GUS

Lab (1)

Anatomy of Urinary System

1- Left kidney.

2- Left gonadal vessels.

3- Left vas deferens.

4- Urinary bladder.

5- Right external iliac vessels.

6- Right Psoas major muscle.

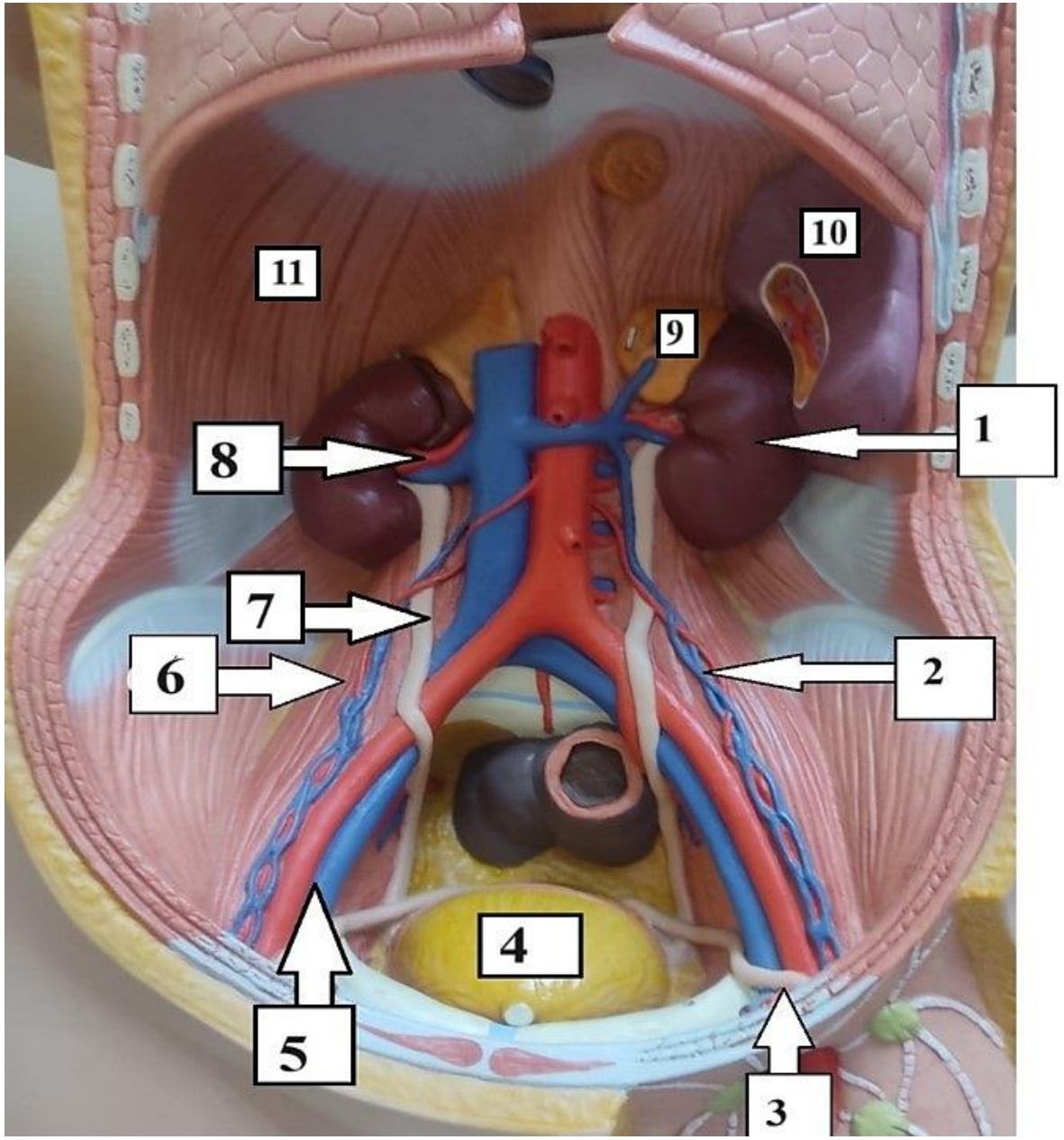
7- Right ureter.

8- Right renal vessels.

9- Left suprarenal gland.

10- Spleen.

11- Diaphragm.



Anterior relation of kidney

1- Suprarenal area.

2- Hepatic area.

3- Duodenal area.

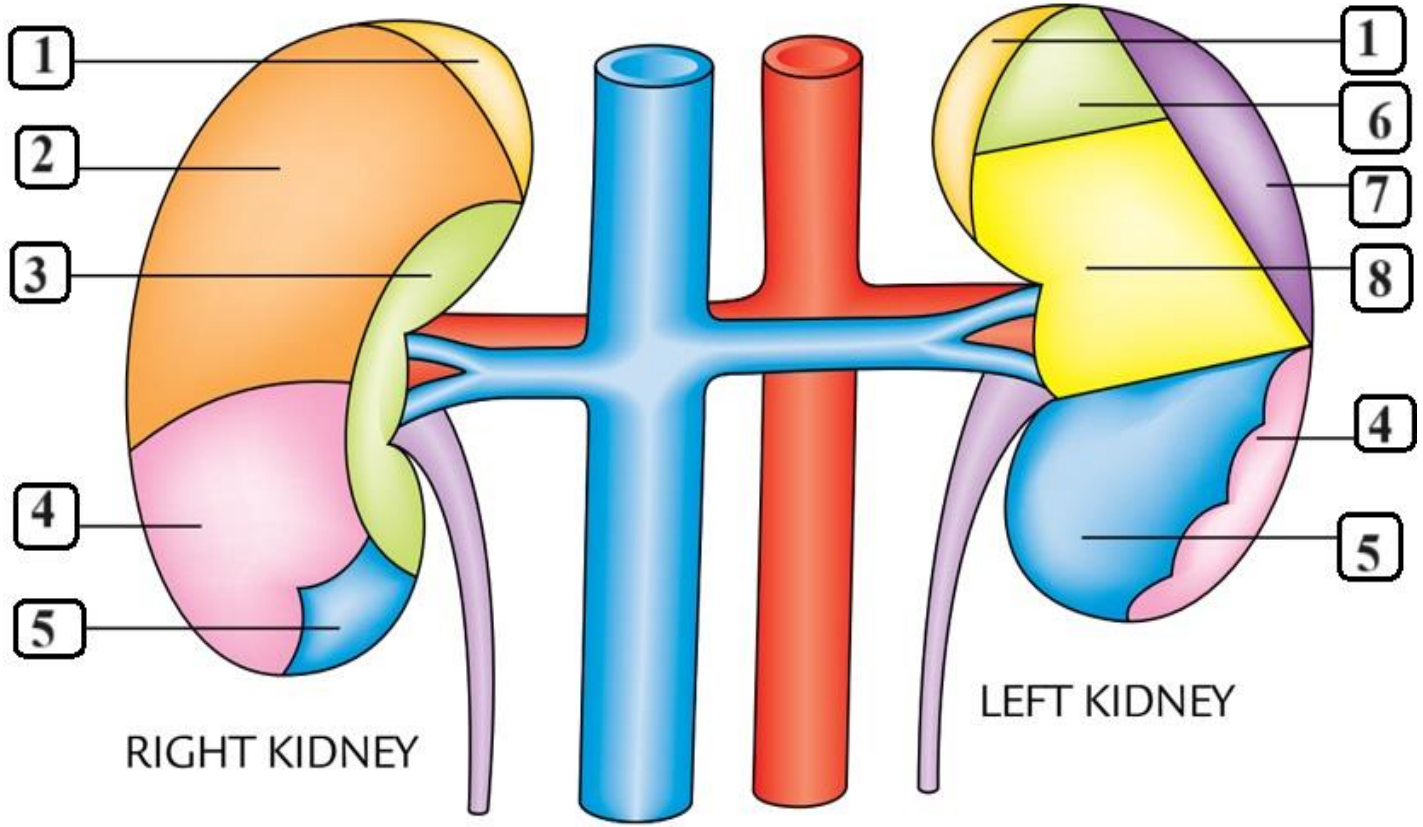
4- Colic area.

5- Jejunal area.

6- Gastric area.

7- Splenic area.

8- Pancreatic area.



1- Renal capsule.

2- Minor calyces.

3- Renal sinus.

4- Major calyces.

5- Renal pelvis.

6- Ureter.

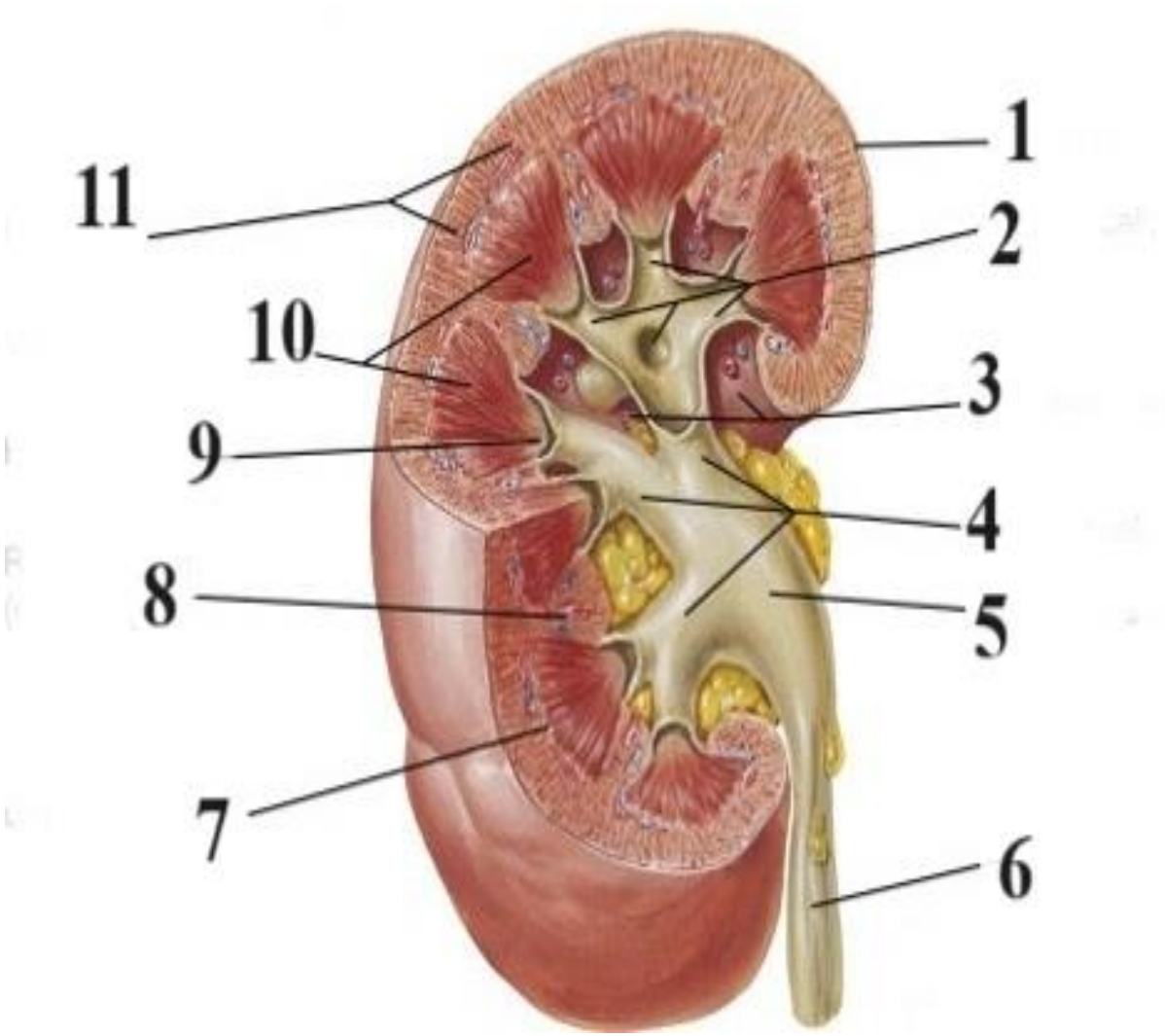
7- Base of renal pyramid.

8- Renal column of Bertin.

9- Renal papilla.

10- Pyramids of renal medulla.

11- Renal cortex.



1- Interlobar artery.

2- Interlobular arteries.

3- Arcuate artery.

4- Renal pelvis.

5- Ureter.

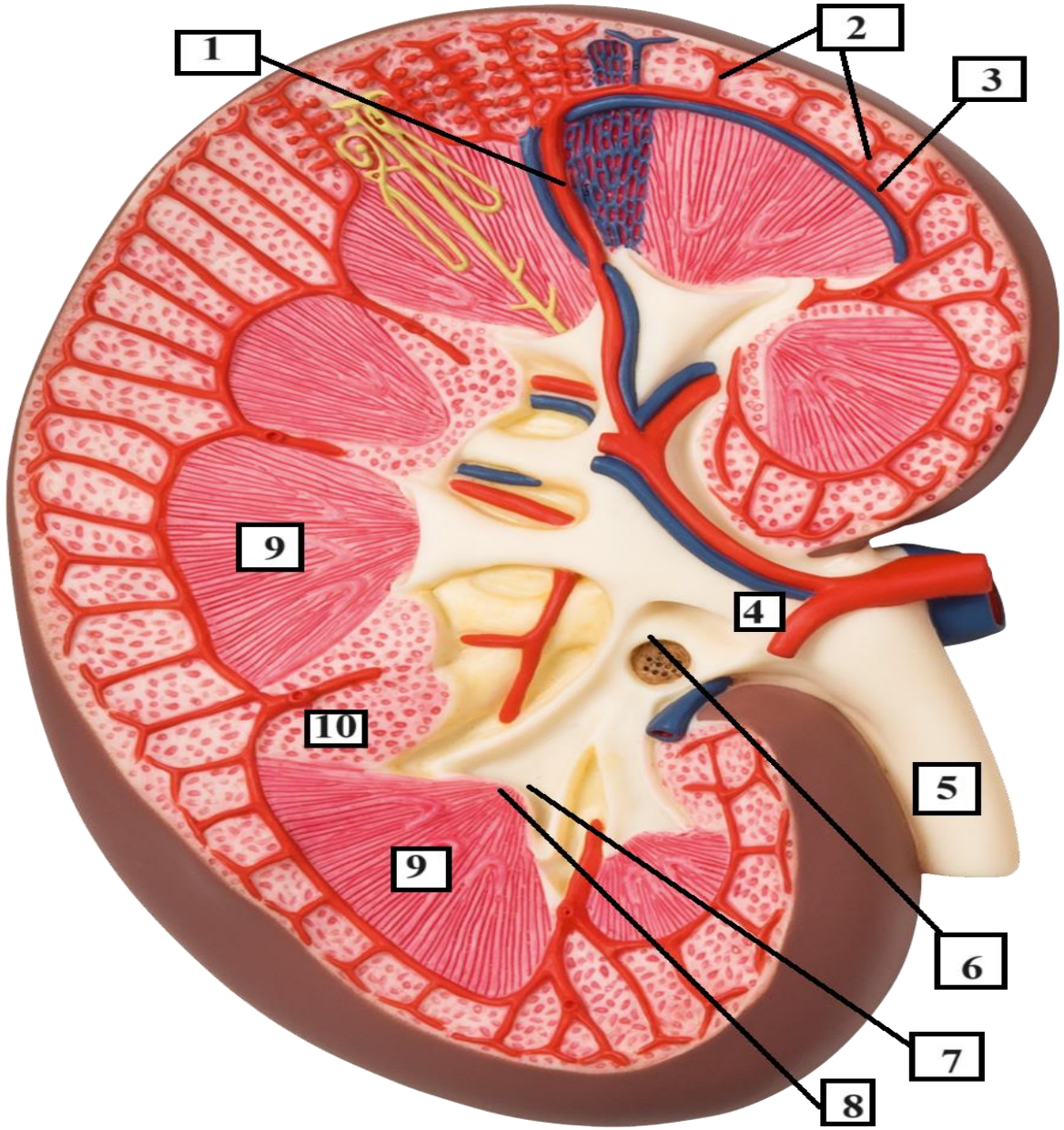
6- Major calyx.

7- Minor calyx.

8- Renal papilla

9- Renal pyramids.

10- Renal column of Bertin.



1- Renal cortex.

2- Renal medulla.

3- Renal column of Bertin.

4- Pyramid.

5- Corticomedullary junction.

6- Renal papilla.

7- Renal lobe.

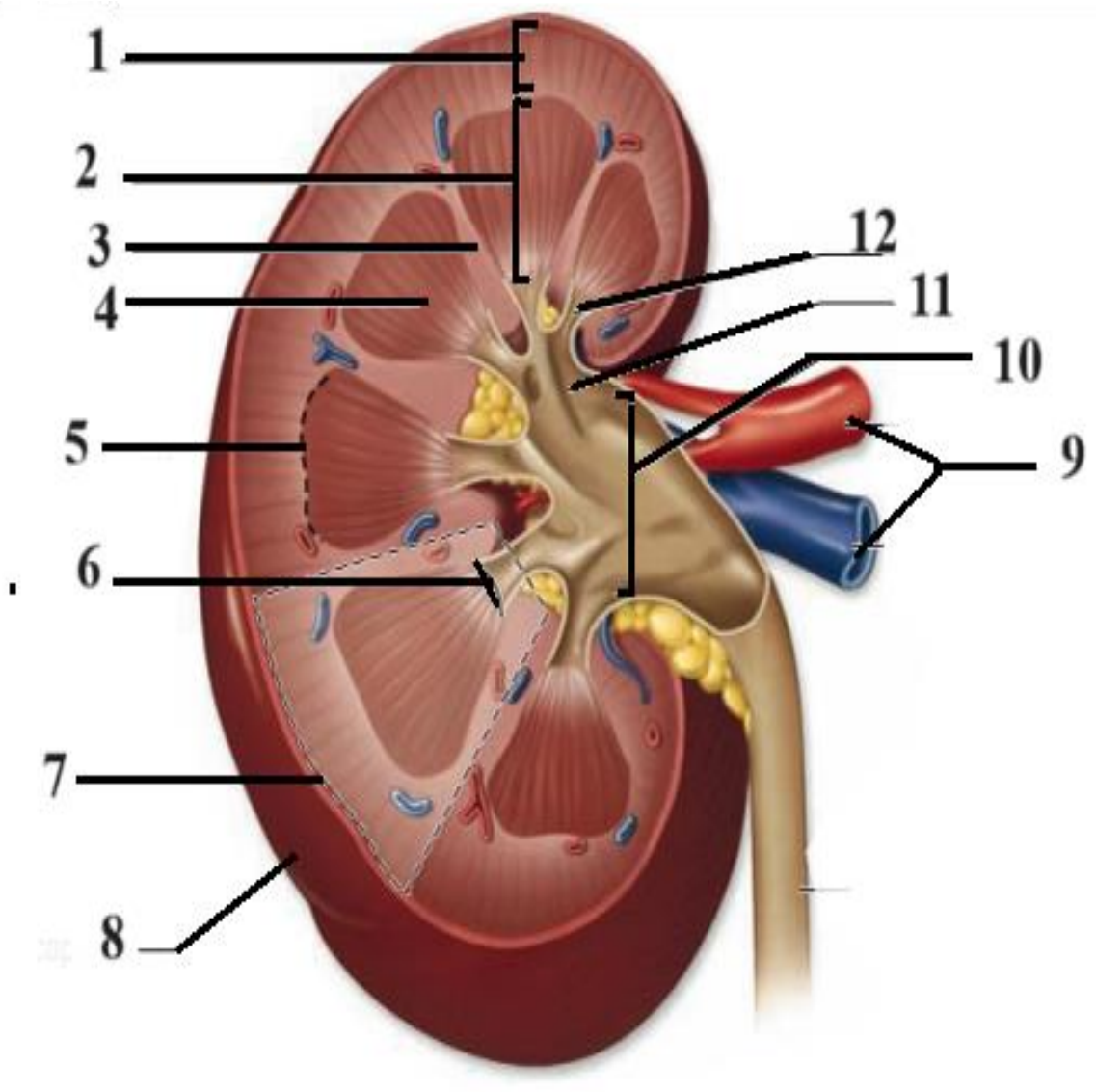
8- Renal capsule.

9- Renal vessels.

10- Renal pelvis.

11- Major calyx.

12- Minor calyx.



1- Right ureter.

