The Male Genital Organs

Composed of :-

1- Testicles ((essential reproductive glands)) .

2- Ductus deference ((the ductus of the testicles)).

3- Seminal vesicles

4- Prostate gland

5- Bulbo-urethral glands

6- Male urethra (A canal which transmits the generative and urinary secretion) **.**

7- The penis

*Genital organs of the stallio***n**

The Scrotum

Is which the testis and adjacent parts of the spermatic cord are situated. The left is more larger and more dependent and placing to the cord-nutrition that there is subcutaneous muscle fibers which contract an exposure to the cord , so the scrotum become thicker and wrinkled or become pendulous are smooth after heat fatigue, debility .

The structure of scrotum

1- skin ; an elastic, present on it scattered hair , contain the skin sebaceous glands and sweat glands it is marked by central longitudinal raphae scroti .

2-**Dartos ;** Is reddish color and is closely adherent to the skin , consist of fibro- elastic and smooth muscle fibers . The scrotal septum is dividing the scrotum into two pouches .

3- **Scrotal fascia**, derived from the oblique abdominal muscle.

4- **The parietal layer of the tunica vaginalis** ((fibro serous sac which is continuous with the parietal peritoneum of abdomen .

The Blood Vessels and Nerves

The blood supply is derived from the external pudic artery and **veins** is by external pudic vein.

The nerves ; ventral branch of the 2nd and 3rd lumbar nerves .

Testis

The testicles (Testis) :- Are situated in the prepubic organs enclosed in a diverticulum of the abdomen termed the scrotum. The axis of testes are longitudinal to the abdominal wall, they are ovoid in form , each present two surfaces , two borders and two extremities.

The medial and lateral surfaces are convex and smooth, the ventral border is free and convex. The dorsal border is the attached by which is called the epididymal border, it is nearly straight and the testis is suspended into scrotum by the spermatic cord, the epididymis is attached to this border . The anterior and posterior extremities are rounded.

The dimension (size) of testis is

***10-12 cm long**

*** 6-7 cm high**

*** 5 cm wide**

Its weight about **225 -300 gm** . The left one may be larger in size. The epididymis is adherent to the attached border of the testis and overlaps somewhat the lateral surface , its anterior end enlarged and termed the head, the posterior end slightly enlarged and called the tail, the intermediate part is narrow and called the body .

The head is closely connected with the testis by the efferent ductus by the connective tissue . The tail is continued by the ductus deference , it is attached to the posterior extremity of the testis by the ligament of the epididymis which is formed by a short thick fold of the tunica vaginalis and smooth muscle.

Structure of testis and Epididymis

The surface of testis is covered by the serous membrane called tunica vaginalis propria . Beneath it there is the tunica albuginea which is a strong capsule composed of dense white fibrous tissue and smooth muscle fibers., from this tunica; a connective tissue septa and smooth muscle fibers pass into the gland and subdivide the parenchyma into lobules . The space between septa contains a semineferous tubules which are supported by the loose connective tissue .

The tubules are tortous and unite with others to form straight tubules these are pass toward the anterior part of the gland, so there are 12 of these parts . Larger efferent ducts pierce the tunica albuginea at a small area about 1 cm at the anterior part of the attached border and enter the head of epididymis . The epididymis is covered by the tunica vaginalis propria and this albuginea, the head consist of about 12 or more coiled tubules, 4-5 tubules uinte to form single tubule and unite with others to form a duct of epididymis , which by its complete coils form the body and tail of epididyms and terminates into the ductus deference.The tubules and ducts are lined by ciliated epithelium.

Blood vessels and nerves

The testis is richly supplied with blood by the spermatic artery, a branch of posterior aorta. It is tortuous near the testis and become flexuous, giving branches to the testis and epididymis and to the parenchyma of testis through the septa, from tunica albuginea.

The veins on leaving the testis form a network ((the pampiform plexus)) around the artery and spermatic cord , The spermatic vein form a plexus joins the posterior vena cava on the right side and to the left renal vein of the left side,

The lymph vessels

Follow the course of veins and enter the lumbar lymph nodes .

