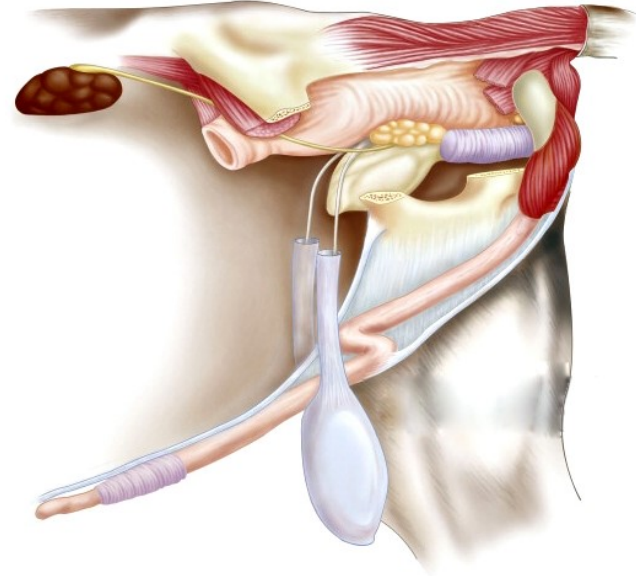
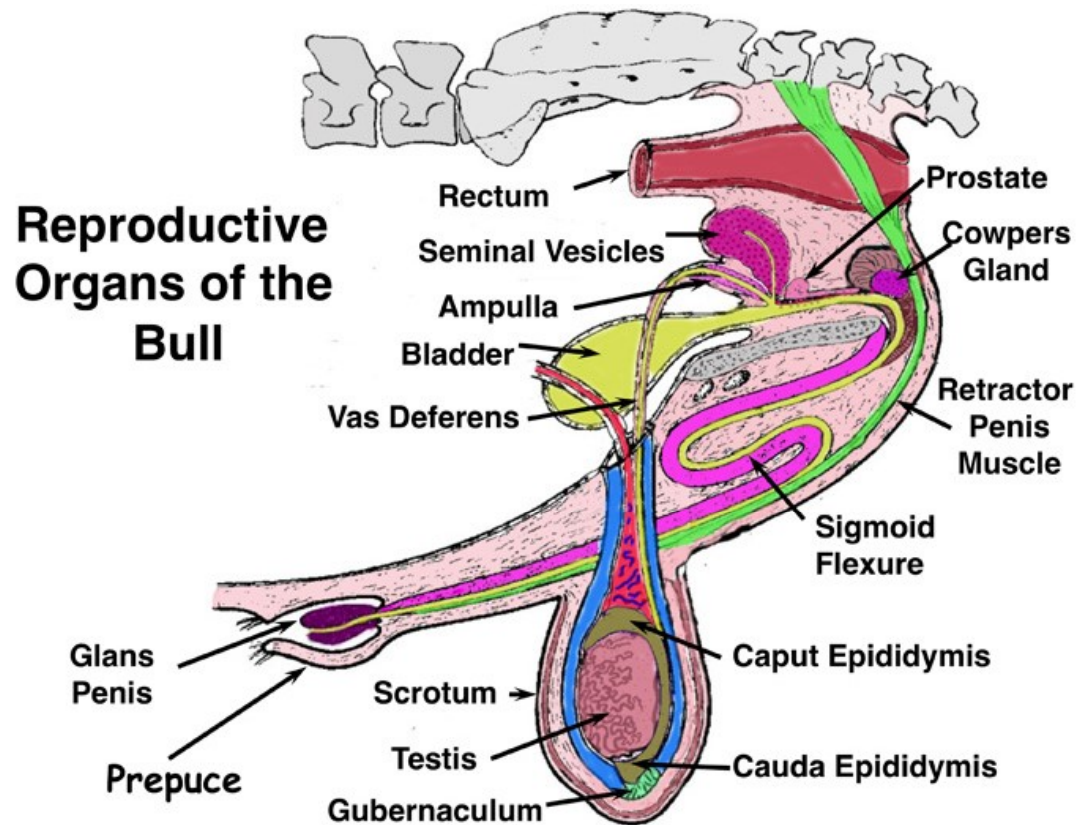


MALE REPRODUCTIVE SYSTEM



Male reproductive is consists of

- Scrotum
- Testis
- Epididymis
- Vas deferens
- Urethra
- Penis
- Accessory sex glands



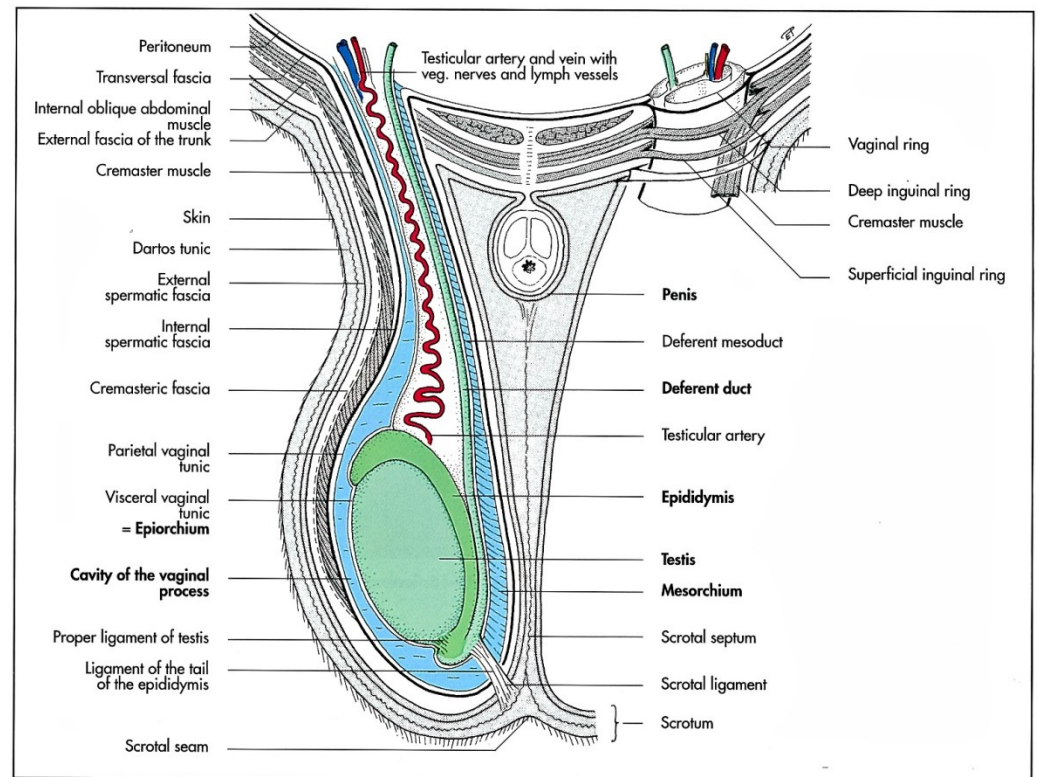
SCROTUM

- It is diverticulum of the abdomen situated in front of the inguinal region and lodges the testicles and its appendages
- It is oval in form and slightly compressed from side to side
- It is asymmetrical since the left testicle is larger, more dependent and placed a little further back
- It is long and pendulous and presents a well-marked neck when not contracted
- The scrotum varies in its form under the influence of cold, heat, fatigue.



