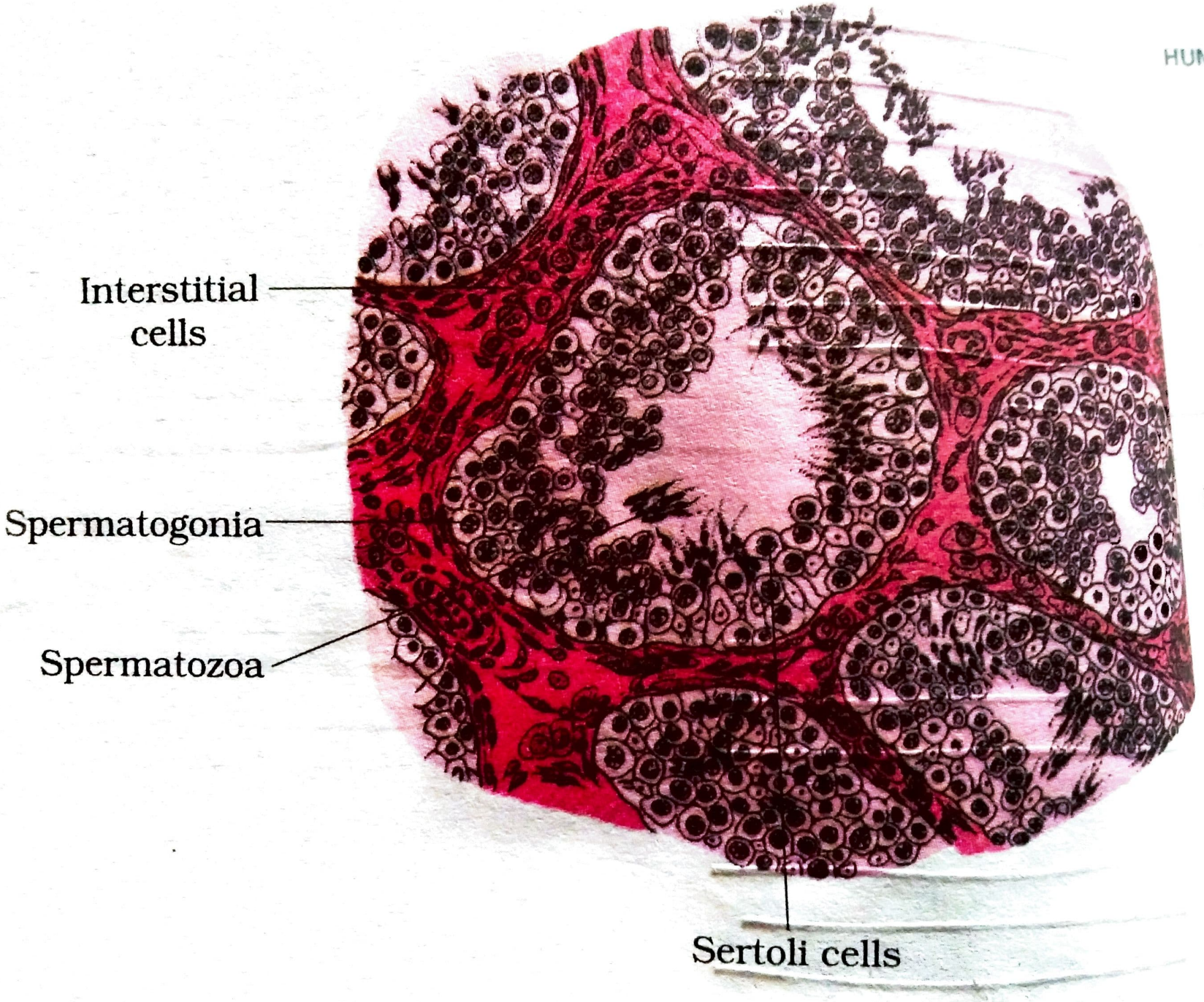

Figure 3.2 Diagrammatic sectional view of seminiferous tubul

Uterus
Urinary Bladder
Pubic symphysis
Urethra
Clitoris
Labium minora
Labium majora
Vaginal orifice

Figure 3.3

The ovidu

that help in the production of hormones that makes Sperms. Among the Sertoli cells are Spermatogenic cells that devide and become spermatozoa or Sperm cells.

The regions outside the seminiferous tubules called interstial space contain small blood vessels & interstial cells or Leydig cells. These Leydig cells synthesize & secrete testicular hormones called androgens

(2) Rete testis :- After Sperm is formed in seminiferous tubules, Sperm cells travel towards the epididymis through the rete testis. The rete testis helps to mix Sperm cells around in the fluid secreted by sertoli cells. The body reabsorbs this fluid as Sperm cells travel from the seminiferous tubules to the epididymis. Millions of tiny projections in the rete testis known as microvilli help move Sperm to the efferent tubules.

(3) Efferent tubules :- The efferent ducts are a series of tubes that join the rete testis to the epididymis. The epididymis stores Sperm cells until they are mature and ready for ejaculation. These ducts are lined by hair like projections called cilia. cilia help movement of Sperms into the epididymis. The efferent ducts also absorbs most of the fluid that helps to move Sperm cells. This results in a higher concentration of Sperm in ejaculate fluid.

(4) Tunica: Vasculosa, albuginea & Vaginalis :- The testis is surrounded by several layers of tissues. They are the:

(a) Tunica vasculosa.
(b) Tunica albuginea &
(c) Tunica vaginalis.

Tunica vasculosa is the first Thin layer of blood vessels. This layer sheilds the tubular interior of each testis from further layers of tissue around the outer testicle.

Tunica albuginea is a thick protective layer made up of densly packed fibres that further protect the testis.

The tunicae vaginalis consists of three layers :-

(i) visceral layer :- This layer surrounds the tunica albuginea that sheilds the seminiferous tubules.

(ii) Cavum vaginale :- This layer is an empty space between the visceral layer & the outermost layer of tunica vaginalis.

(iii) Parietal layer :- This is the outermost protective layer that surrounds almost the entire testicular structure.

Functions

The main function of the testes is producing & storing sperms. They also produce testosterone and other male hormones called androgens.