- ANATOMY

# The scrotum

YEAR TWO \ COLLEGE OF MEDICINE


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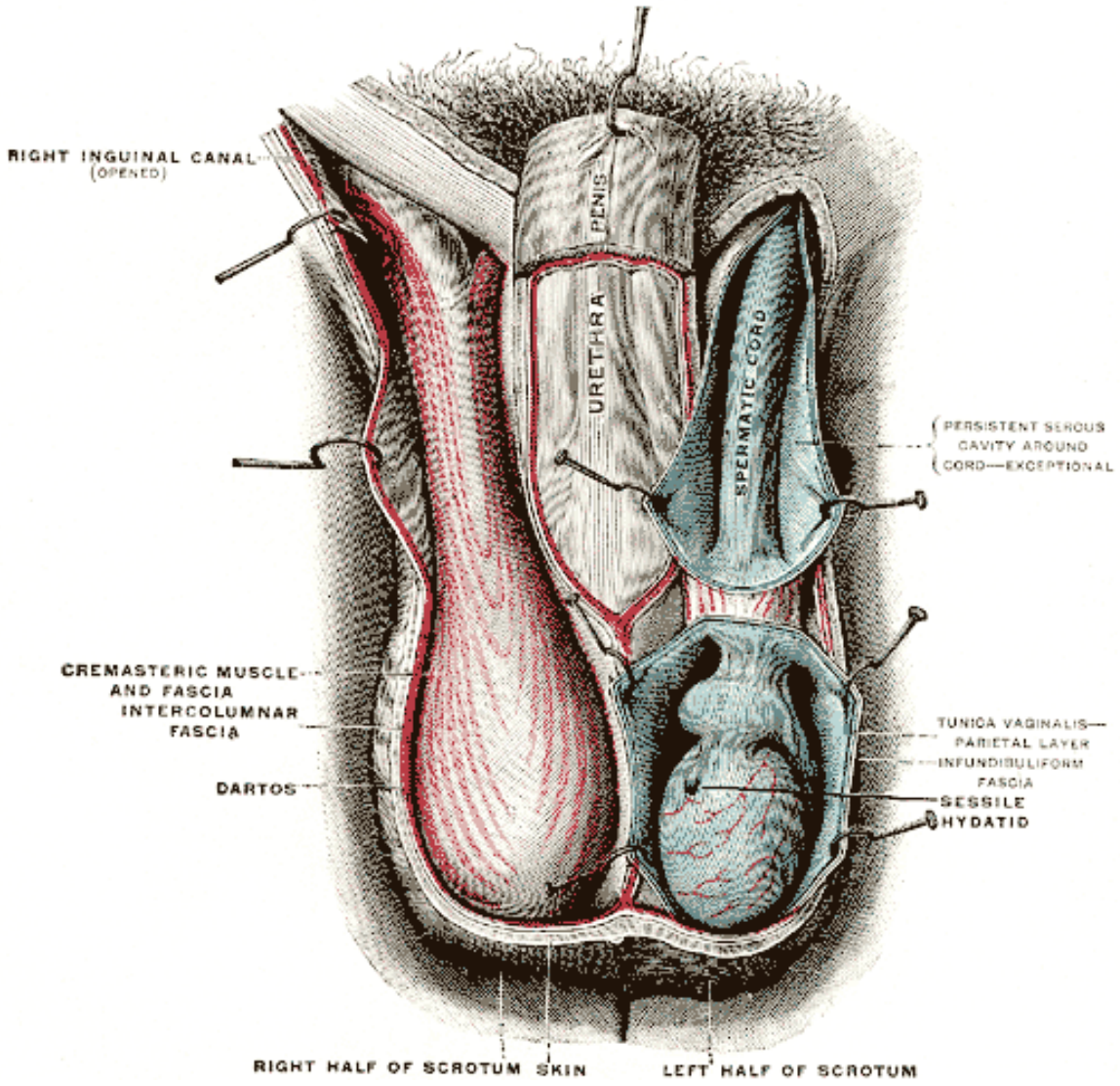
- 2022

# The scrotum

The scrotum is a thin external sac , and
anatomical male reproductive structure,  that is located under the **penis** and is composed of skin and smooth muscle. This sac is divided into two compartments by the **scrotal septum**. The average wall thickness of the scrotum is about **8 mm. It** has a parietal and a visceral layer

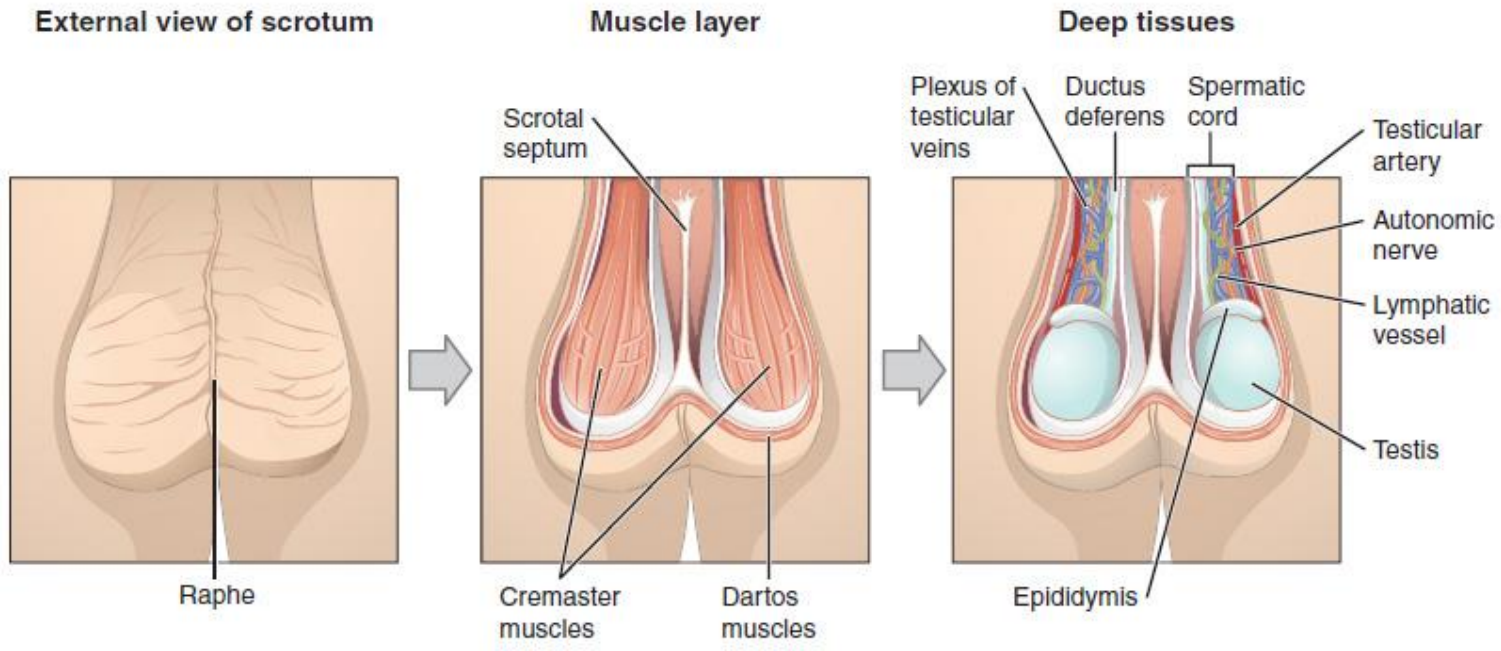
https://en.wikipedia.org/wiki/Scrotum#Development



# Scrotum

- The scrotum developed from two cutaneous out pouching of the anterior abdominal wall

  (labioscrotal swelling)
- The scrotum consist of two layers , skin and superficial fascia
- superficial fascia is devoid of fat , but it contain a thin sheet of smooth muscle called dartos muscle  (wrinkle when cold )



- The scrotum contains the external spermatic fascia, testes, epididymis, and ductus deferens. It is a distention of the perineum and carries some abdominal tissues into its cavity including the testicular artery, testicular vein, and pampiniform plexus.

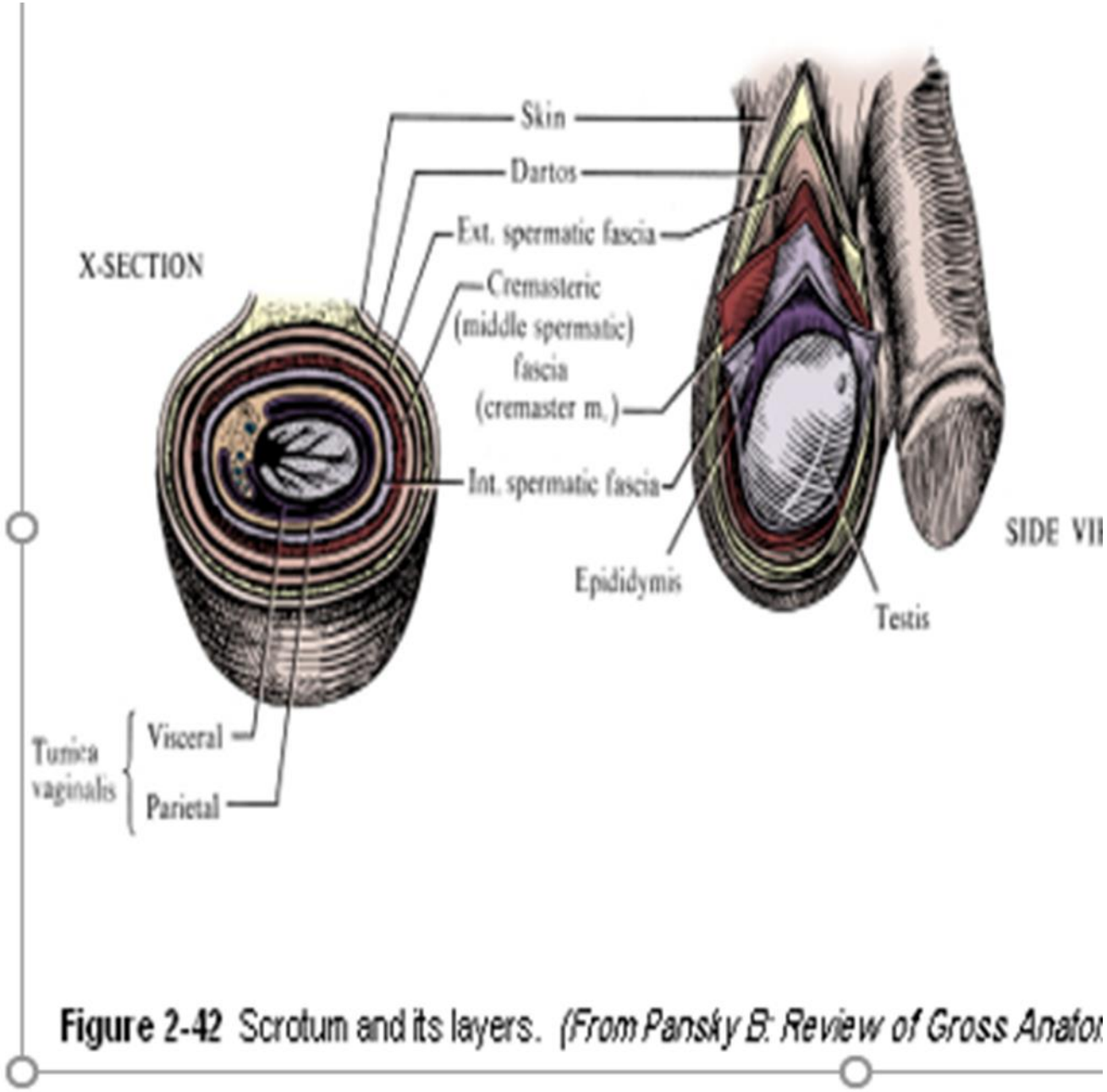
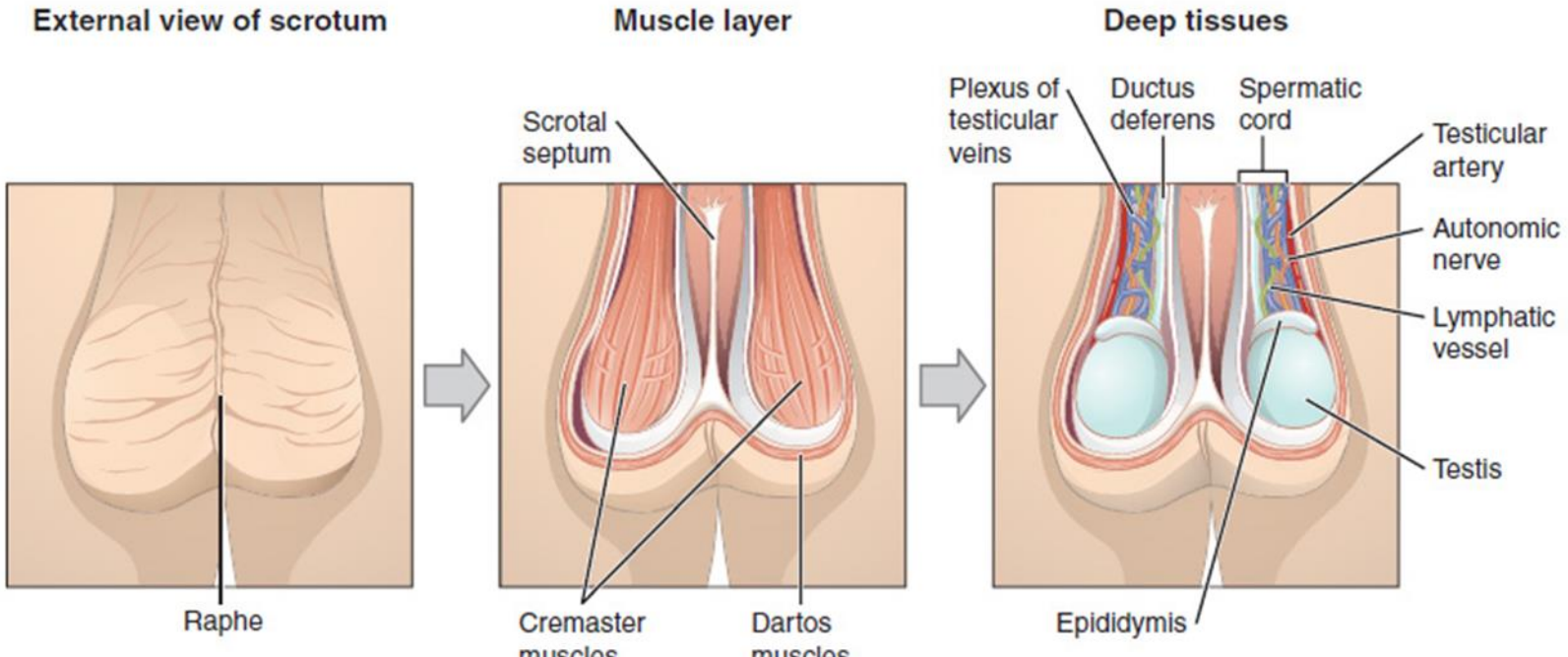
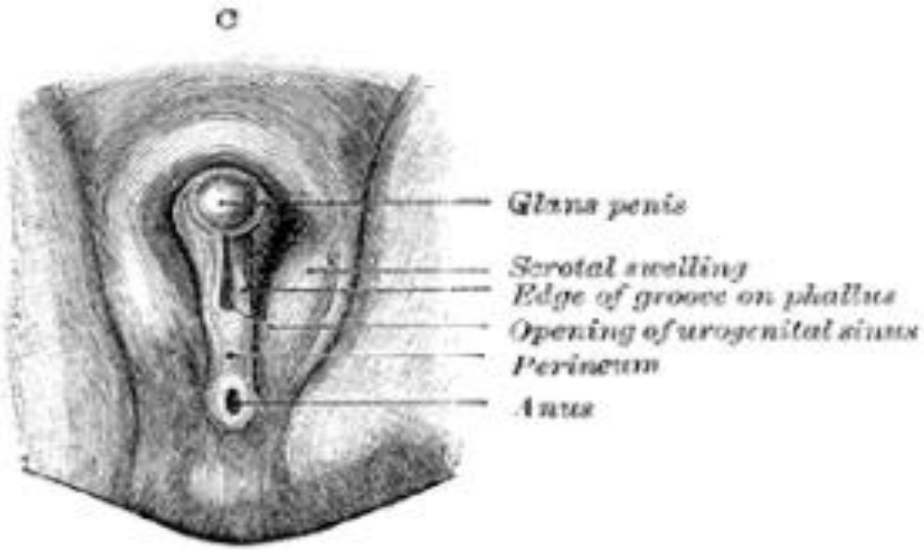