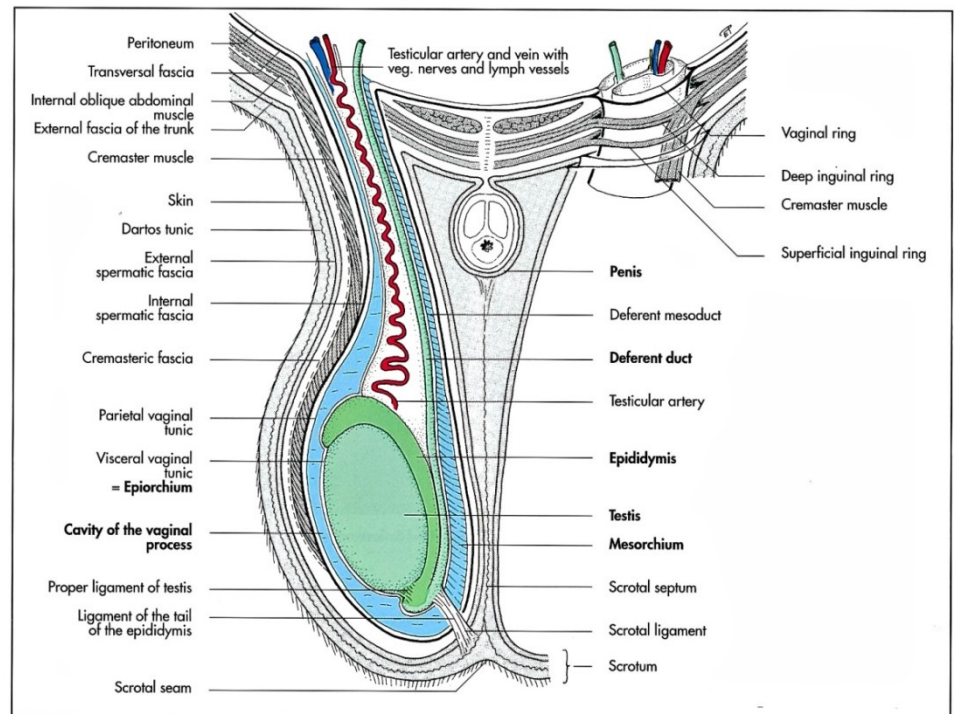
Structure

- It is composed of the following layers
 - *Skin* -thick and elastic, flesh coloured and is sparsely covered with short hairs. It is marked centrally by a raphe - the raphe scroti



Investments of the testis and spermatic cord of the bull, schematic.

- The *scrotal fascia* made up of three layers and are derived from oblique and transverse abdominal muscles
 - *Intercolumnar fascia*
 - *Cremasteric fascia*
 - *Infundibuliform fascia*



Investments of the testis and spermatic cord of the bull, schematic.

Species difference

Ram and Buck

- It resembles ox

Horse

- It is in the inguinal region
- The skin is dark or black coloured

Dog

- It is behind the inguinal region
- The skin of scrotum is pigmented and covered sparsely with fine hairs
- The raphe is not distinct

Boar

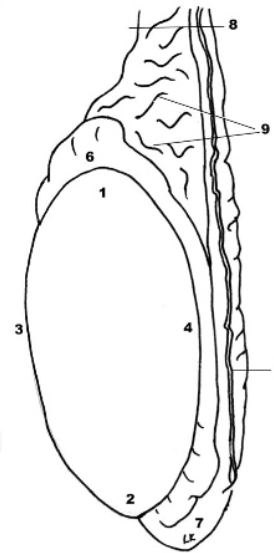
- It is situated a short distance from the anus and is not so sharply defined from the surrounding parts as in other animals

Cock

- It is absent as testicles are abdominal in position

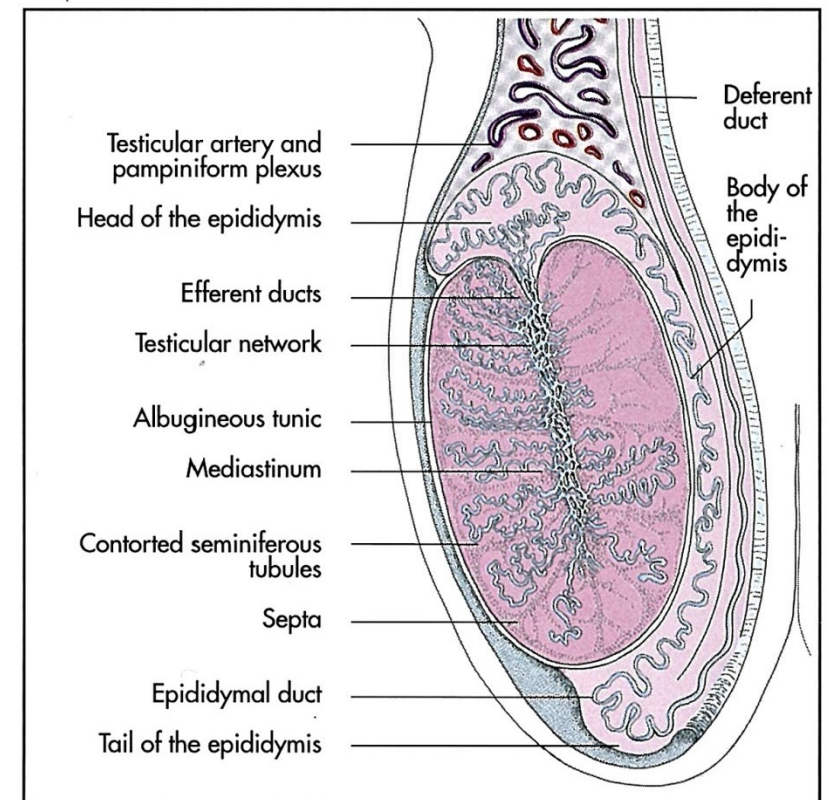
TESTES AND EPIDIDYMIS

- The testicles are two elongated oval, compound tubular glands situated in the scrotum and suspended by the spermatic cords
- each is slightly compressed from side to side and presents two faces, two borders and two extremities.



Left testis and epididymis of a bull

1. Dorsal end
2. Ventral end
3. Cranial free border
4. Caudal epididymal border
5. Mesorchium
6. Head of epididymis
7. Tail of epididymis
8. Spermatic cord
9. Testicular veins forming pampiniform plexus

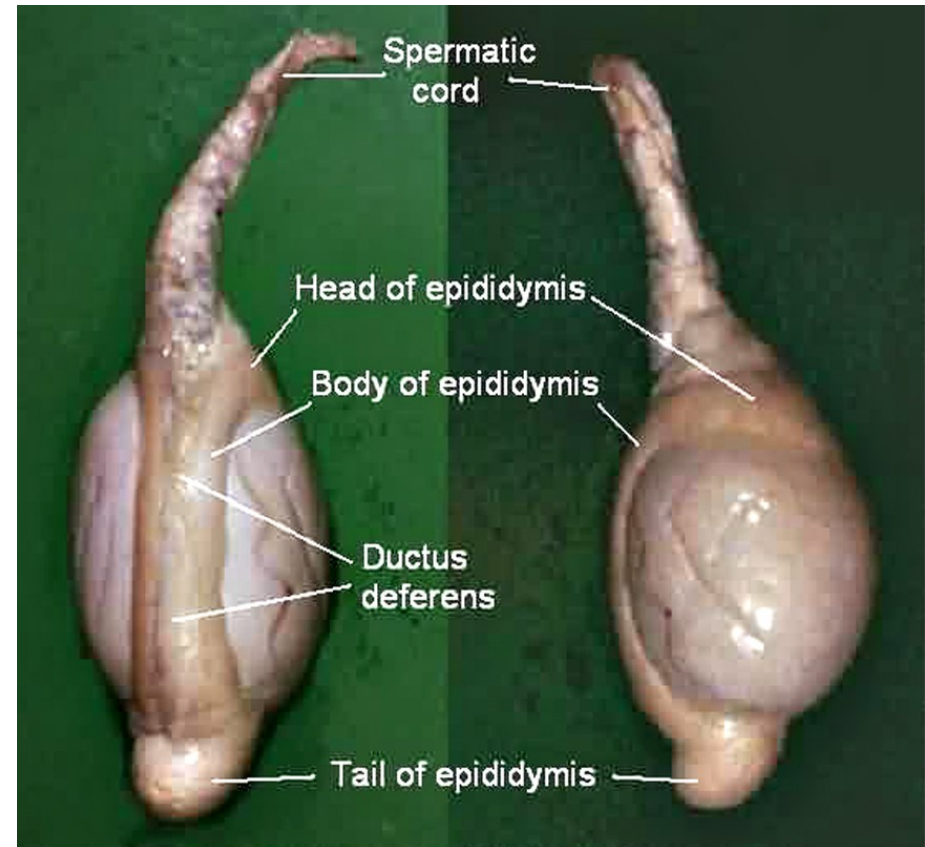


Testis, epididymis and deferent duct of the bull, median section, schematic.