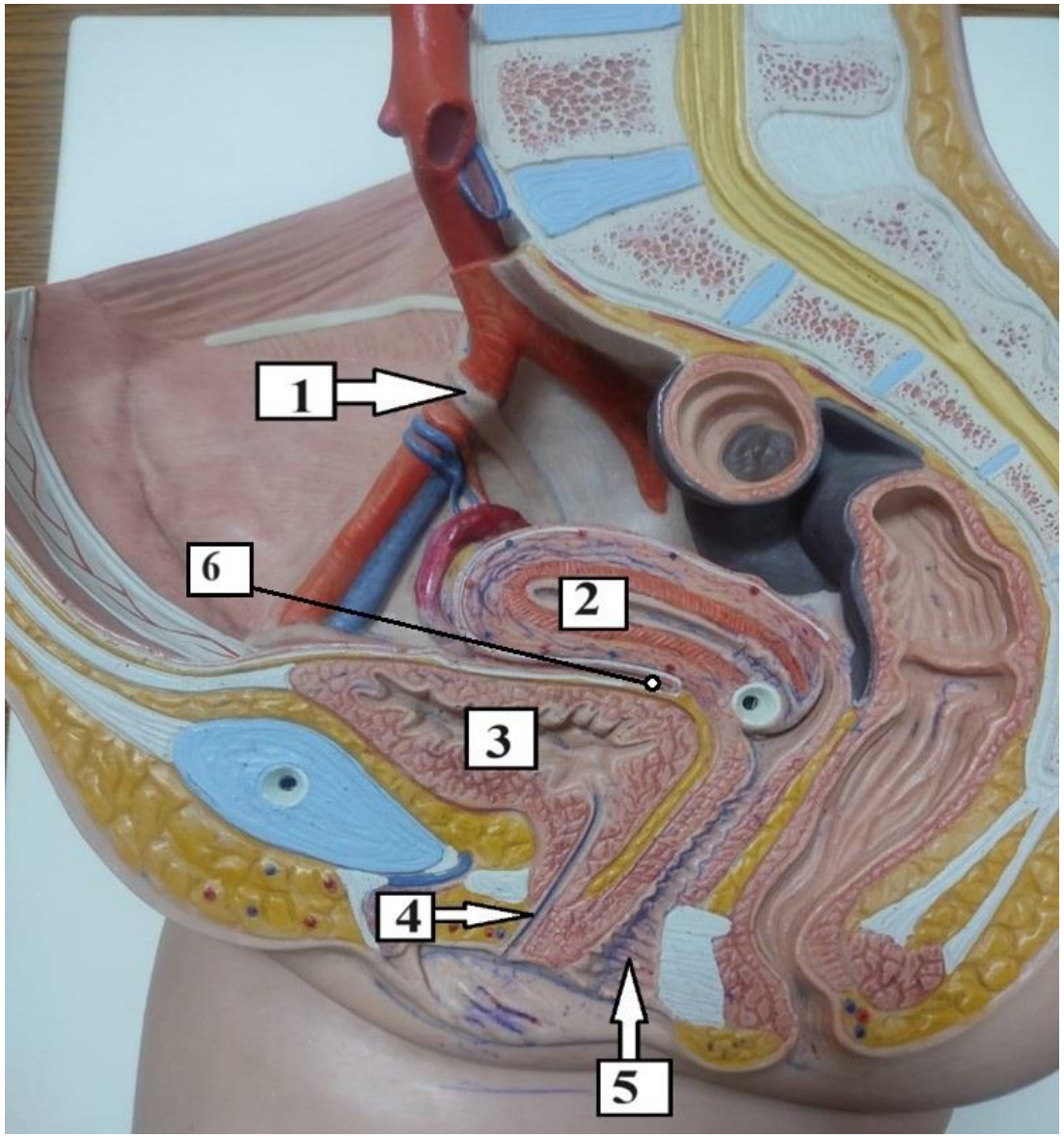
2- Uterus.

3- Urinary bladder.

4- Urethra.

5- Vagina.

6- Uterovesical pouch.



1- Uterus.

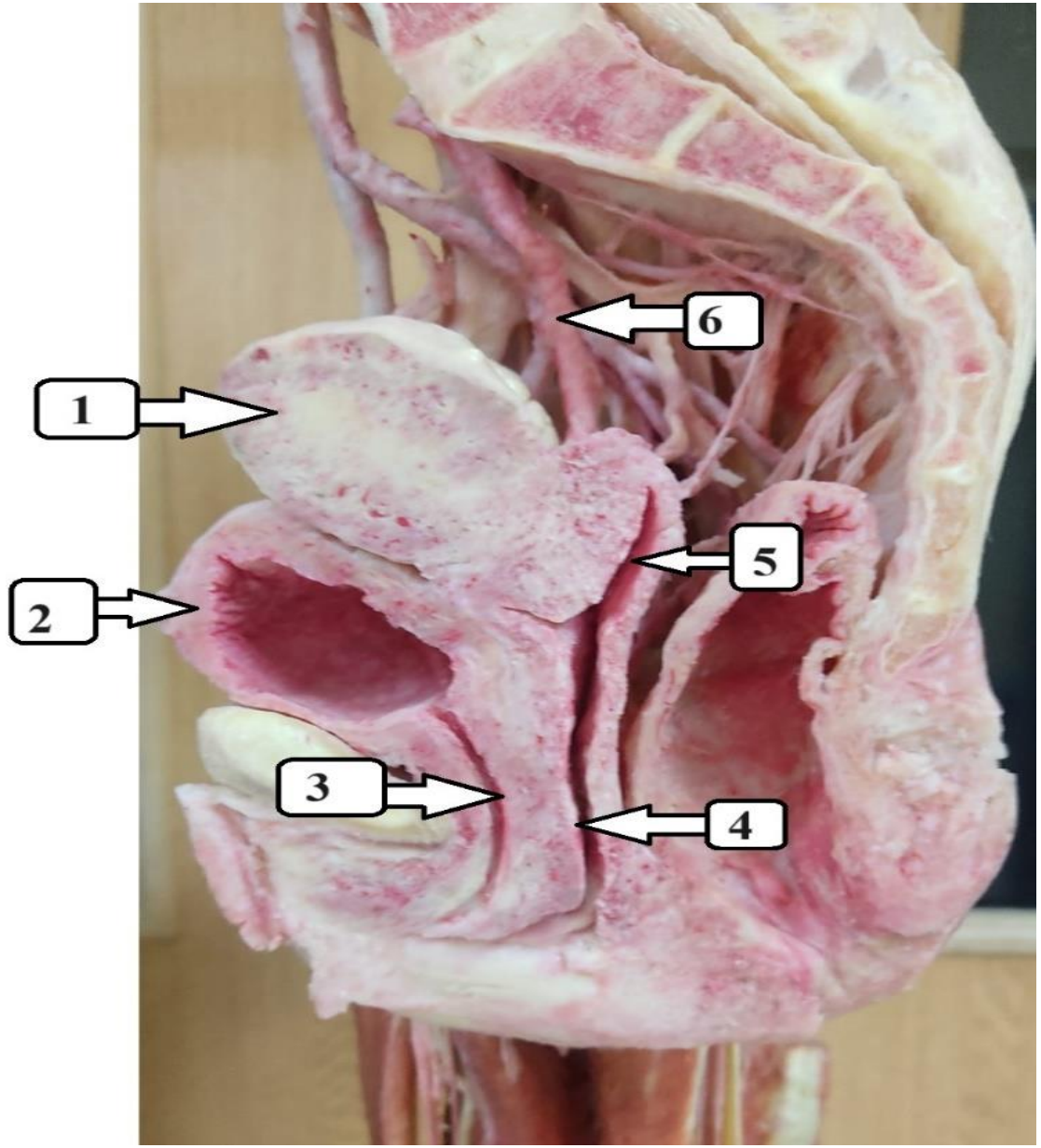
2- Urinary bladder.

3- Urethra.

4- Vagina.

5- Posterior vaginal fornix.

6- Right ureter.



1- Ureter.

2- Urinary bladder.

4- Rectovesical pouch.

5- Rectum.

6- Prostate.

7- Prostatic urethra.

8- Membranous urethra.

9- Penile urethra.

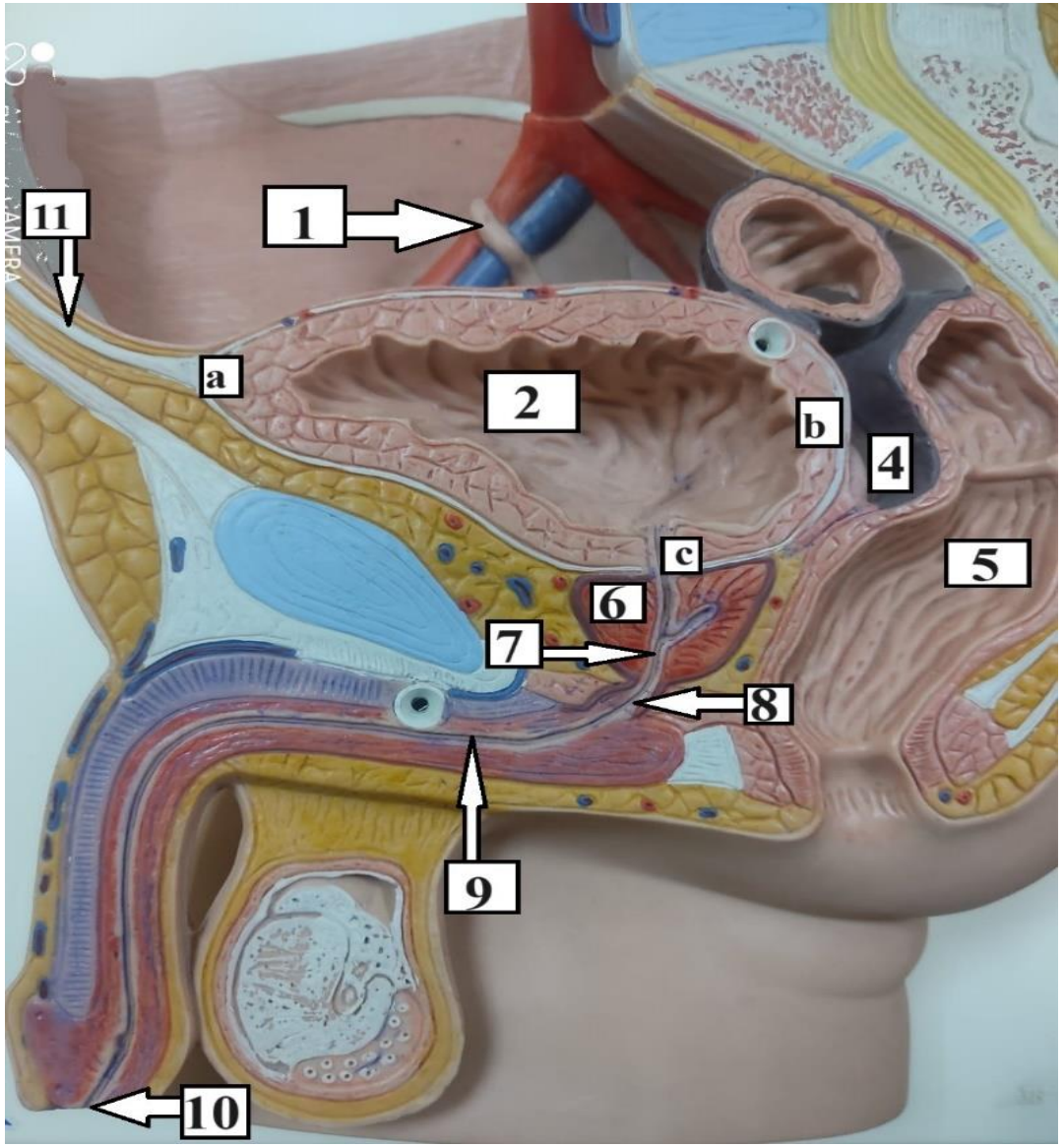
10- External urethral orifice.

11- Median umbilical ligament.

a- Apex of urinary bladder.

b- Base of urinary bladder.

c- Neck of urinary bladder.



1-Right external iliac vessels.

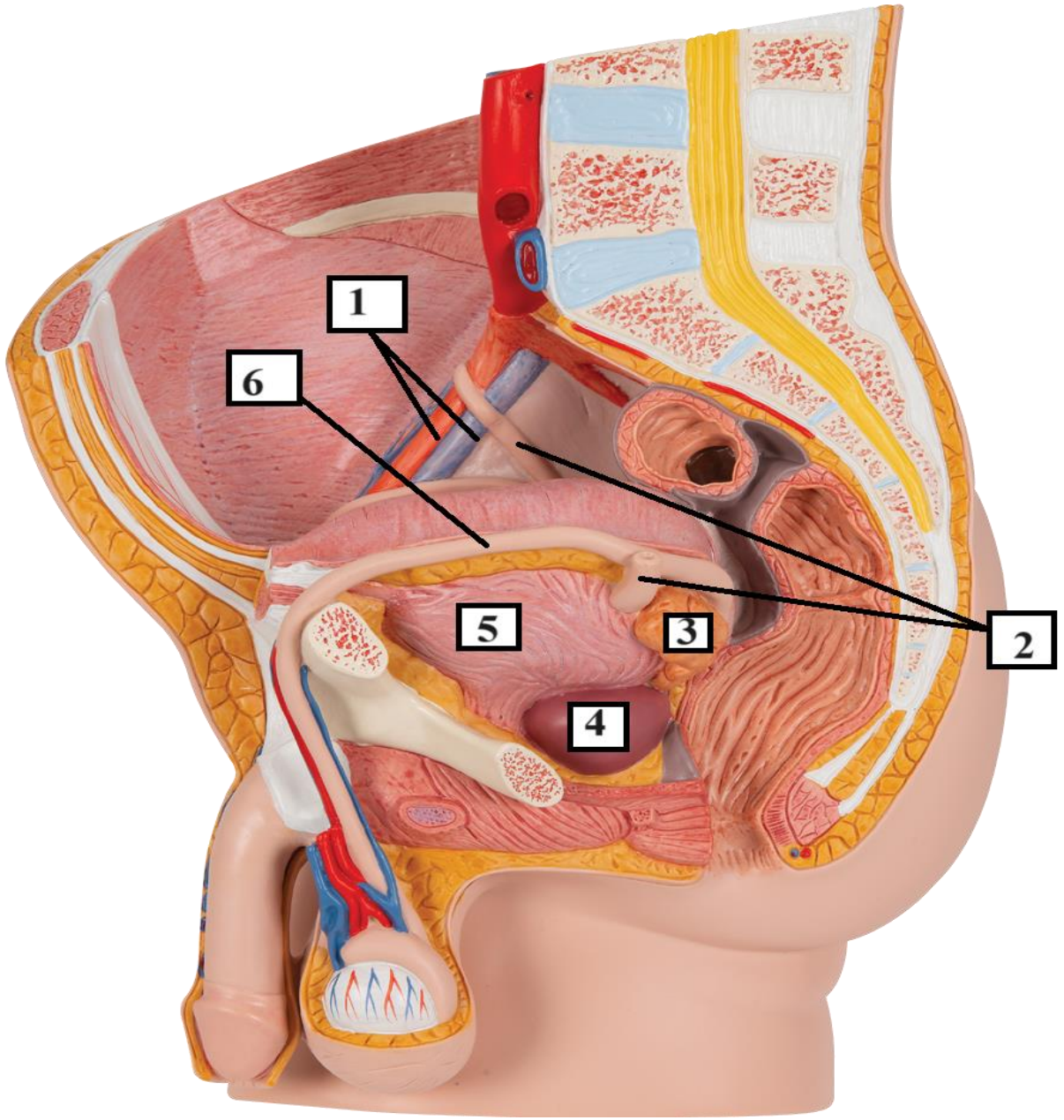
2- Ureters.

3- Seminal vesicle.

4- Prostate gland.

5- Urinary bladder.

6- Left vas deferens.



1- Right ureter.

2- Median umbilical ligament.

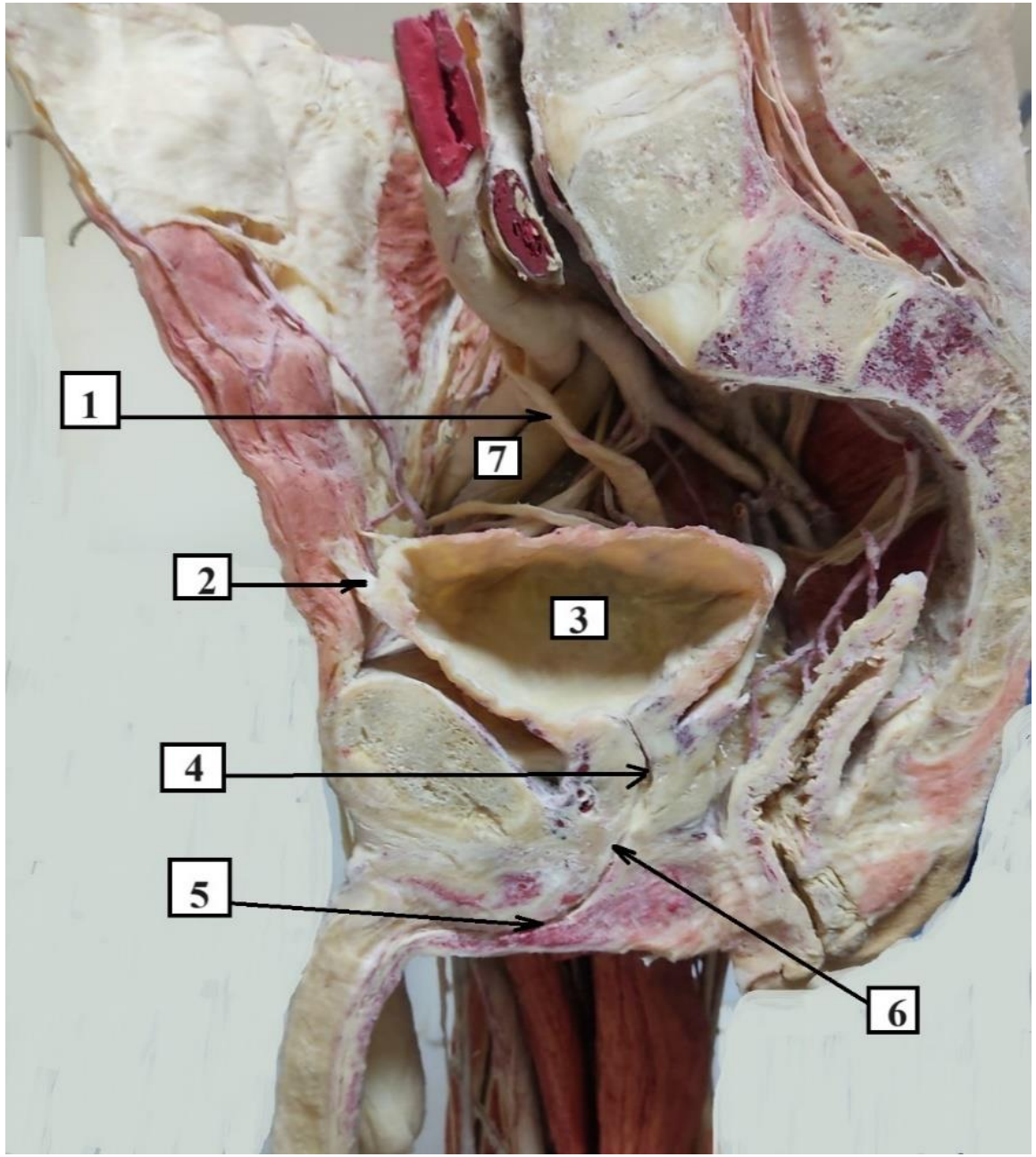
3- Urinary bladder.

4- Prostatic part of urethra.

5- Penile part of urethra.

6- Membranous part of urethra.

7- Right external iliac vessels.



