

وسهلا

أهلا



الأستاذ الدكتور يوسف حسين

أستاذ التشريح وعلم الأجنة - كلية الطب - جامعة الزقازيق - مصر

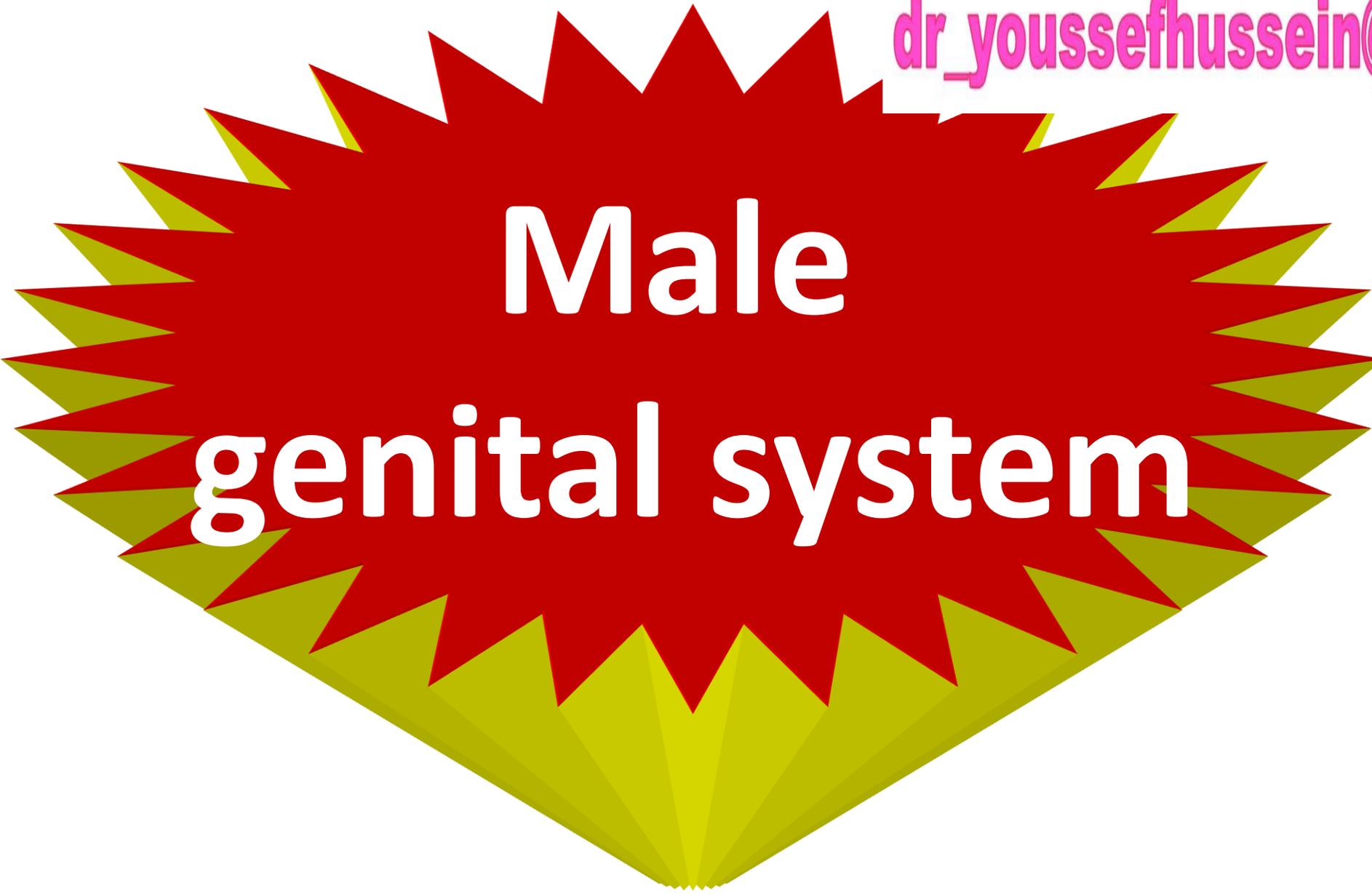
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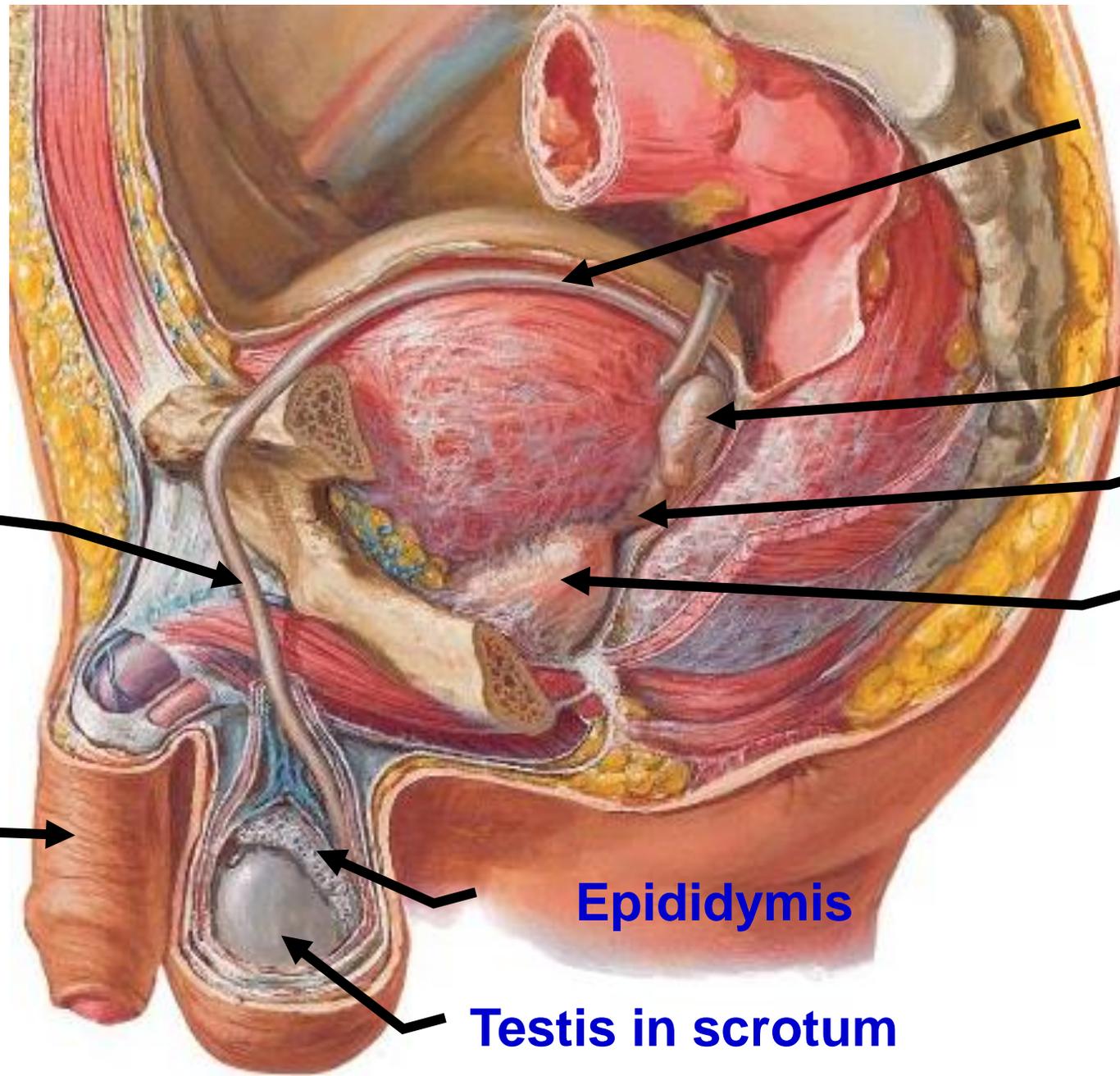
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Male genital system