- The testicle of an adult bull weighs about 300 gm. and measures 10 to 12 cm long and 6 to 8 cm wide
- The left one is heavier than the right by 30 gm. or more
- The *epididymis* is attached along the caudal border of the testicle and slightly overlaps its lateral surface



- It presents three parts. The dorsal enlarged end is the head
- The middle part is the body and the lower part is the tail. The *head* is large and is closely adherent to the dorsal end of the testicle
- The *body* is narrow and lies along the lateral part of the caudal border of the testicle
- The *tail* is large, attached to the ventral end of the testicle.



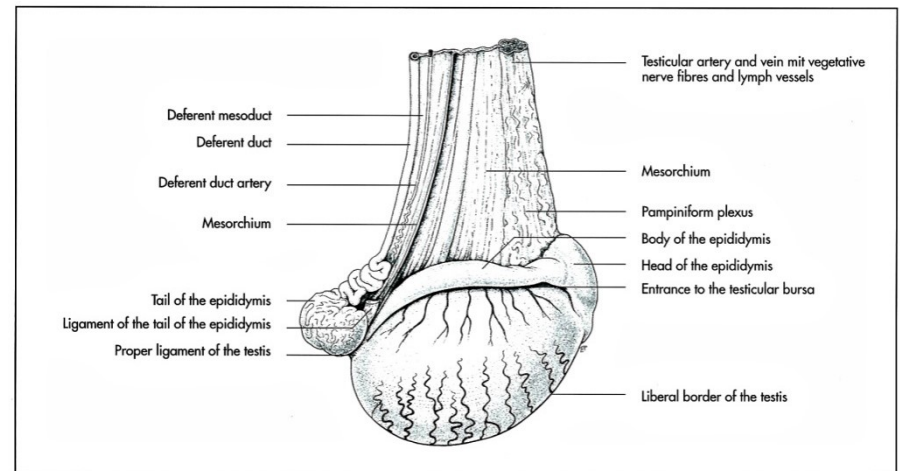
Species difference

Ram and Buck

- The testicles are relatively larger
- They are broader in proportion to their length

Stallion

- The testicles are smaller
- The testicle weighs about 225 to 300 gm. It measures 10 to 12cm long x 6 to 7 cm high x 5 cm wide
- The epididymis is directed upward



Right testis, epididymis and spermatic cord of a stallion, lateral aspect, schematic.

Boar

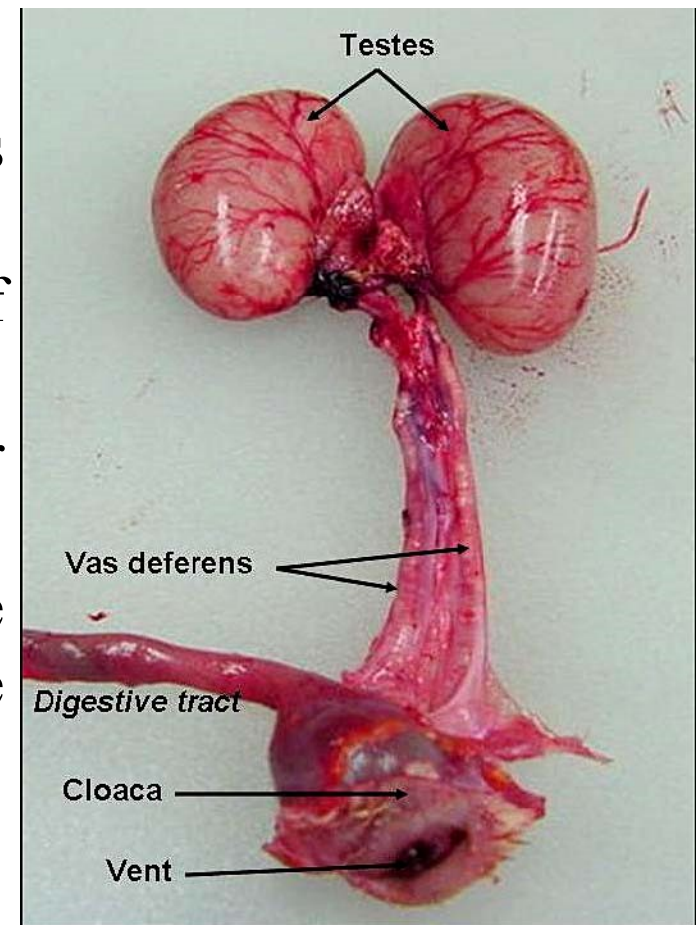
- Testicles are elliptical
- The spermatic cord is large and the cremaster muscle is well developed
- The epididymis is closely attached to the testicle. Its tail is very large and forms a blunt conical projection at the caudal end of the testicle

Dog

- They are small and oval
- They are suspended in an oblique direction upwards and backwards
- Epididymis is large and is along the dorsal border

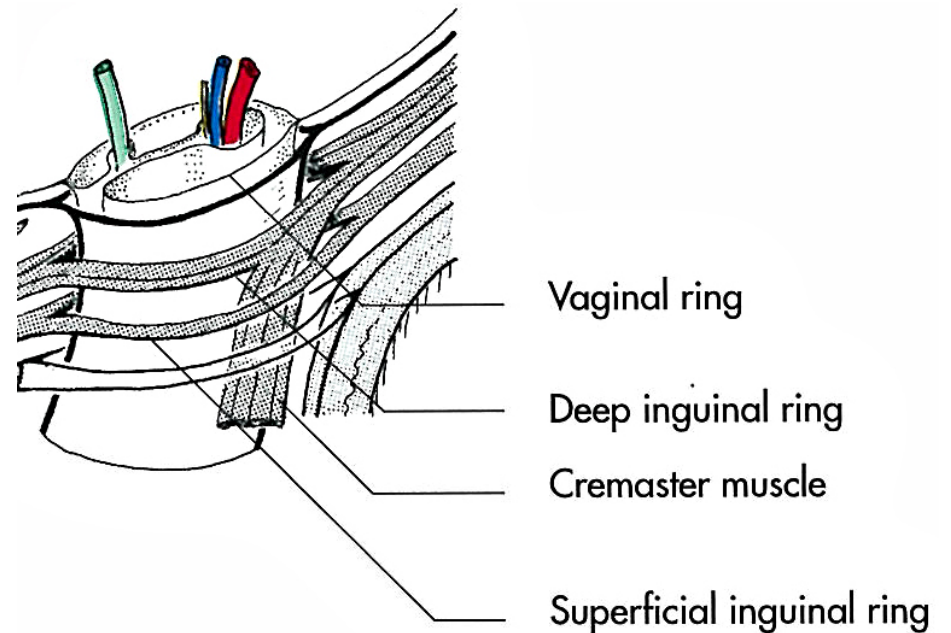
Cock

- The testicles lie ventral to the cranial lobes of kidneys
- The right one is against the dorsal part of the right lobe of liver
- The left one is related to the glandular stomach
- They are bean shaped and bear on the concave border a flattened projection -the rudimentary epididymis