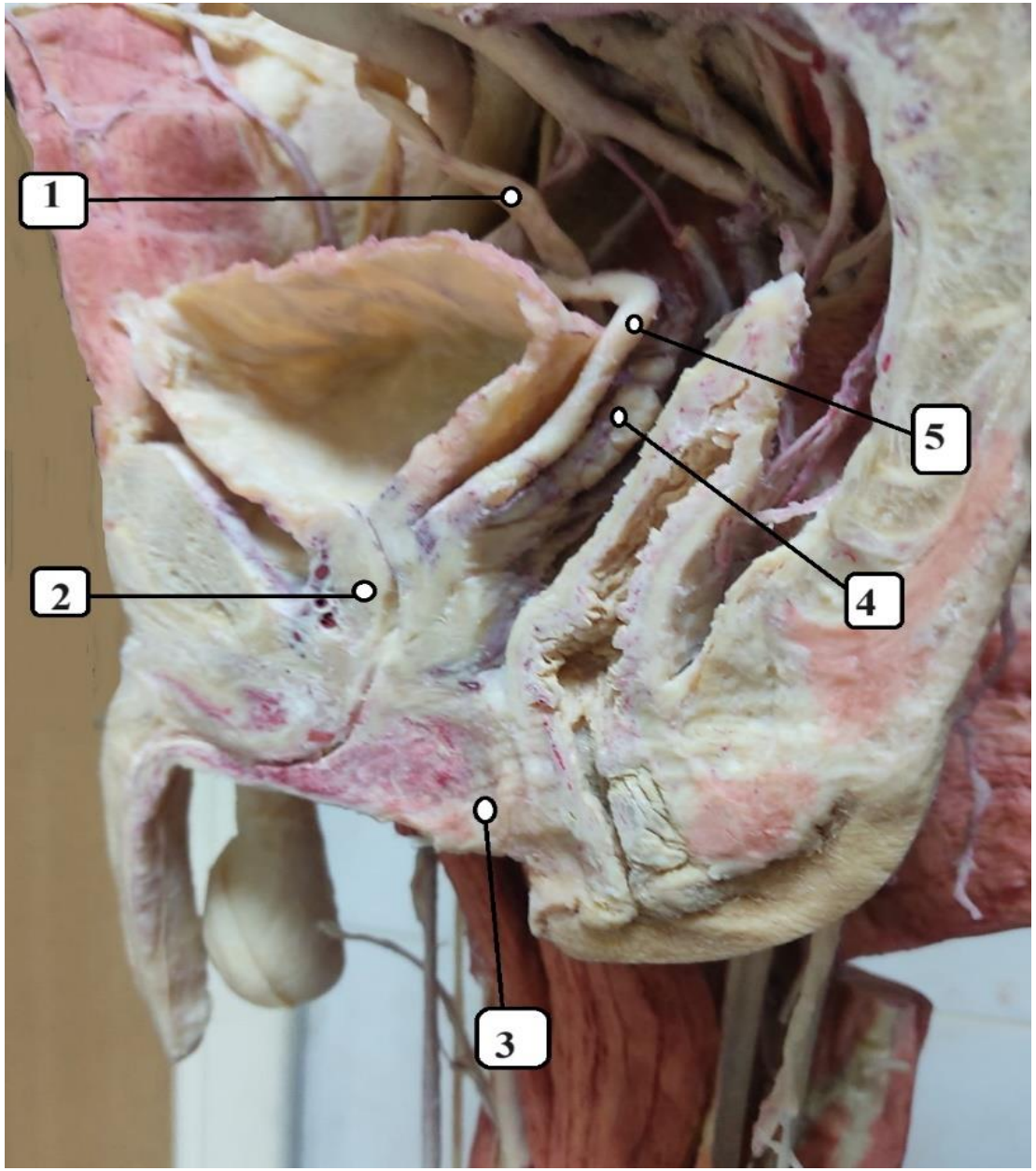
1- Right ureter.

2- Prostate.

3-Perineal body.

4- Right seminal vesicle.

5- Right ductus (vas) deferens.



1- Urinary bladder.

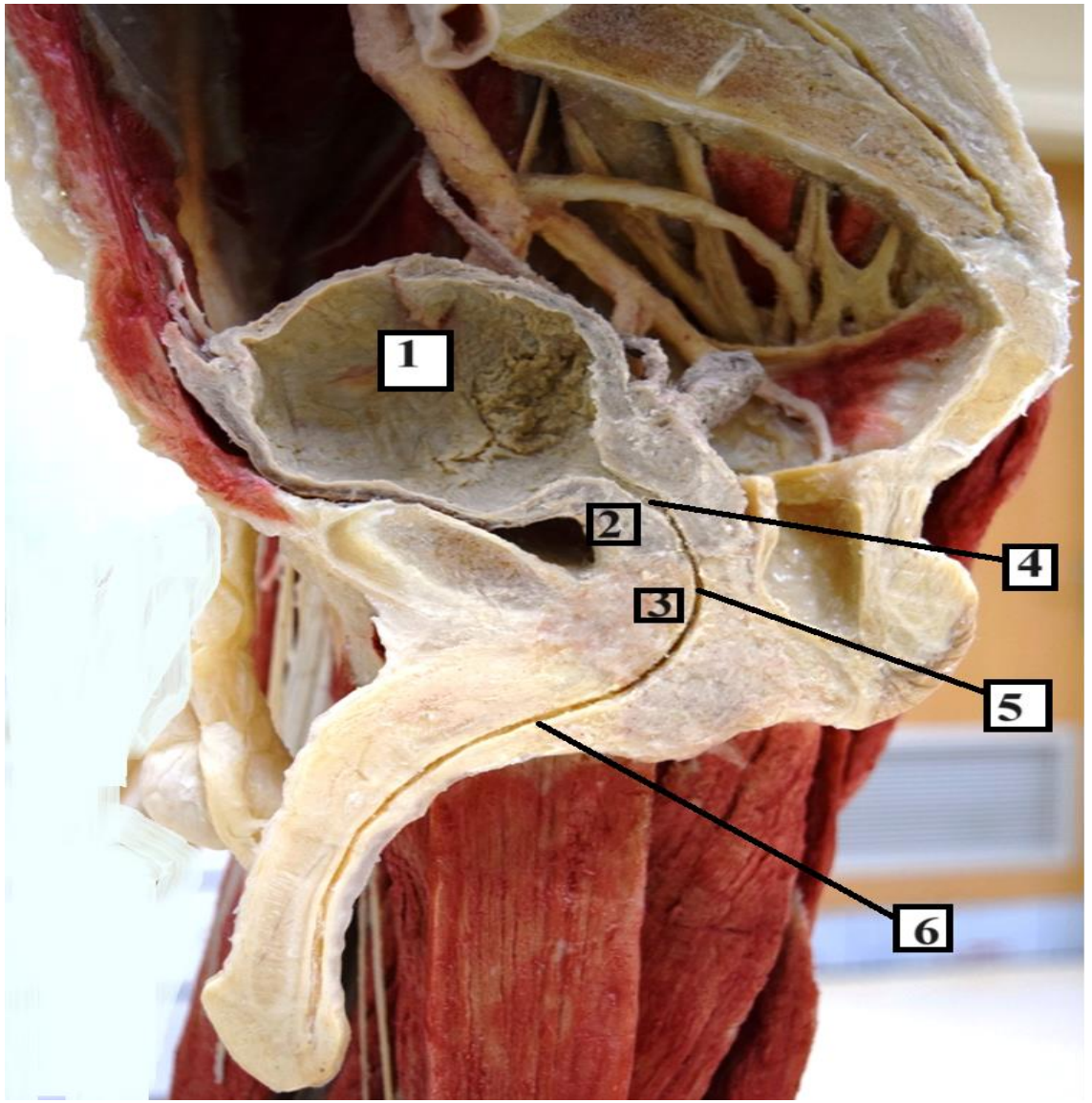
2- Prostate.

3- External urethral sphincter.

4- Prostatic part of urethra.

5- Membranous part of urethra.

6- Penile part of urethra.



1- Peritoneum.

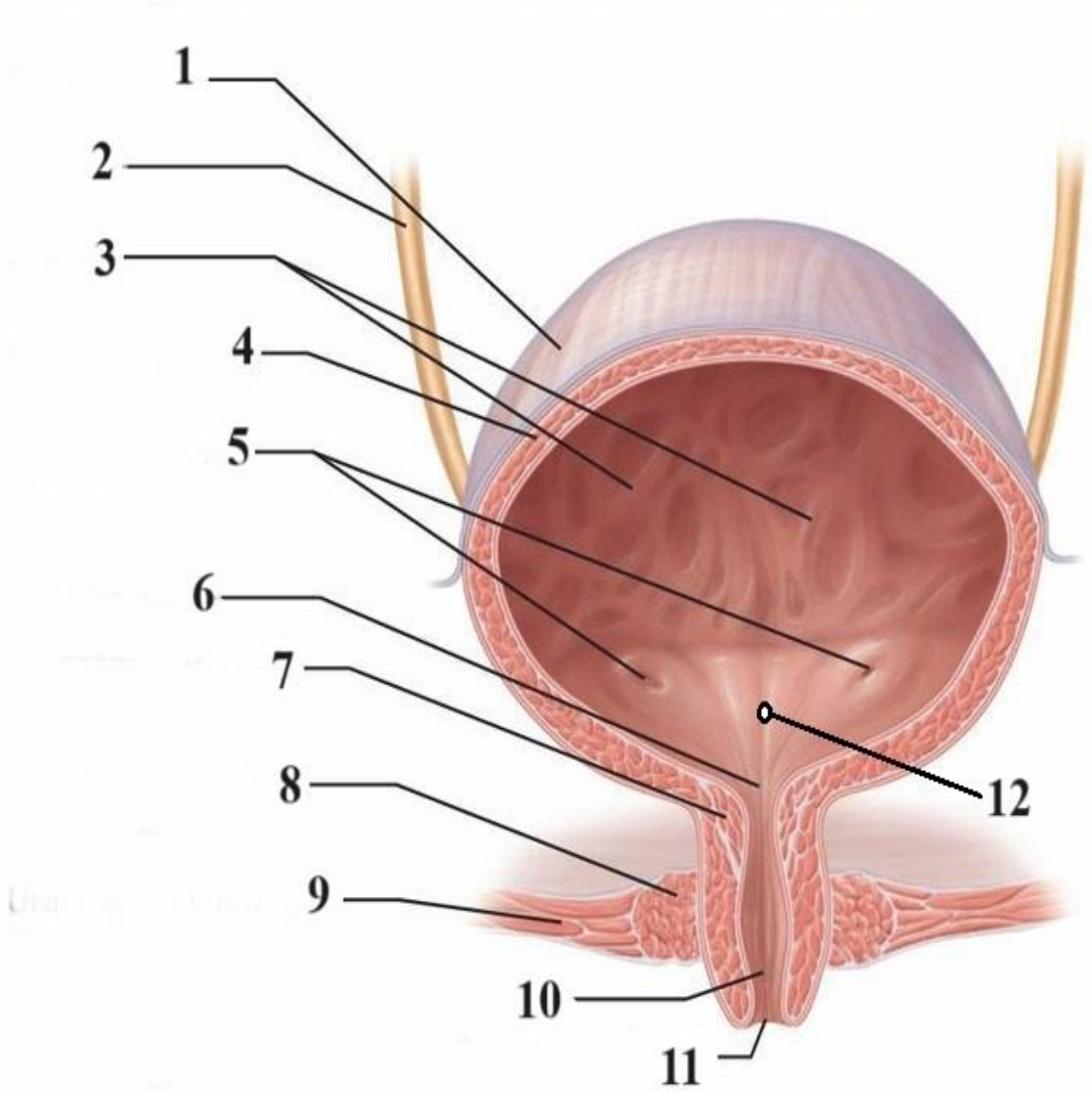
2- Right ureter.

3- Rugae.

4- Detrusor muscle.

5- Ureteric orifices.

6- Bladder neck (internal urethral orifice).



7- Internal urethral sphincter.

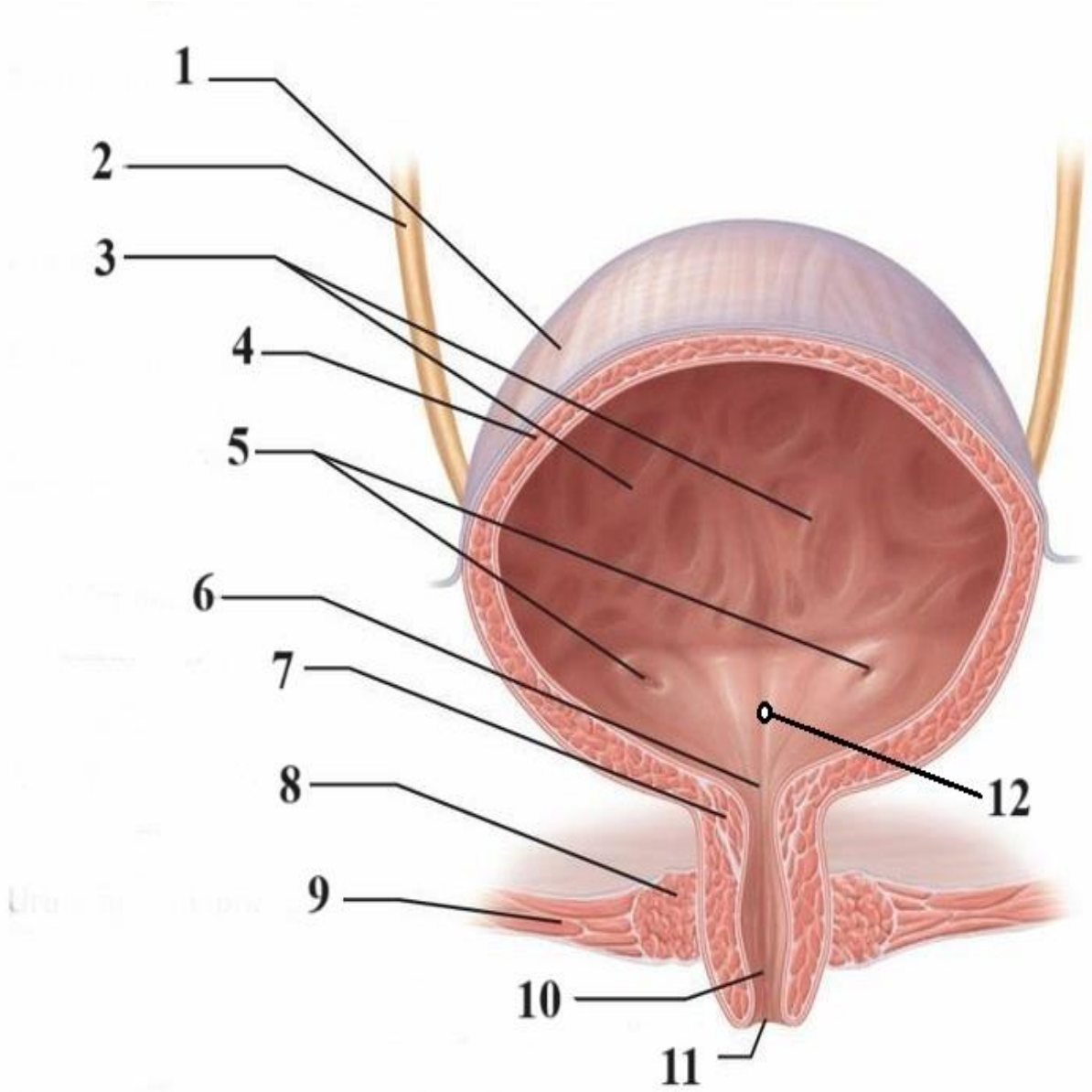
8- External urethral sphincter.

9- Urogenital diaphragm.

10- Urethra.

11- External urethral orifice.

12- Trigone.



a- Left ureter.

b- Rugae.

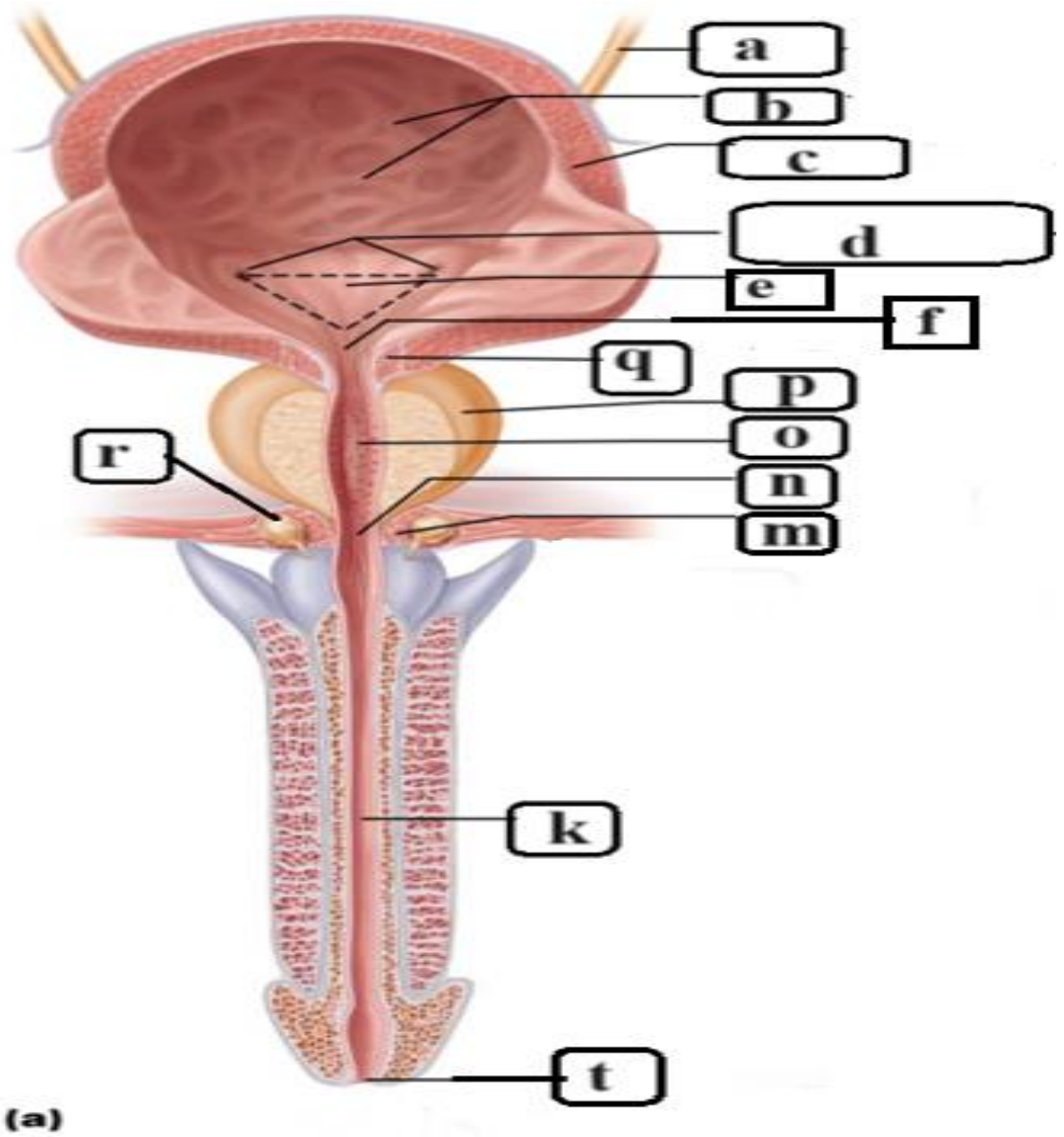
c- Detrusor muscle.

d- Ureteric orifices.

e- Trigone.

f- Bladder neck (internal urethral orifice).

q- Internal urethral sphincter.



p- Prostate gland.

o- Prostatic part of urethra.

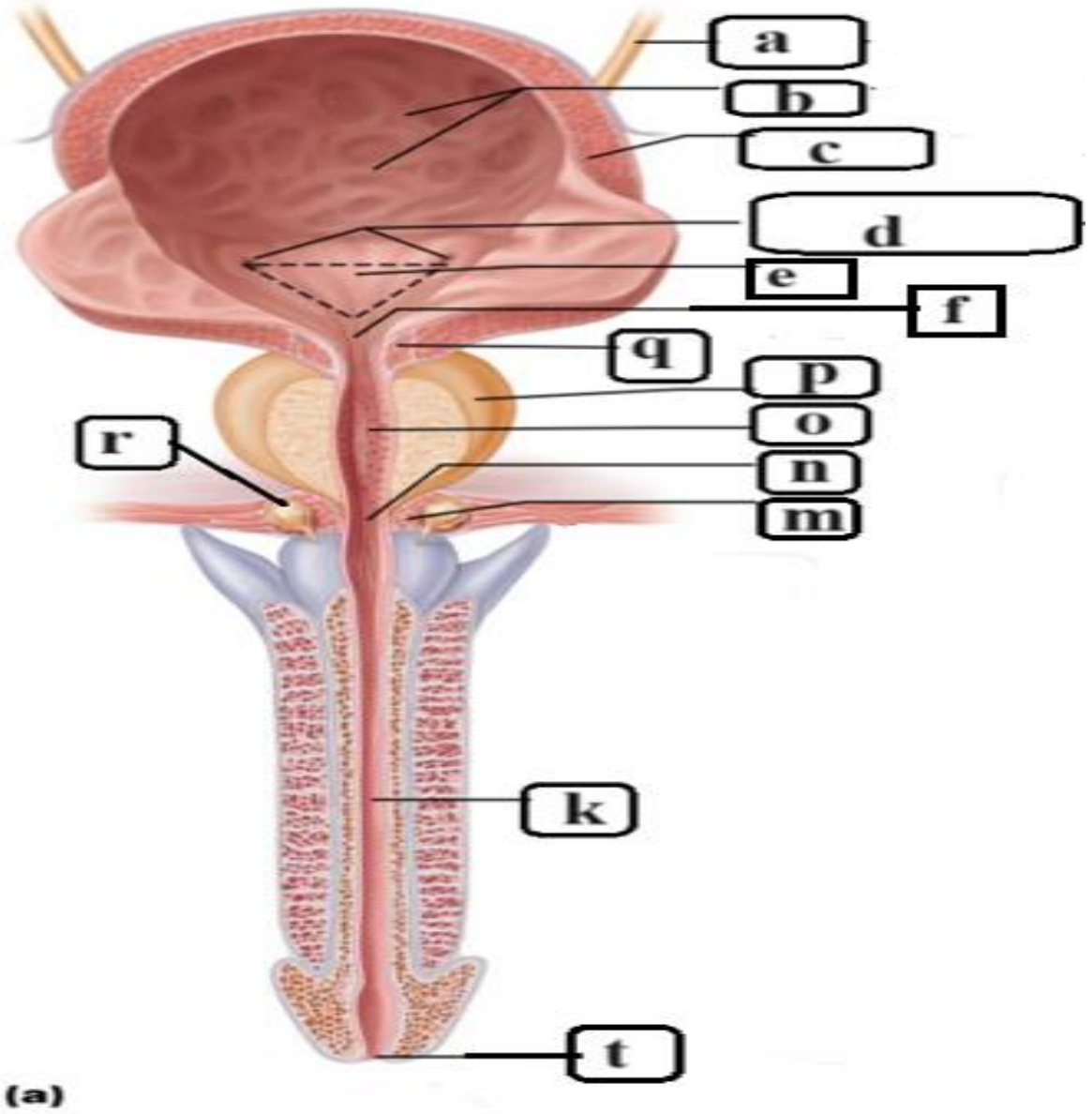
n- Membranous part of urethra.

r- Bulbourethral gland.