Vas deferens

Seminal vesicle

Ejaculatory duct

Prostate

**Vas deferens in
spermatic cord**

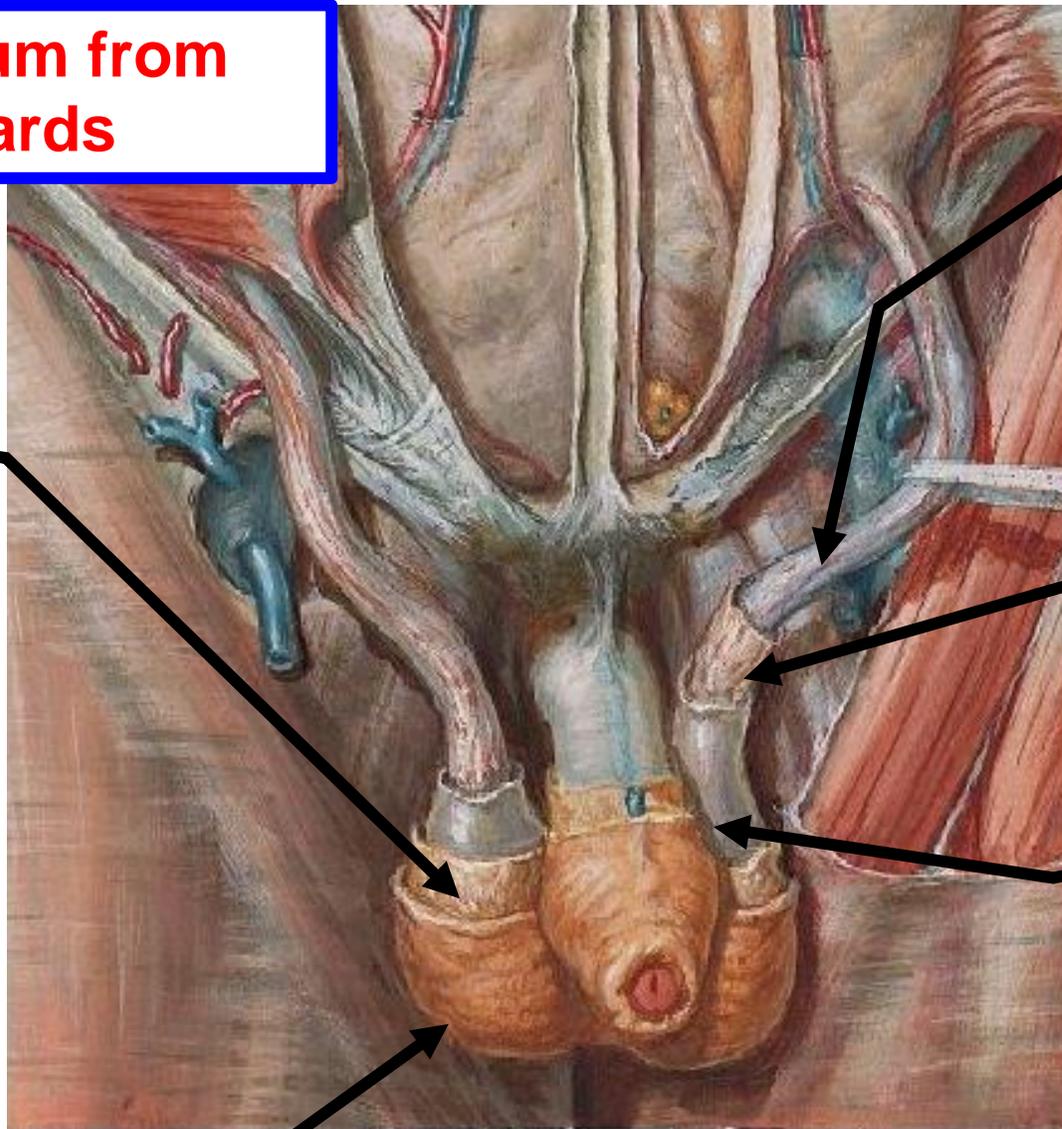
Penis

Epididymis

Testis in scrotum

Layers of scrotum from outside inwards

Superficial fascia
Dartos muscle, involuntary muscle, corrugate scrotum to regulate temperature for spermatogenesis (sympathetic fibers of genital branch of genitofemoral N L1,2) (No fatty layer).



Internal spermatic fascia

Cremasteric muscle and fascia, presents only in male.

