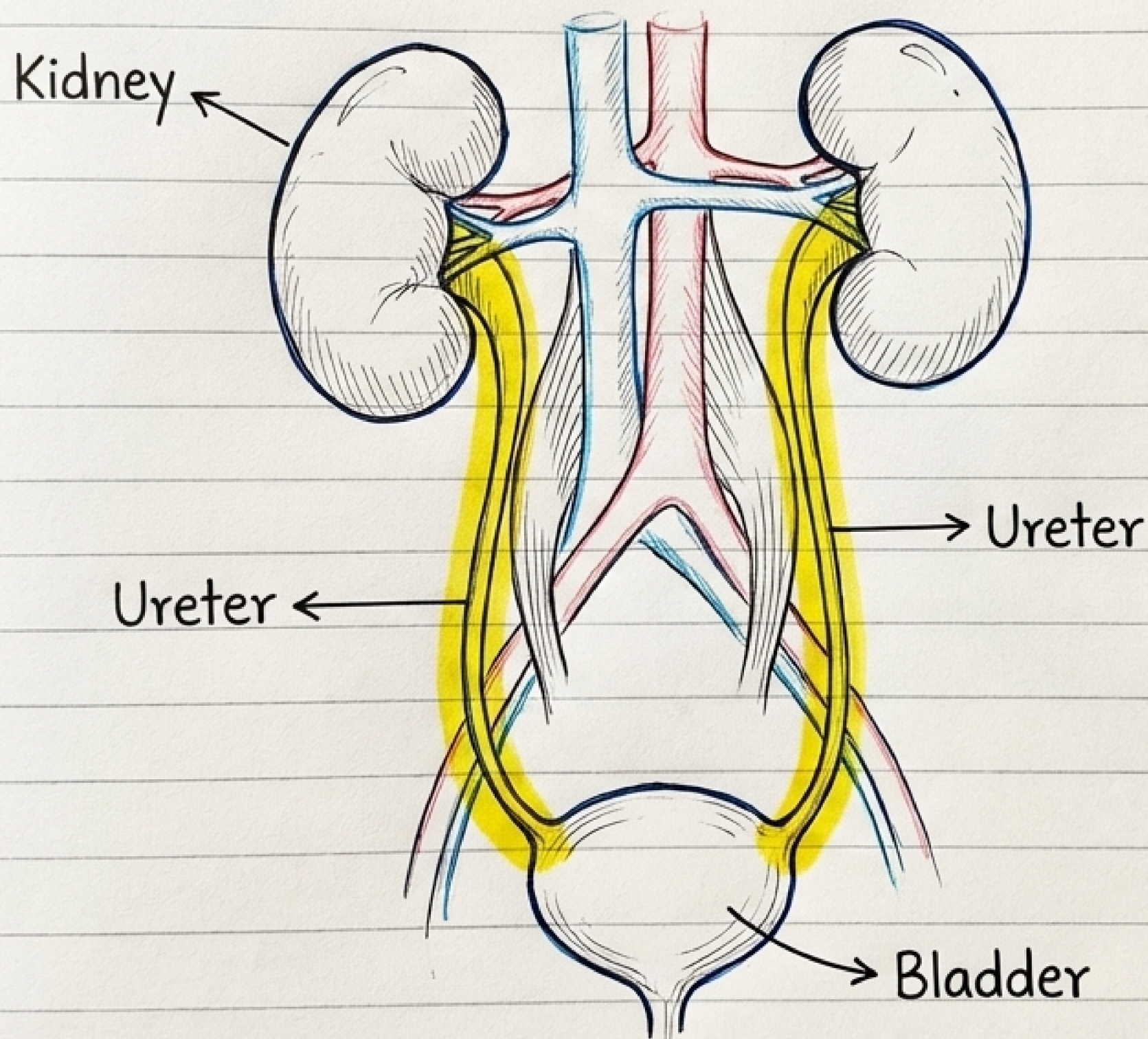


ANATOMY - THE URETER

A Journey from the Kidney to the Bladder

V. Imp. Topic