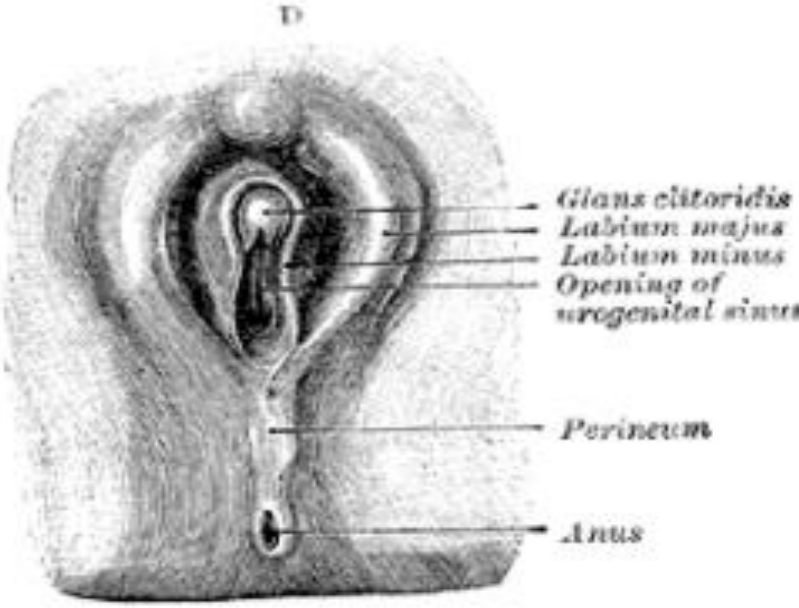

Figure 2-42 Scrotum and its layers. *(From Pansky B: Review of Gross Anato*

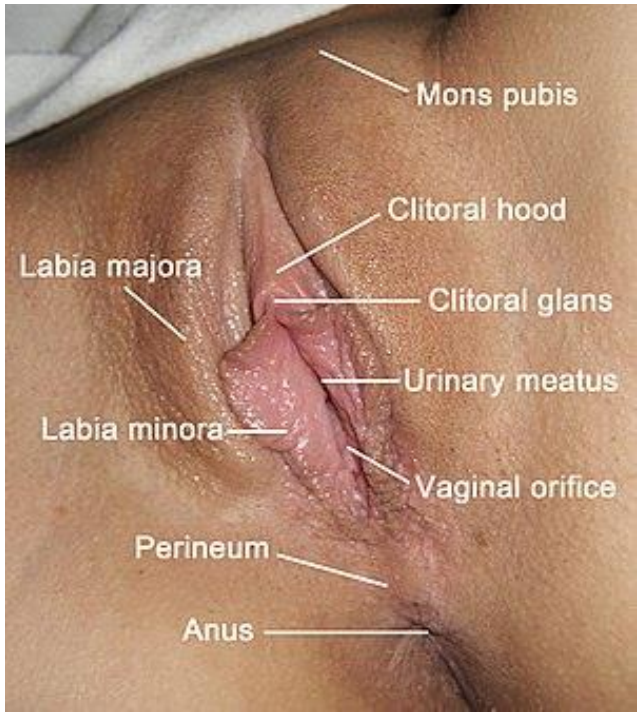
- The perineal raphe is a small, vertical, slightly raised ridge of scrotal skin under which is found the scrotal septum. It appears as a thin longitudinal line that runs front to back over the entire scrotum.
- The scrotum, in humans and some other mammals becomes covered with pubic hair at puberty.
- One testis is typically lower than the other to avoid compression in the event of impact.[1]



- The scrotum will usually tighten during penile erection and when exposed to cold temperature
- The scrotum is biologically homologous to the labia majora in females.