**** Nerve supply; genital branch of genitofemoral nerve.**

**** Action; elevates testis.**

External spermatic fascia

Skin

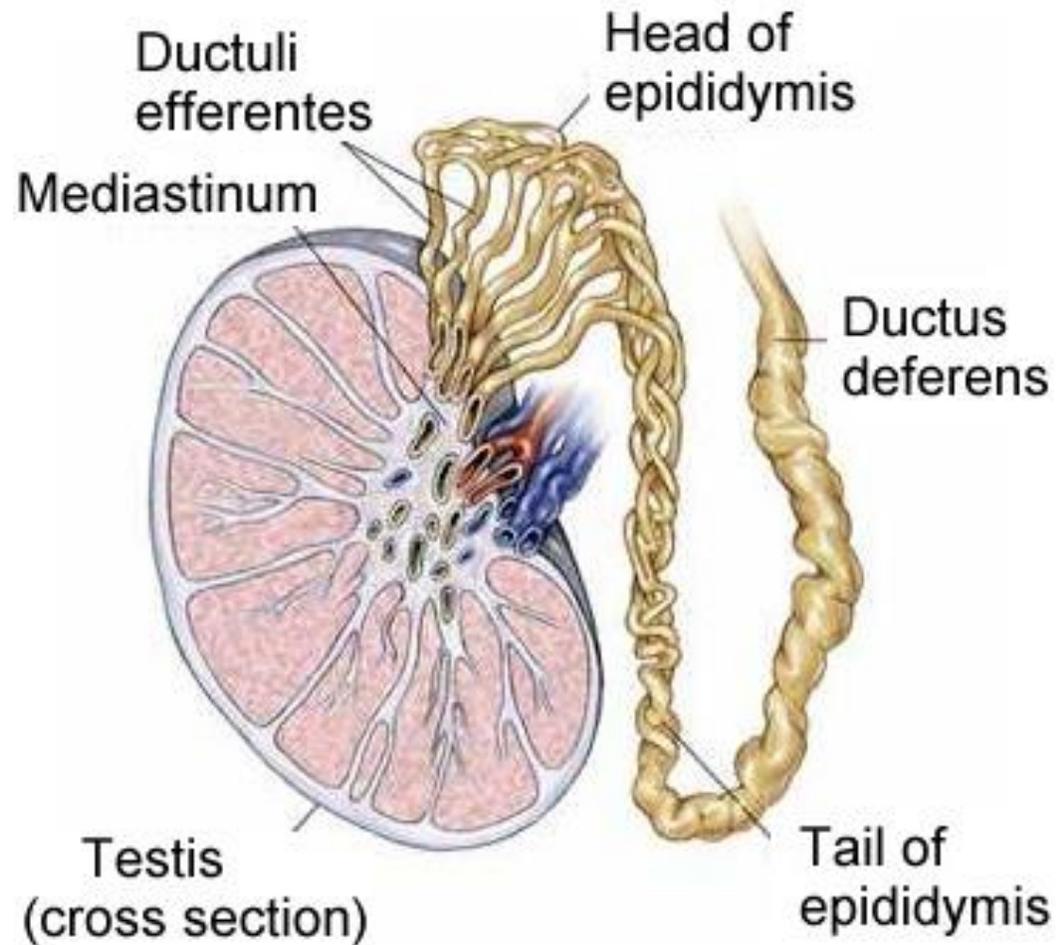
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Testis



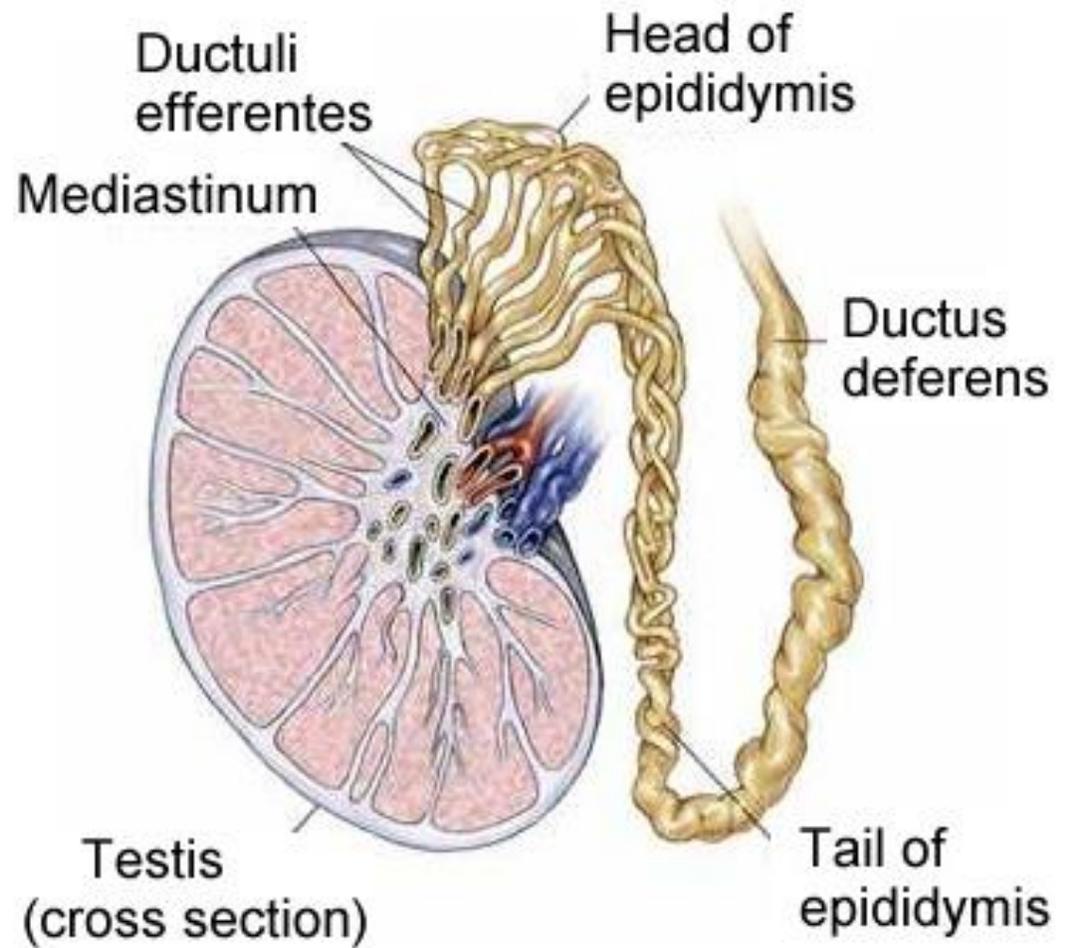
❖ Testis

- It is the primary male sex organ.
- **Functions:** spermatogenesis
- Secretion of testosterone hormone.
- * **Site;** in the scrotum
- ** **Shape,** it is oval in shape.
- ** **Size,** 1.5 inches long, 1 inch broad and 0.5 inch thick.
- **External features,**
 - 2 poles** (upper and lower)
 - Upper related to the head of epididymis.
 - Lower related to the tail of epididymis.
 - The **L**eft testis is **L**ower than the right.
 - 2 borders:** Anterior (smooth)
 - **P**osterior where the epididymis attached
 - 2 surfaces** (lateral and medial).