for Surgery!

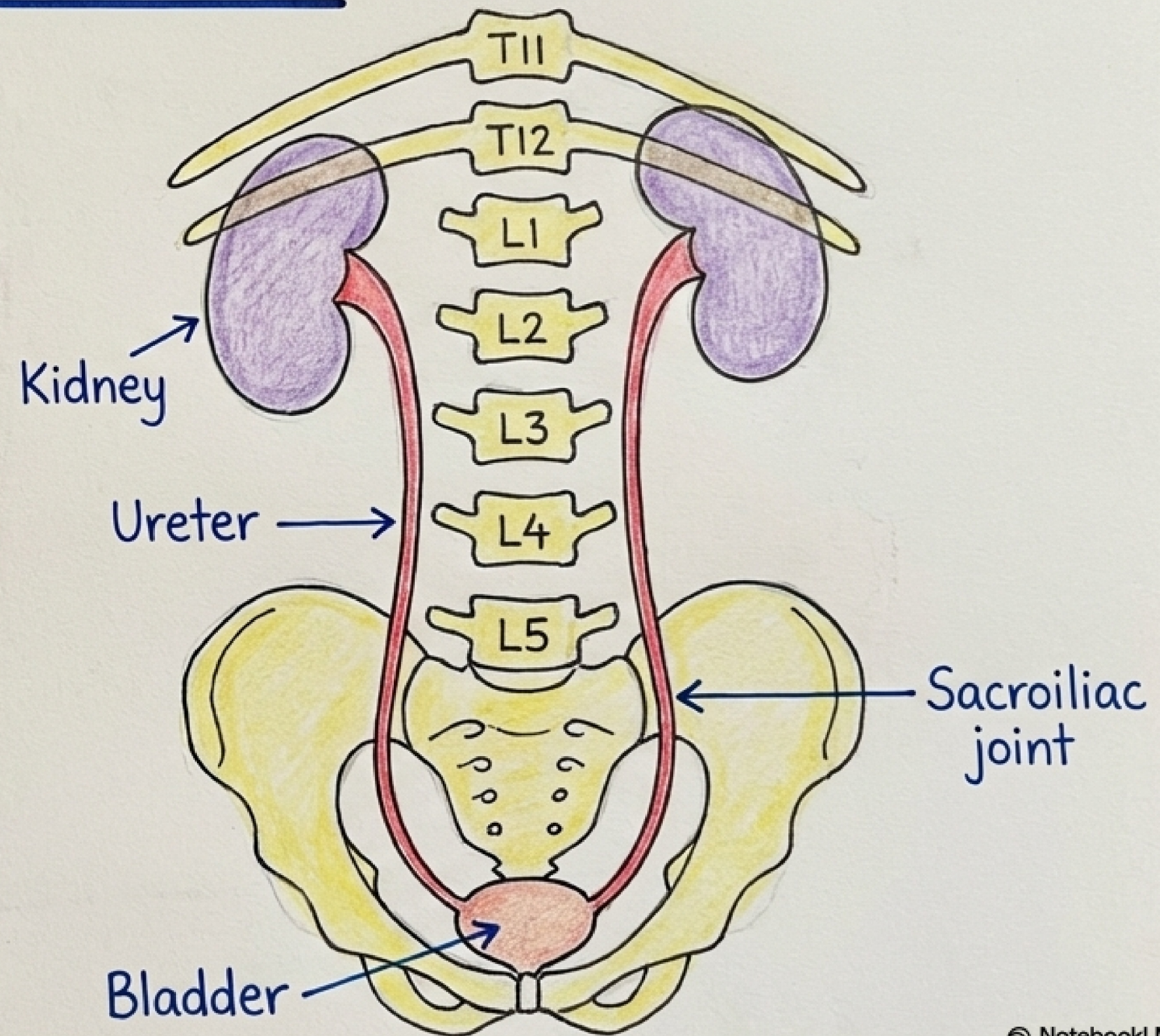


THE URETER: Our Body's Drainage Pipe

An Overview of its Path