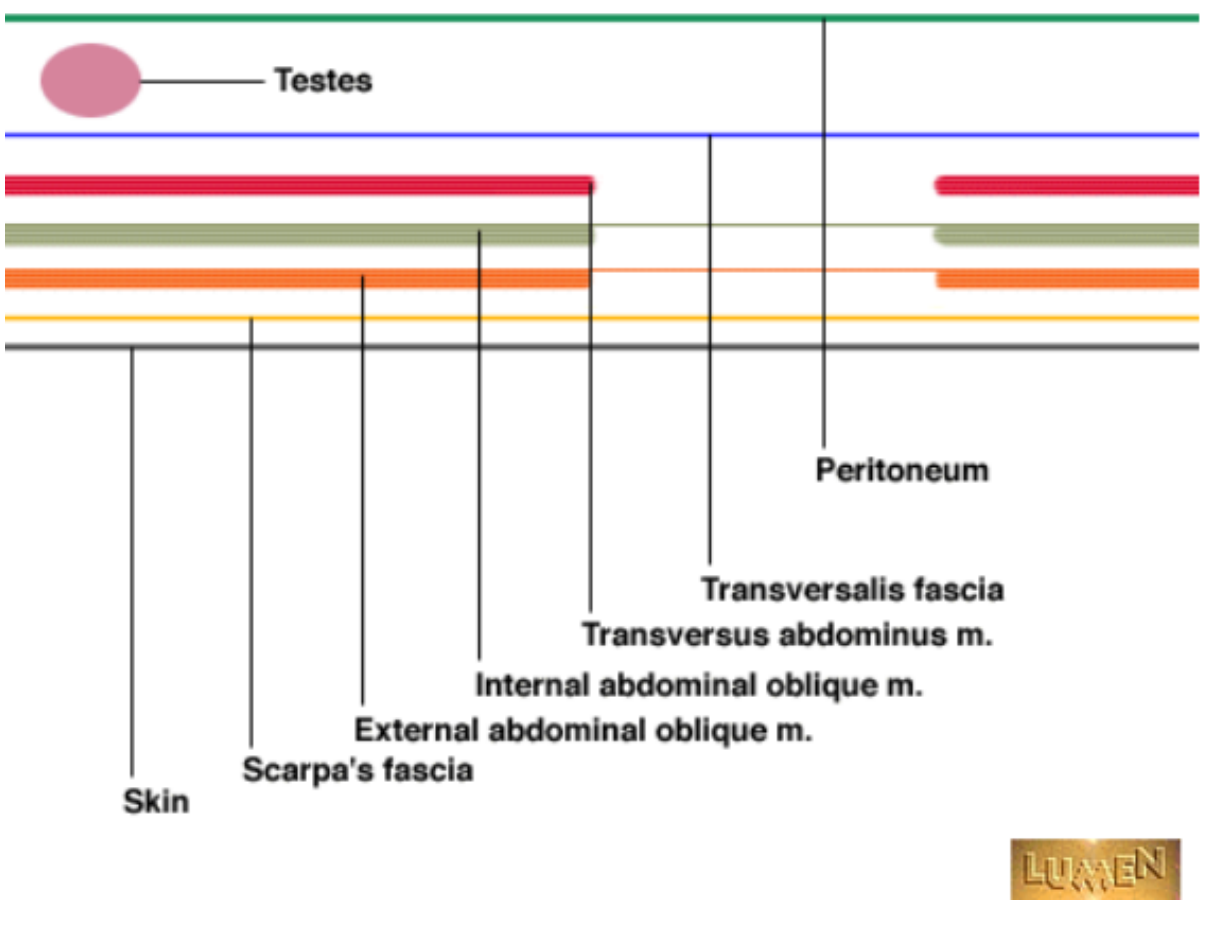


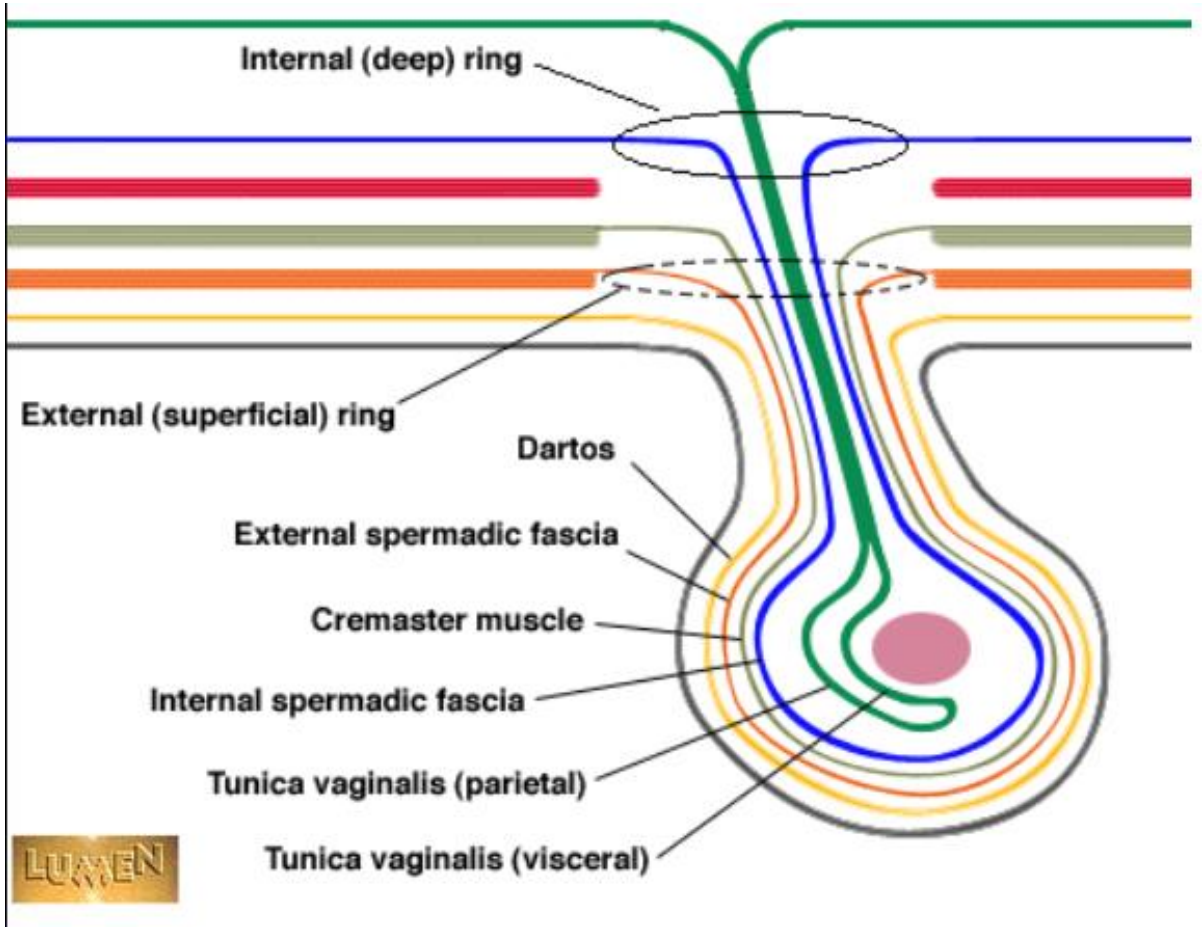



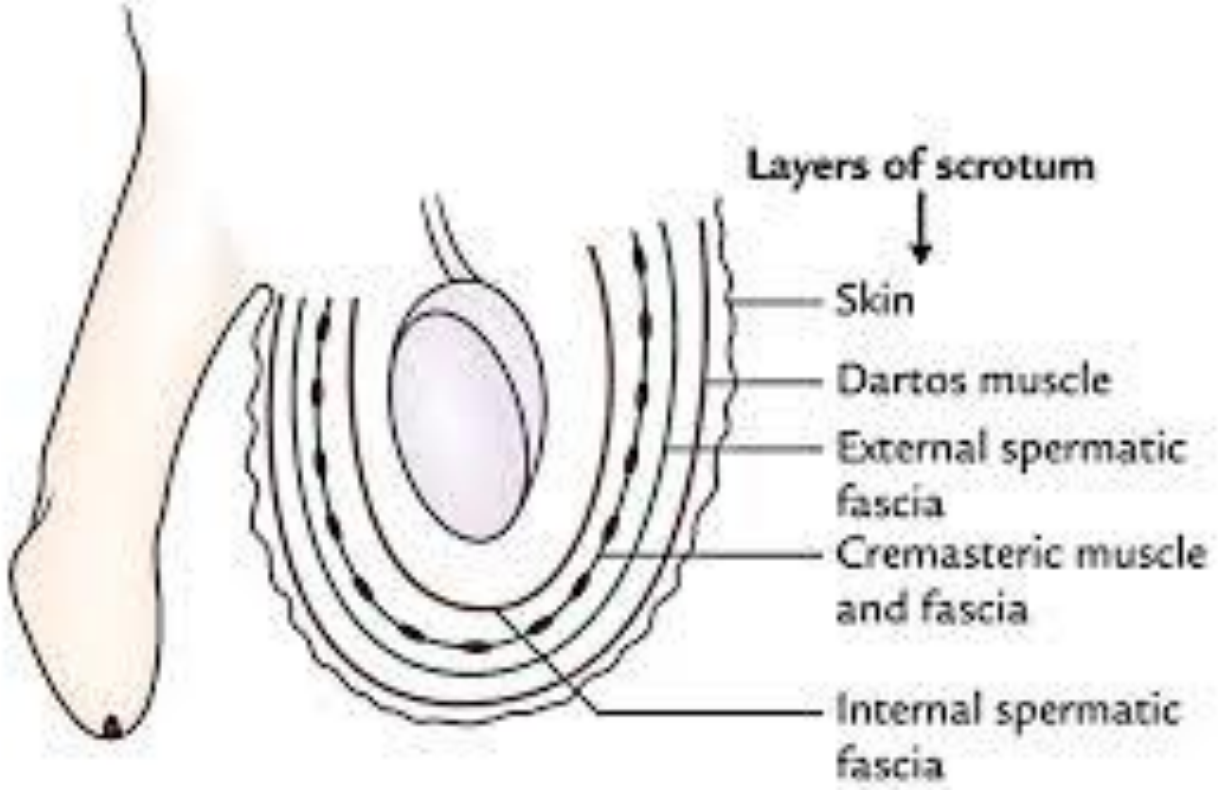
- ***The covering of the testis are continuous with the covering of the spermatic cord , the outermost covering of the testis , the external spermatic fascia , is continuous with this layer of spermatic cord , which is continuous with the E.O.A. at the superficial ring***
- ***Internal to this layer is the cremastric muscle with its fascia***
- ***Inside this layer is the internal spermatic fascia***
- ***Inside the internal spermatic fascia is tunica vaginalis***

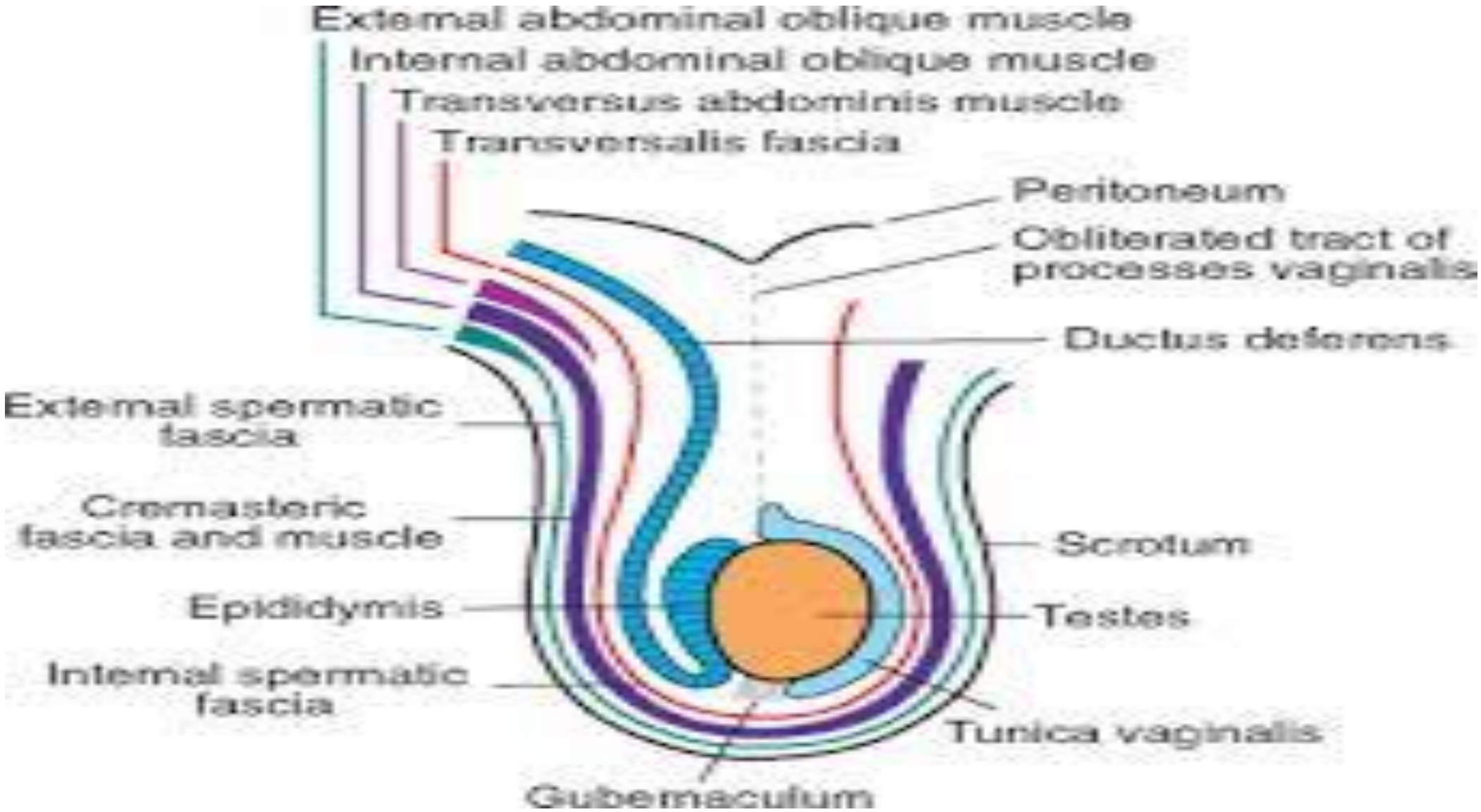
# Descent of Testis in the Inguinal Canal

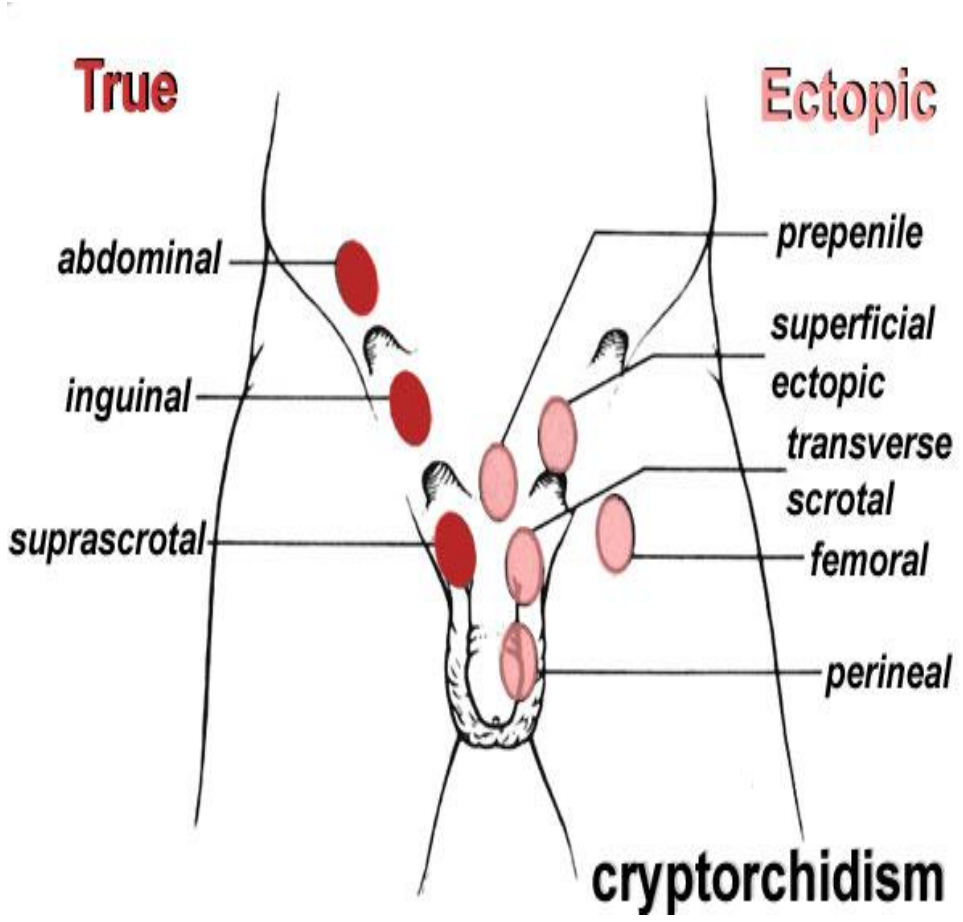


http://www.meddean.luc.edu/lumen/MedEd/GrossAnatomy/abd/inguinal/inguinal.gif




External abdominal oblique muscle
Internal abdominal oblique muscle
Transversus abdominis muscle
Transversalis fascia
Peritoneum
Obliterated tract of processes vaginalis
Ductus deferens
External spermatic fascia
Cremasteric fascia and muscle
Epididymis
Internal spermatic fascia
Scrotum
Testes
Tunica vaginalis
Gubernaculum




https://embryology.med.unsw.edu.au/embryology/index.php/Testis_Development#/media/File:Cryptorchidism.jpg

- Cryptorchidism - *A disorder affecting males, caused by an abnormality occurring in sex development during the antenatal period. This disorder is characterized by the absence of one or both testes from the scrotum. This disorder may also present with reduced fertility, psychological implications, or increased risk of testicular germ cell tumours.*
- ***Confirmation is by imaging, karyotyping (***to detect chromosomal abnormalities.)***, or identification of male sex hormones in a blood sample.***

Anorchia or ***microorchidia*** - A disorder affecting males, caused by an abnormality occurring in sex development during the antenatal period". This disorder is characterized by individuals who are born with **absence of the testes**, or with testes that are **deficient in size and function** (measured by orchidometer). Confirmation is by physical examination, identification of low testosterone levels but elevated follicle stimulating hormone and luteinizing hormone levels in a blood sample, or imaging