K- Penile part of urethra.

m- External urethral sphincter.

t- External urethral orifice.



1- Peritoneum.

2- Urinary bladder.

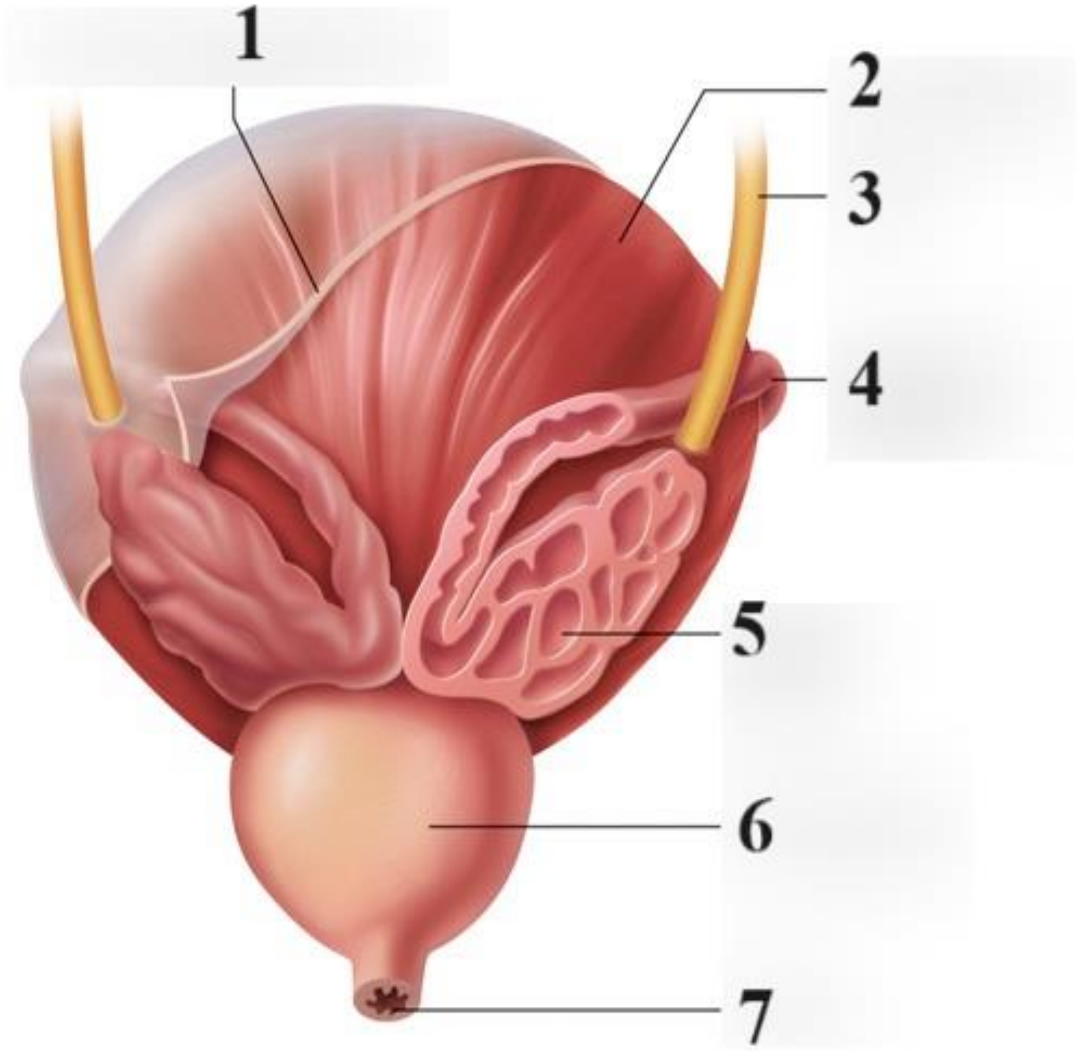
3- Right ureter.

4- Right ductus deferens.

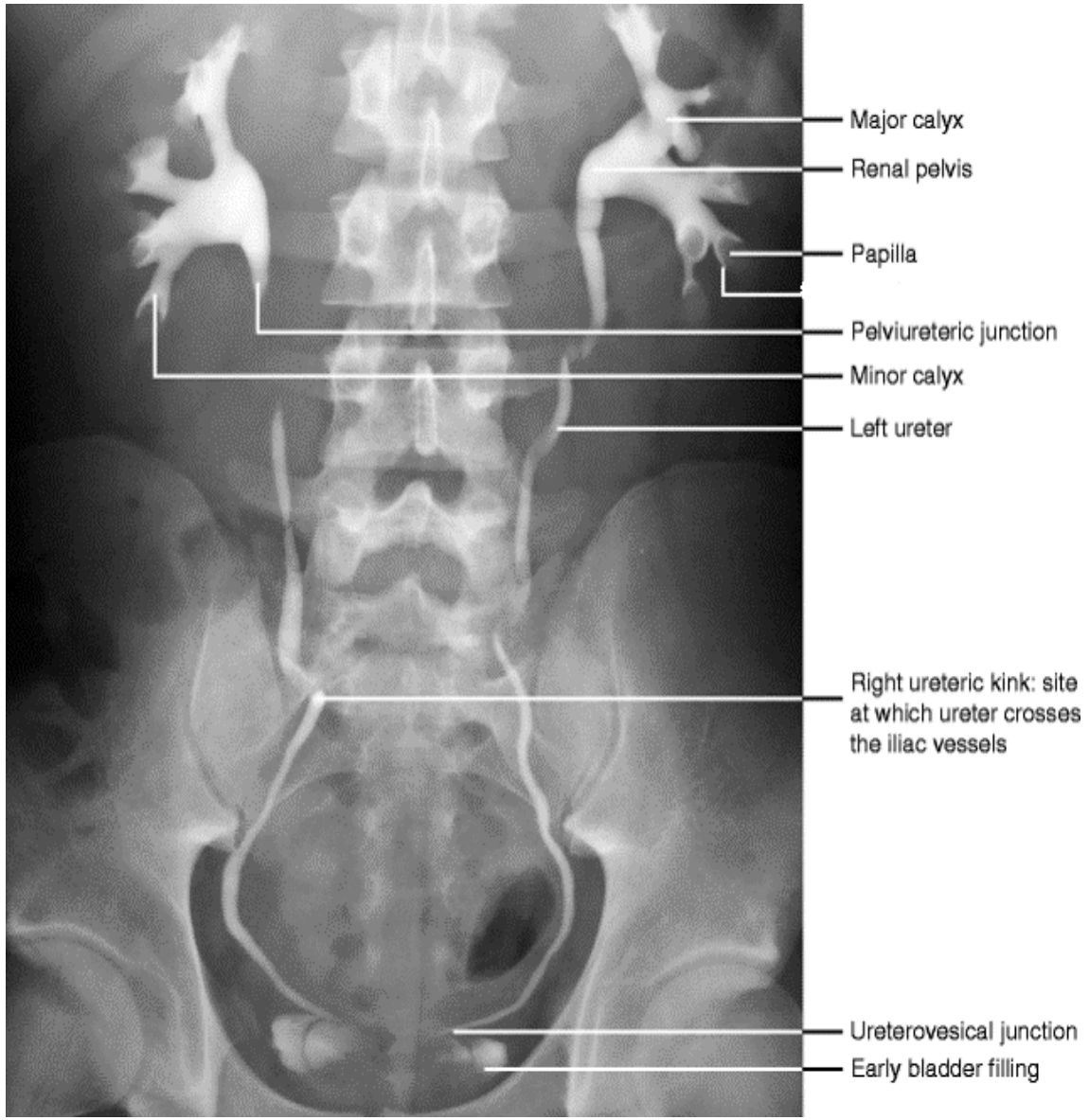
5- Right seminal vesicle.

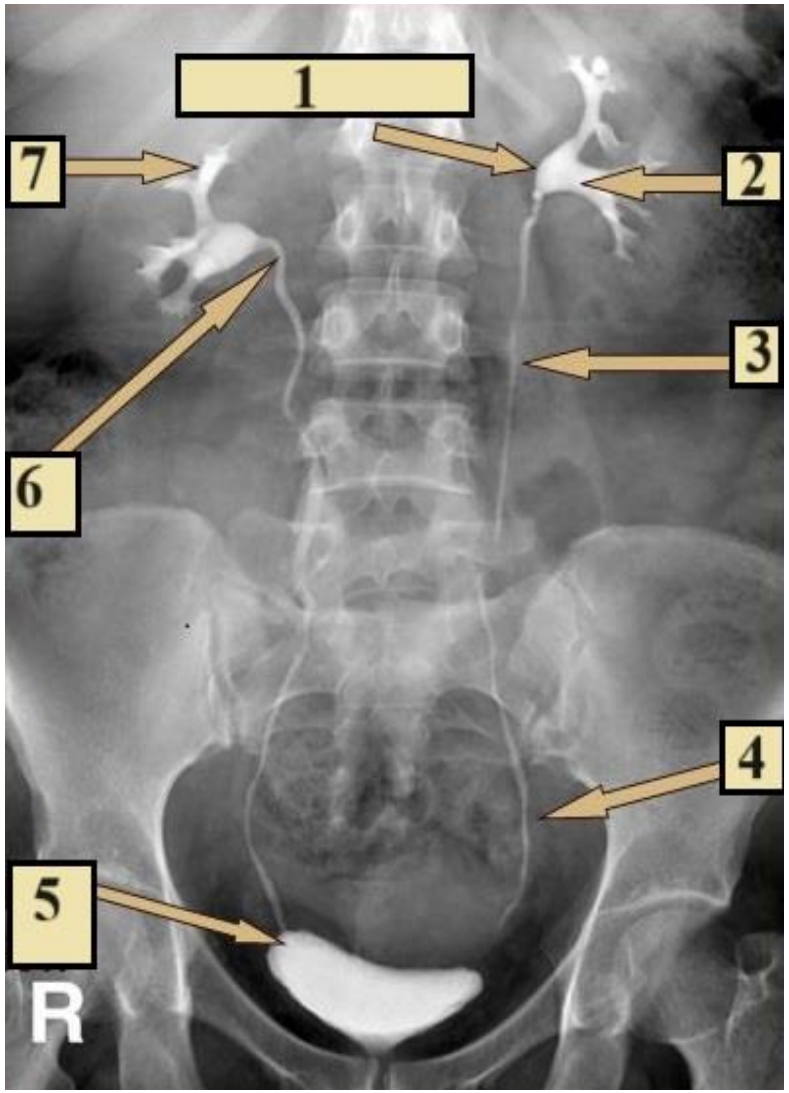
6- Prostate.

7- Membranous urethra.



Intravenous Pyelography (IVP)





1- Renal pelvis.

2- Major calyx.

3- Abdominal part of ureter.

4- Pelvic part of ureter.

5- Uterovesical junction.

6- Pelvi-ureteric junction.

7- Minor calyx.

A: Minor Calyx.

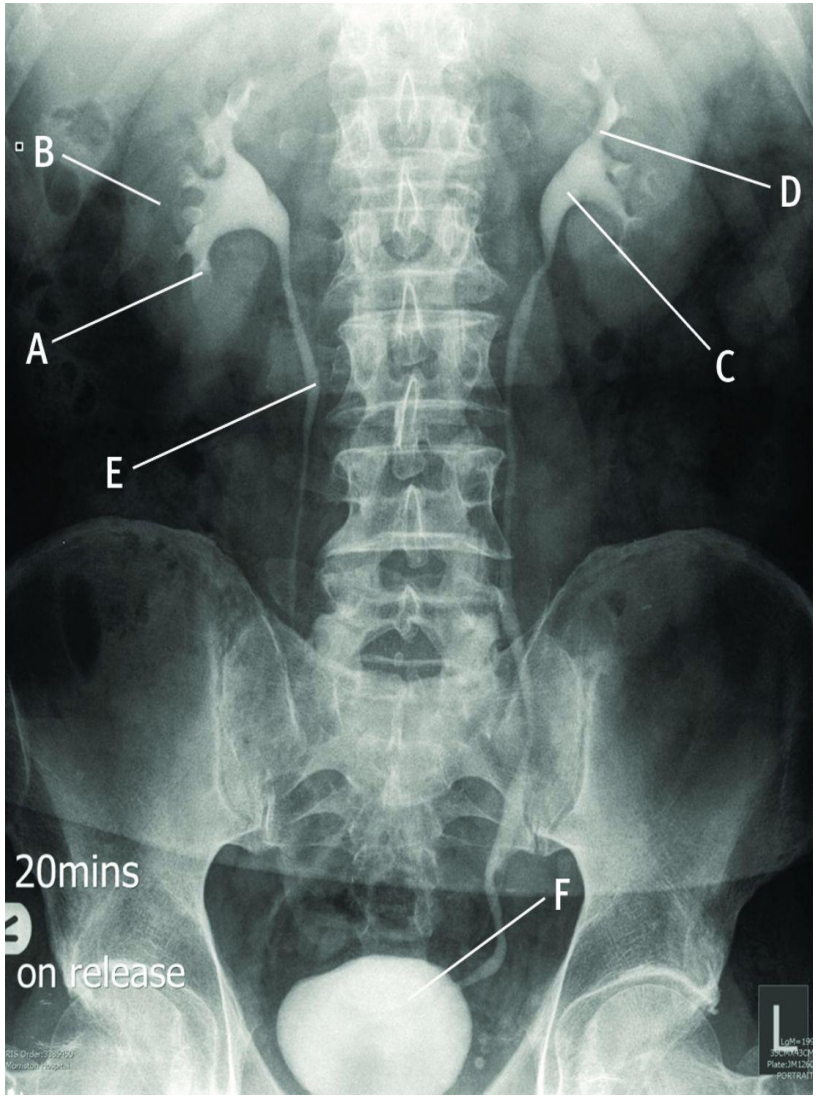
B: Right kidney

C: Left renal pelvis

D: Major calyx.

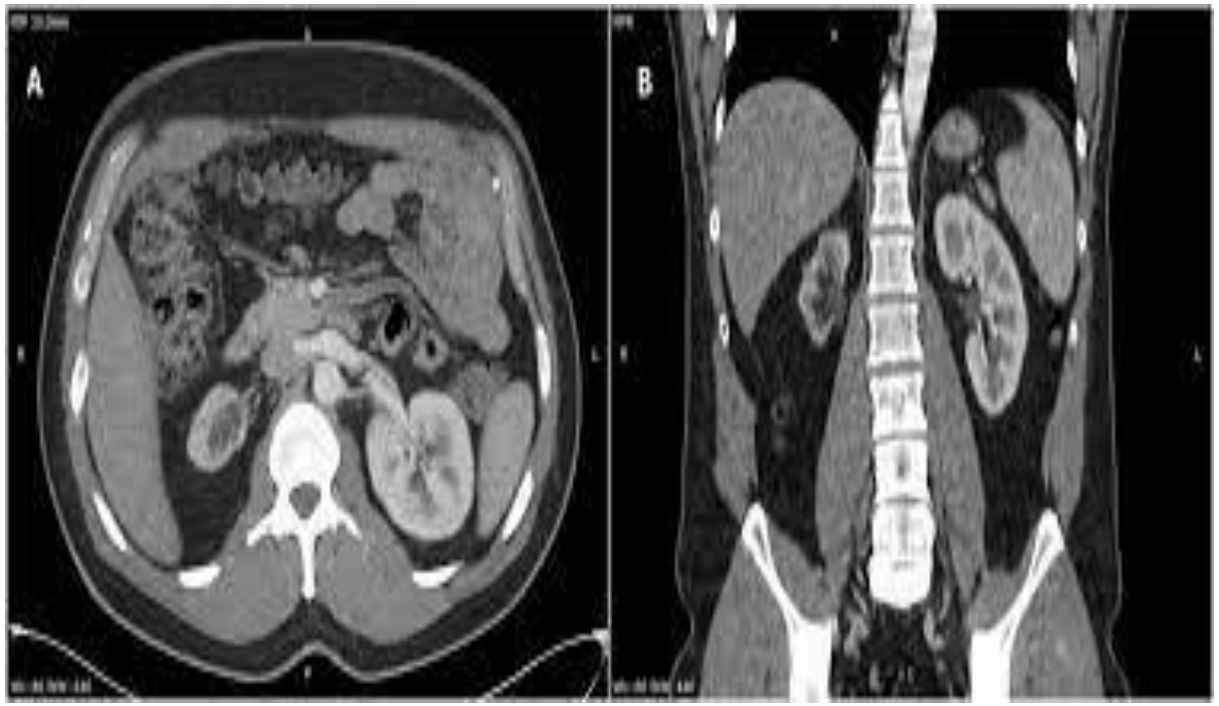
E: Right ureter

F: Urinary bladder

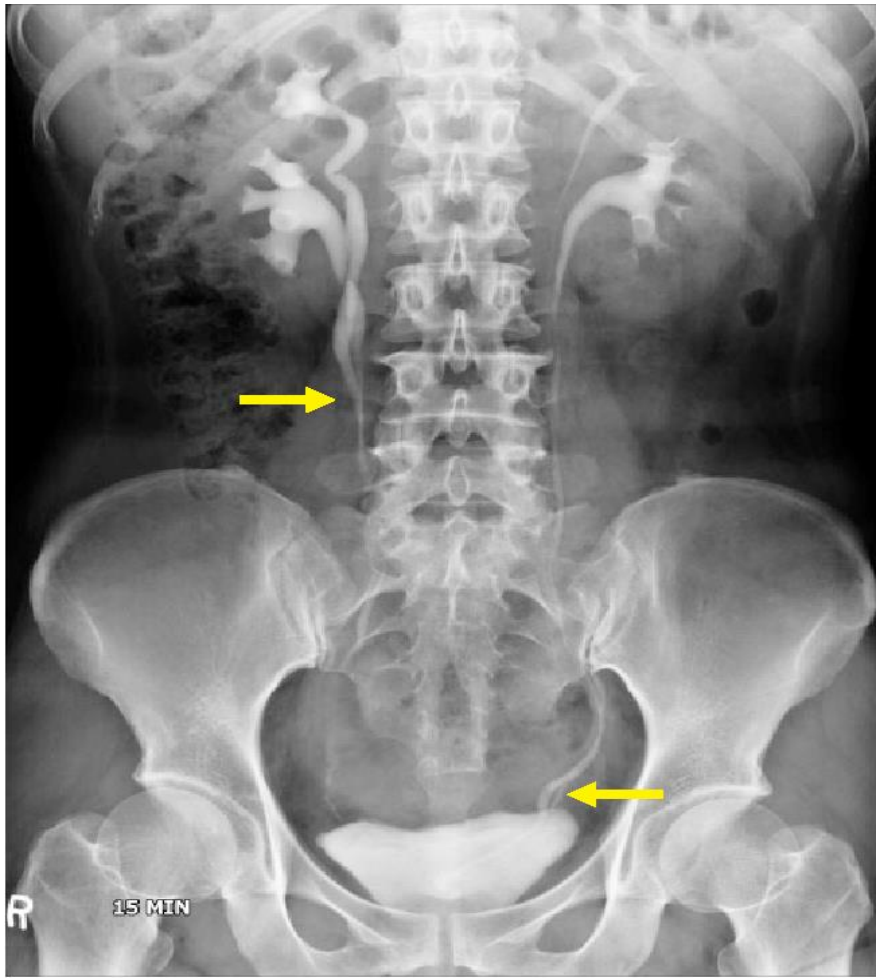


Intravenous pyelography film in a case of horseshoe kidney (arrows) showing lower poles closer to the spine.