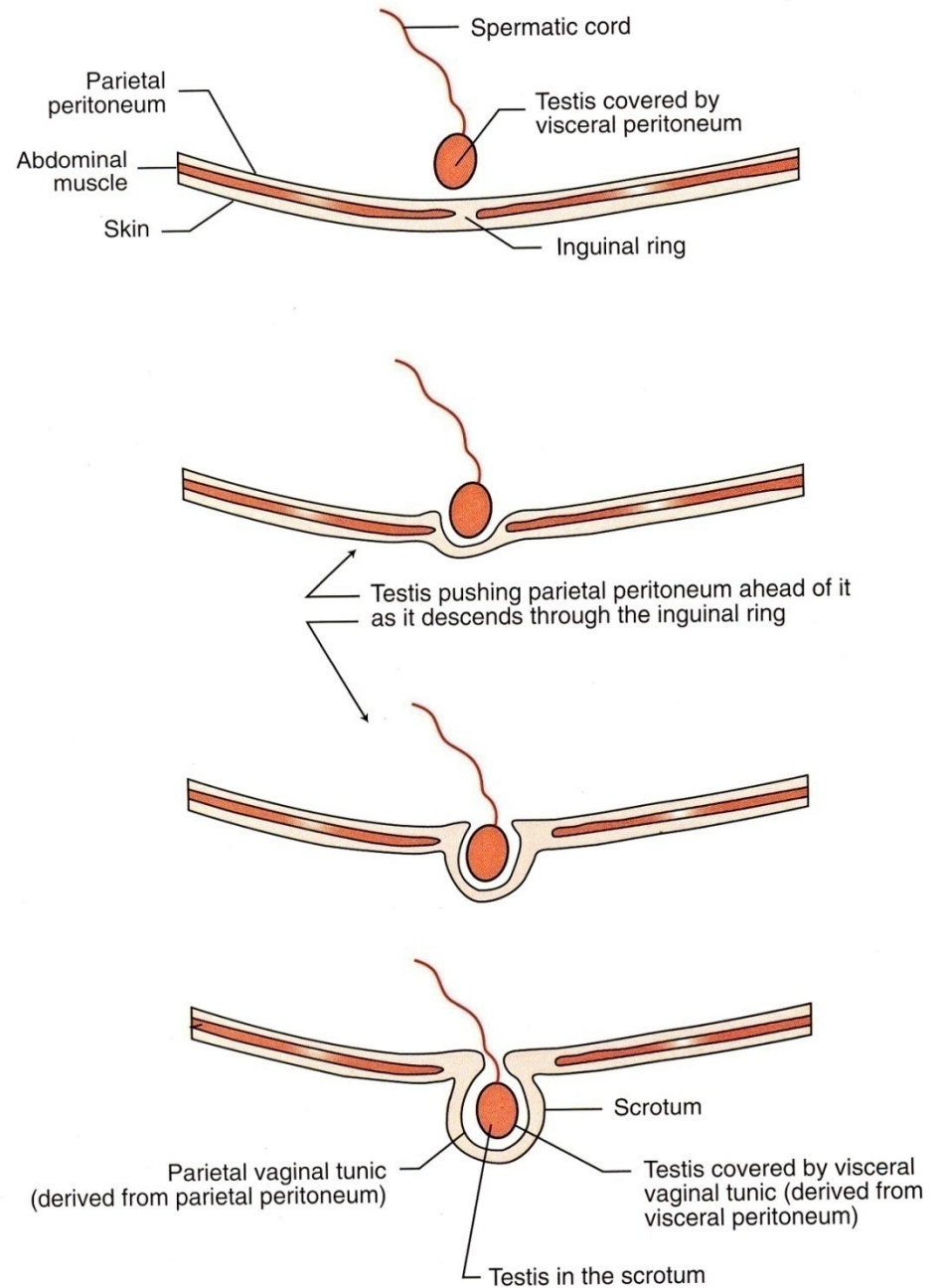
SPERMATIC CORD

- It consists of the following structures,
 - Internal Spermatic arteries
 - Spermatic veins
 - Internal Spermatic nerves
 - Lymphatics
 - Internal cremaster muscle
 - Vas deferens
 - Tunica vaginalis (visceral layer)



TUNICA VAGINALIS

- Tunica vaginalis is an evagination of parietal peritoneum passing through the inguinal canal into the scrotum



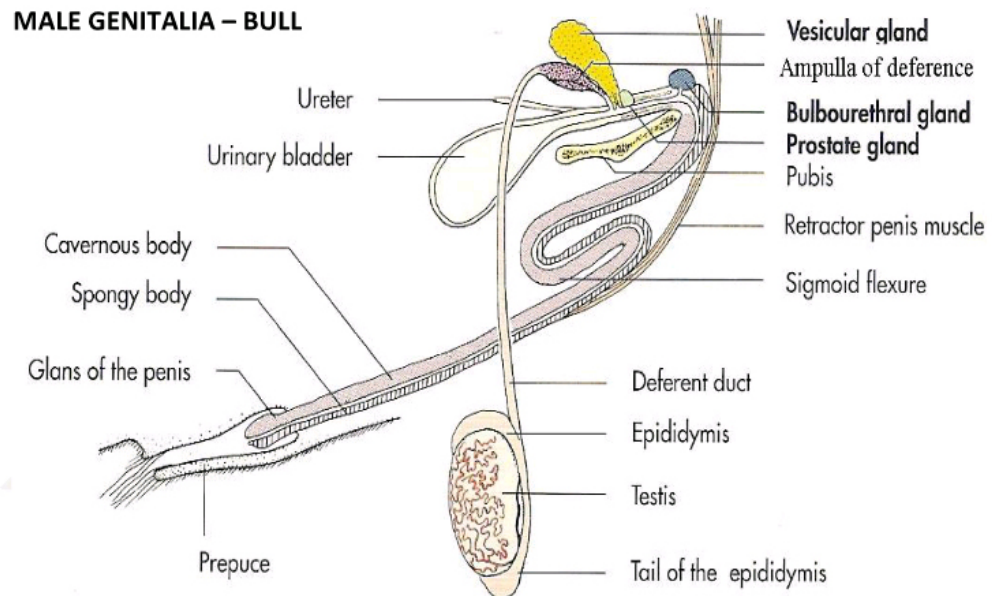
Formation of Vaginal Tunic

ACCESSORY SEX GLANDS

- Seminal vesicle
- Prostate
- Cowper's gland

URETHRA

- It is a long mucous tube extending from the neck of the bladder to the tip of glans penis
- It has therefore pelvic and extra pelvic or penile parts
- The *pelvic* part is 12 cm long and is relatively small and uniform in diameter
- The urethral muscle encloses it ventrally and laterally and is very thick

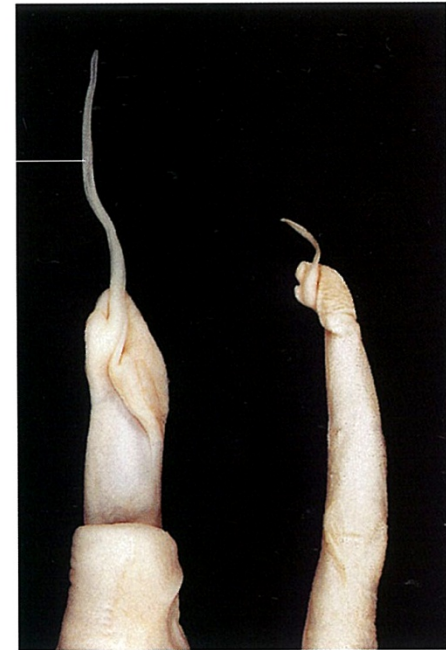


Species difference

Ram and Buck

No major differences

Urethral process



Apex of the penis of a sheep (left) and a goat (right).