**** Structure of the testis;**

- It is divided into lobules by septa.
- Each lobule contains 2-3 **seminiferous tubules supported by interstitial tissue.**
- **Leydig cells** lie in the interstitial tissue are responsible for **testosterone secretion**
- **Seminiferous tubules** lined by **Sertoli cells**
- **Spermatogenic cells** are responsible for **Spermatogenesis**
- The **seminiferous tubules** communicate with each other at mediastinum forming **rete testis.**
- **Vasa efferentia** join rete testes with epididymis



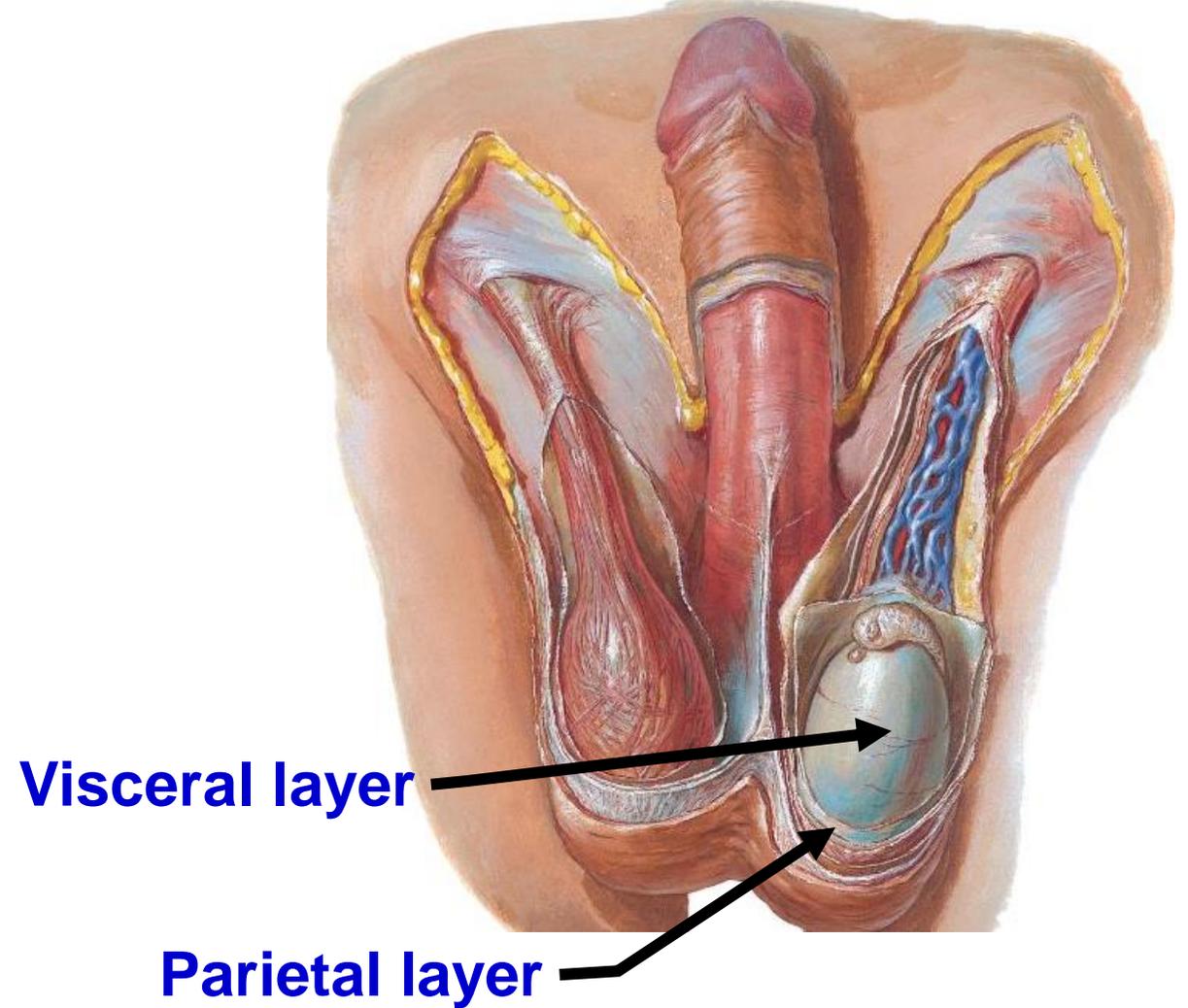
- **The testes are surrounded by three tunica**

a- Innermost layer, **Tunica vasculosa** (thin layer of blood vessels)

b- Middle layer, **Tunica albuginea** is a thick protective capsule

c- Outermost layer, **Tunica vaginalis** (derived from vaginal process of the peritoneum during descend of the testes)

- **It** is formed of inner visceral layer and outer parietal layer, in between them a cavity containing a thin fluid layer



- **Arterial supply:** Testicular artery from the abdominal aorta.
- **Venous drainage** pampiniform plexus of vein that form testicular vein:
 - a. **Right** vein ends in the inferior vena cava.
 - b. **Left** vein ends in the left renal vein.
- **Why varicocele is common in the left side**
 1. **L**eft testicular vein is **L**onger than right
 2. It opens in the left renal vein by right angle.
 3. Compression by a full sigmoid colon in chronic constipation.
 4. Vascular spasm by adrenaline coming from left suprarenal gland.

**** Applied anatomy, undescended testes**

 - undescended testes leading to arrest of the spermatogenesis.
 - In bilateral cases occurs permanent sterility.
 - If neglected, the testis transforms into malignant.