CT scan abdomen, showing a case of horseshoe kidney.



CT scan abdomen, A case of unilateral renal hypoplasia.



Intravenous urography shows bilateral ureteral duplications. Although right side is shown as incomplete form, left side is complete form by showing entire course of double ureters

Intravenous urography of a left sided double ureter. The double ureters in this case is of the incomplete/partial variety.

GUS

Lab (2)

Histology of Urinary System

a- Efferent arteriole.

b- Interlobular vein.

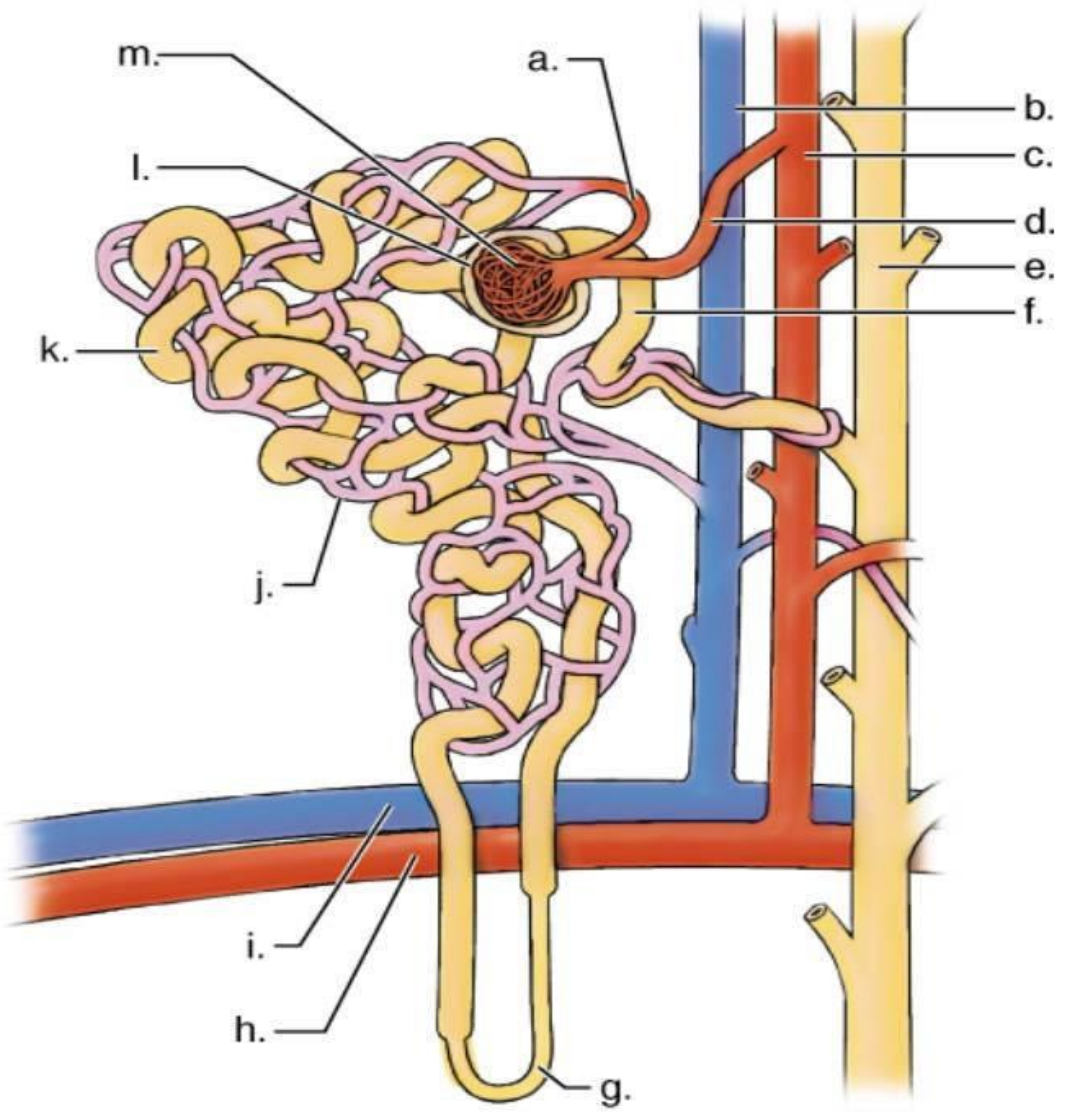
c- Interlobular artery.

d- Afferent arteriole.

e- Collecting duct.

f- Distal convoluted tubule.

g- Loop of Henle.



h- Arcuate artery.

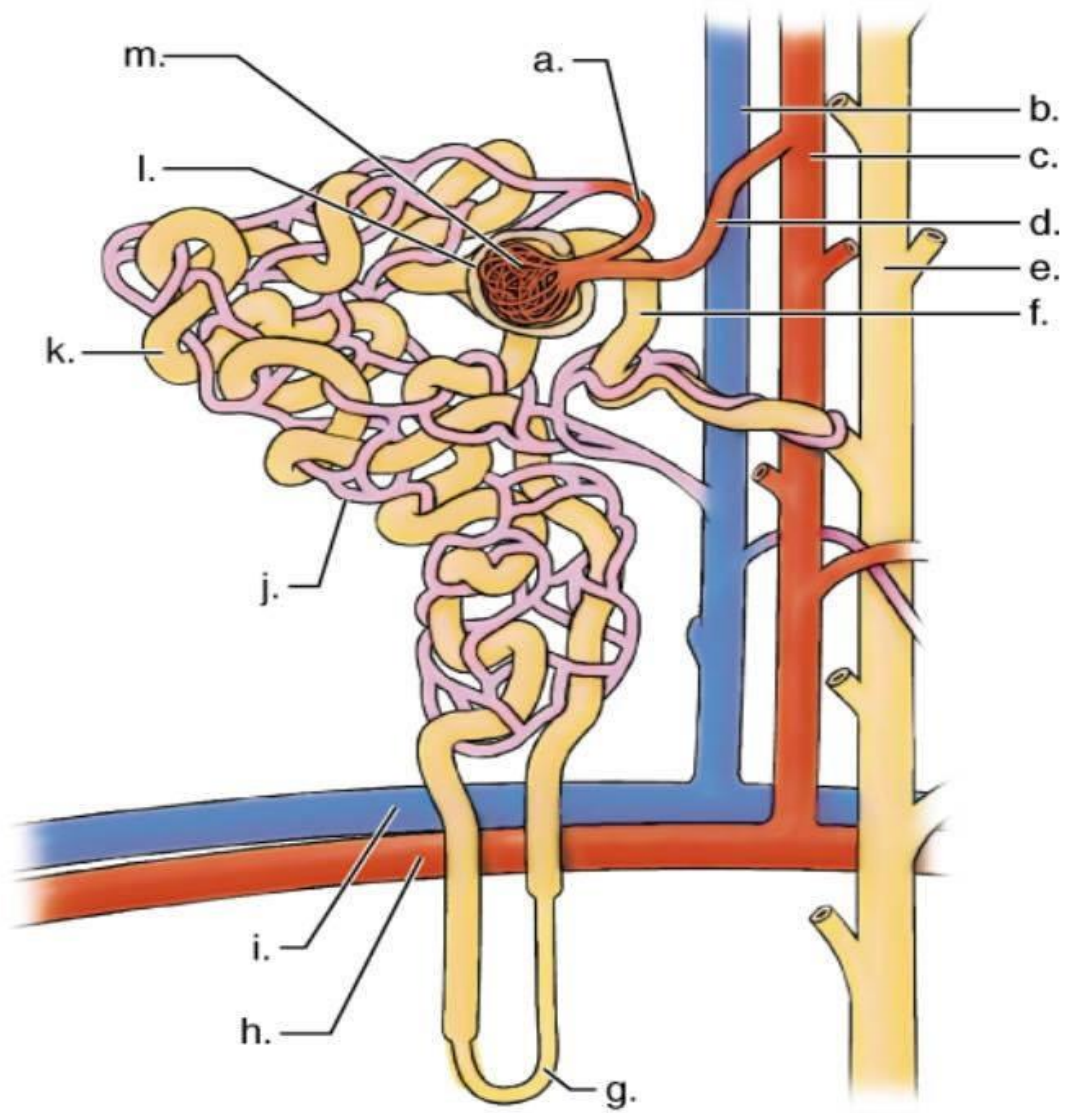
i- Arcuate vein.

j- Peritubular capillaries.

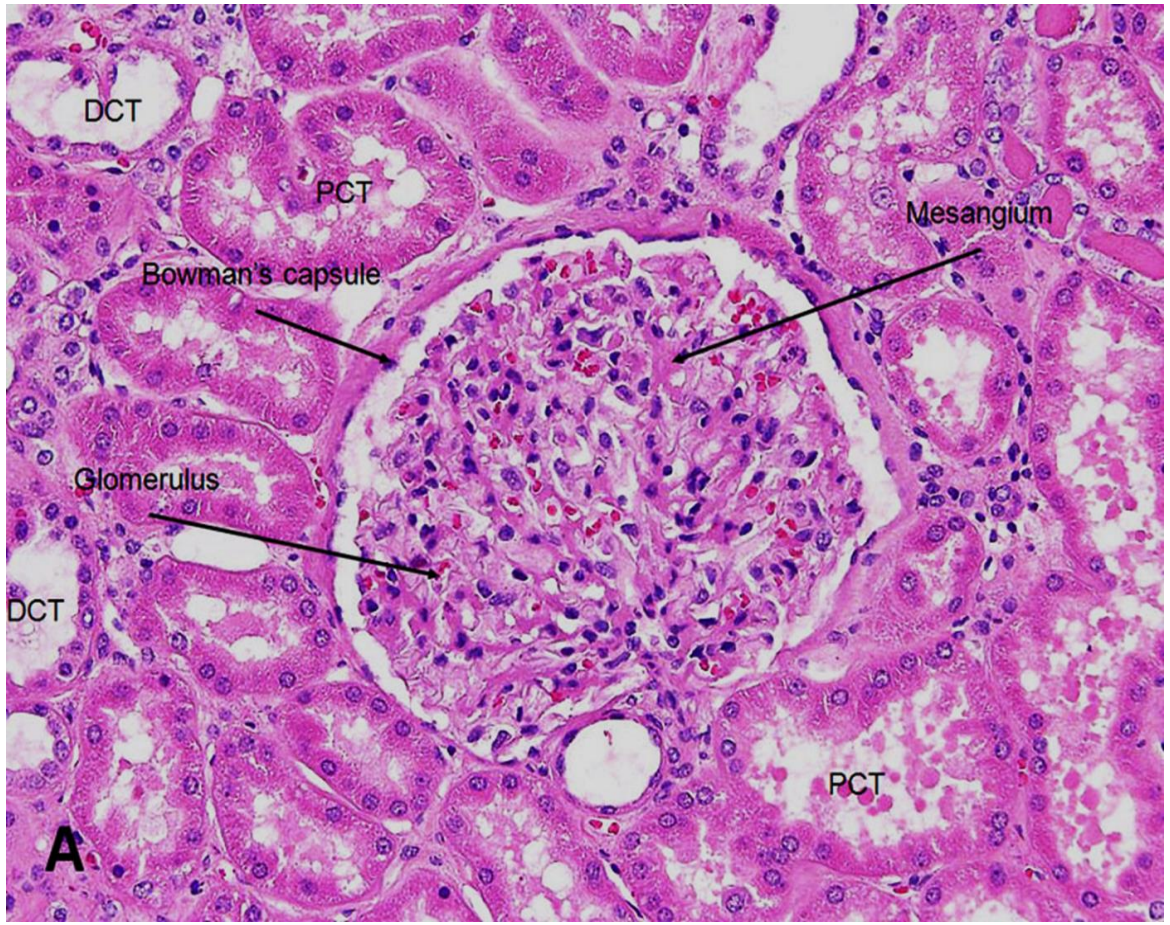
k- Proximal convoluted tubule.

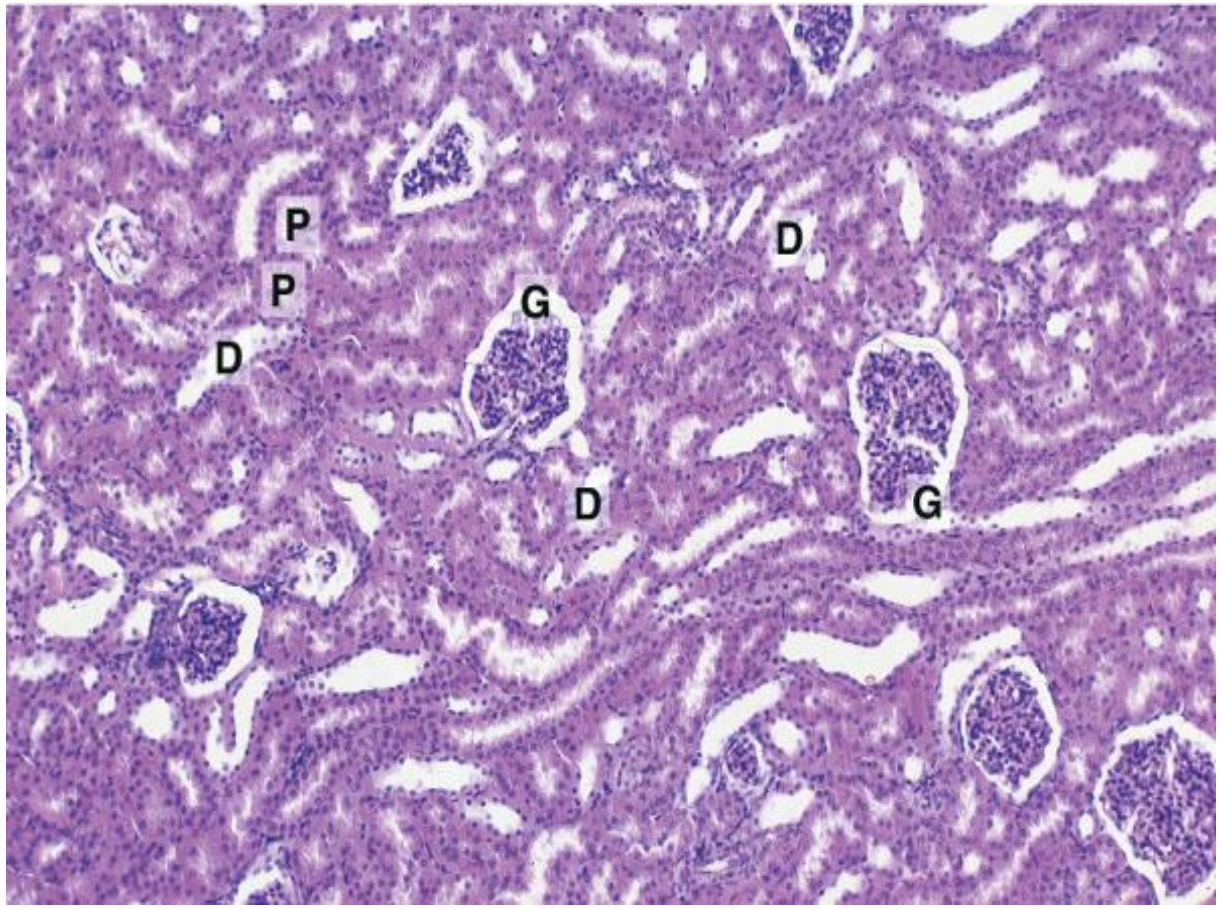
l- Bowman's capsule.

m- Glomerulus.

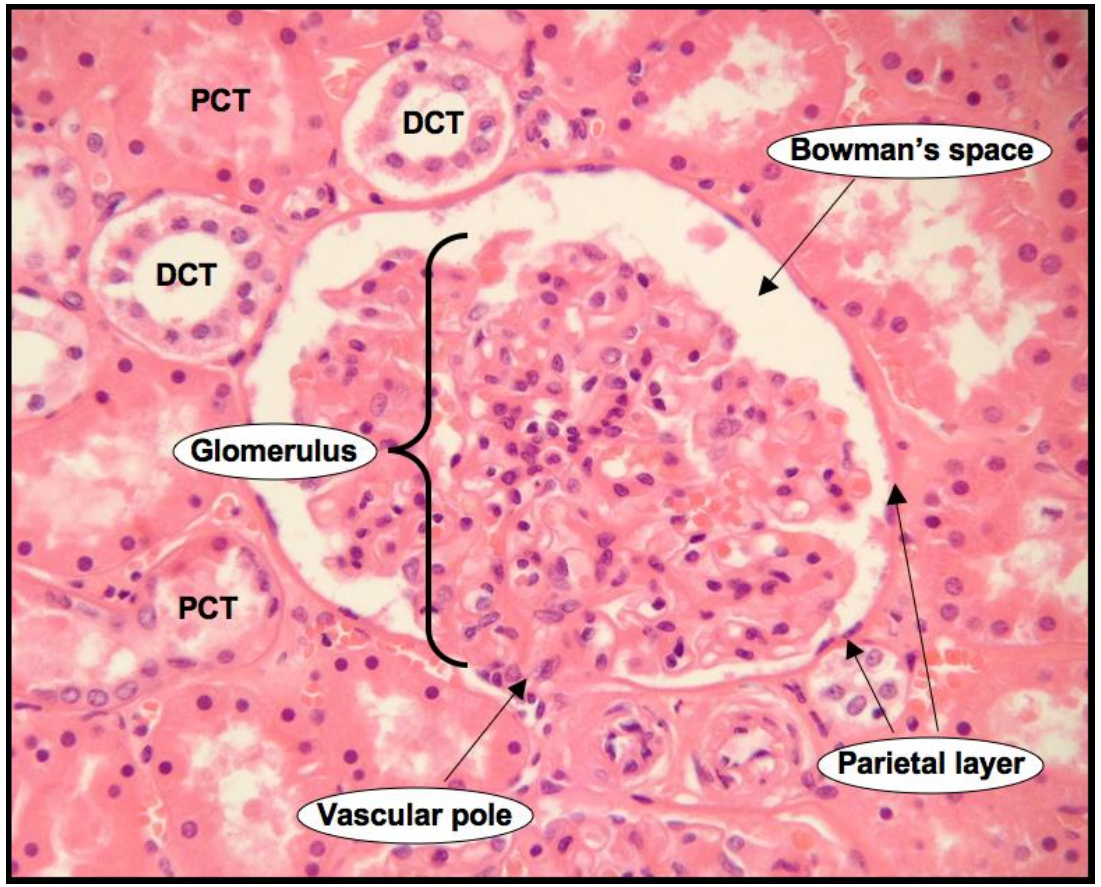


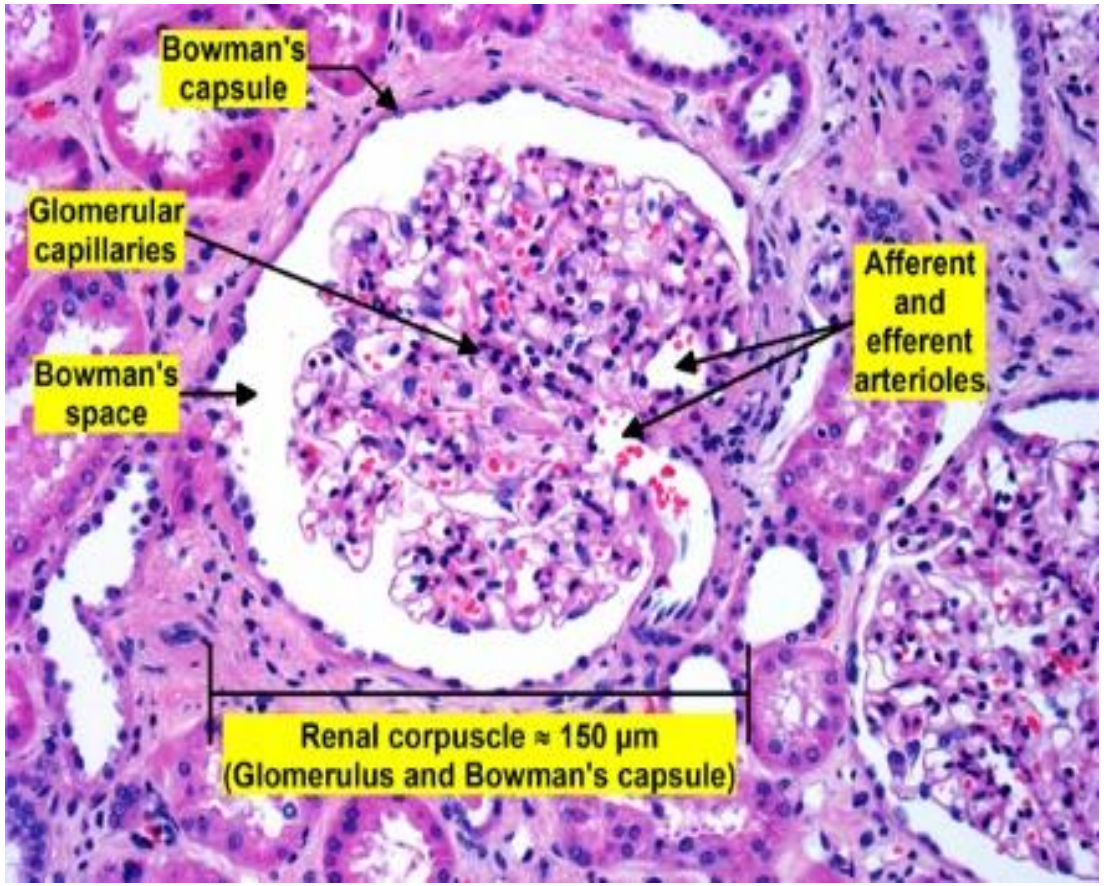
Renal Cortex





Light micrograph of **Renal Cortex**, which is composed mainly of proximal (P) and distal (D) convoluted tubules and renal glomeruli (G).