Stallion

- Pelvic part is 10 to 12 cm long and 5 to 6 cm in diameter.
- The extra pelvic part is 1.5 cm in diameter.

Boar

- It has a very long pelvic part and covered by a thick urethral muscle

Dog

- The bulb of the urethra is well developed

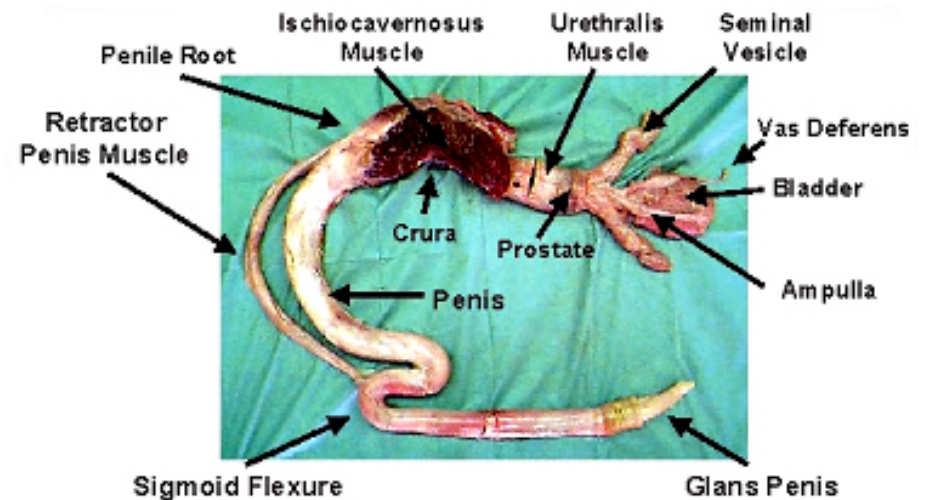
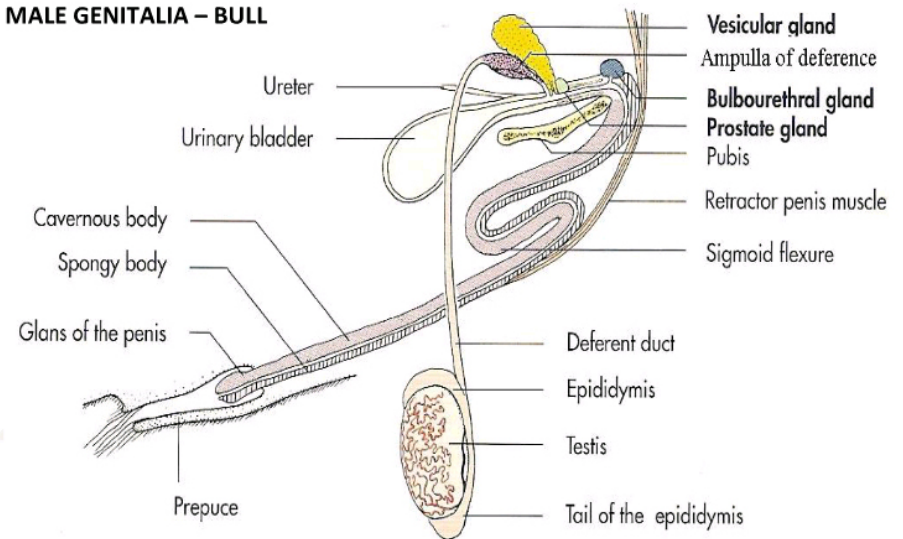
Cock

- Absent

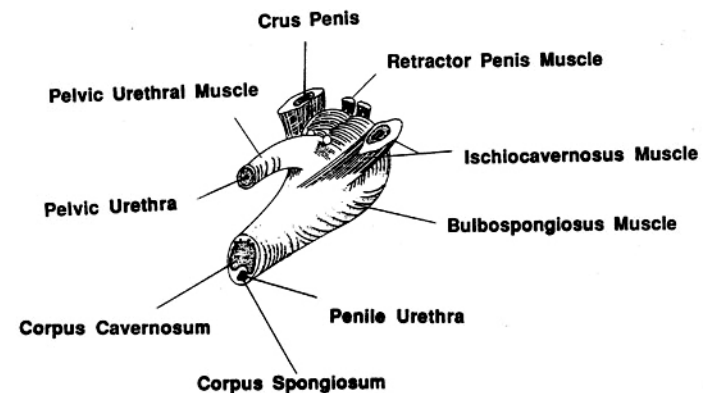
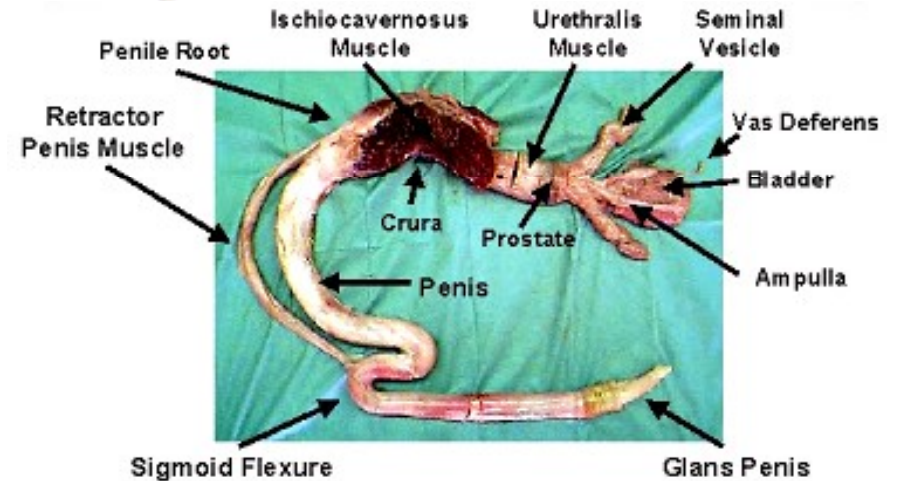
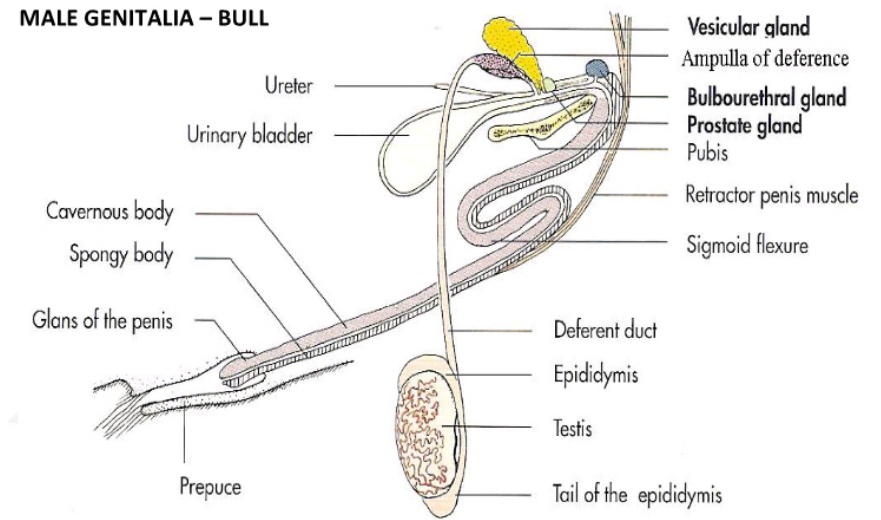
PENIS

- The penis is the male copulatory organ and is composed of white fibrous tissue and a little erectile tissue
- It extends from the ischial arch forward between the thighs to the umbilical region of the abdominal wall
- It is cylindrical in form and measures in an adult bull about 90 cm It may be divided into 3 parts -the root, body and glans.