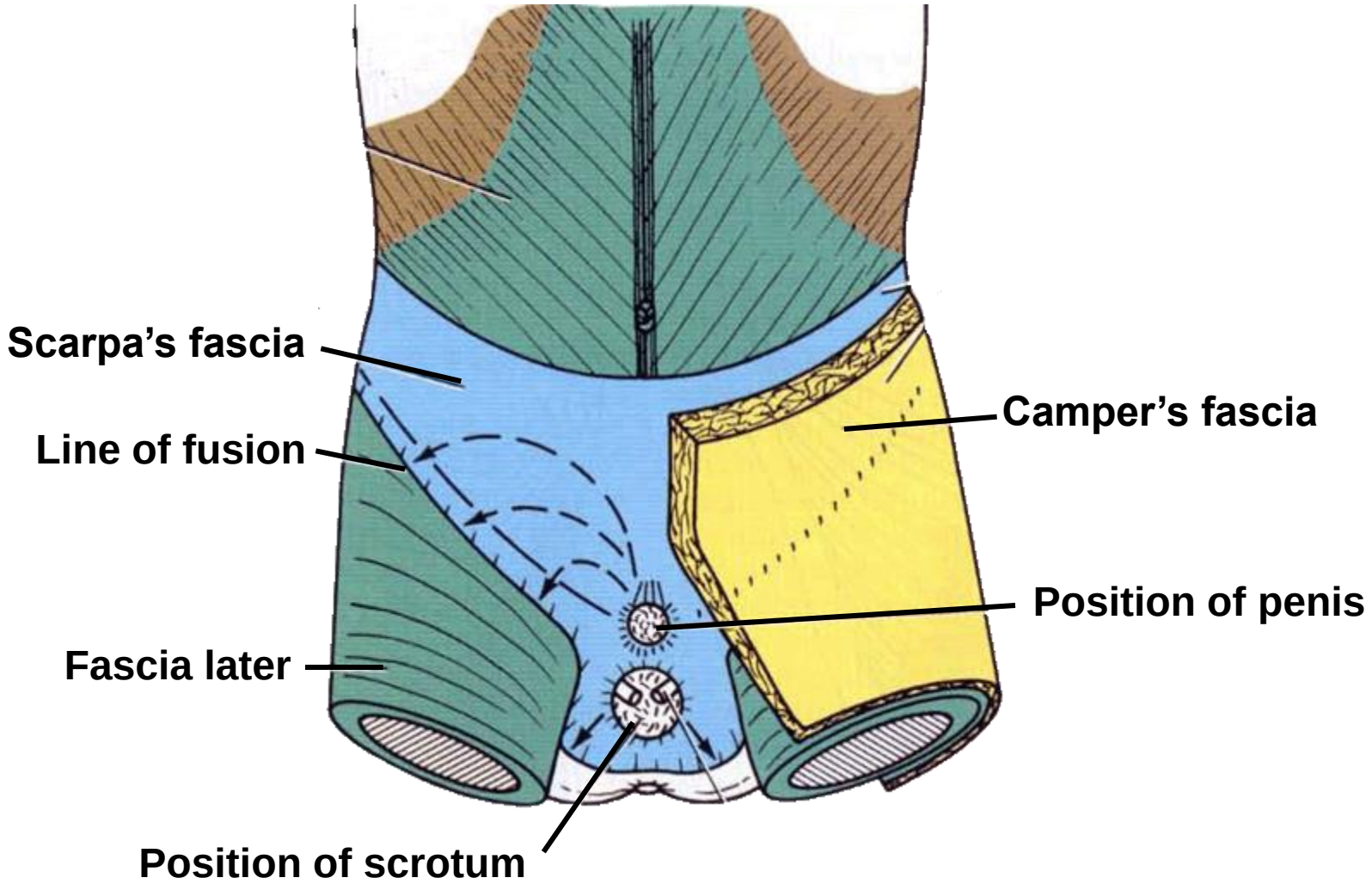
Hematoceles & chyloceles, represent accumulations of blood or lymphatic fluid within the tunica vaginalis respectively. In extreme cases of lymphatic obstruction, caused, for example, by filariasis *, the scrotum and the lower extremities may enlarge to dreadful proportions, a condition termed elephantiasis.* an infection with roundworms

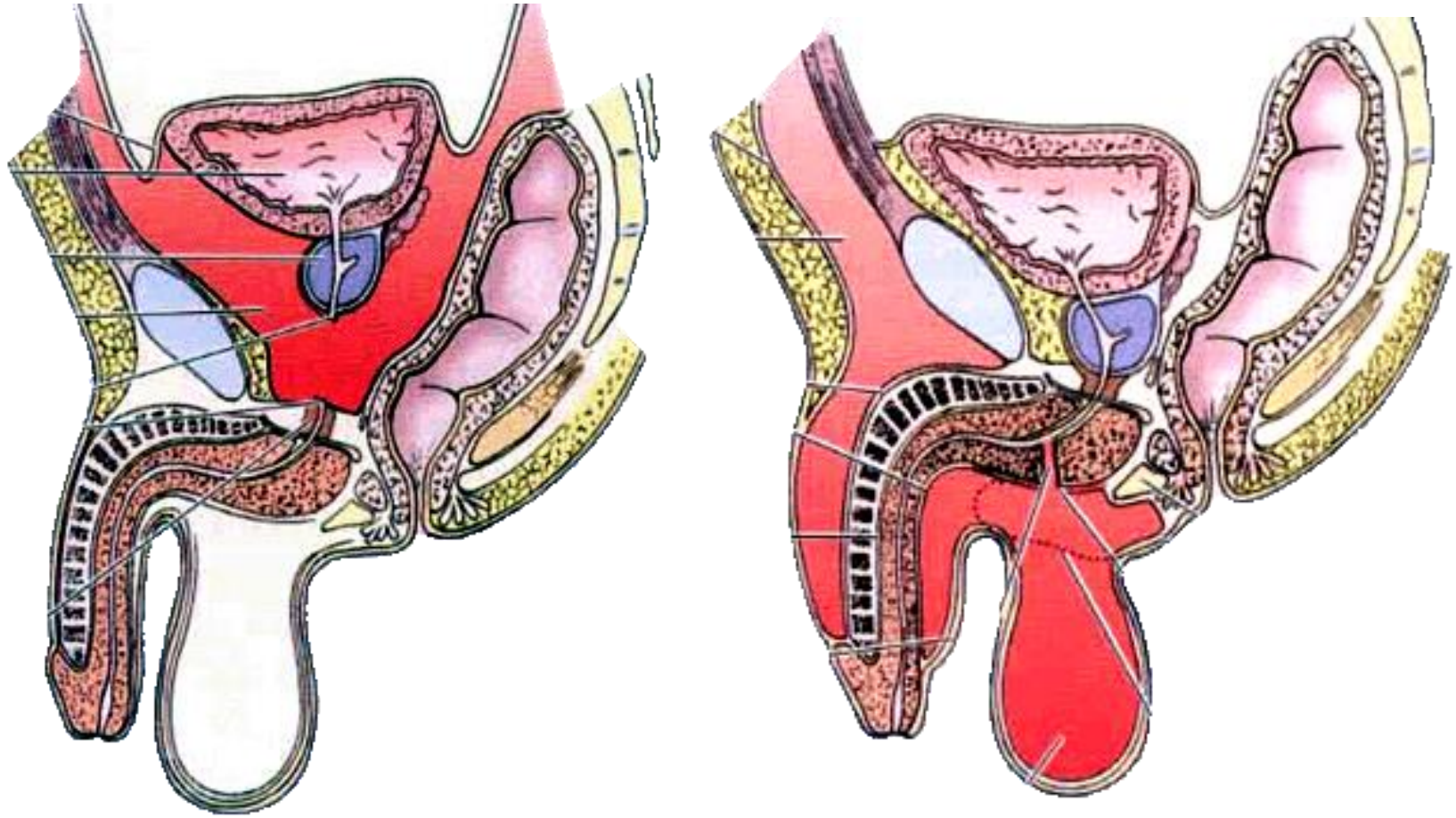
# TESTICULAR NEOPLASMS

Testicular neoplasms are the most important cause of firm, painless enlargement of the testis. The peak incidence is between the ages of 20 and 34 years. In adults, 95% of testicular tumors arise from germ cells, and all are malignant. Neoplasms derived from Sertoli or Leydig cells (sex cord/stromal tumors) are uncommon and, in contrast to tumors of germ cell origin, usually pursue a benign clinical course.

The etiology of testicular neoplasms is not known.


CT and MRI Findings in Testicular Cancer

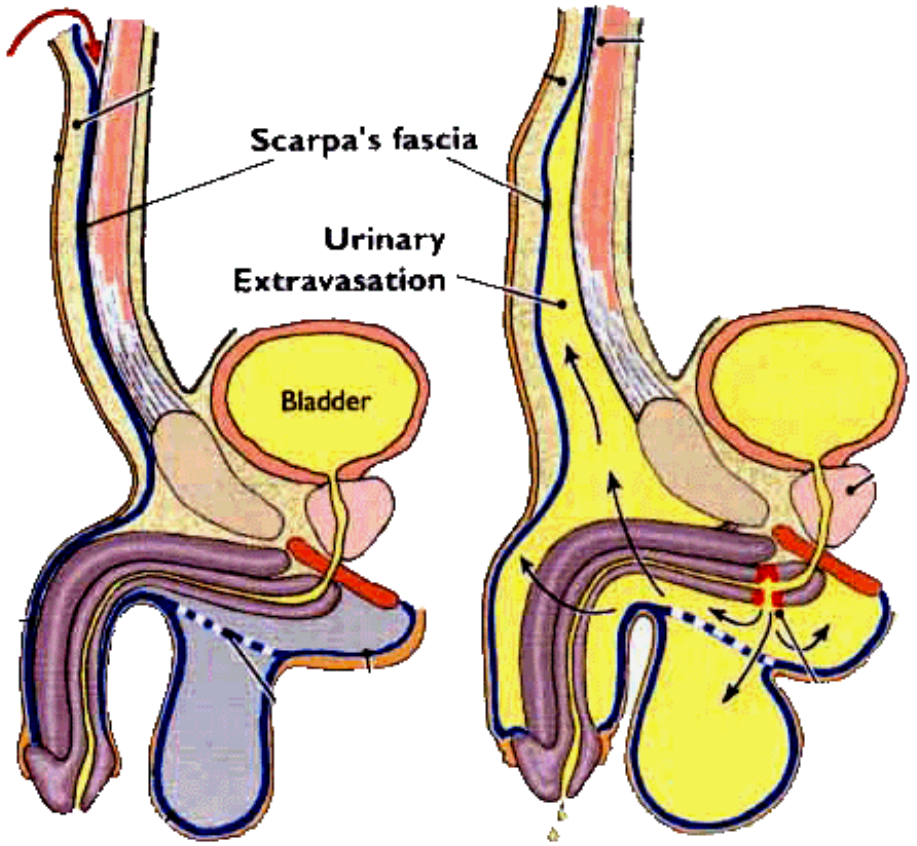

Scarpa's fascia
Line of fusion
Fascia later
Position of scrotum
Camper's fascia
Position of penis



# Superficial perineal space

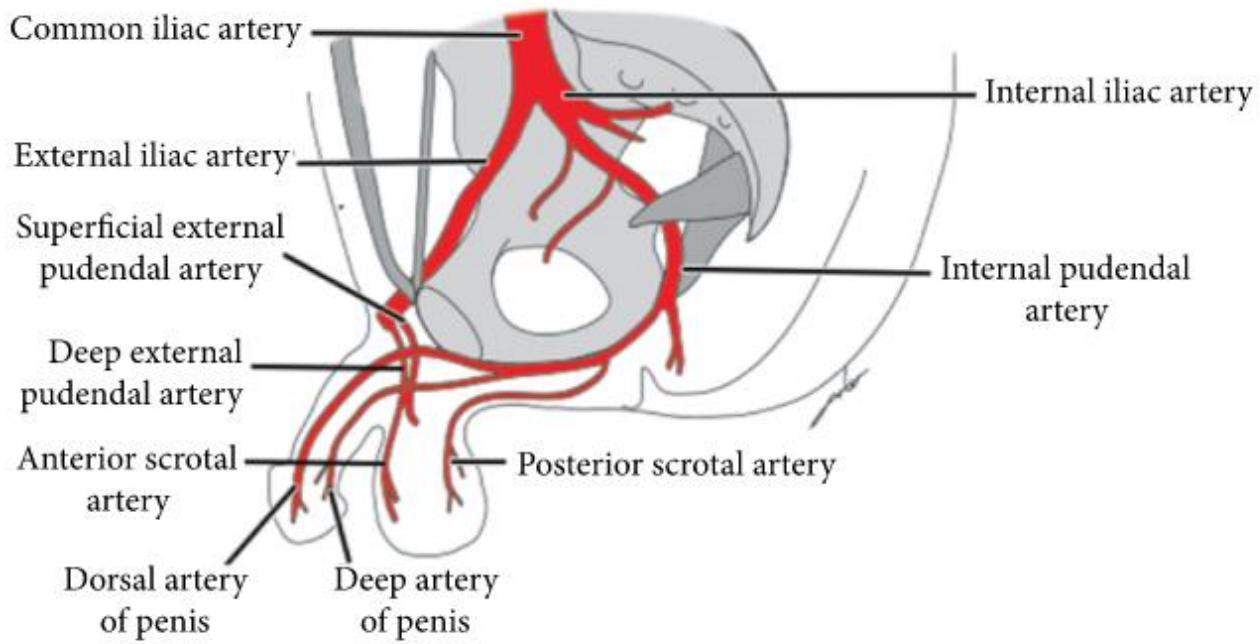
**Boundaries**

- Lies between inferior fascia of urogenital diaphragm and superficial fascia of perineum
- Space open anteriorly (In rupture of cavernous part of urethra, urine can extravasate from scrotum upward in front of symphysis pubis into anterior abdominal wall deep to membranous fascia of Scarpa)