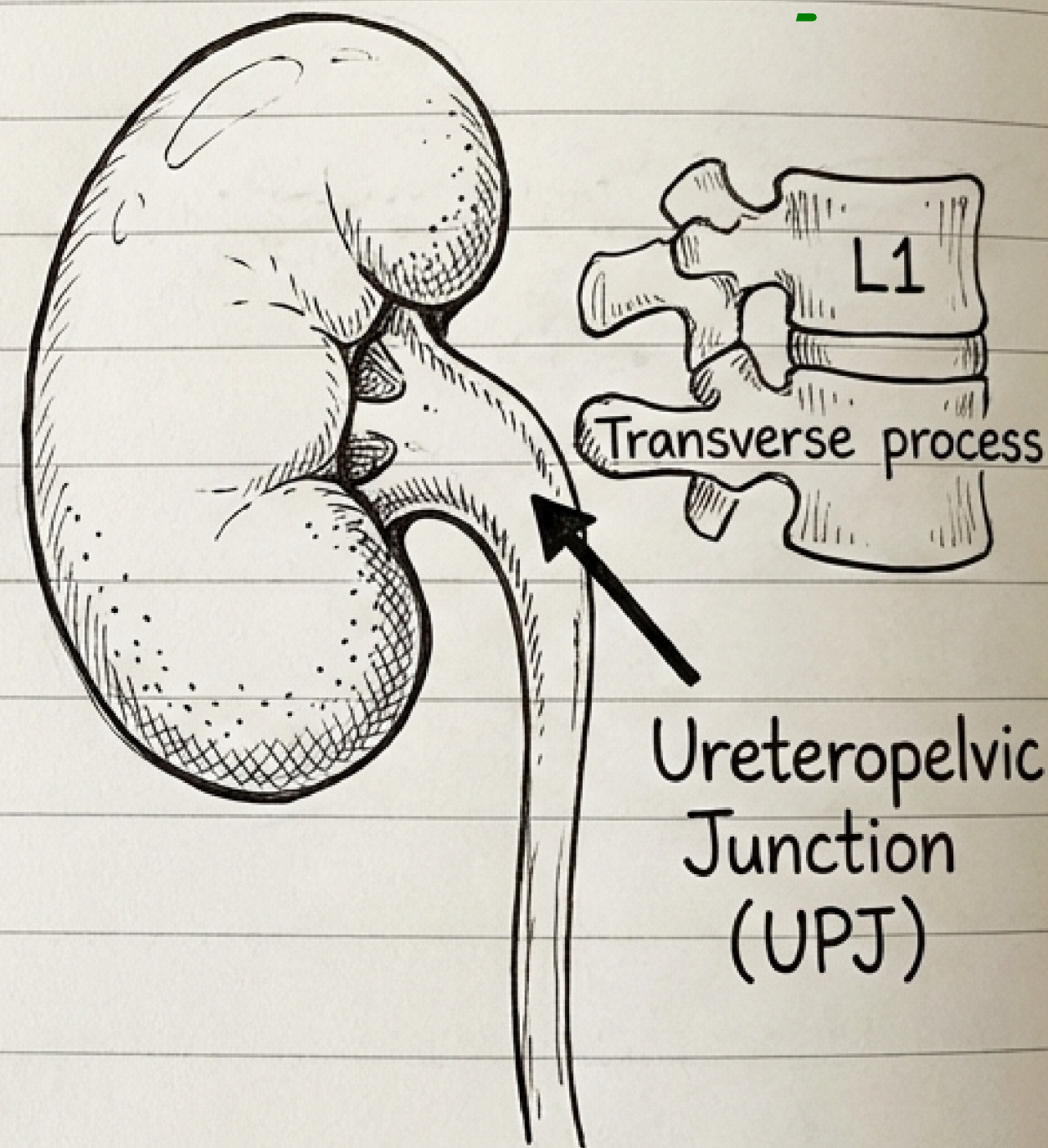
Tip: Right kidney is a bit lower than the left because of the liver!