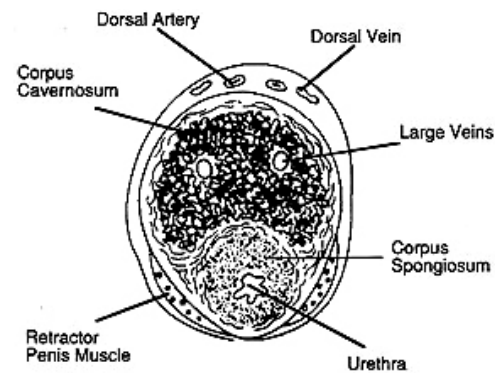
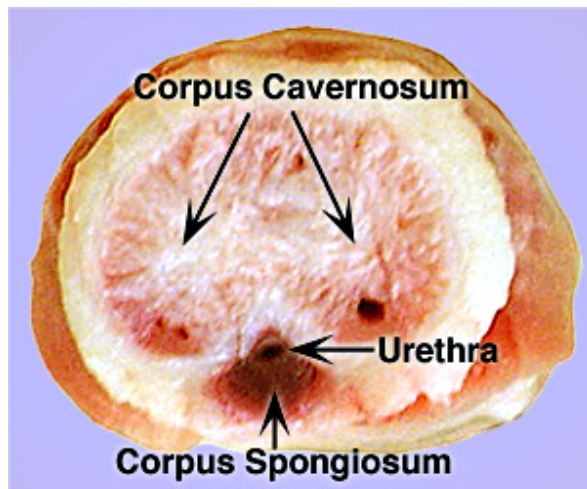
MALE GENITALIA – BULL



- Just behind the scrotum it forms a S-shaped curve-the *sigmoid flexure* in which 30 cm of the penis is folded which is released during erection



- The *glans penis* is the free end of the organ and is 8 cm long. Its extremity is pointed and twisted
- At the end of the process is the *external urethral orifice*



CROSS SECTION OF BULL PENIS



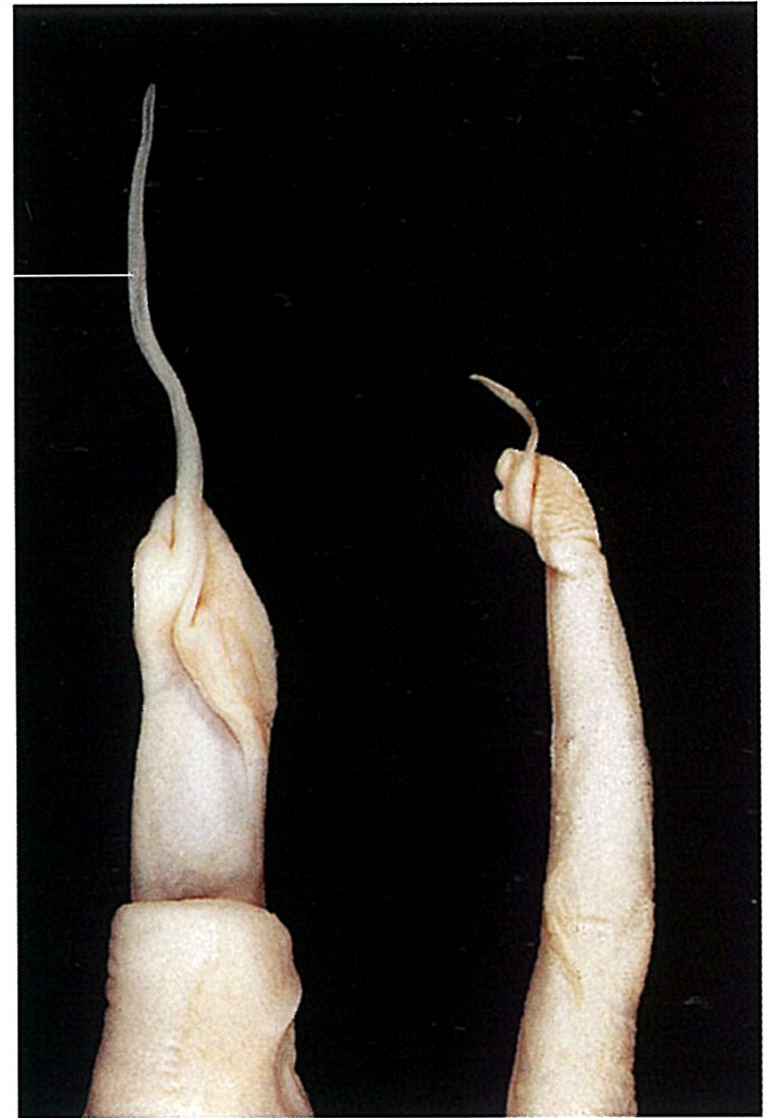
Apex of the penis of a bull.

Species difference

Ram and Buck

- The free extremity is very distinctive with well-developed urethral process continued beyond the glans penis

Urethral process

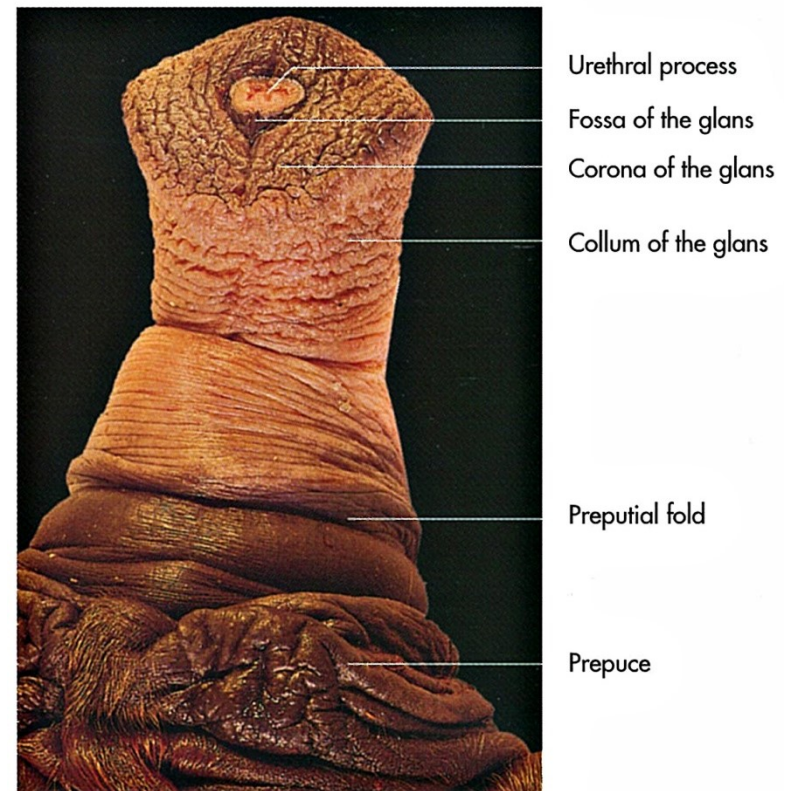
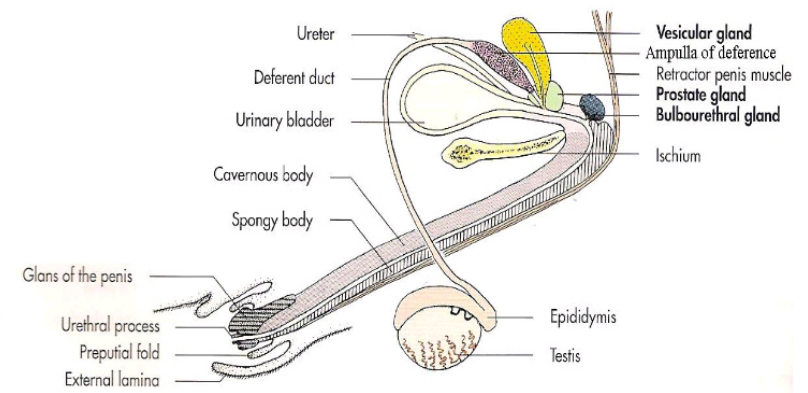


Apex of the penis of a sheep (left) and a goat (right).