Photomicrograph shows histologic features of a renal corpuscle.

A- Parietal layer of Bowman's capsule.

B- Bowman's space.

C- Proximal convoluted tubule.

E- Podocytes.

F- Afferent arteriole.

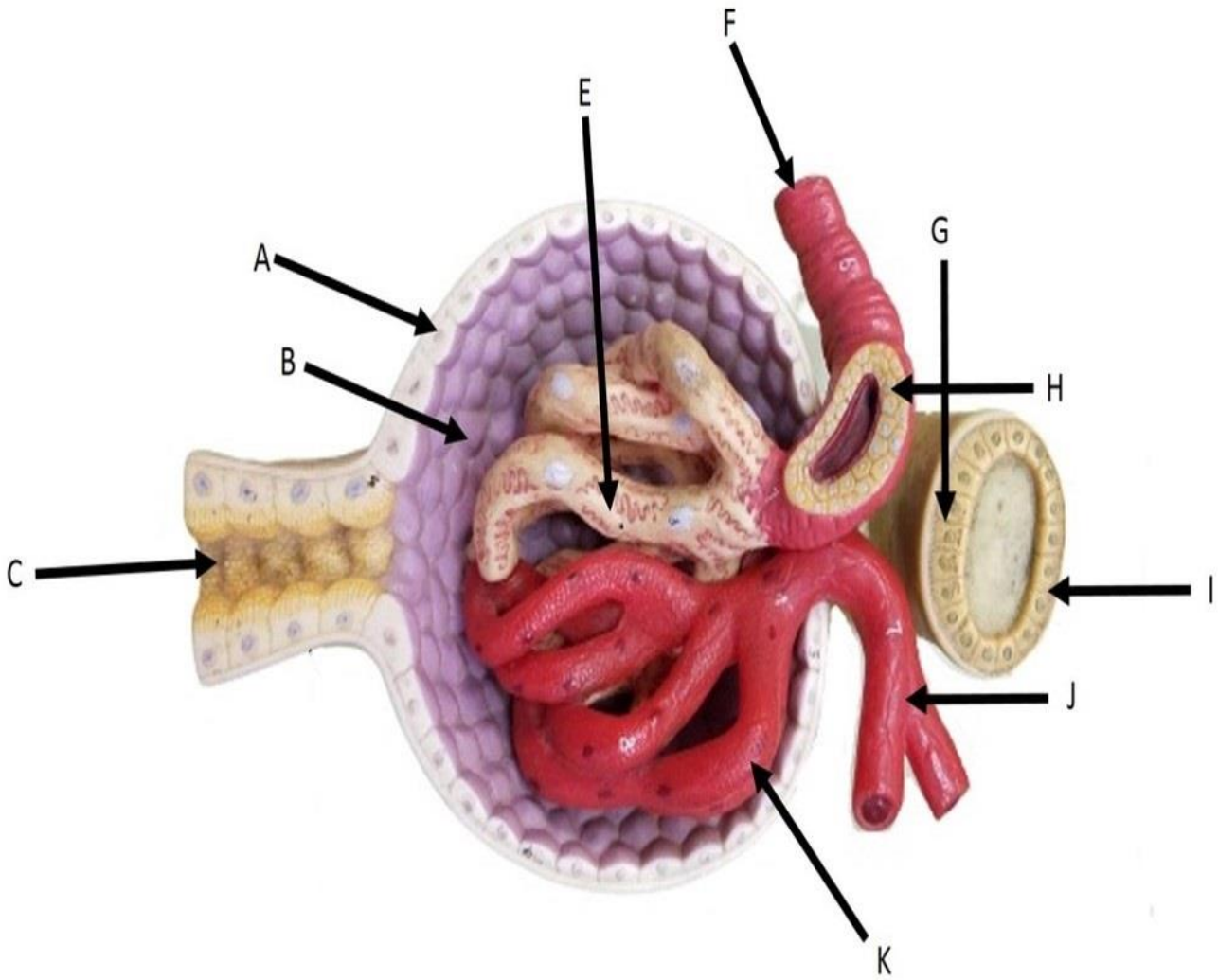
G- Macula densa.

H- Juxtaglomerular Cells.

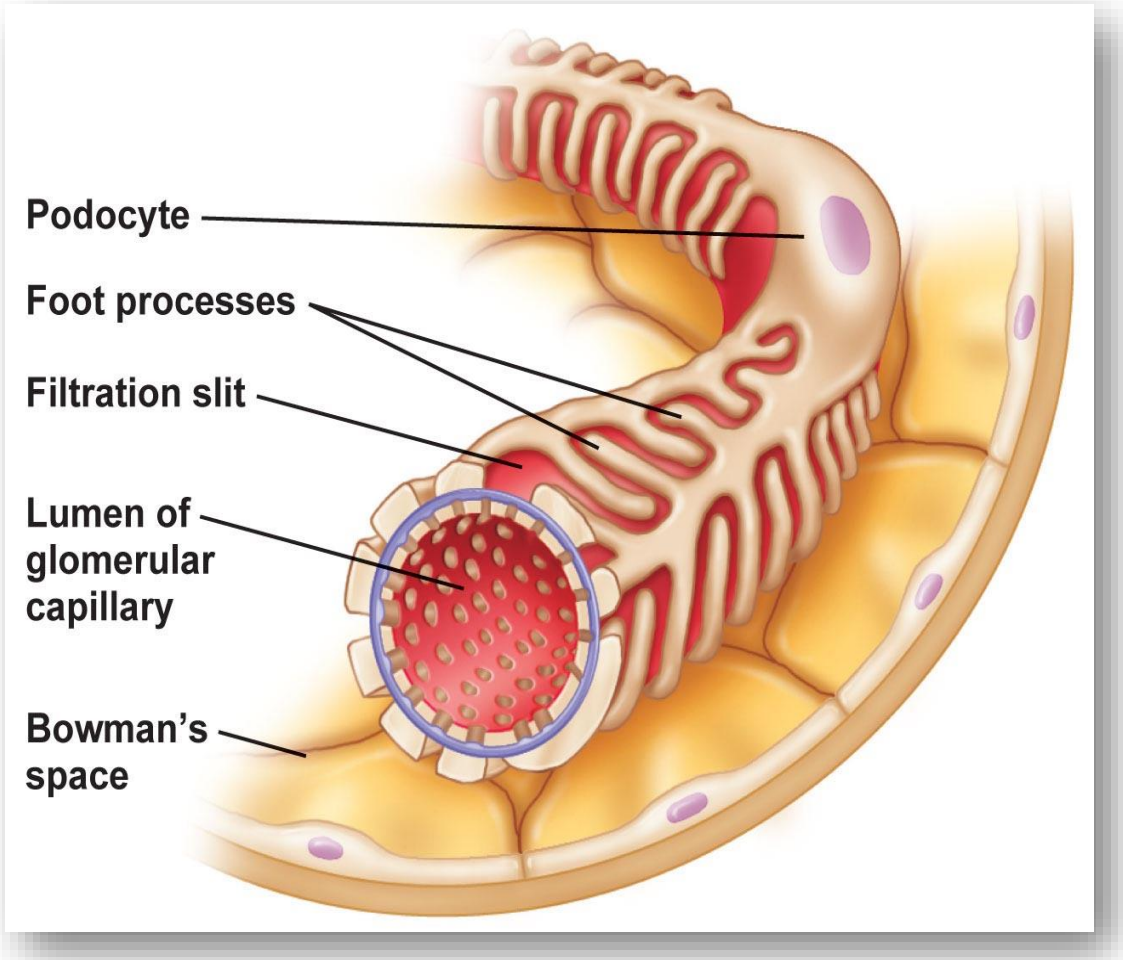
I- Distal convoluted tubule.

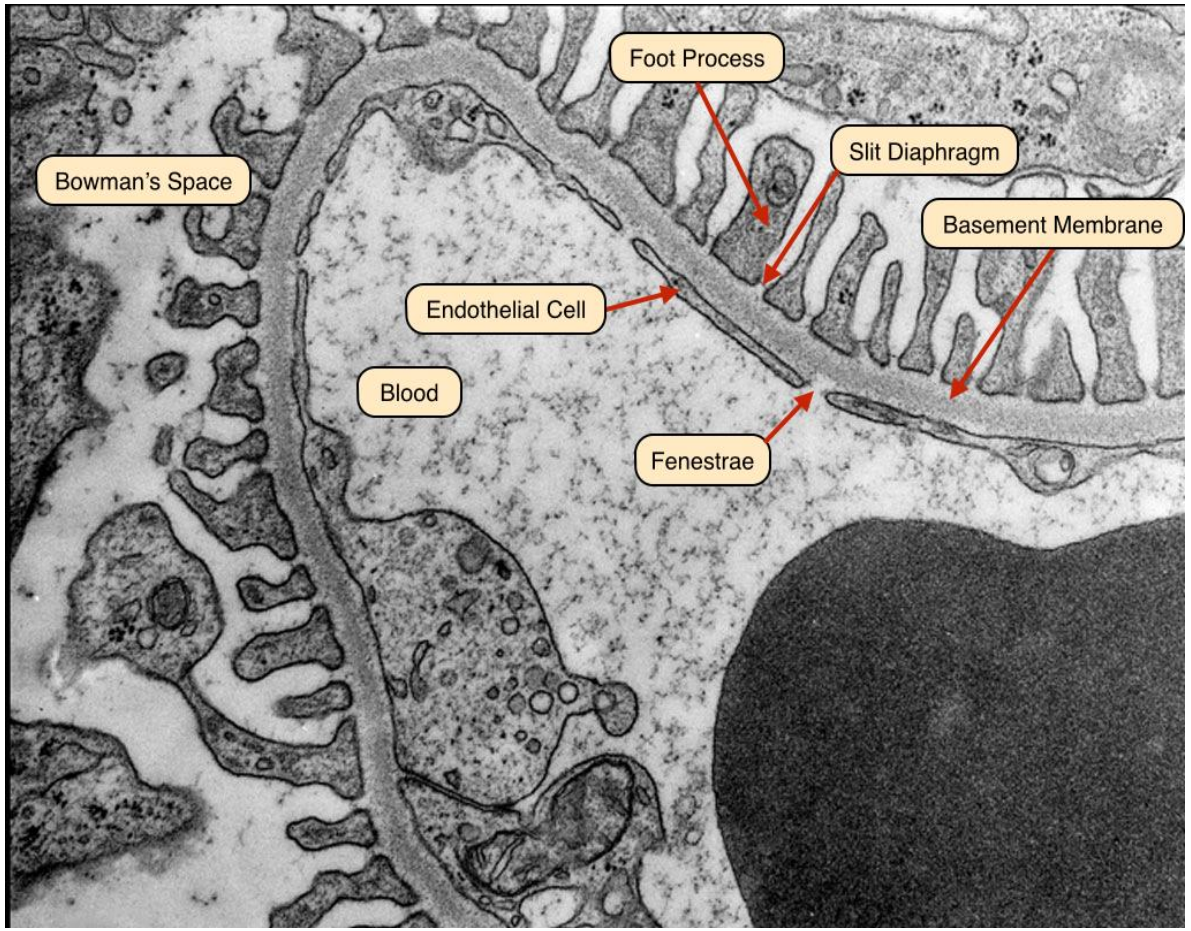
J- Efferent Arteriole.

K- Glomerular Capillaries (Glomerulus).

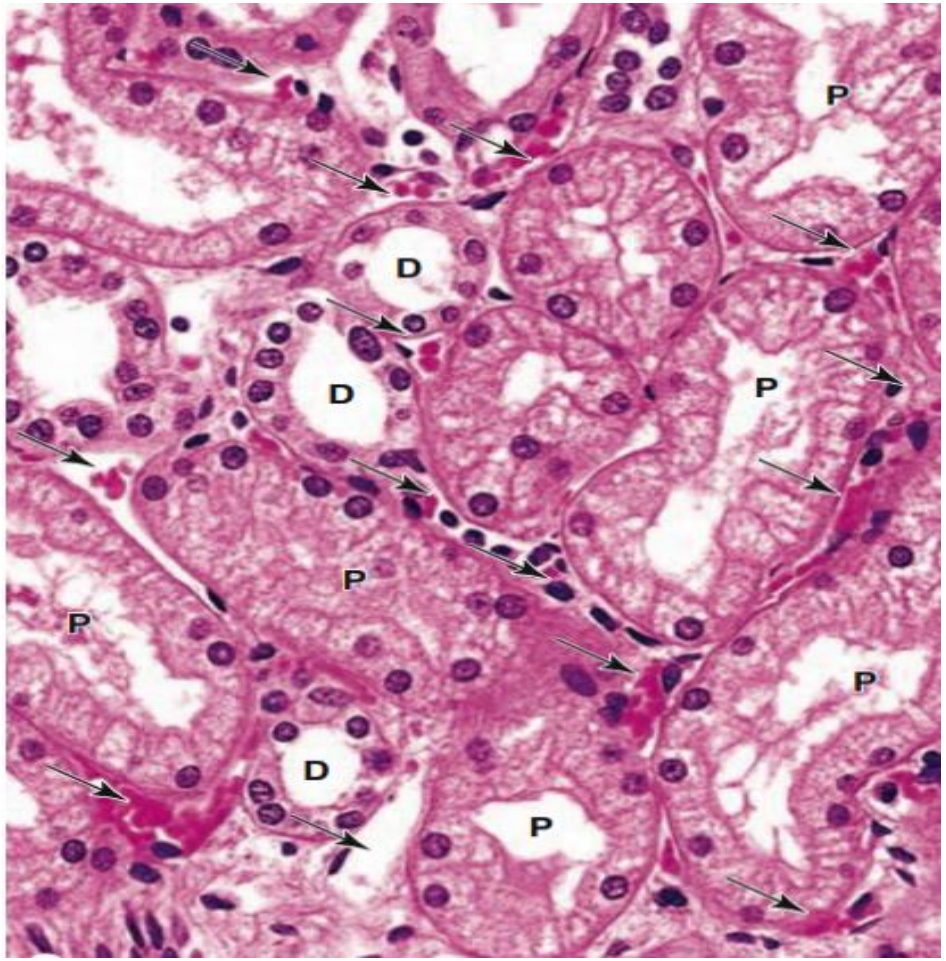


Blood Renal Barrier





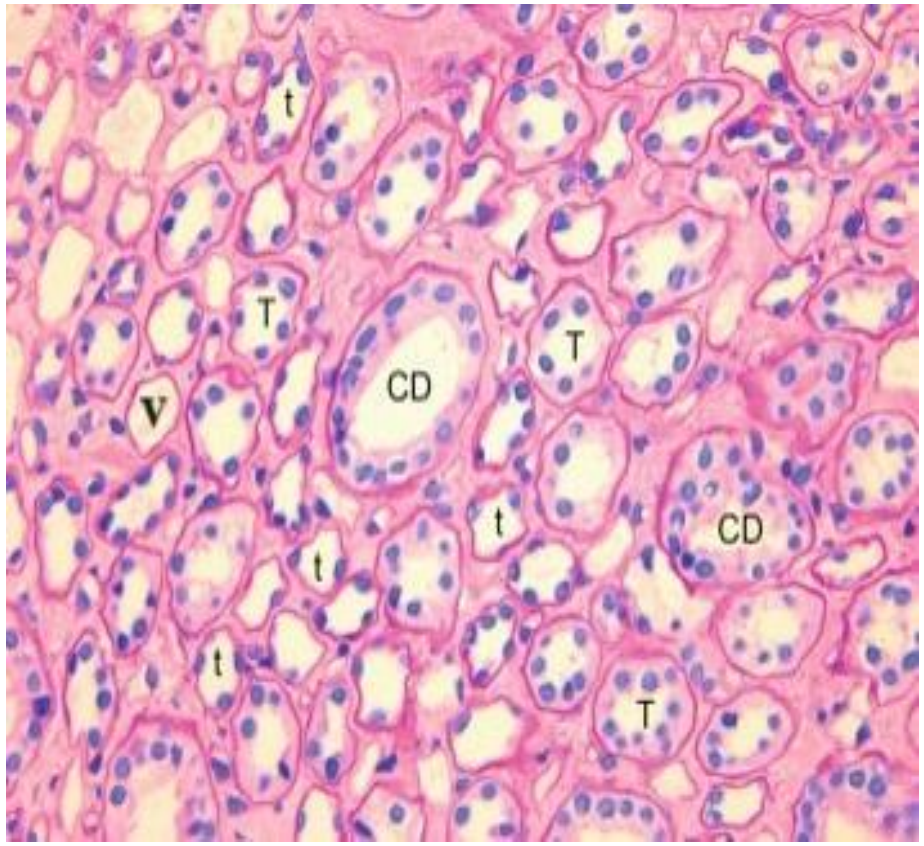
Electron micrograph of the filtration barrier in a renal corpuscle



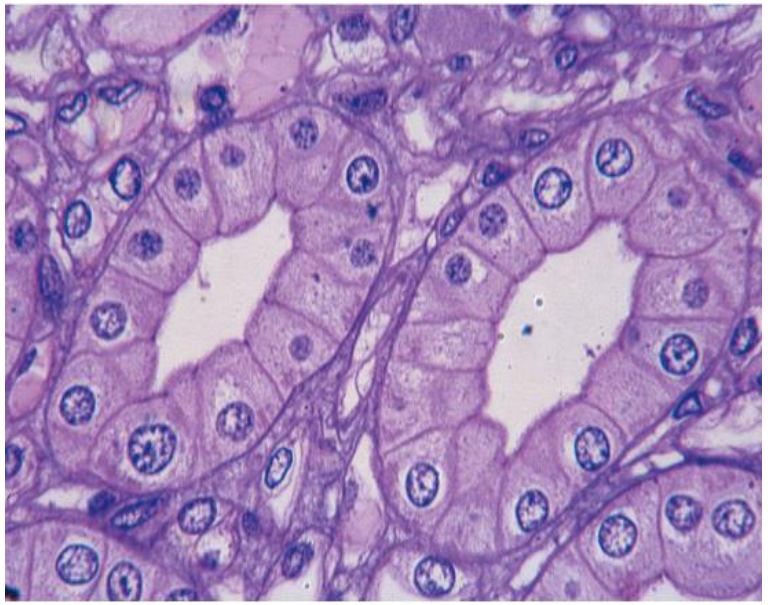
Light micrograph, Renal cortex section showing **a proximal convoluted tubule** (P), its cells presenting a brush border. **Distal convoluted tubules** (D). Peritubular capillaries and draining venules (arrows)

Renal cortex section, **PCT**; Proximal convoluted tubule. **BB;** Brush border.