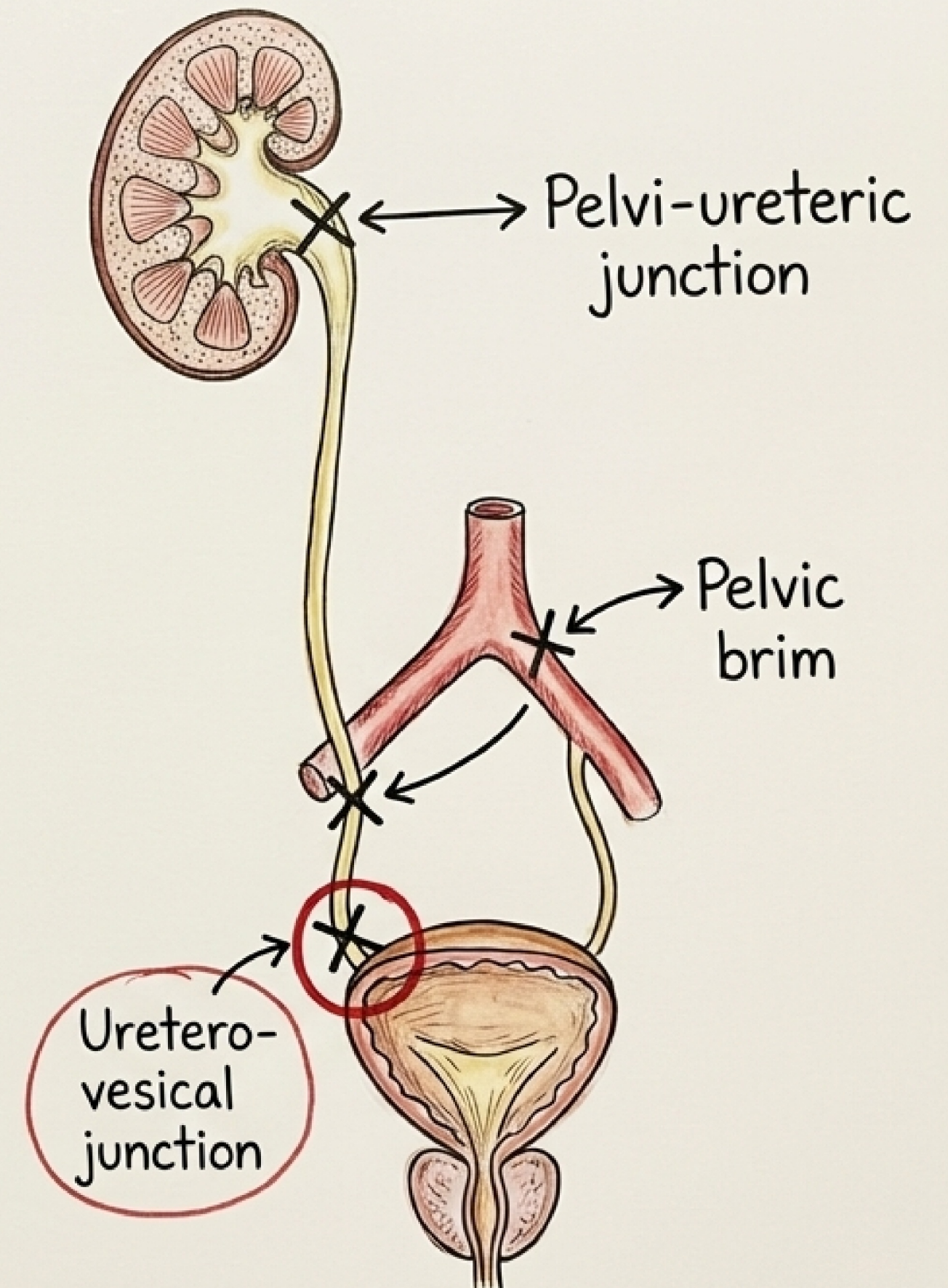
- A muscular tube that carries urine from the kidney to the urinary bladder.
- **Length**: Approx. 25-30 cm long.
- **Position**: It is a retroperitoneal structure throughout its course.
- It begins at the renal pelvis and ends at the bladder.