Stallion

- It is shorter but has a larger diameter, the length being about 50cm in the quiescent state
- It undergoes 50% increase during erection
- The erectile tissue is very rich in elastic and muscular tissues and hence very soft
- The glans is enlarged and its base forms a prominent margin -the *corona glandis*. There is a depression in the glans known as *fossa glandis*.

MALE GENITALIA - STALLION

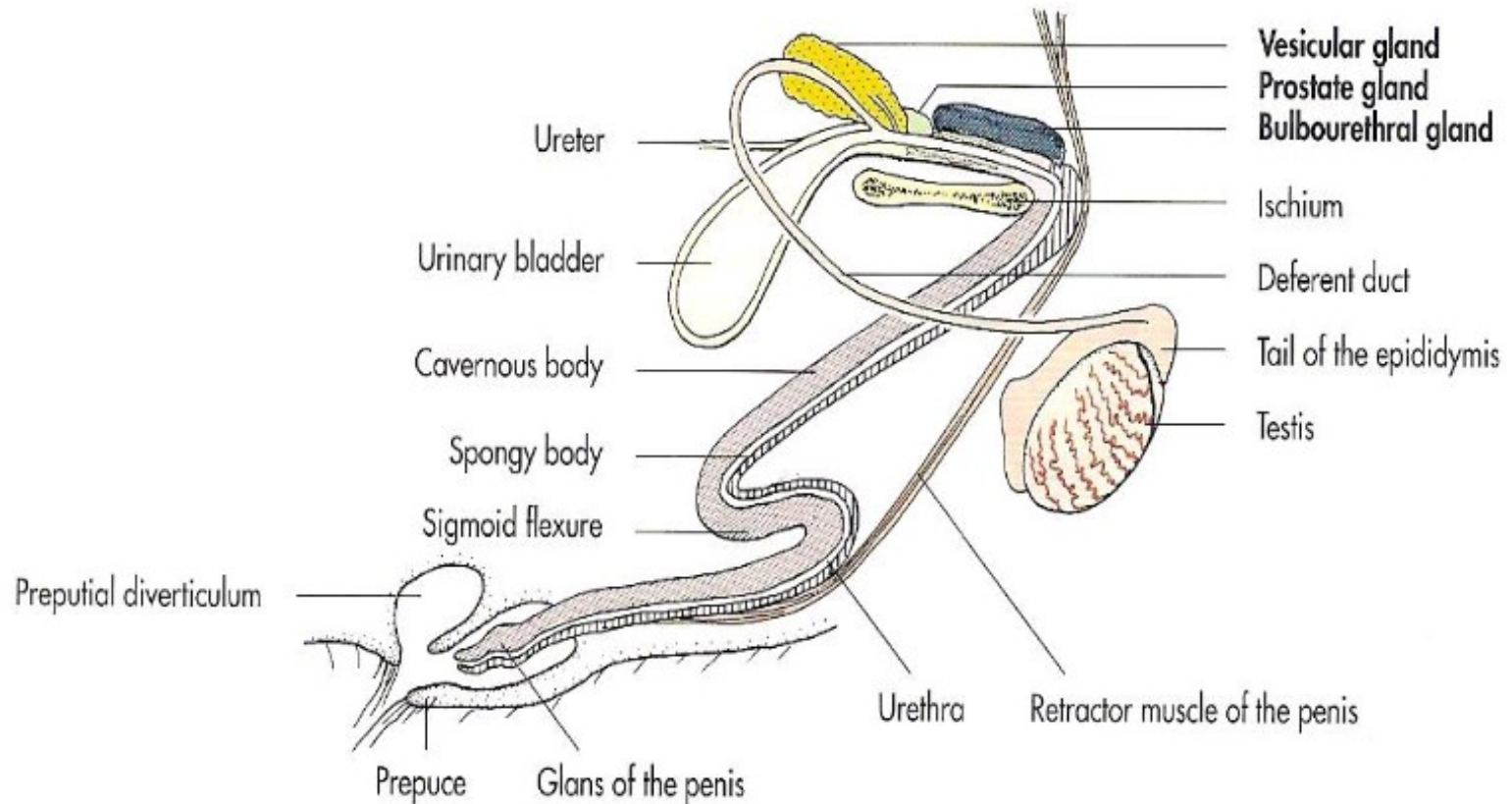


Apex of the penis of a stallion.

Boar

- Resemble in general to that of the ox
- The sigmoid flexure however is prescrotal
- The cranial part is spirally twisted especially in erection

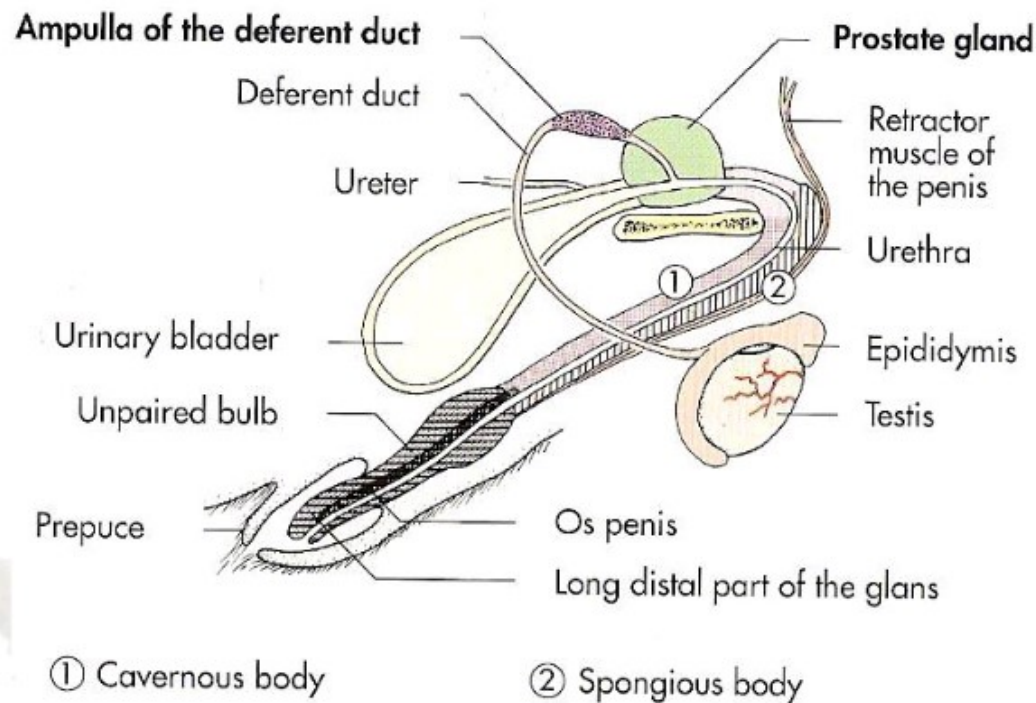
MALE GENITALIA - BOAR



Dog

- In the cranial part there is a bone-os penis.
- The glans is very long and is extended over the entire length of the os penis
- The cranial part of the glans penis is cylindrical with pointed free end
- In the caudal part, there is a rounded enlargement, the *bulbous glandis*