Renal Medulla

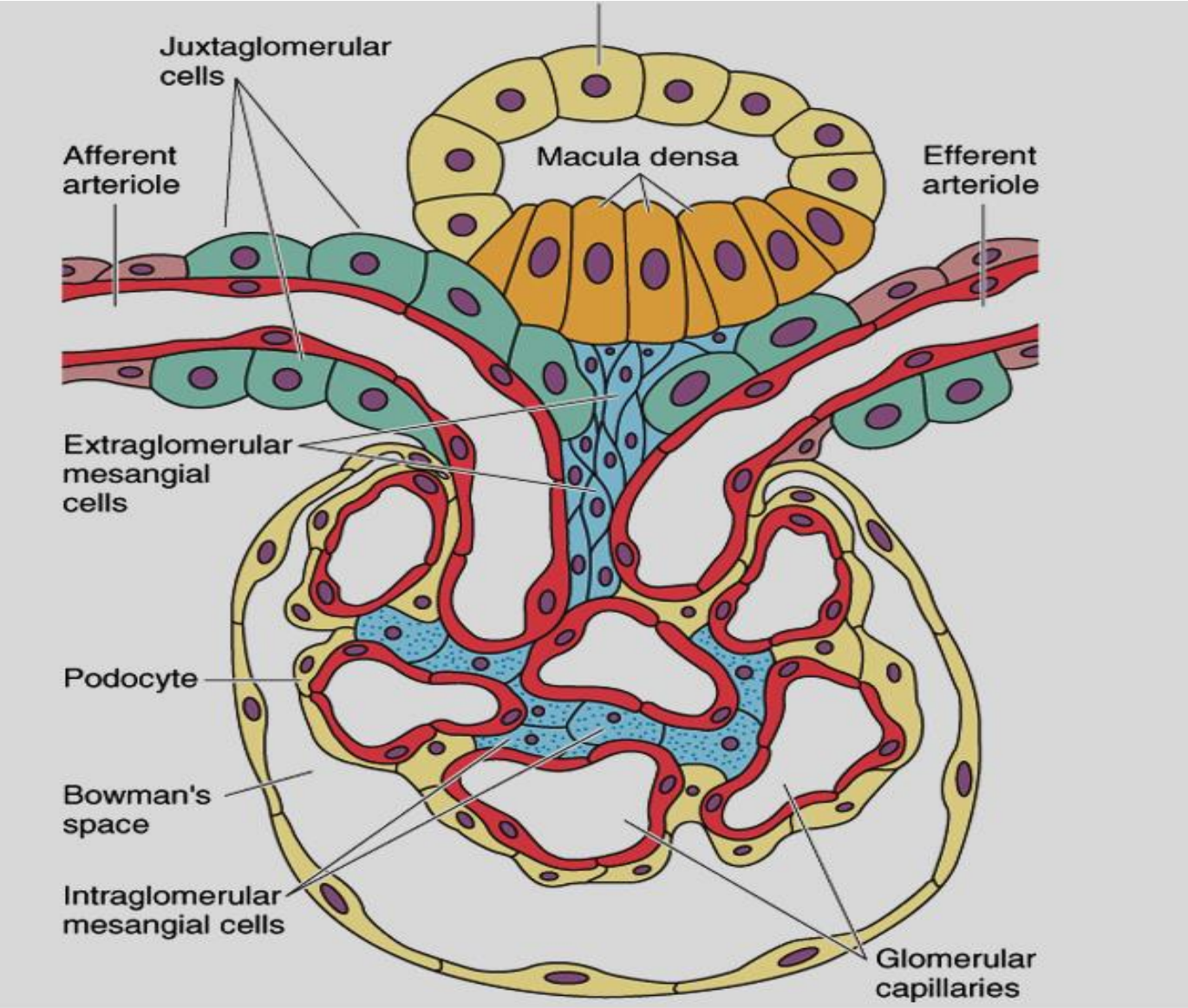


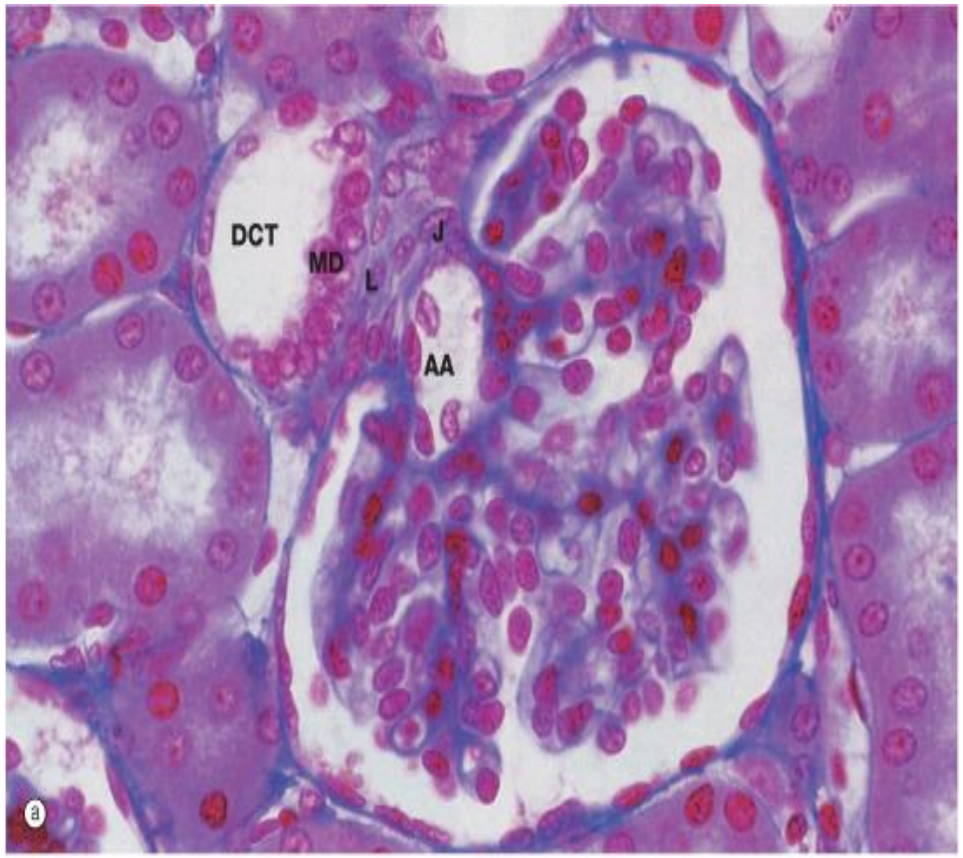
Light micrograph of Cross section of **Renal Medulla;** shows closely packed cross sections of the many Henle's loop, thin descending and ascending limbs (t) and thick ascending limbs (T), intermingled with parallel vasa recta capillaries containing blood (v) and collecting ducts (CD).



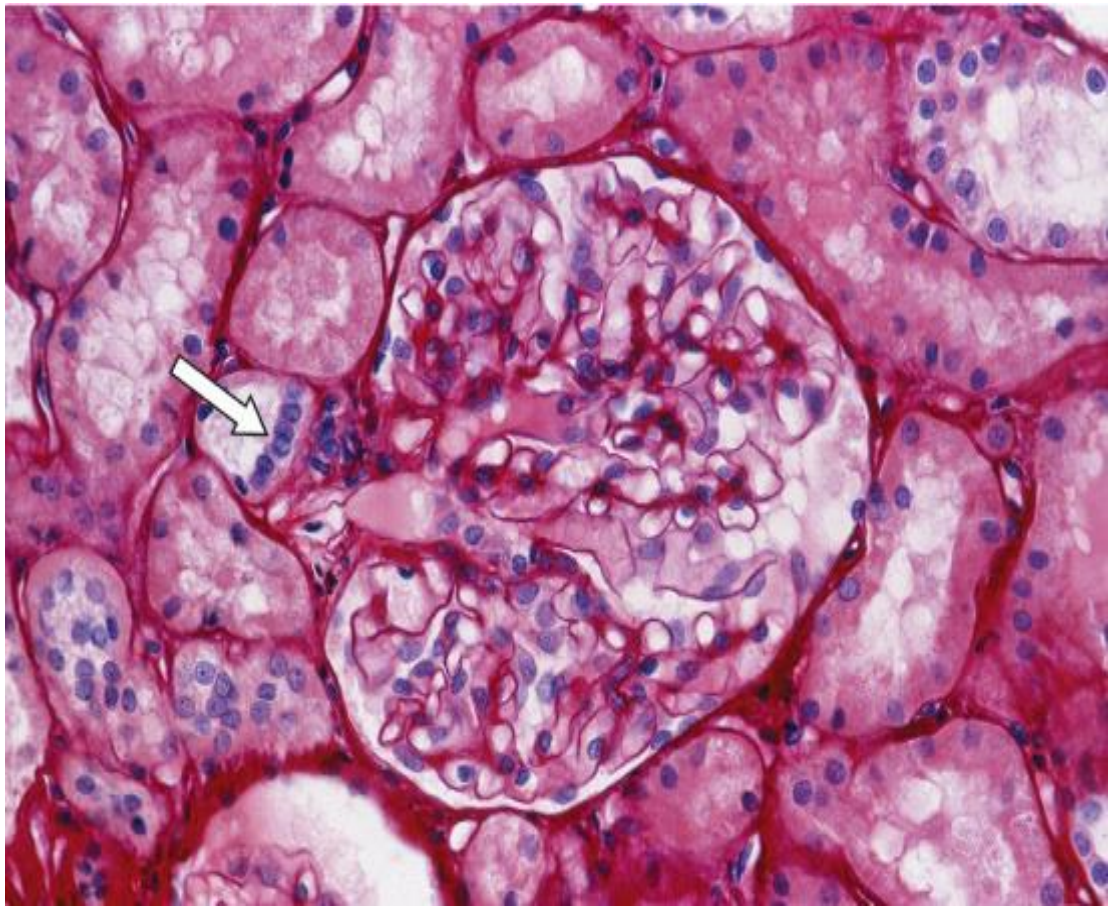
Photomicrograph of renal medulla showing two collecting ducts consisting of cuboidal cells resting on a basement membrane.

Juxtaglomerular Complex

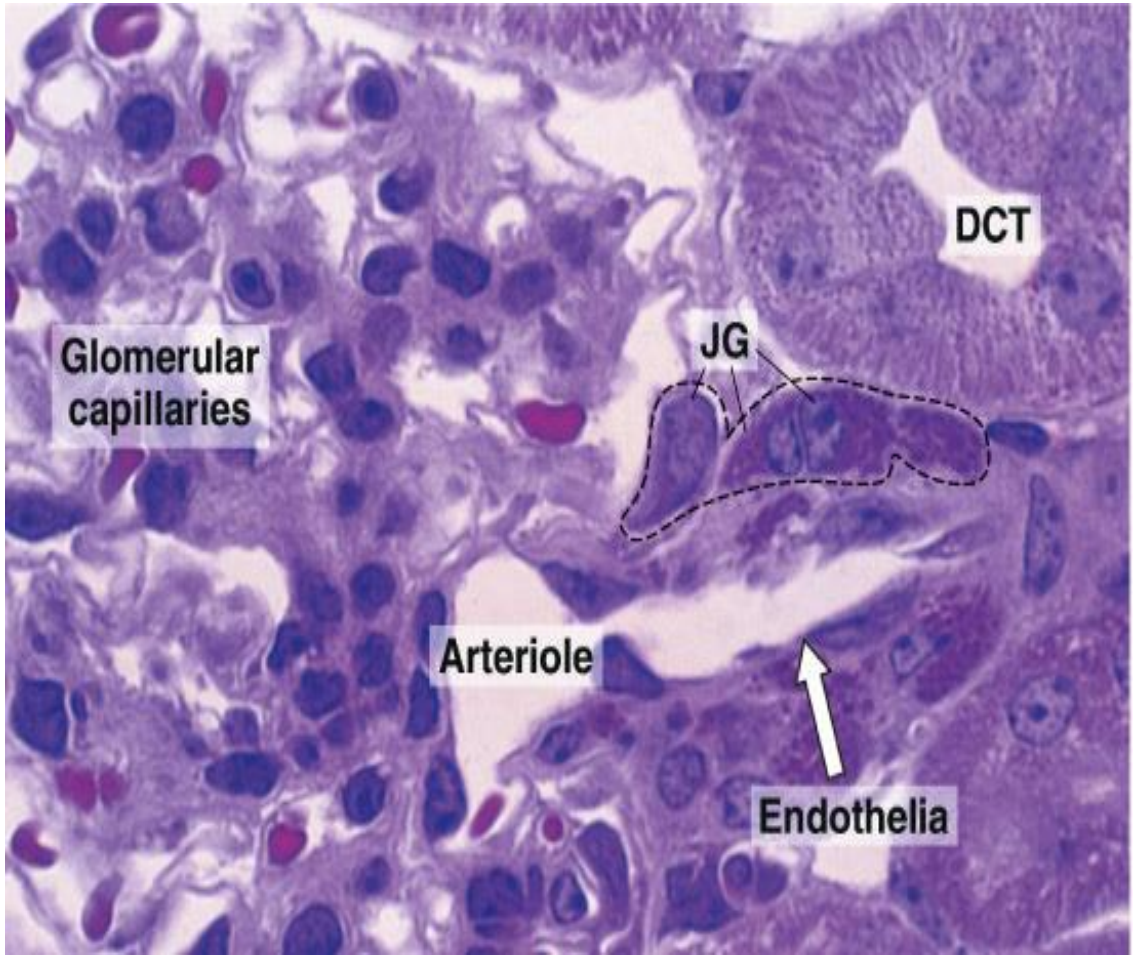




L- Lacis cell (Extra glomerular mesangial cells)
MD- Macula densa.
DCT- Distal convoluted tubule.
J- Juxtaglomerular cells.
AA- Afferent arteriole.

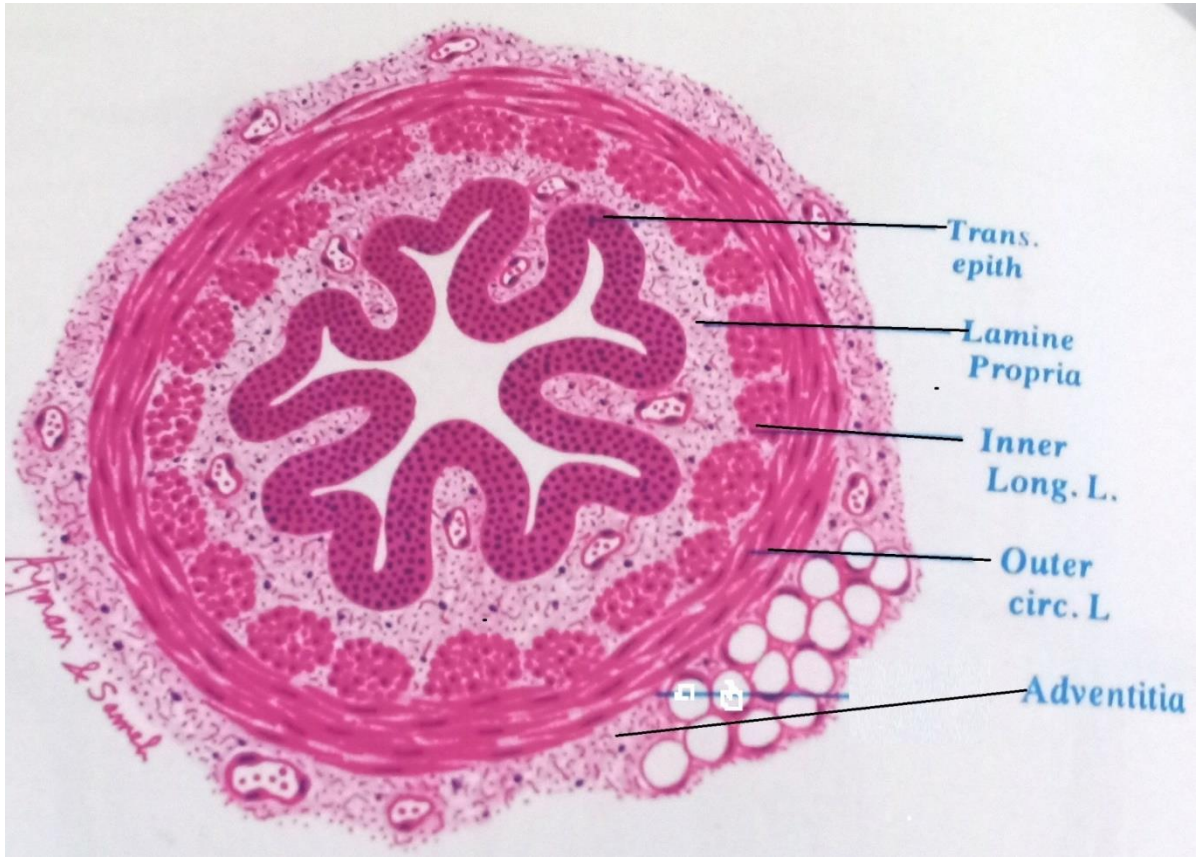


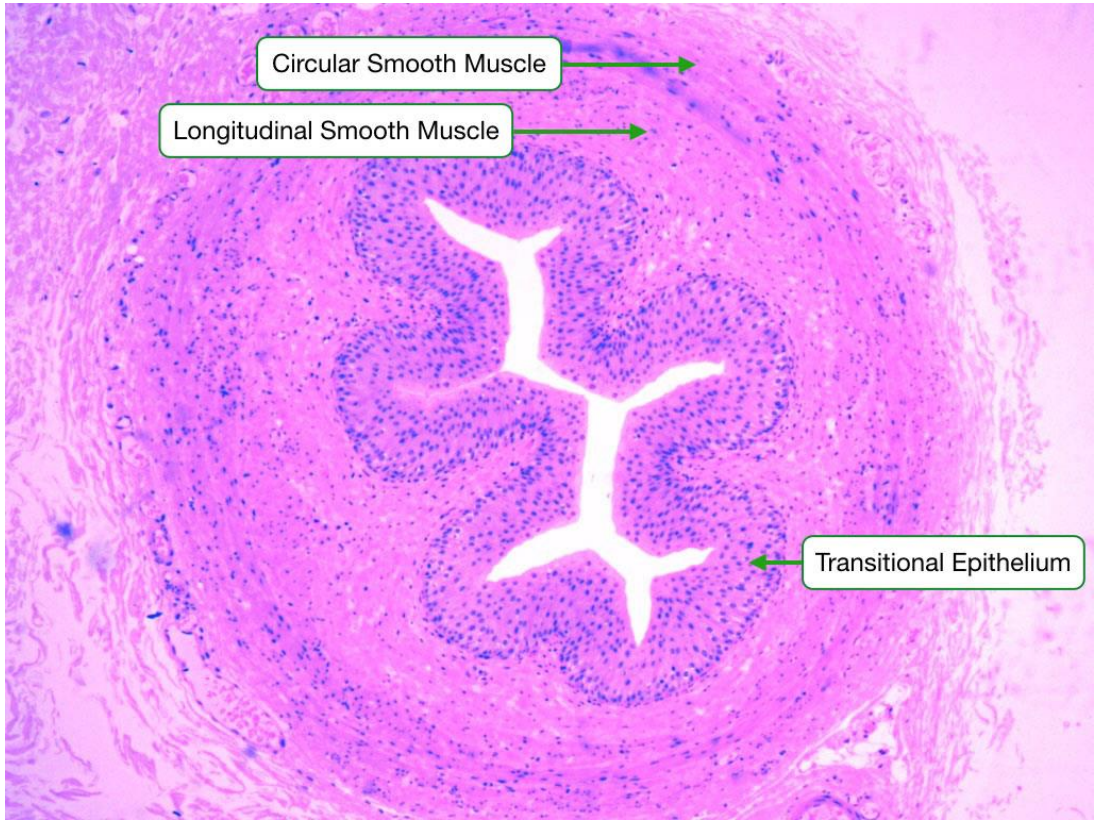
A macula densa (arrow) is seen at the vascular pole of a renal corpuscle.