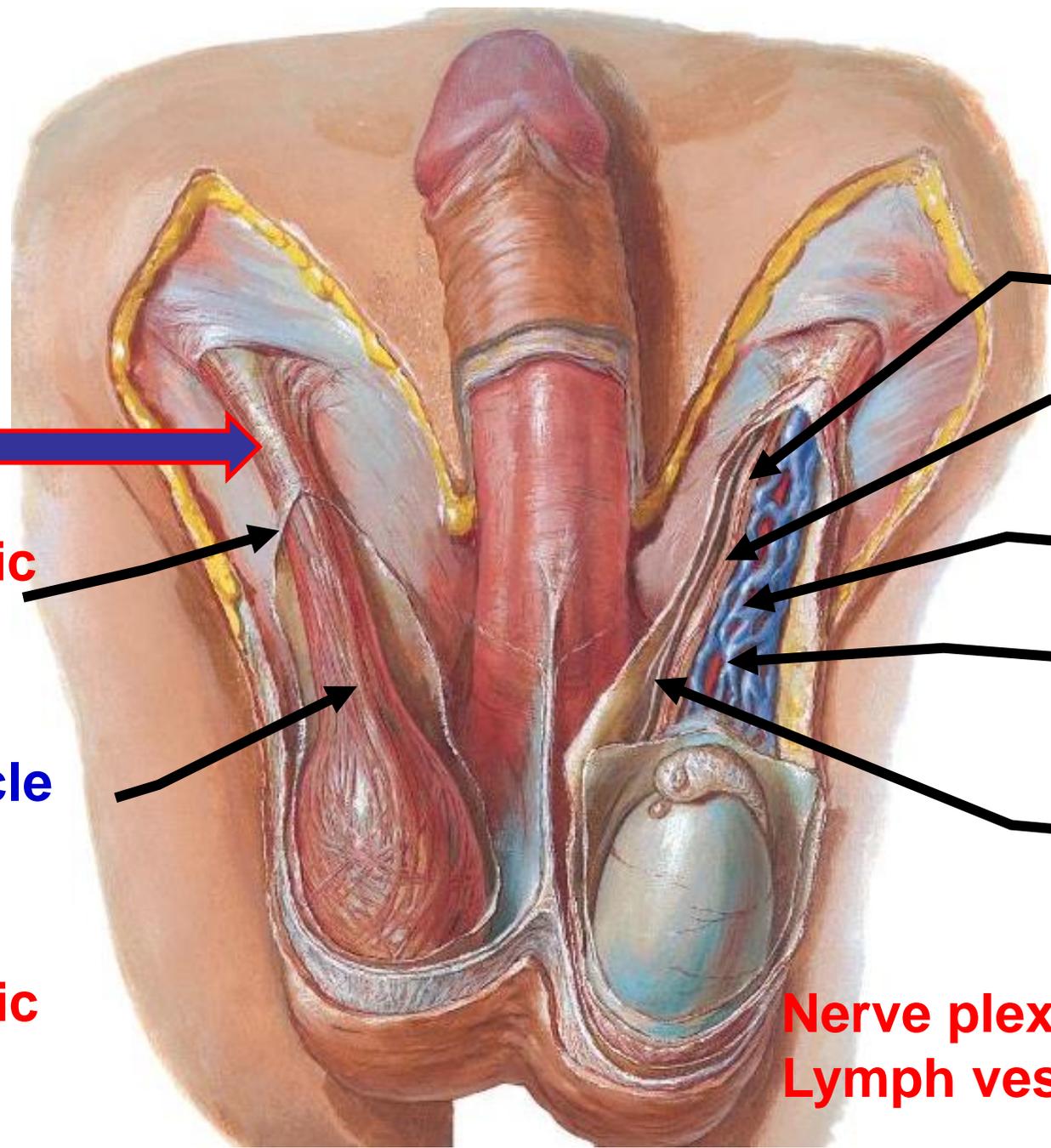
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Spermatic cord



Covering

Contents



External spermatic fascia

Cremasteric muscle and fascia

Internal spermatic fascia

Vas deferens

Artery of Vas deferens

Testicular artery

Pampiniform plexus of vein

Genital branch of genitofemoral N

**Nerve plexus
Lymph vessels**

Vas deferens

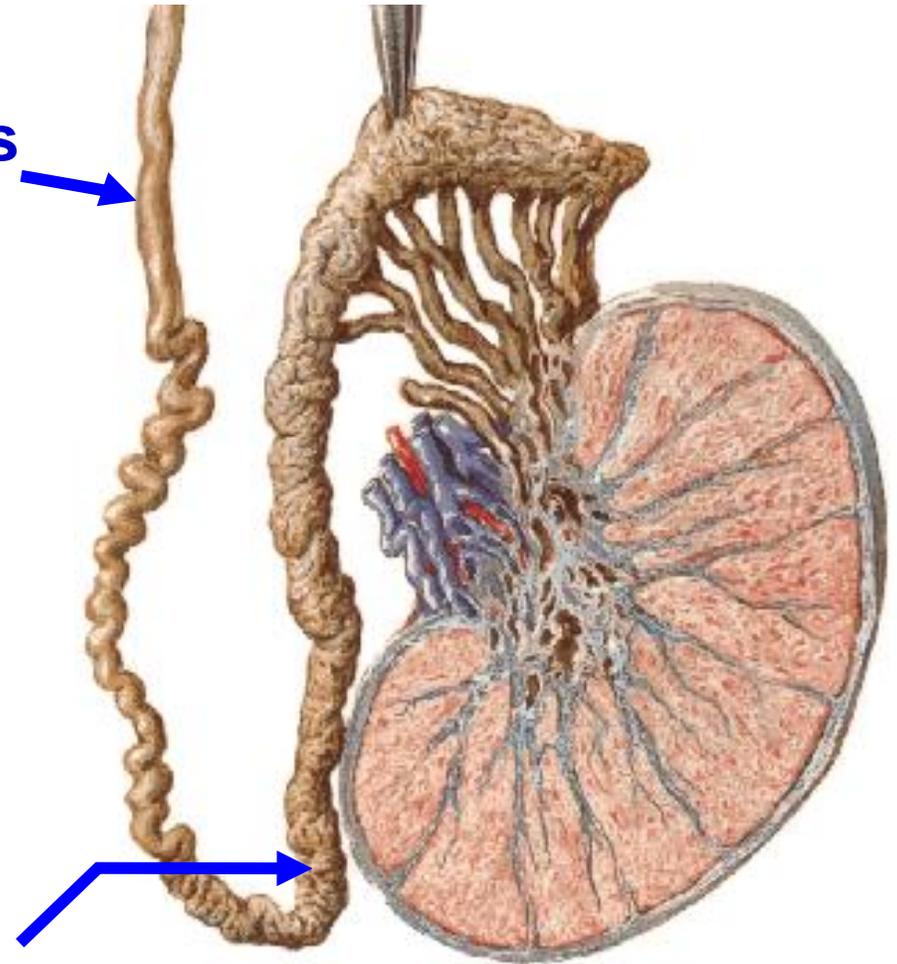
Vas deferens is a thick cord-like tube, about 45 cm long.