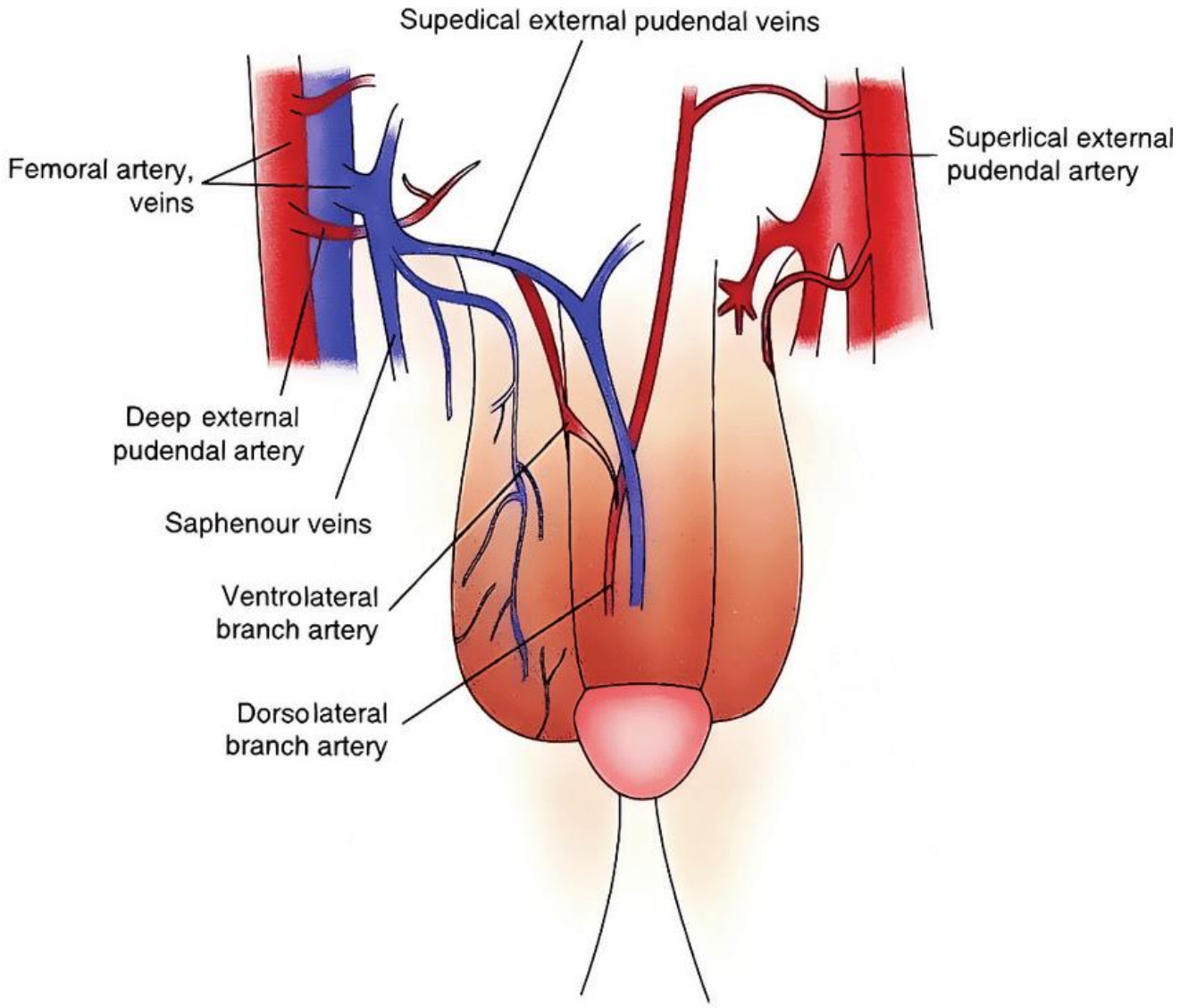
# Arterial Supply of The Scrotum

1. Perineal branch of internal pudendA.
2. External pudendal branches of the femoral A.
3. Cremastric A. branch of inferior epigastric A.



# Venous Drainage of The Scrotum

The scrotal veins accompany the arteries . The external pudendal vein enter the great saphenous veins



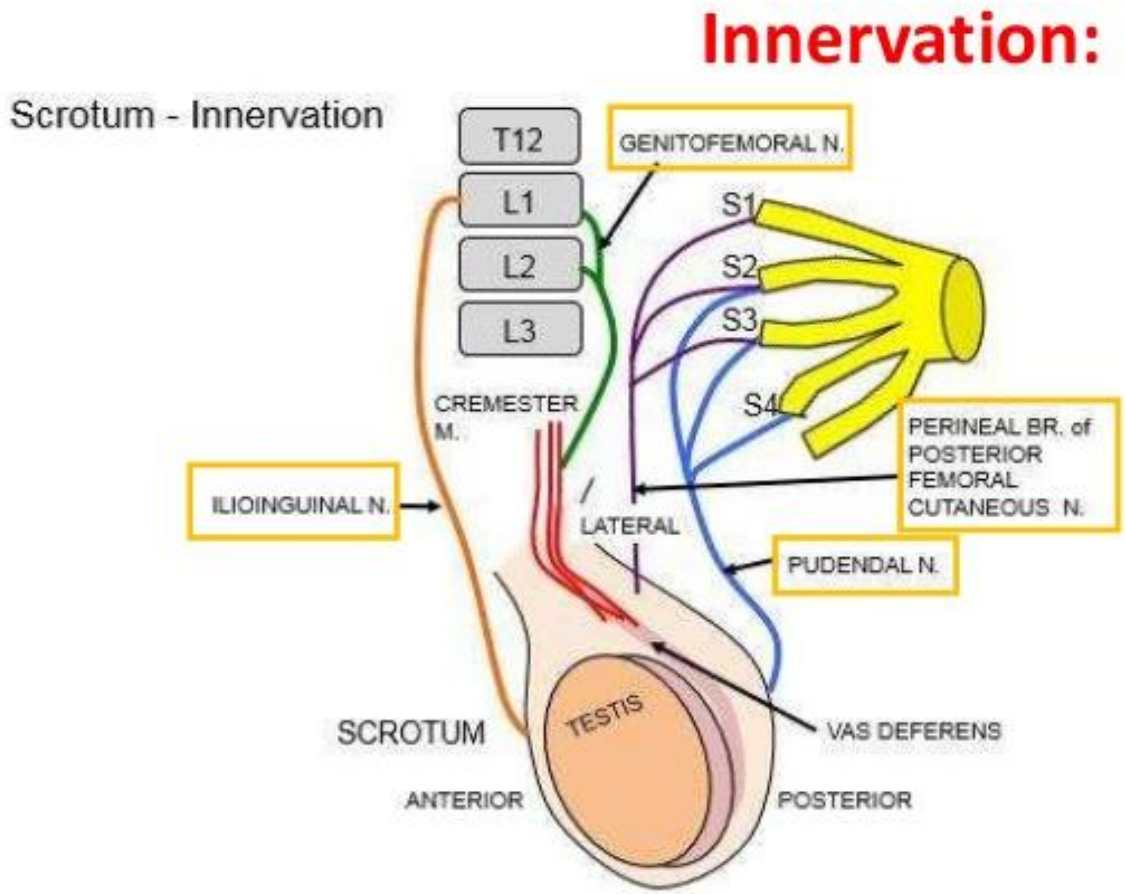
# Nerve Supply of the scrotum

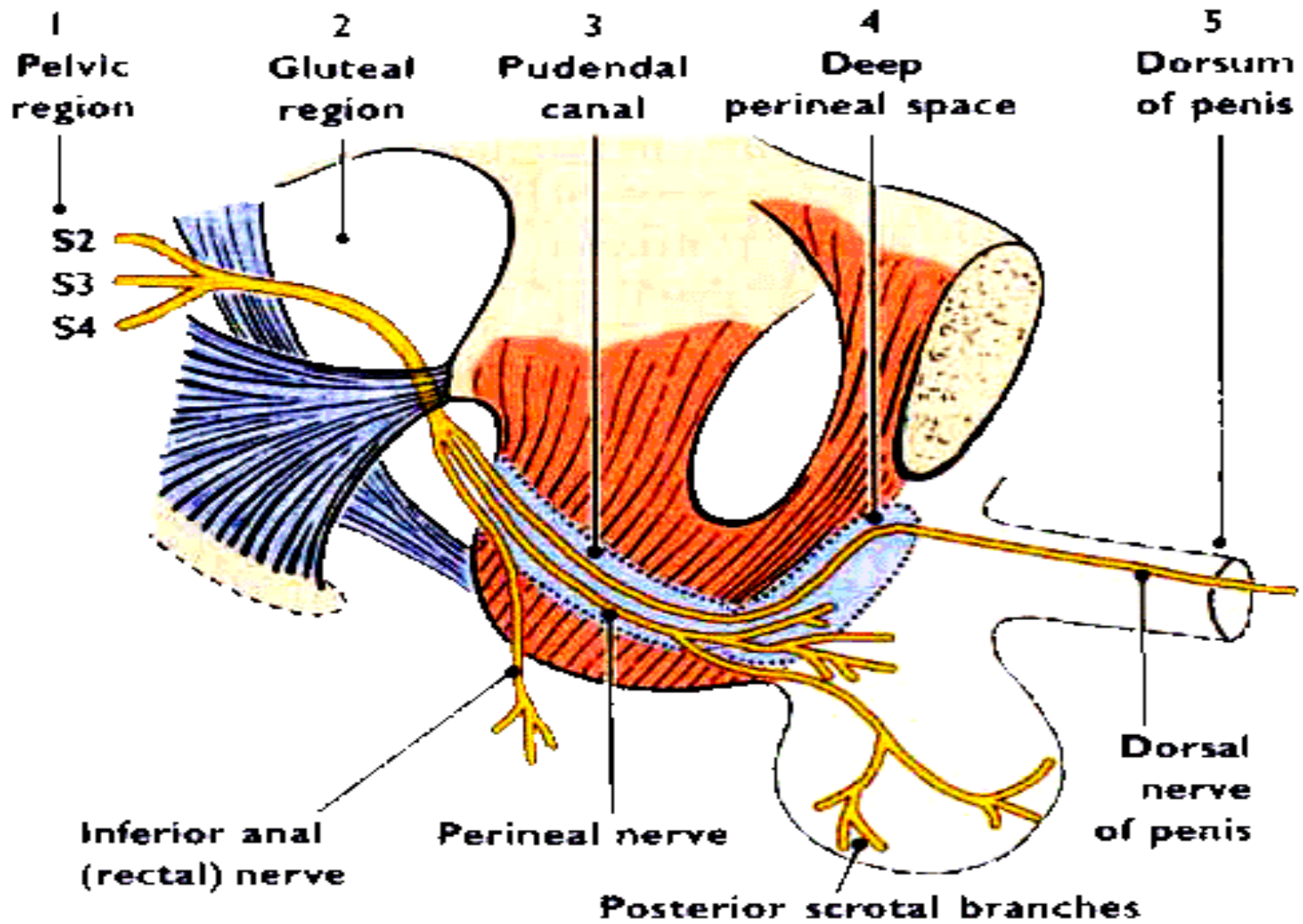
Genital branch of genitofemoral nerve

Scrotal branch of ilioinguinal nerve

Perineal branch of pudendal nerve

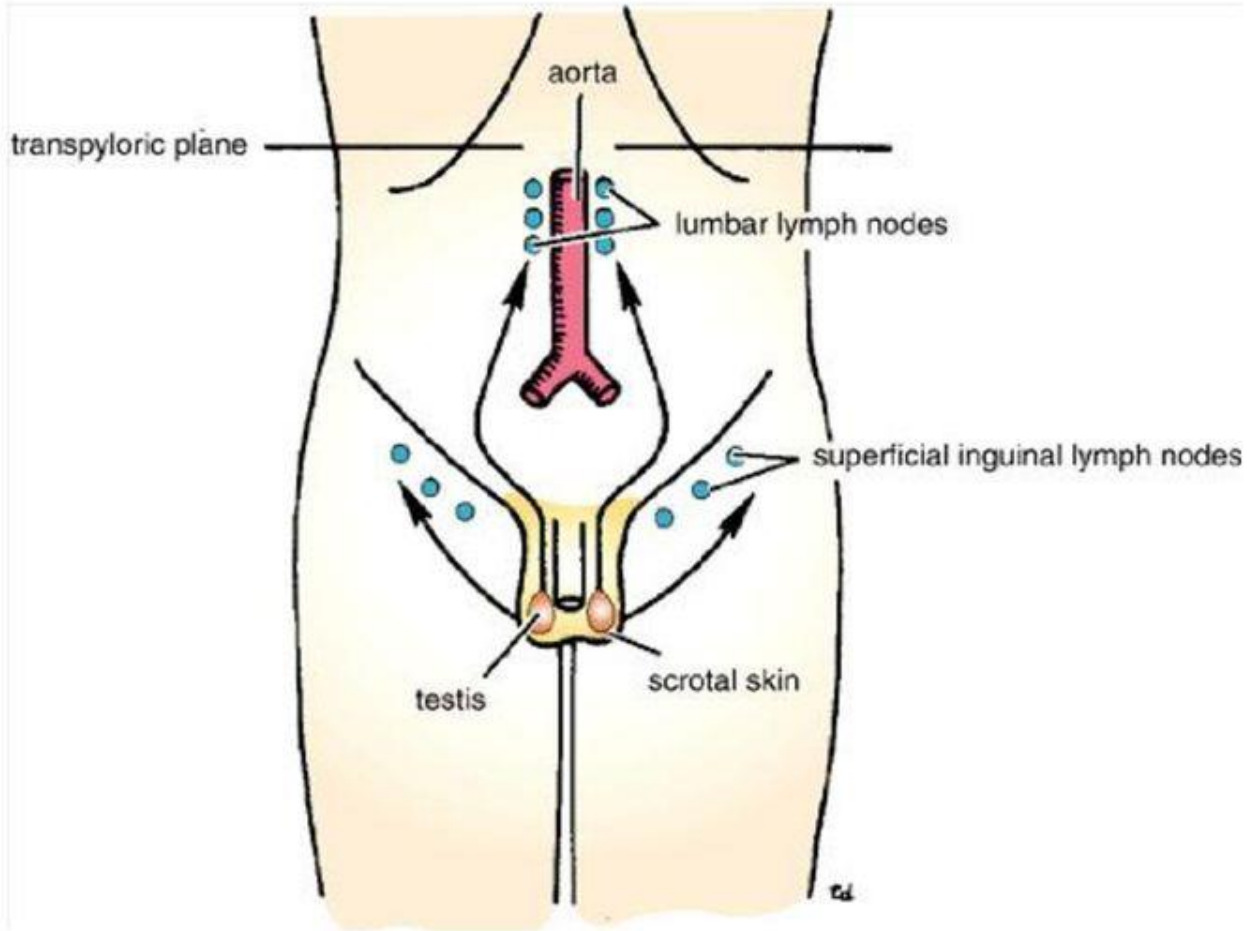
Perineal branchs of posterior femoral cutaneous nerve




1
Pelvic region
2
Gluteal region
3
Pudendal canal
4
Deep perineal space
5
Dorsum of penis
S2
S3
S4
Inferior anal (rectal) nerve
Perineal nerve
Posterior scrotal branches
Dorsal nerve of penis

# Lymph Drainage of the Scrotum

Lymph from the skin and fascia, including the tunica vaginalis, drains into **the superficial inguinal lymph nodes**.