MALE GENITALIA - DOG

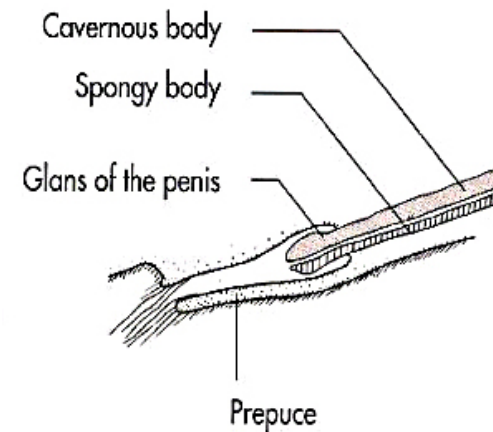


Cock

- Absent
- The copulatory apparatus is placed at the ventral aspects of the caudal end of cloaca
- It comprises of two papillae of vas deferens, two vascular bodies, a phallus and two lymphatic folds

PREPUCE

- The prepuce is a tubular sheath covering the cranial free portion of the penis in non-erect state
- The preputial cavity is 35 to 40 cm long and narrow and consists of external and internal layers
- The *external layer* extends from the scrotum to about the umbilicus
- The *internal or penile layer* extends to the tip of the glans.



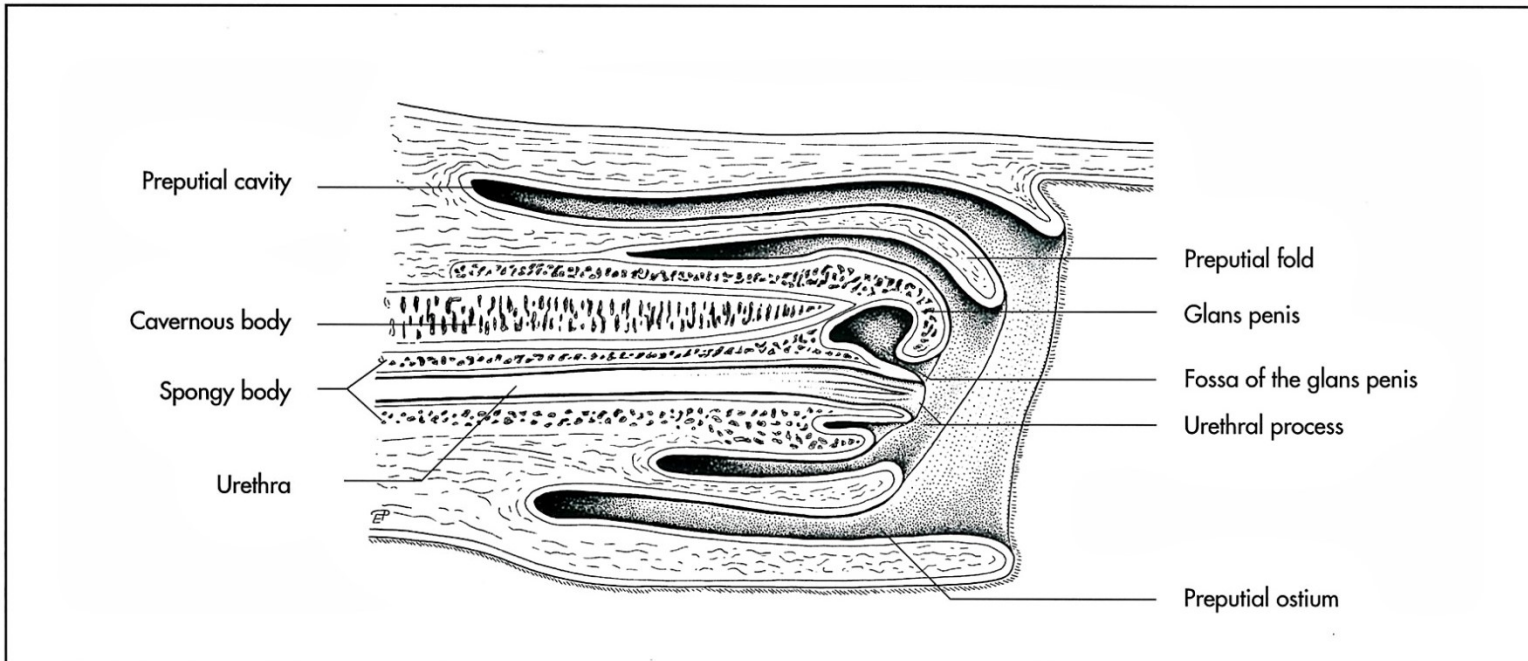
Species Differences

Ram and Buck

- The prepuce is relatively short

Stallion

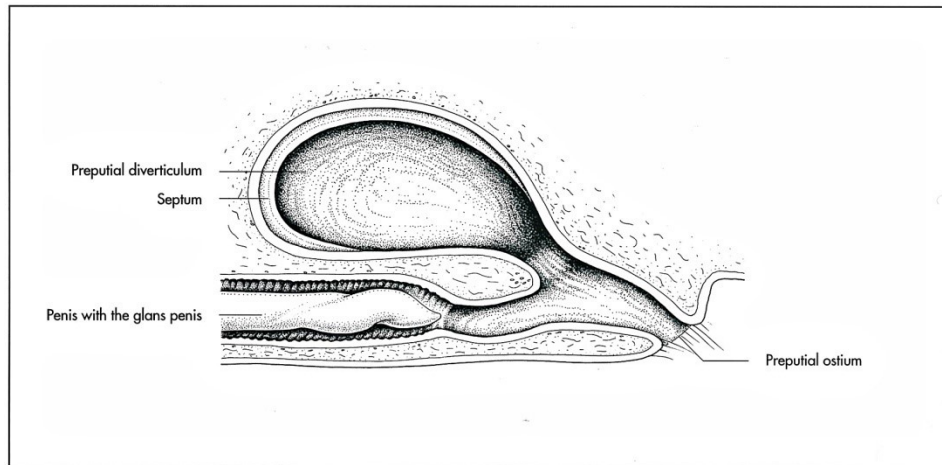
- It is shorter but wider. The orifice has no hairs around it
- The prepuce is a double invagination of the skin, which contains and covers the free part of the penis, which consists of two layers - external and internal



Prepuce and glans of the penis of the stallion, schematic

Boar

- The preputial cavity is very long and partially divided by a circular fold into a *caudal narrow part* and a much *wider cranial part*
- In the dorsal wall of the wide part, there is a circular opening, which leads to a *cul-de-sac*, the preputial diverticulum



Prepuce and glans of the penis of the boar, schematic.

Dog

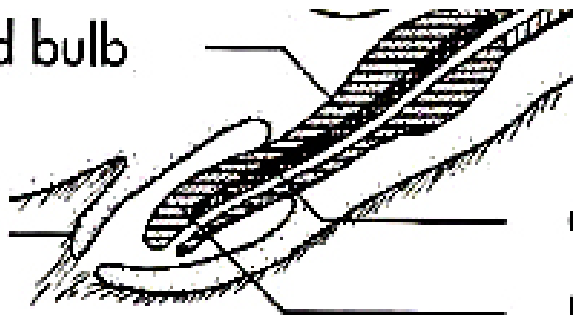
As in bull

Cock

Absent

Unpaired bulb

Prepuce



Os penis

Long distal part of the glans



THANKS