- It carries and stores the sperms.
- It begins from the tail of the epididymis.

** Course

- **Scrotal part:** ascends on the back of the testis.
- **Inguinal part:** runs in the inguinal canal through the spermatic cord.

Vas deferens



Tail of epididymis

Inferior epigastric artery

Deep inguinal ring

External iliac artery

External iliac vein

**Superior vesical artery
(patent umbilical artery)**

**Obturator nerve, artery
and vein**

Ureter

Ampulla of vas

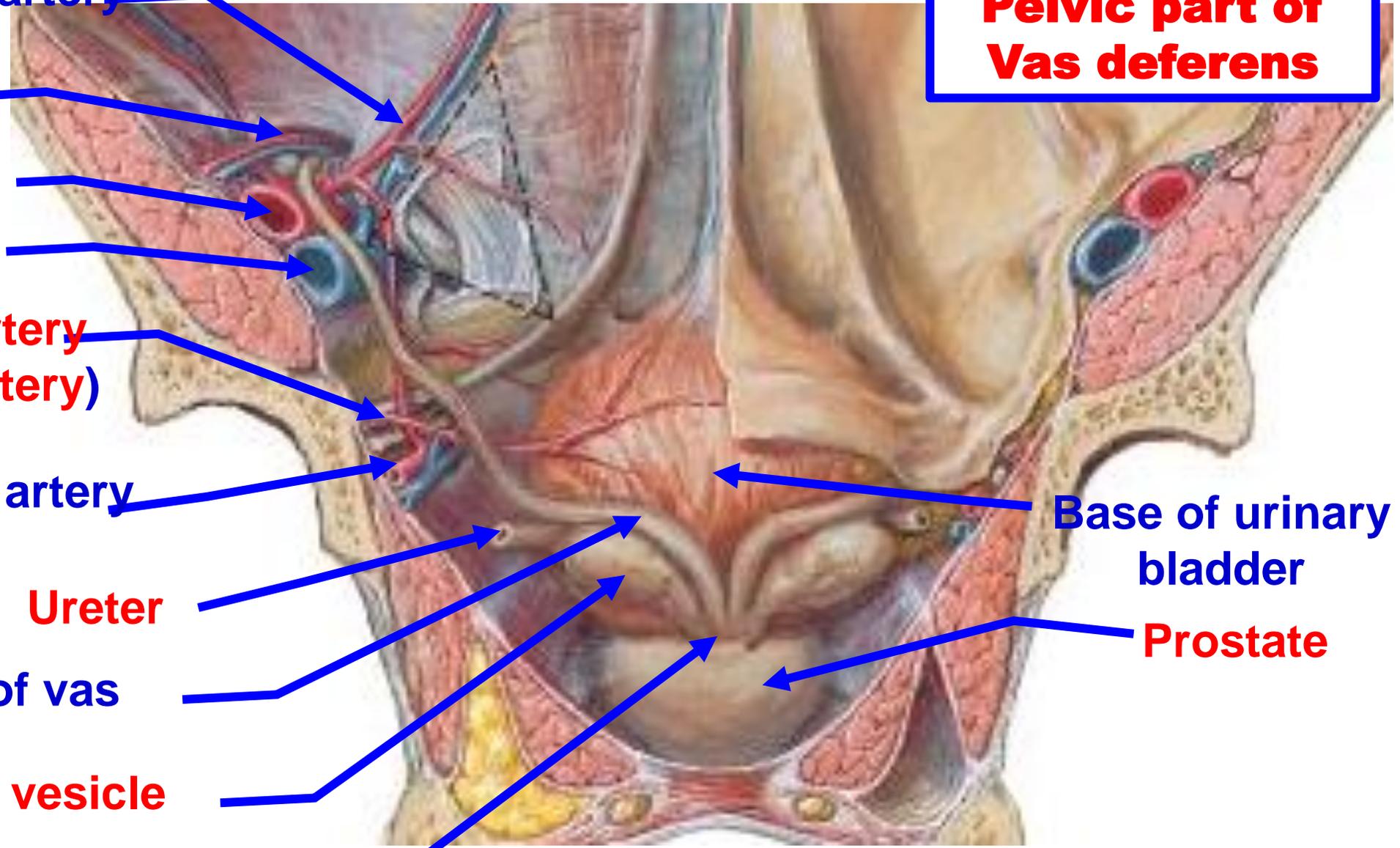
Seminal vesicle

Ejaculatory duct

**Pelvic part of
Vas deferens**

**Base of urinary
bladder**

Prostate

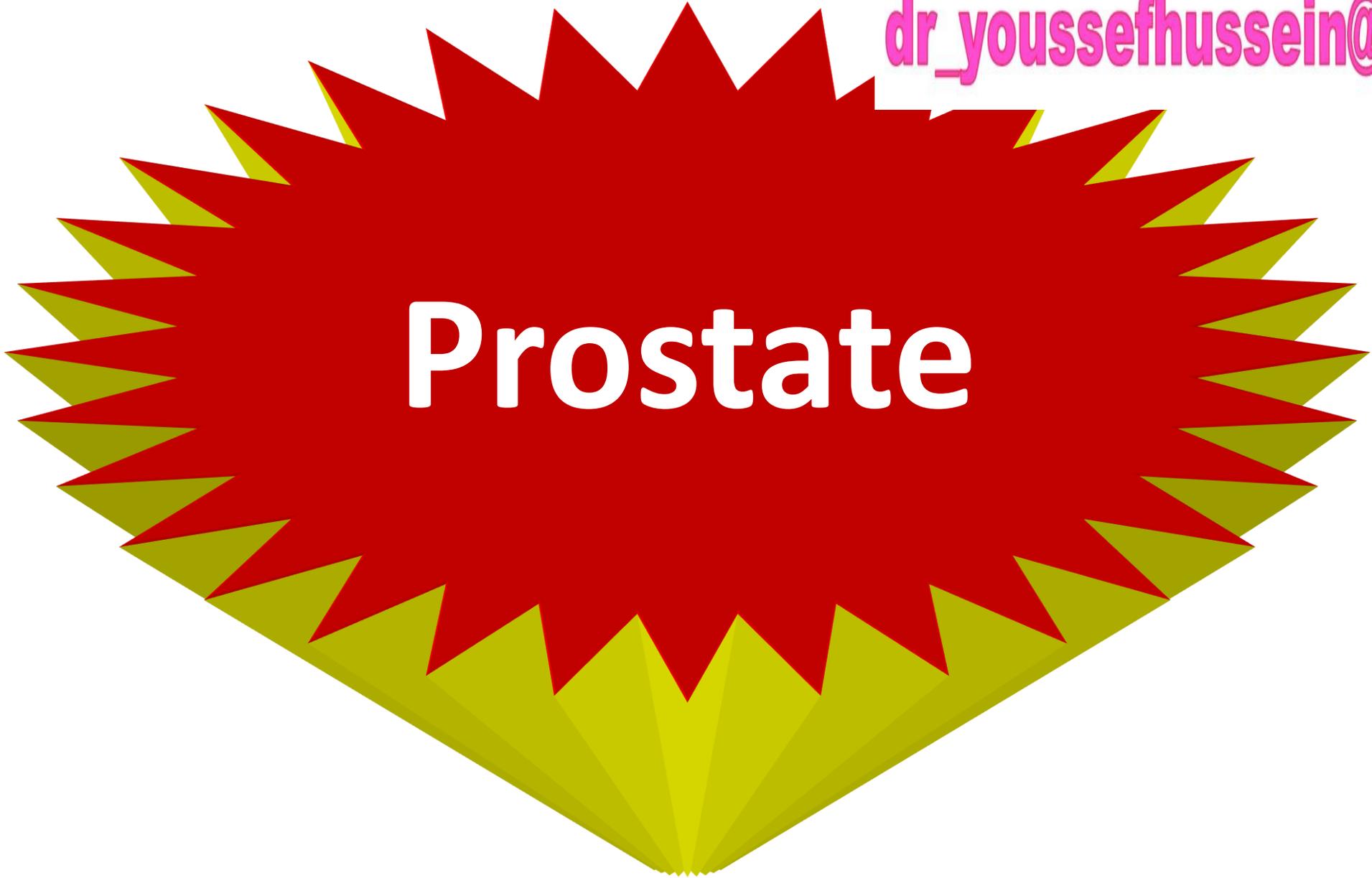


- **Pelvic part:** curves around inferior epigastric artery.
- Then, it descends downwards and backwards on the following structures;
 - 1- External iliac artery.
 - 2- External iliac vein.
 - 3- Superior vesical (patent umbilical) artery.
 - 4- Obturator nerve.
 - 5- Obturator artery.
 - 6- Obturator vein
 - 7- Ureter
 - 8- Base of urinary bladder

**** End** behind the base of the urinary bladder by forming the **ampulla of vas** which joins the **seminal vesicle** to form the **ejaculatory duct**, that **open** into the **seminal colliculus** of the prostatic urethra.

**** Function of** seminal vesicles (glands) secretes great amount of the seminal fluid, which contract during ejaculation.

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Prostate

Prostate

**** Site,** It lies just below the urinary bladder and surrounds the prostatic part of urethra.

**** Dimensions (measurements)**

2 cm Anteroposterior diameter at the base.

3 cm Vertical diameter:

4 cm Transverse diameter at the base.

**** Relations**

- **Base:** directed upwards and related to neck of urinary bladder. It is pierced by urethra.

- **Apex:** directed inferiorly and rests on pelvic fascia.

- **Inferolateral surfaces:** related to anterior part of the levator ani.