# Anatomy
# Testes, Epididymis, vas deferens

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2022

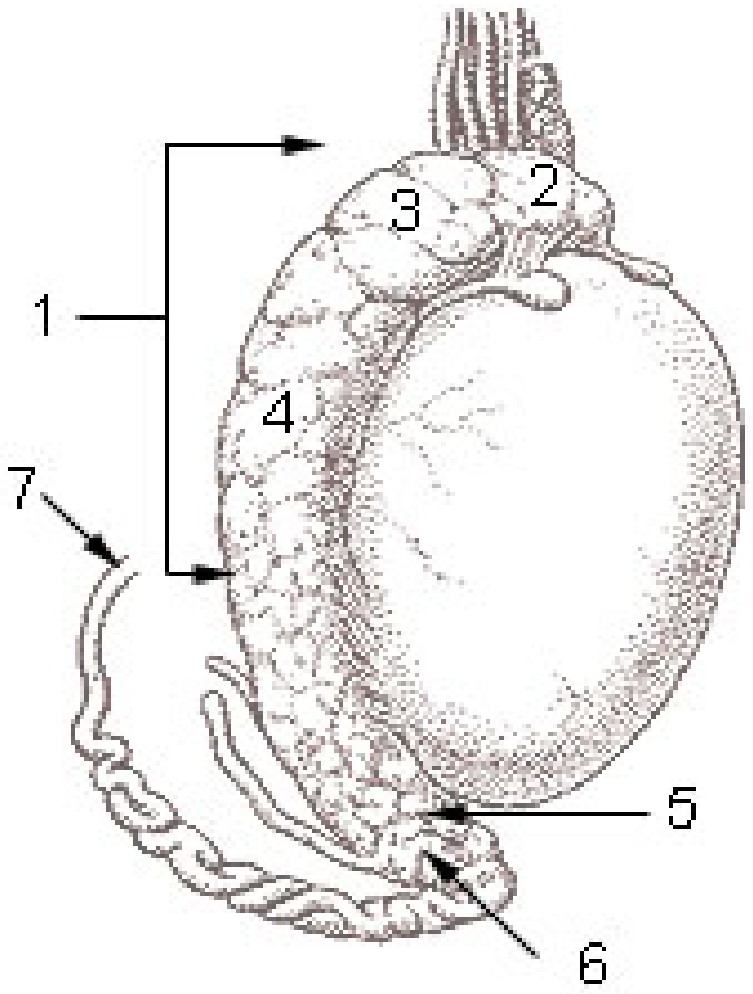
# Testes (Testis)

- 1° sex organ (male reproductive organ)

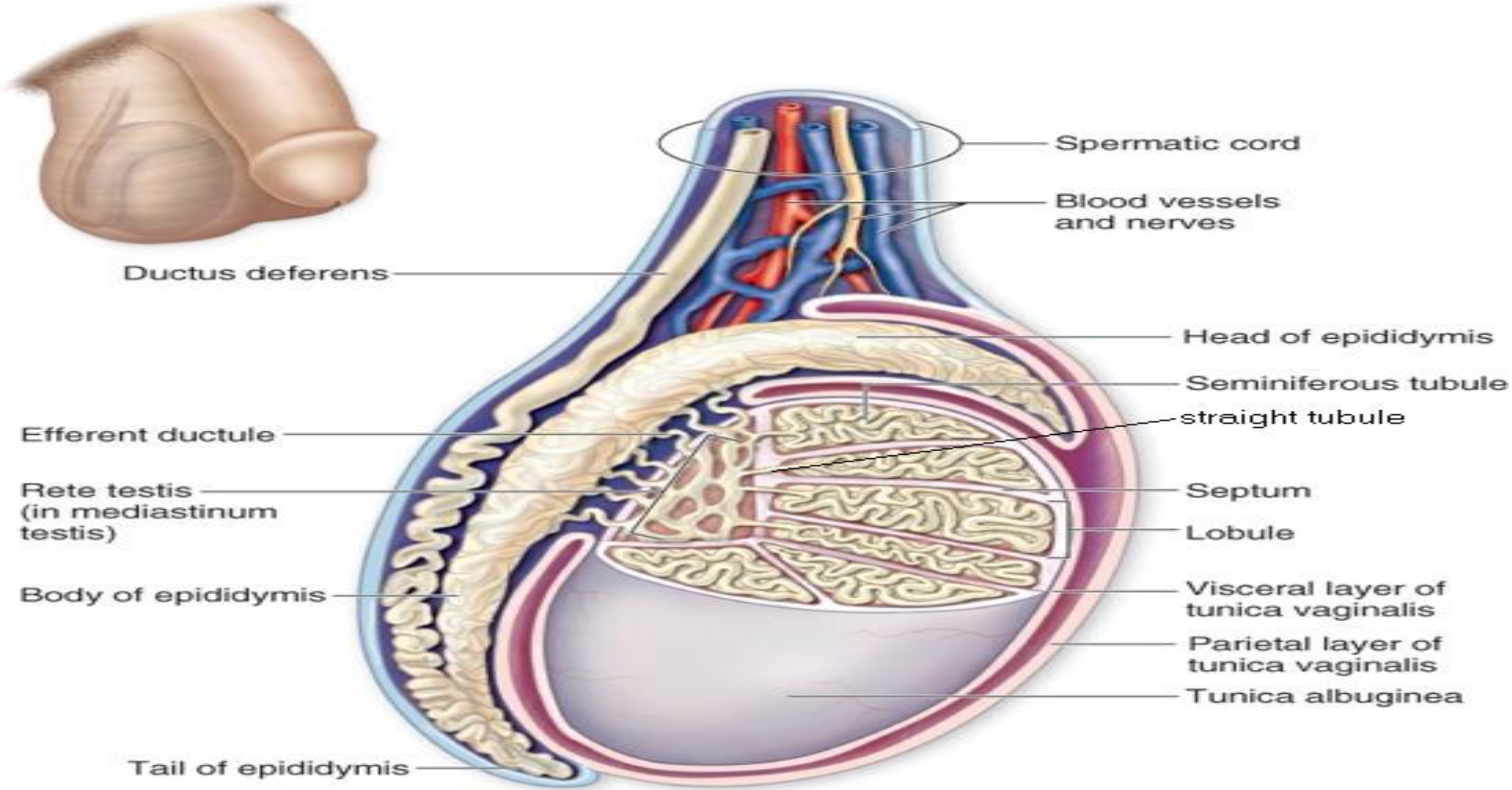
1. production of sperm
2. Secretion of testosterone

- Suspended within the ***scrotum***
- Nerve supply; sympathetic-T10
- Testes first appear at 7 weeks next to kidneys
- **Testes don’t descend into the scrotum until about 8 months of fetal age**

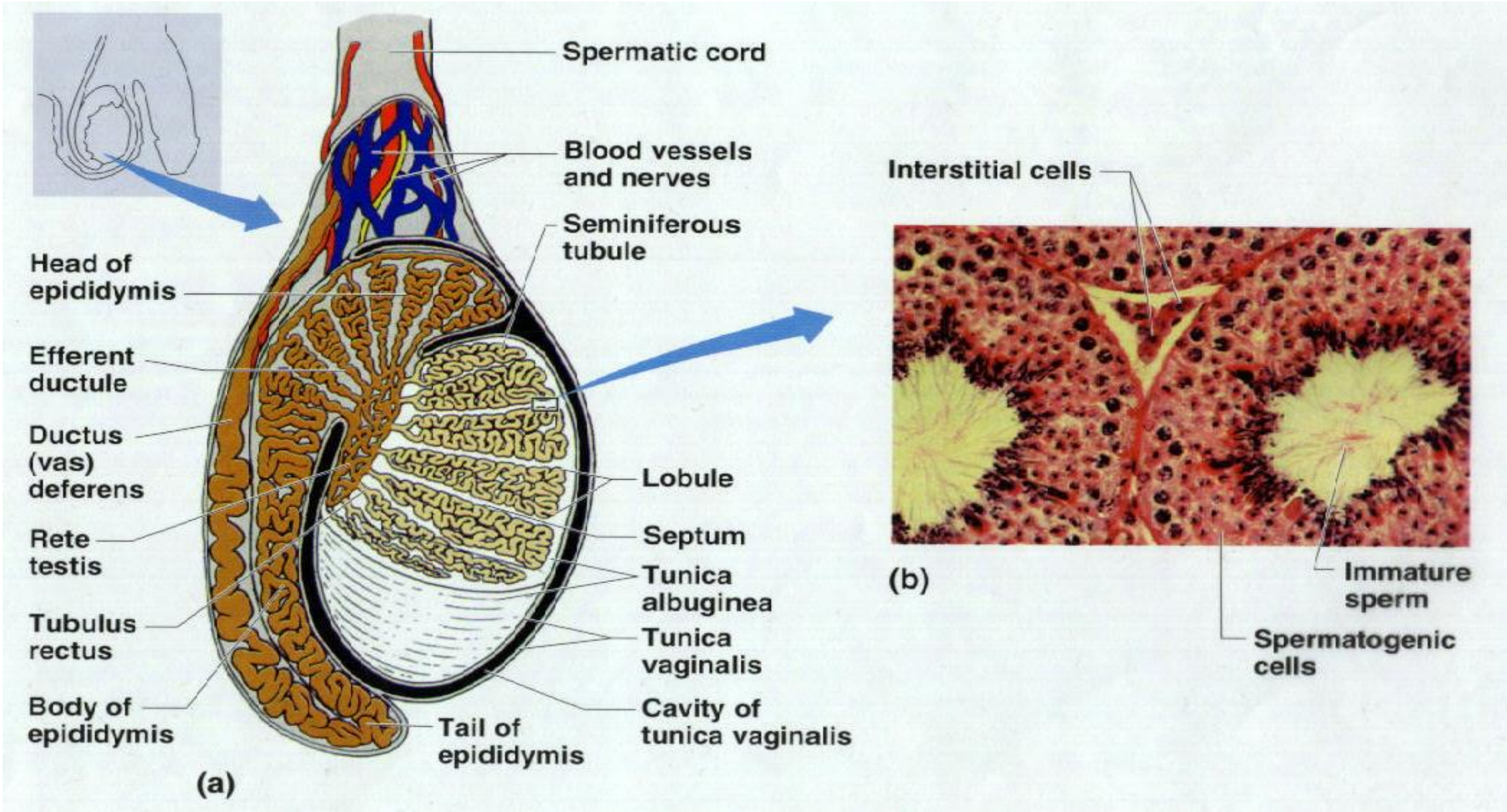
# Testicle and Epididymis, Surface




| | |
|---|---|
| 1 | Epididymis |
| 2 | Head of epididymis |
| 3 | Lobules of epididymis |
| 4 | Body of epididymis |
| 5 | Tail of epididymis |
| 6 | Duct of epididymis |
| 7 | Deferent duct (ductus deferens or vas deferens) |
| | |