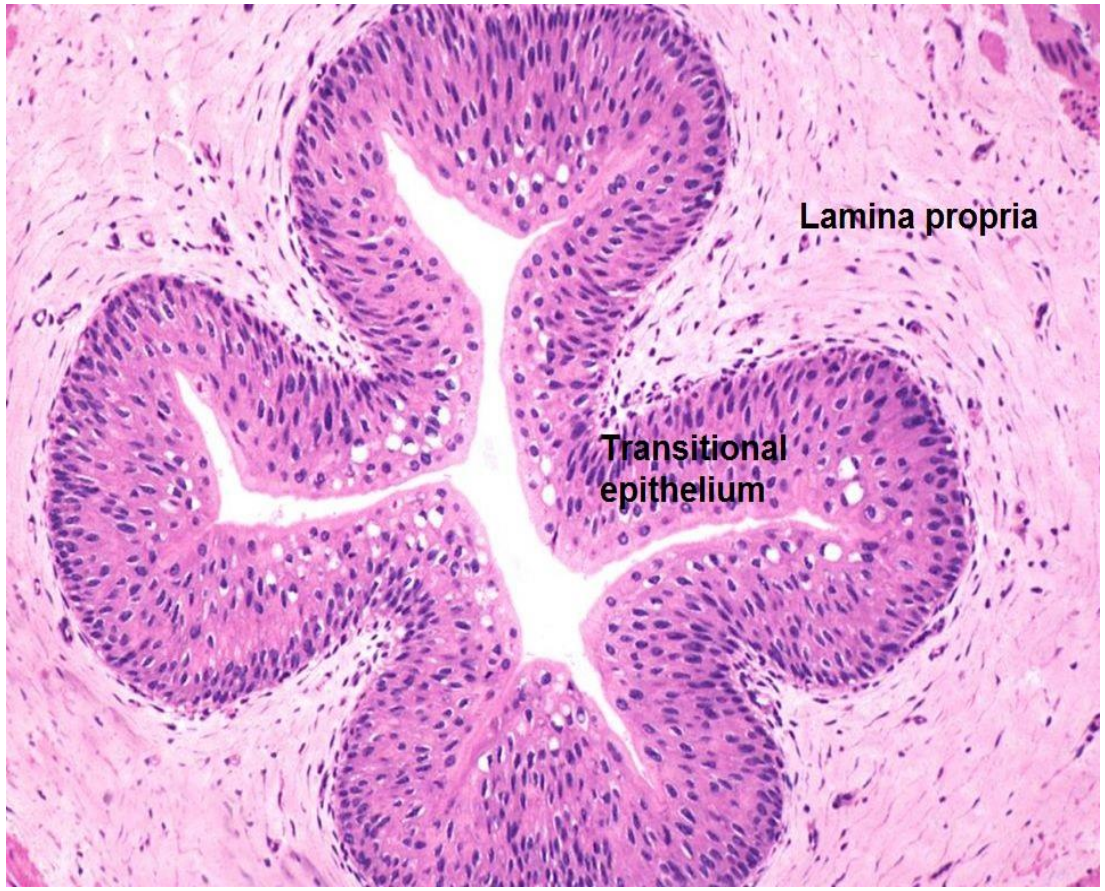
Photomicrograph of an **afferent arteriole** entering a renal corpuscle. The wall of this arteriole shows the **juxtaglomerular (JG) cells** (broken line). **A distal convoluted tubule** (DCT).

Microscopic Appearance of Ureter

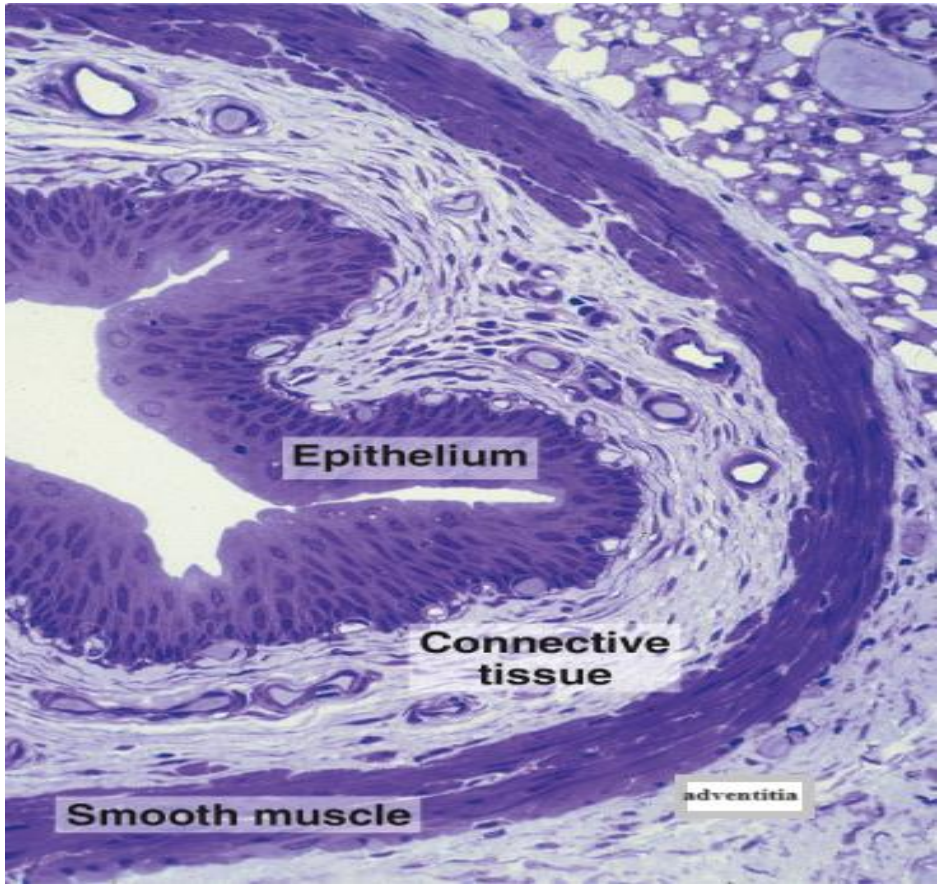




Microscopic Appearance of Ureter

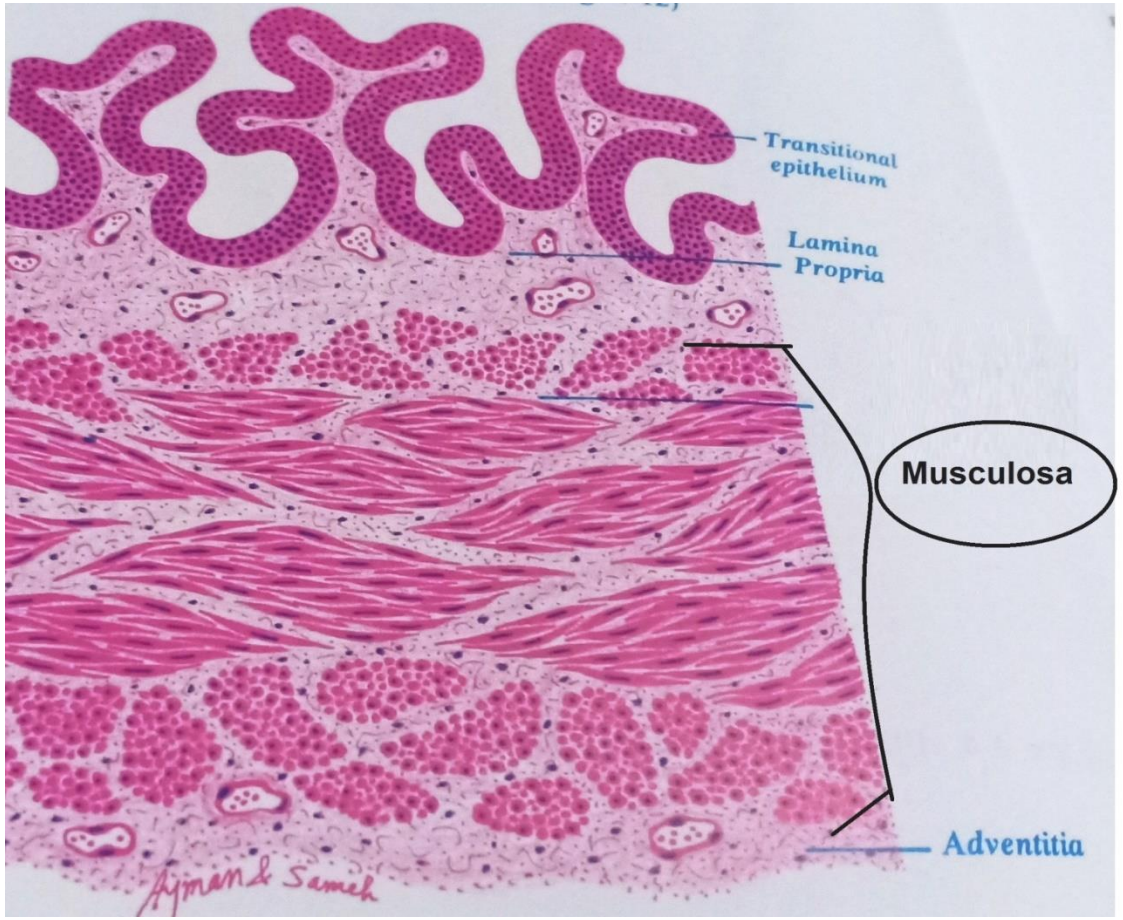


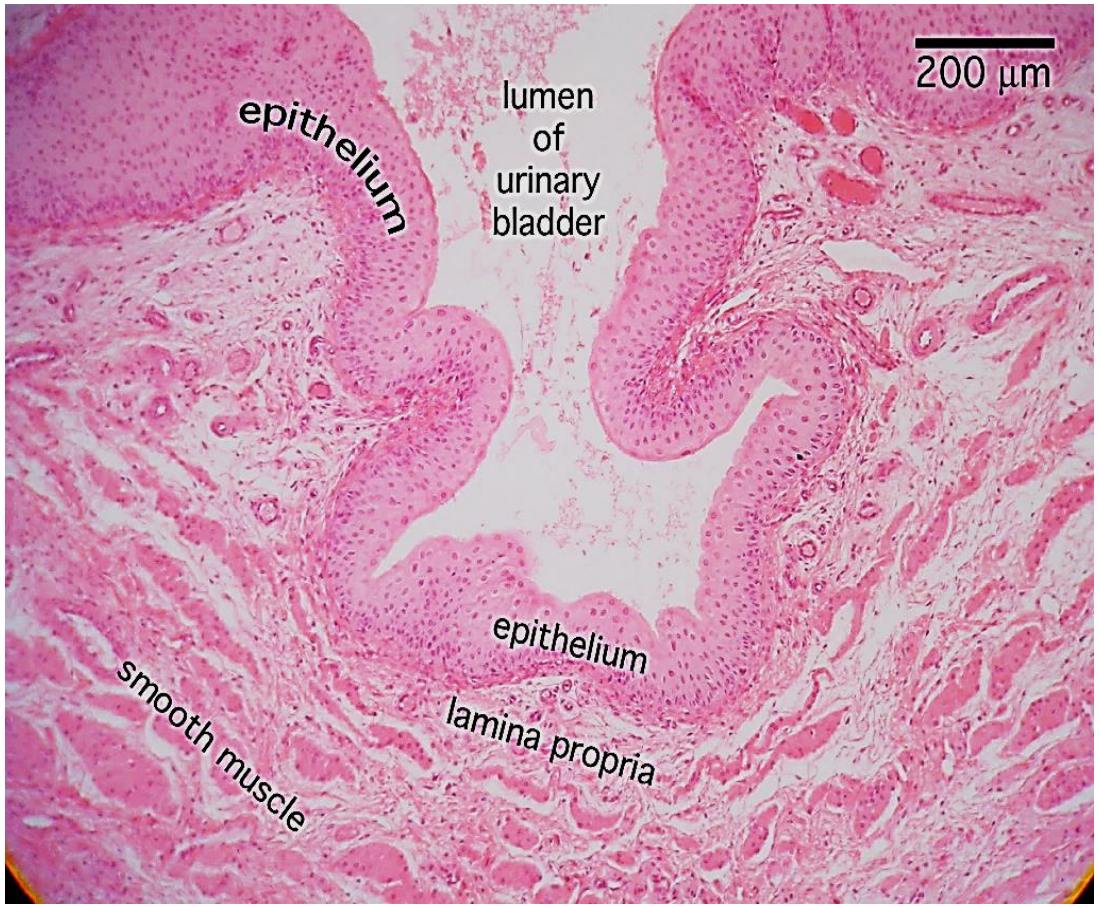
Light micrograph showing stellate-shaped lumen of ureter.
Mucosa of ureter; Transitional Epithelium &Lamina propria.



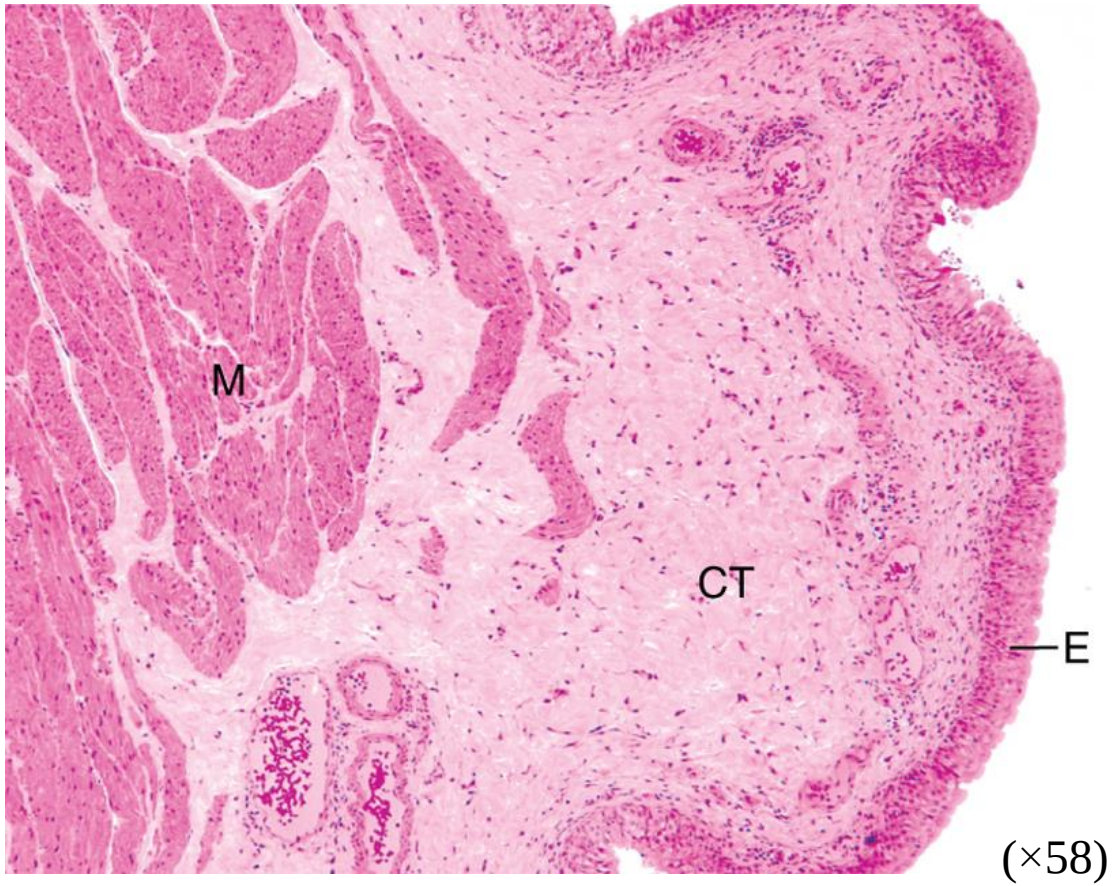
Light micrograph showing structure of the ureter, which consists of an inner layer of transitional epithelium, a highly vascularized connective tissue (lamina propria), a smooth muscle layer, and an outer layer of connective tissue (adventitia).

Microscopic Appearance of Urinary Bladder

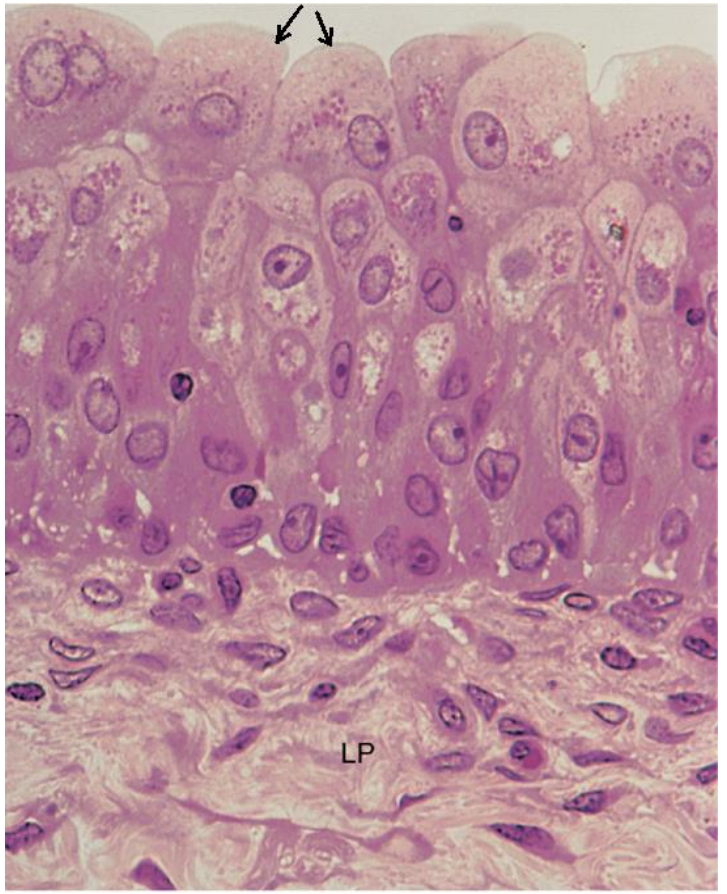




Microscopic Appearance of Urinary Bladder

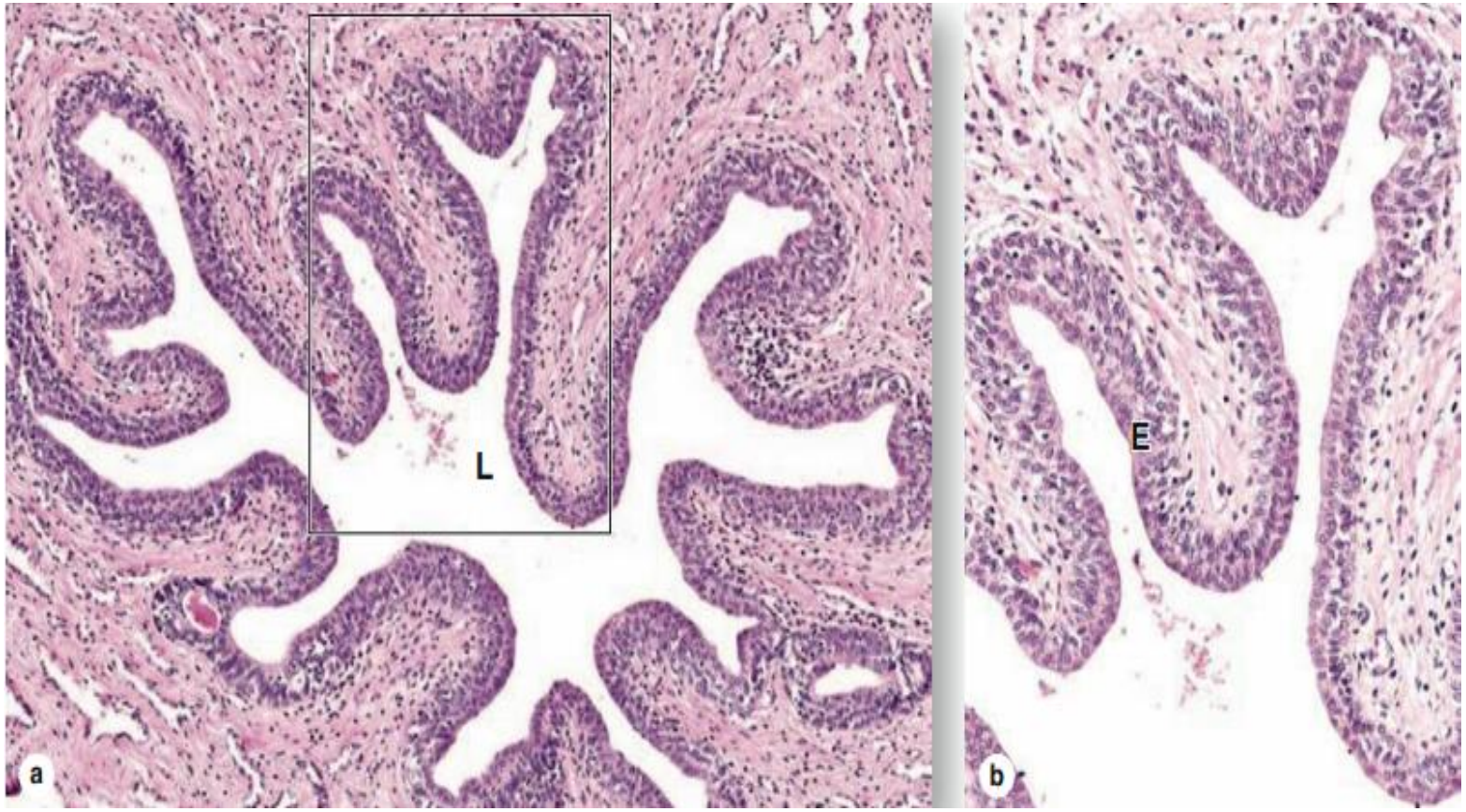


Light micrograph of the urinary bladder. Observe the transitional epithelium (E), the lamina propria connective tissue (CT), and the muscular coat (M) of the bladder.



Light micrograph of transitional epithelium from the bladder. Observe the very large, dome-shaped cells (arrows). LP; lamina propria.

Microscopic Appearance of Urethra



(a) A transverse section through urethra shows that the mucosa has large longitudinal folds around the lumen (L).

(b) A higher magnification shows the epithelial lining (stratified columnar epithelium (E).


Thank
you