urinary
bladder

Prostate

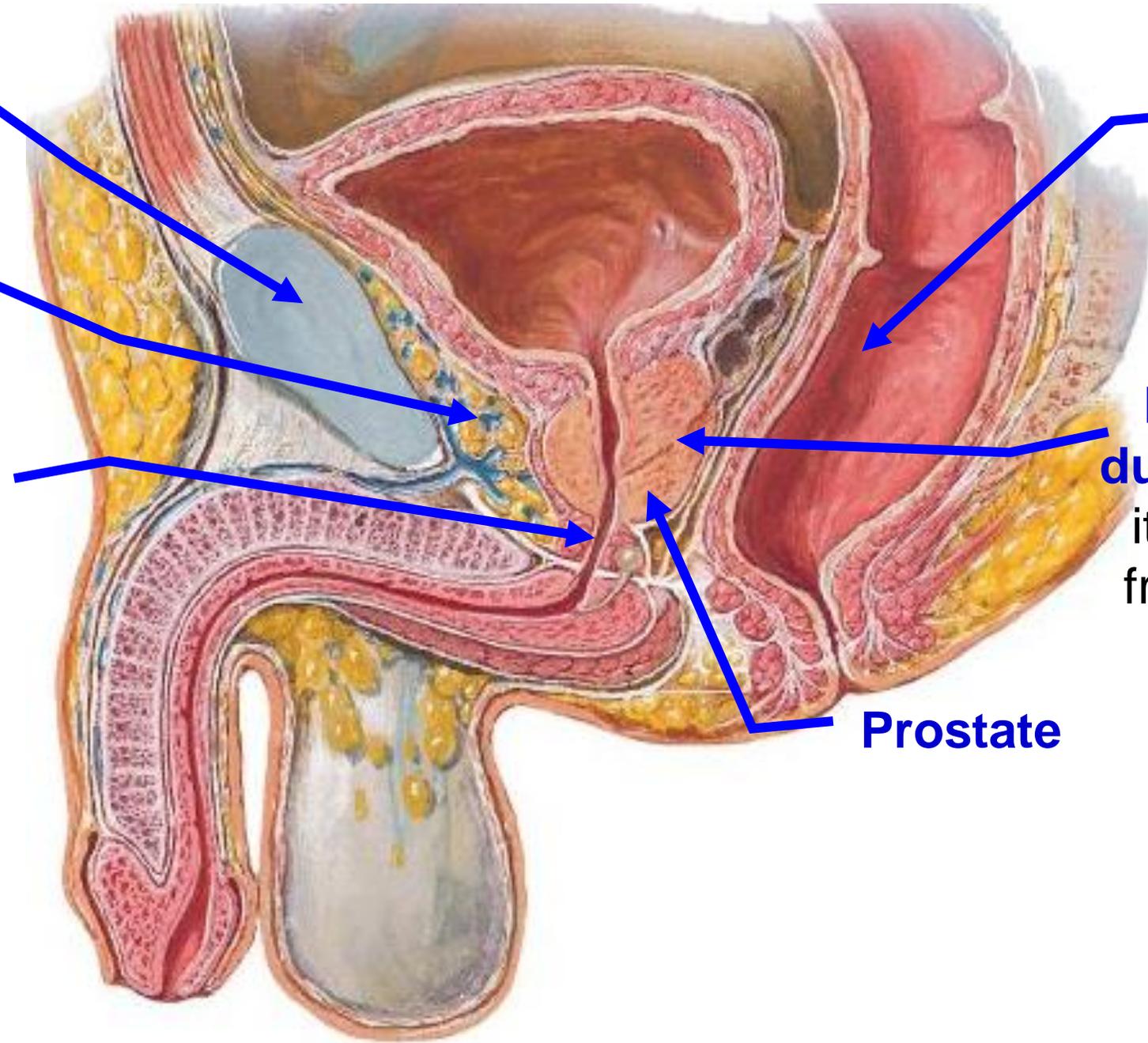
Levator
ani

Symphysis pubis
Anteriorly

Fat Anteriorly

Urethra exits from
anterior surface
nearer to the apex

**Relations of
prostate**



Rectum
posteriorly

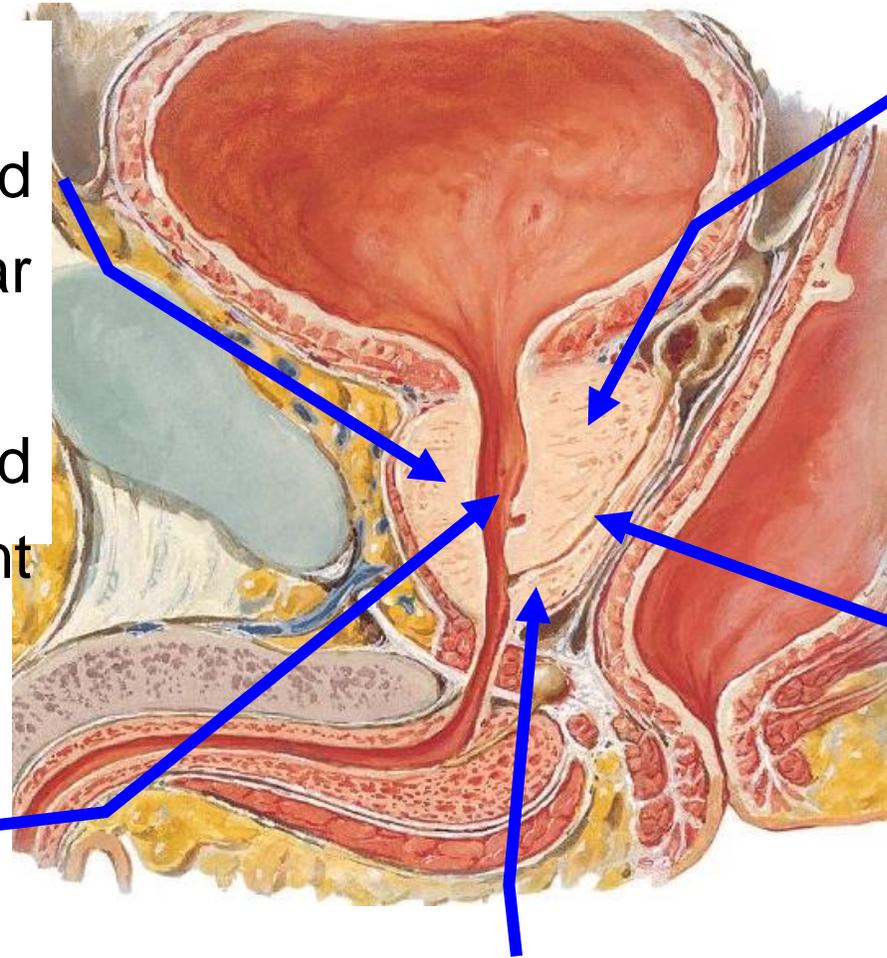
**Ejaculatory
ducts** penetrate
its upper part
from posterior
surface

Prostate

Isthmus:

fibromuscular band
(devoid of glandular
substance)
connecting right and
left lobes in front
urethra

Prostatic Urethra



Median lobe: between prostatic urethra and two ejaculatory ducts.

- This lobe projects into the interior of urinary bladder forming the **uvula**.

Ejaculatory duct

Lobes of prostate
- **Urethra and 2 ejaculatory ducts** traverse prostate dividing it into

Right and left lateral lobes; on each side of the urethra, connecting **behind urethra**.

**** Structures of the prostate;**

A- Glandular tissues are formed of 2 layers:

1- Outer large zone formed of glands that open into the prostatic sinus. It is the **commonest site of the cancer prostate**.

2- Inner small zone formed of submucosal glands that open into the prostatic sinus. It is the **commonest site of the benign prostatic hypertrophy**.

B- Muscular tissue: arranged into 3 layers (Peripheral, Central and intermediate layer form meshes in which the glandular tissues embedded).

**** Arterial supply:** 1) inferior vesical. 2) Middle rectal. 3) Internal pudendal.

**** Venous drainage:** The veins form a prostatic venous plexus.

**** Lymphatic drainage:** into 1) internal iliac. 2) Sacral lymph nodes.

**** Nerve supply:** from the pelvic plexus.

**** Applied anatomy**

- **Cancer prostate** commonly spreads to vertebrae because prostatic venous plexus is connected to internal vertebral venous plexuses by valveless veins.

❖ **Benign prostatic hyperplasia (BPH), prostate enlargement**

- **Cause:** unknown, hormonal changes as a man gets older
- **Symptoms:** Frequent or urgent need to urinate, Increased frequency of urination at night (nocturia), Difficulty starting urination, weak stream, inability to urinate, or loss of bladder control; **sexual** problems in **men**, Erectile dysfunction (inability to attain and maintain an erection sufficient for **sexual** intercourse), Reduced **sex** drive, Decreased **sexual** satisfaction

❖ **7 Natural Ways To Keep Your Prostate Healthy**

1. **Eating** more vegetables and fruits
2. Eat more legumes (beans, peas, and lentils) and whole grains
3. Limit red meat and dairy
4. Eat more fatty fish
5. Drink green tea, Reduce caffeine, soda, energy drinks and alcohol
6. **Maintain a healthy** weight
7. Exercise regularly.

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