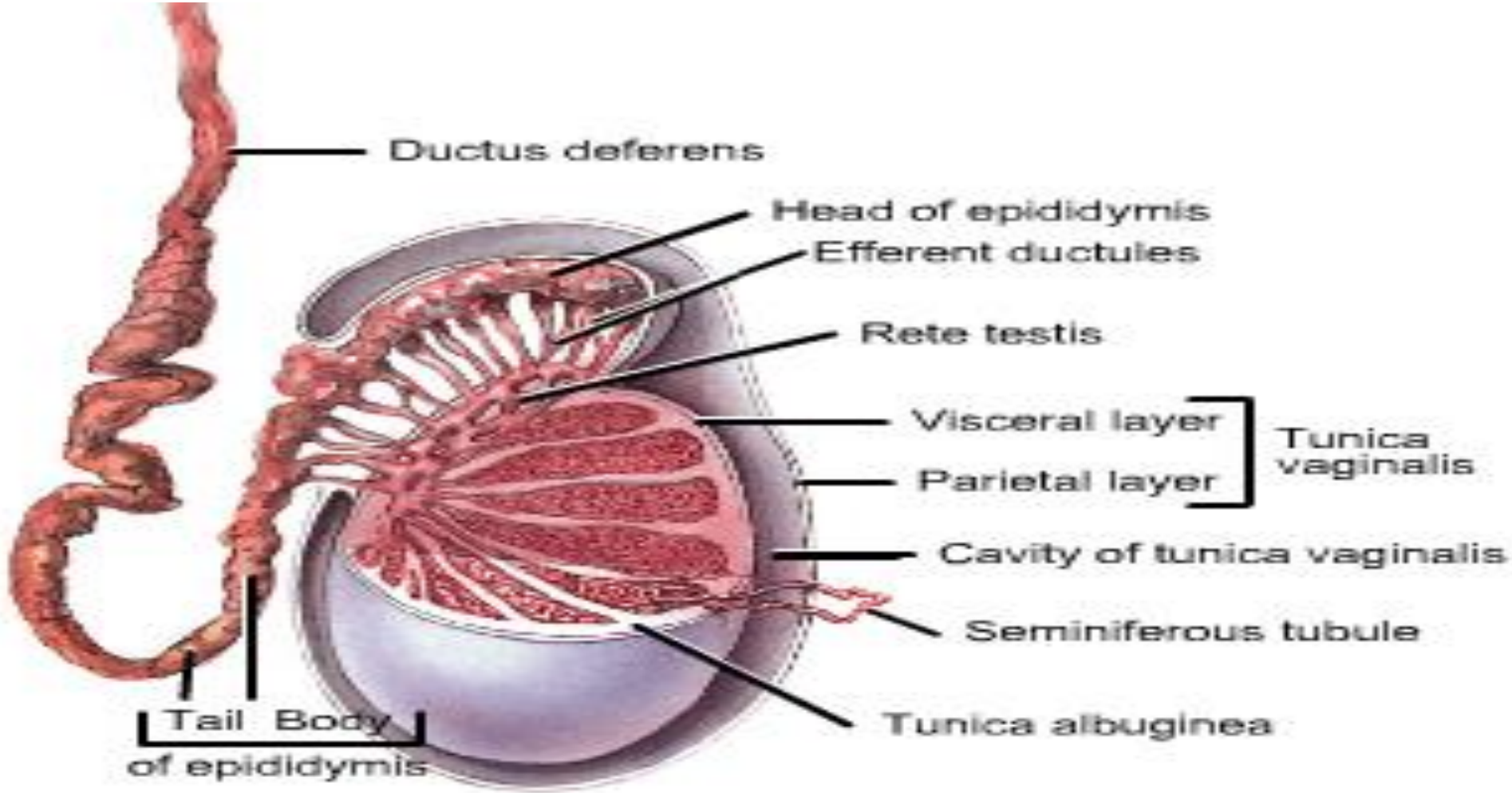



**(a) Testis**


Spermatic cord
Blood vessels and nerves
Seminiferous tubule
Head of epididymis
Efferent ductule
Ductus (vas) deferens
Rete testis
Tubulus rectus
Body of epididymis
Tail of epididymis
Lobule
Septum
Tunica albuginea
Tunica vaginalis
Cavity of tunica vaginalis
(a)
Interstitial cells
Immature sperm
Spermatogenic cells
(b)

# Epididymus

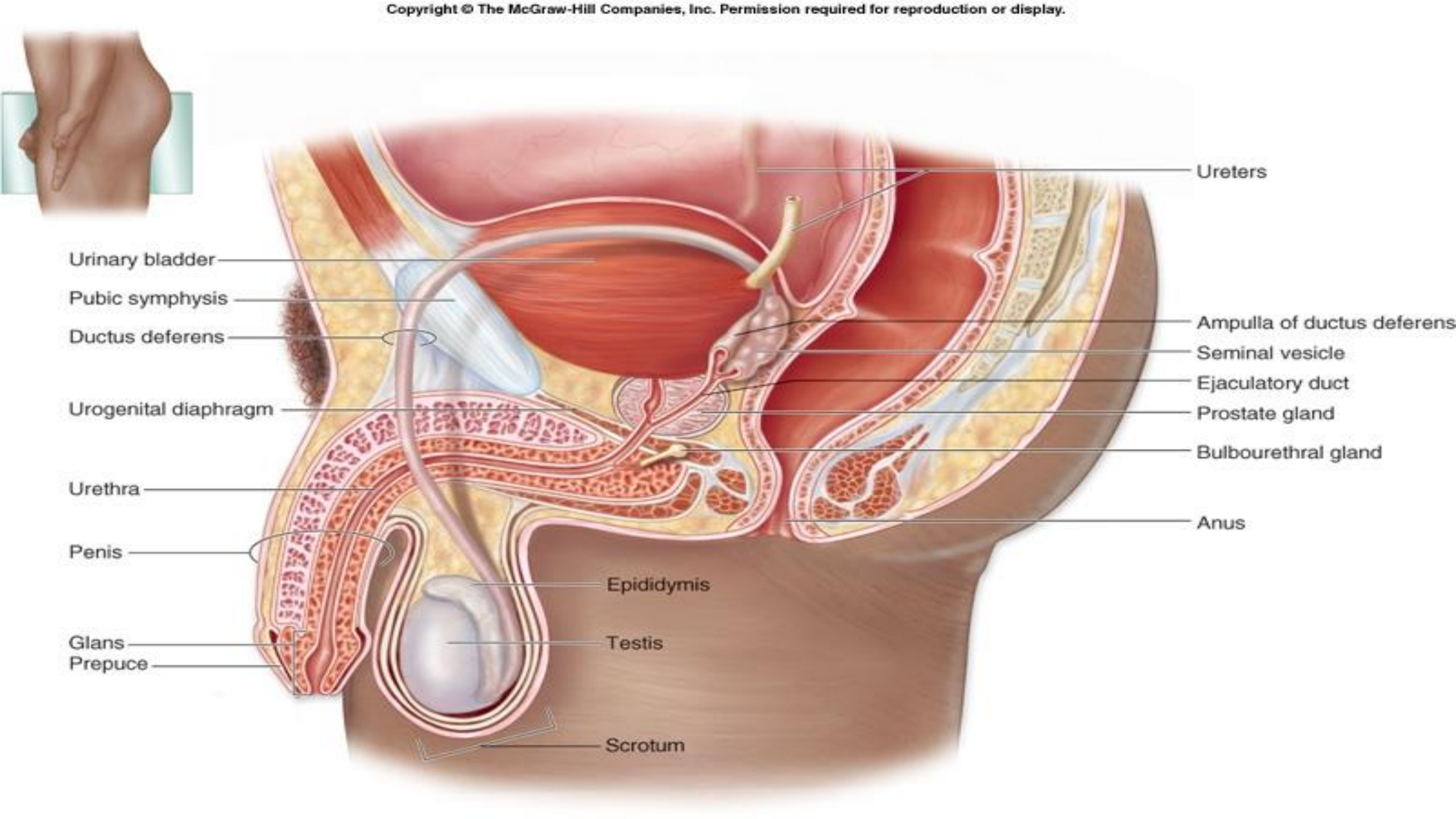
- **Highly coiled single tube(length-6m)**
- **Located on posterior/lateral border of testes**
- **Acts as recycling center for damaged sperm**
- **Stores sperms for up to 2 months**
- **Allows sperm to be fully functional -- *capacitation***

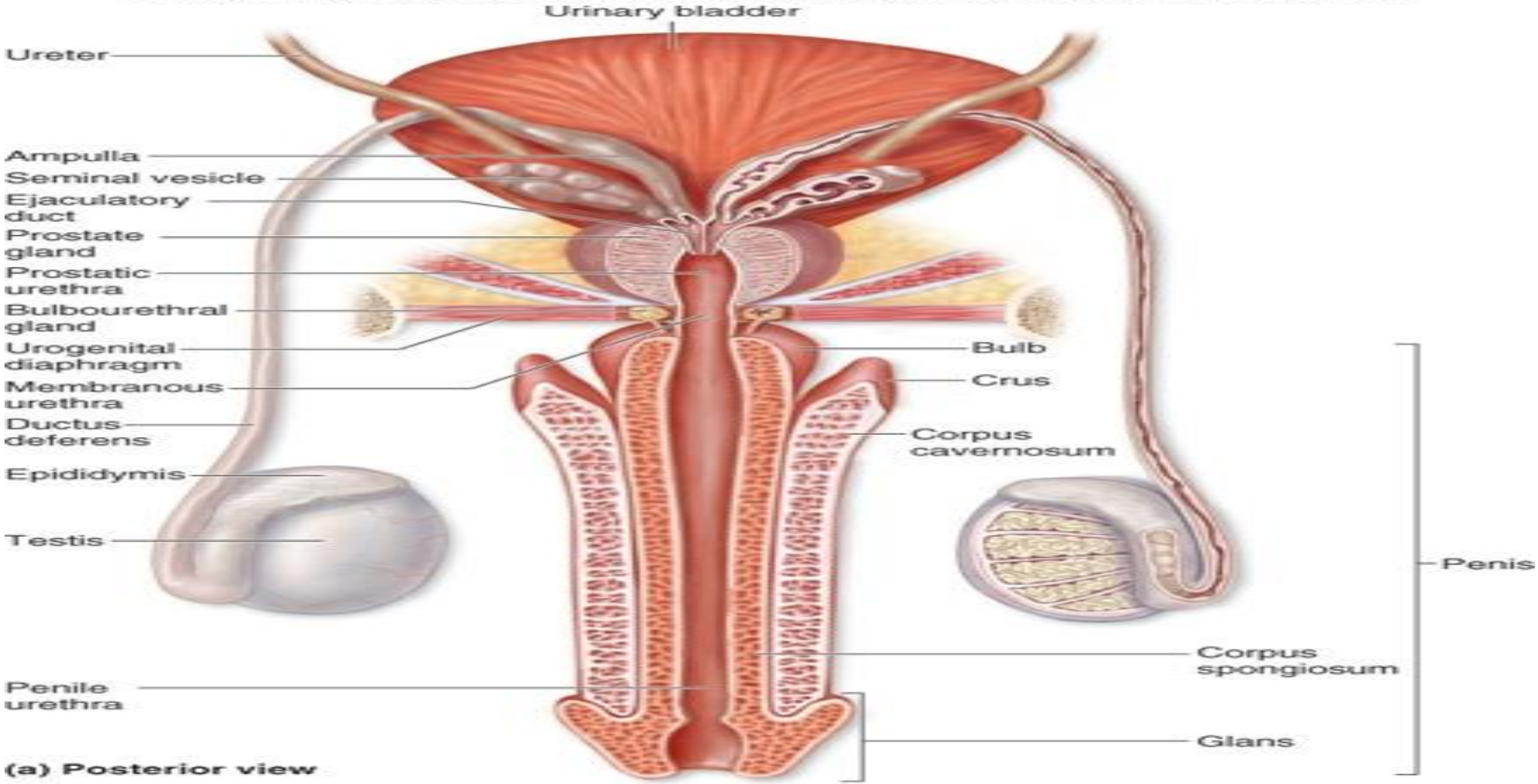



**Longitinal Section of Tunica Vaginalis; Testis Sectioned in Sagittal and Transverse Planes**

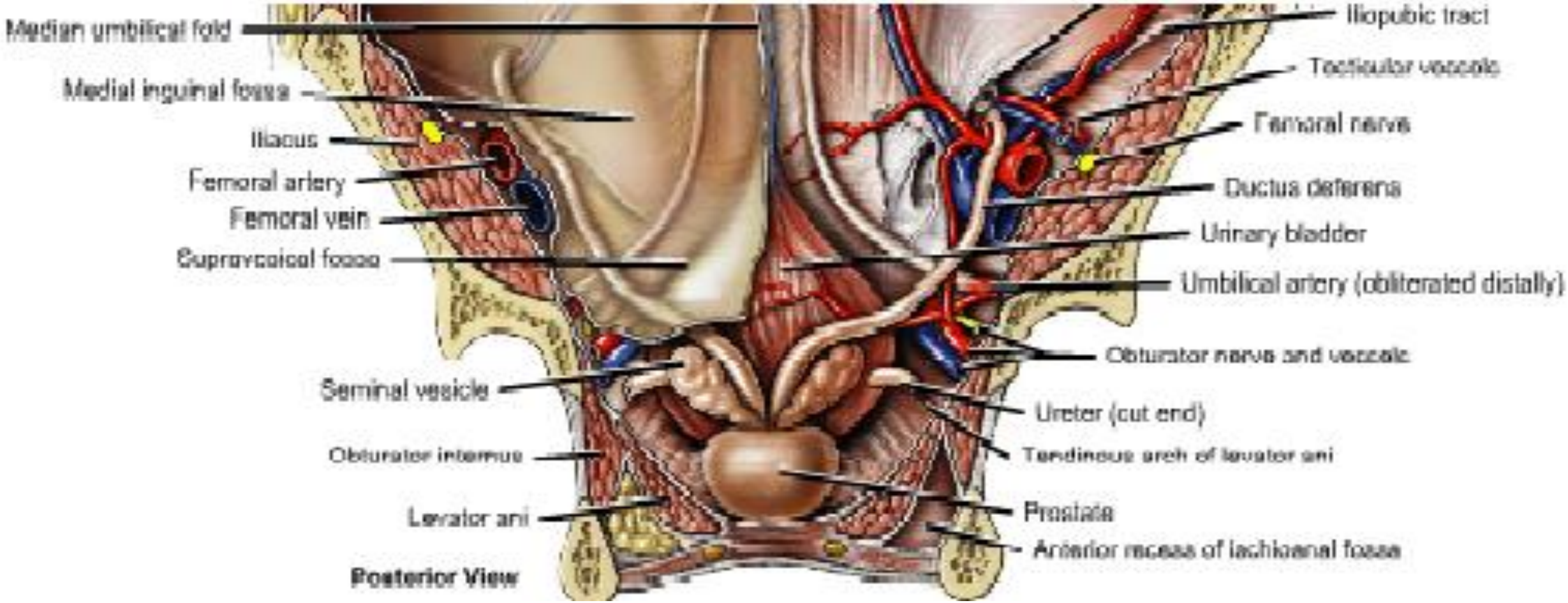
# Ductus (vas) Deferens

- About 16-18 in. long
- Begins at end of epididymis
- Ascends into the abdominal cavity by piercing the anterior muscles
- Courses around posterior surface of bladder
- Joins the duct of  S.V. to form the ejaculatory duct
- And then into the prostate gland