The nerves ; derived from the renal and posterior mesenteric plexus form the spermatic plexus .

Ductus Deferense

The tube is called also Vas defernse , extend from the tail of epididymis to the pelvic part of the urethra. It ascend in the inguinal canal, in this canal , there is an spermatic cord , this pass to the pelvic cavity , it course the dorsal surface of the bladder to be pass to the medial border of the seminal vesicle, over the neck of the bladder , the two ductus lie very close together, surrounded laterally by the seminal vesicle and having the urethra between them , they disappear under the isthmus of the prostate and continue through the wall of the urethra to open in a diverticulum on the colliculus seminalis with the excretory duct of the seminal vesicle, the common duct is called Ejaculatory orifice (union of ducts of seminal vesicle + Ductus deference).

The diameter of vas deference is 6 mm . it forms ampulla of ductus deference (15 – 20) cm long , 2 cm wide in the stallion .

Structure

The wall of ductus deference is thick and the lumen is very small , so the tube is cord like structure , covered by peritoneum, except last part. The wall is consist of longitudinal and circular fibers .

Mucous membrane is having an epithelium of short columnar, in the ampulla there is an numerous gland .

Blood Vessels

Is by spermatic artery , umbilical and internal pudic aa.

Nerves

Pelvic plexus (Sympath etic) .

Spermatic Cord

Consist of the structure carried down by the testicle in its migration through the inguinal canal from the abdominal cavity to the scrotum, it begins at the abdominal inguinal ring obliquely pass through the canal passes over the side of the testicle and ends to be attached to the attached border of testicle, it consist of

1- Spermatic artery

2- Spermatic vein

3- Lymphatic vessels

4- Sympathetic nerves

5- Ductus deference

6- Internal cremaster muscles (smooth)

7- Visceral layer of tunica vaginalis

Descend of testis

During the early faetal life, the testicle is situated against the dorsal wall of the abdominal cavity contact with ventral surface of kidney, it migrate with growth , from this position and finally pass through the inguinal canal to the scrotum .

Firstly the testis is attached to the sub lumbar area by mesorchium , this fold contain the vessels and nerve of the testis anteriorly .

Posteriorly, it attached to the epididymis . In the foal , the descend of testis is at birth , may be remain in the inguinal canal or in the abdomen , in rare cases the descend may be completed at late as the 4^{th} year .

Seminal Vesicle gland

Are two elongated and somewhat piriform sac in shape , lies on the side of the posterior part of the dorsal surface of bladder. They are partly enclosed in the genital fold, related to the rectum dorsally. Each of it is blind sac end , has fundus, body and neck. In the stallion , they are about 15- 20 cm long , its diameter 5 cm . The excretory duct dips under the prostate and open in common with a long side of the ductus deference in a pouch of mucus membrane are the side of colliculus seminalis .

Blood Supply : Internal pudic artery

The Prostate gland

Is lobulated gland which lies on the neck of the bladder and the beginning of the urethra, ventral to the rectum .

It consist of two lateral lobes connected by the isthmus , the lateral lobes, right and left are somewhat prismatic in form.

The isthmus is 2 cm wide , it lies on the junction of the bladder with the urethra .

Structure

Enclosed by capsule of fibrous tissue with smooth muscle fibers , the gland substance is divided into sphenoid or ovoid lobules by trabeculae, the glandular secretion is milky in appearance, 15 – 20 ducts from prostate on each side are perforating the urethra and open lateral to the colliculus seminalis .

Blood Supply: Derived from internal pudic artery

Bulbo-Urethral Gland

Are two in number, situated on each side of pelvic part of urethra, they are covered by urethral muscle, they are oval in shape .

In the stallion , about 4 cm long ,2-5 cm wide . Each gland has an 6 – 8 small papillae behind the prostate duct and close to the median plane .

Bloob Supply : Internal p udic artery