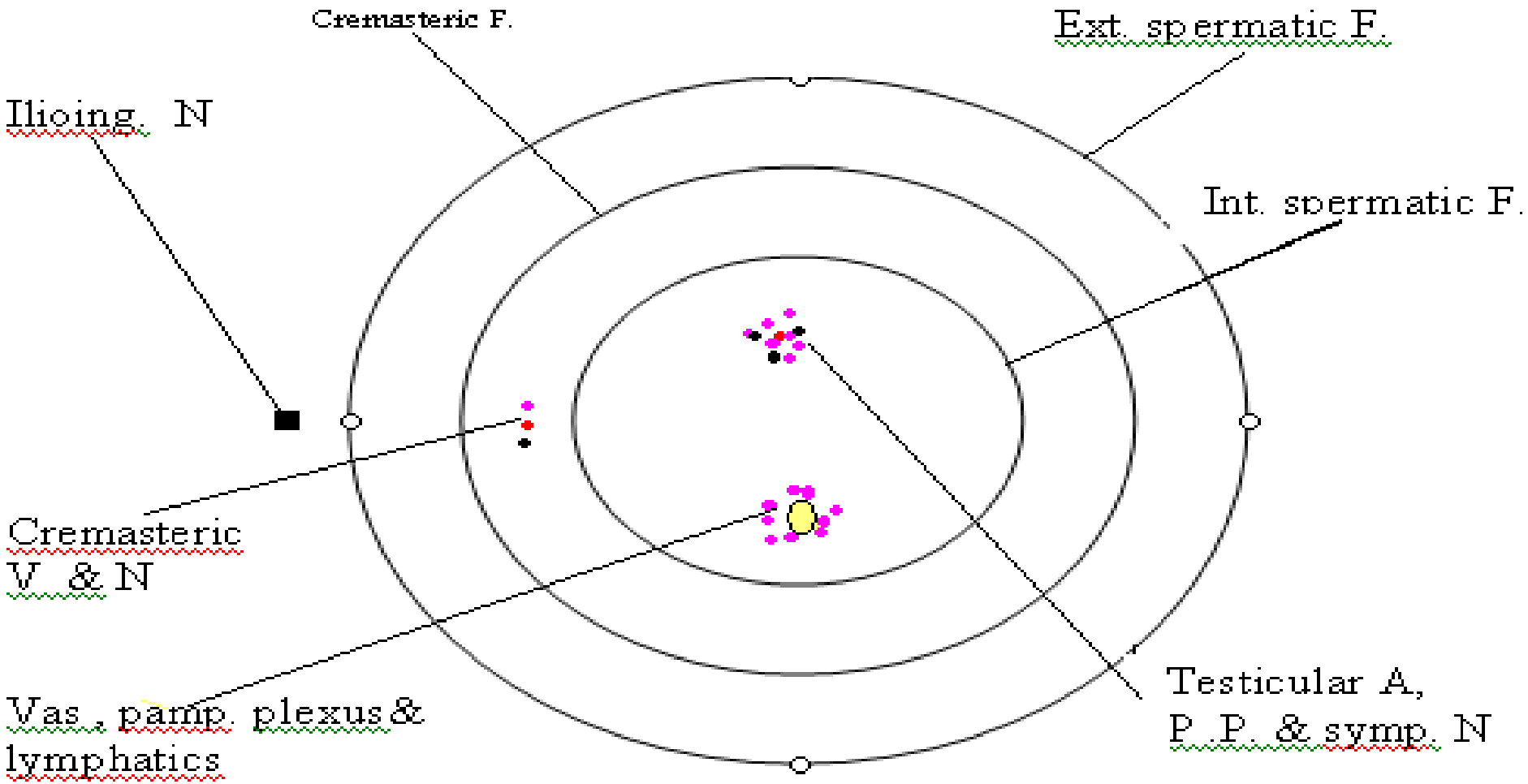


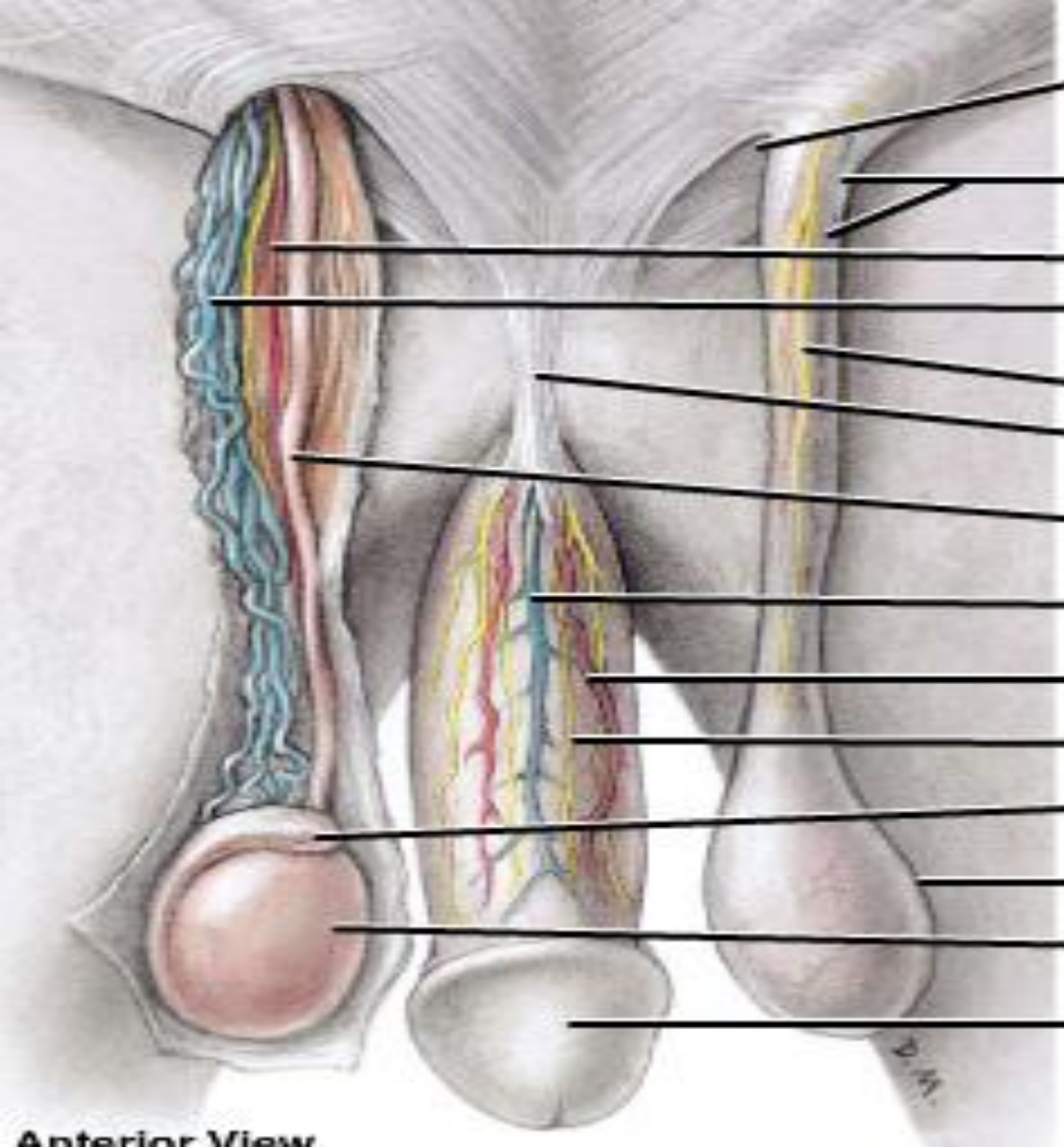



(a) Posterior view


Median umbilical fold
Medial inguinal fossa
Iliacus
Femoral artery
Femoral vein
Supravesical fossa
Seminal vesicle
Obturator internus
Levator ani
Posterior View
Iliopubic tract
Testicular vessels
Femoral nerve
Ductus deferens
Urinary bladder
Umbilical artery (obliterated distally)
Obturator nerve and vessels
Ureter (cut end)
Tendinous arch of levator ani
Prostate
Anterior recess of ischiorectal fossa

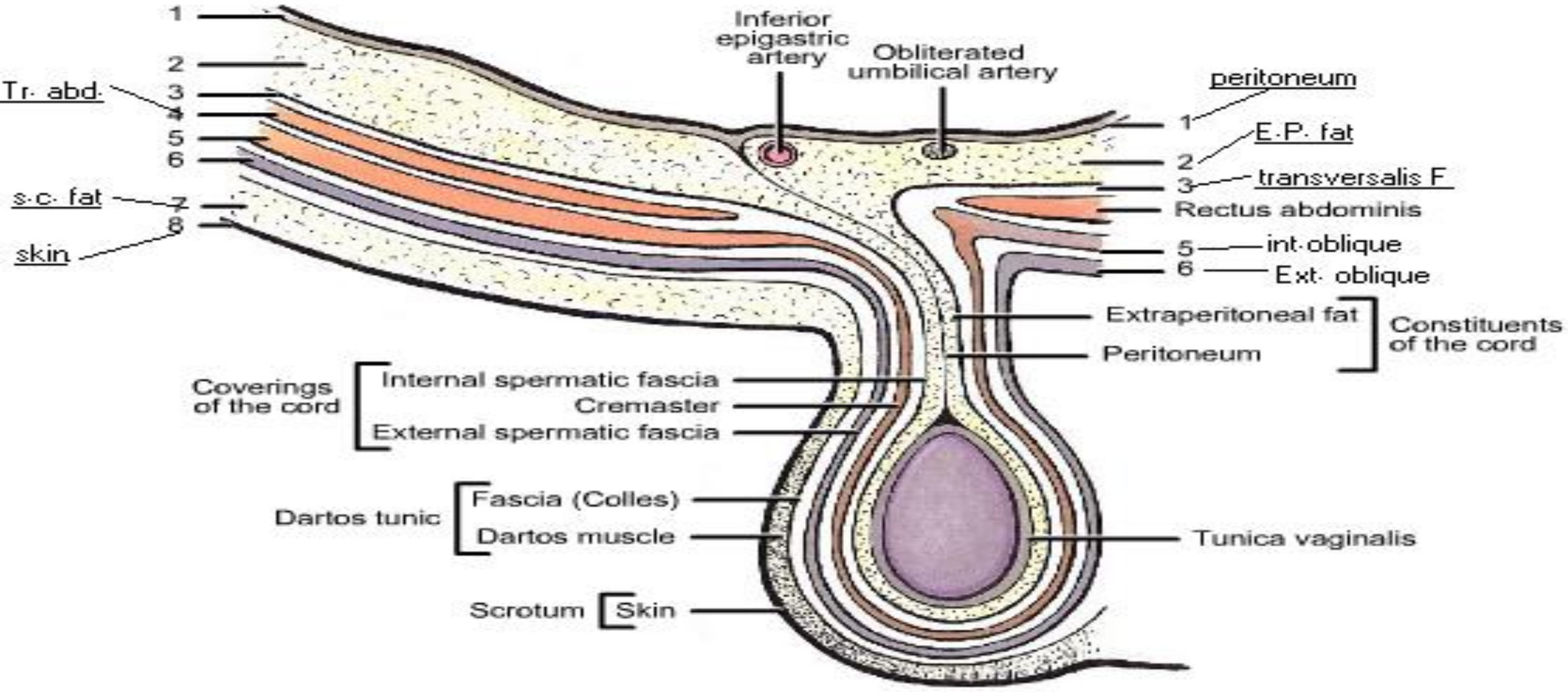
# Covering & contents of spermatic cord






Anterior View

# Ant.& post. Walls of ing. canal

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