The Journey Begins: Origin

- The ureter begins at the **Ureteropelvic Junction (UPJ)**.
- This is where the renal pelvis narrows to become the ureter proper.
- Location: In front of the tip of the transverse process of **L1** vertebra.

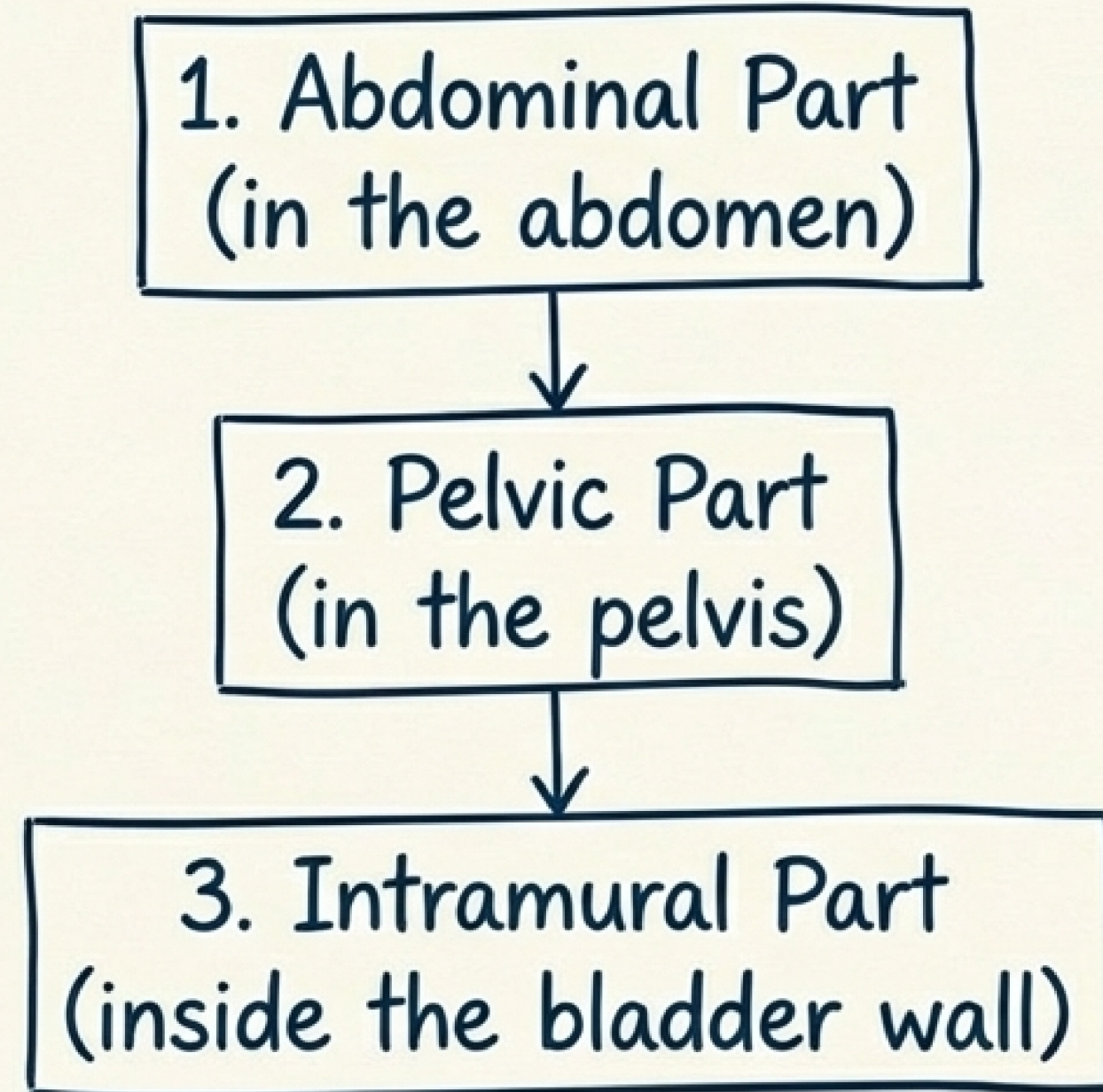




The Course of the Ureter - Our Route

The path of the ureter is divided into three parts:

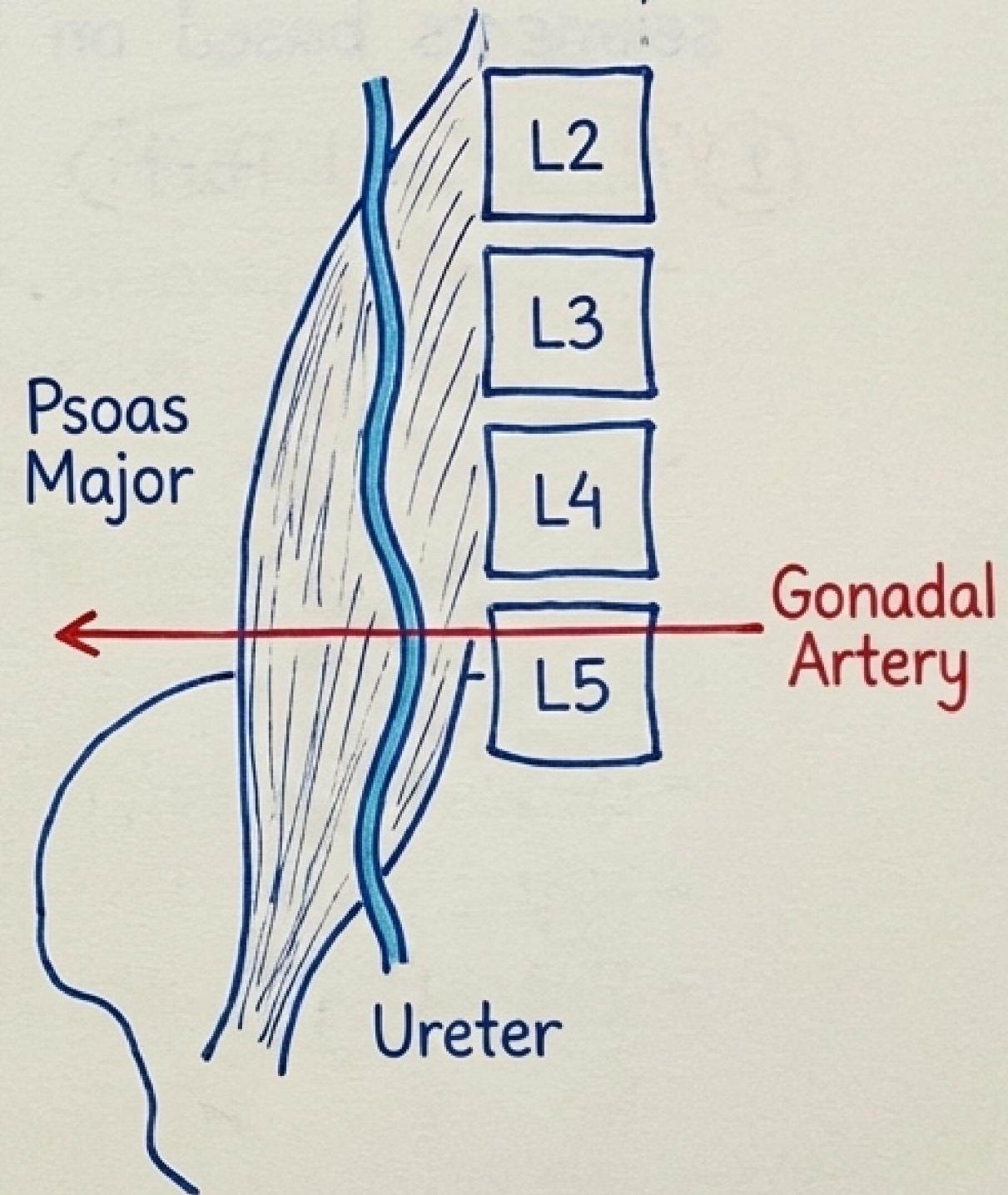
We will follow this path step-by-step.



The Abdominal Course

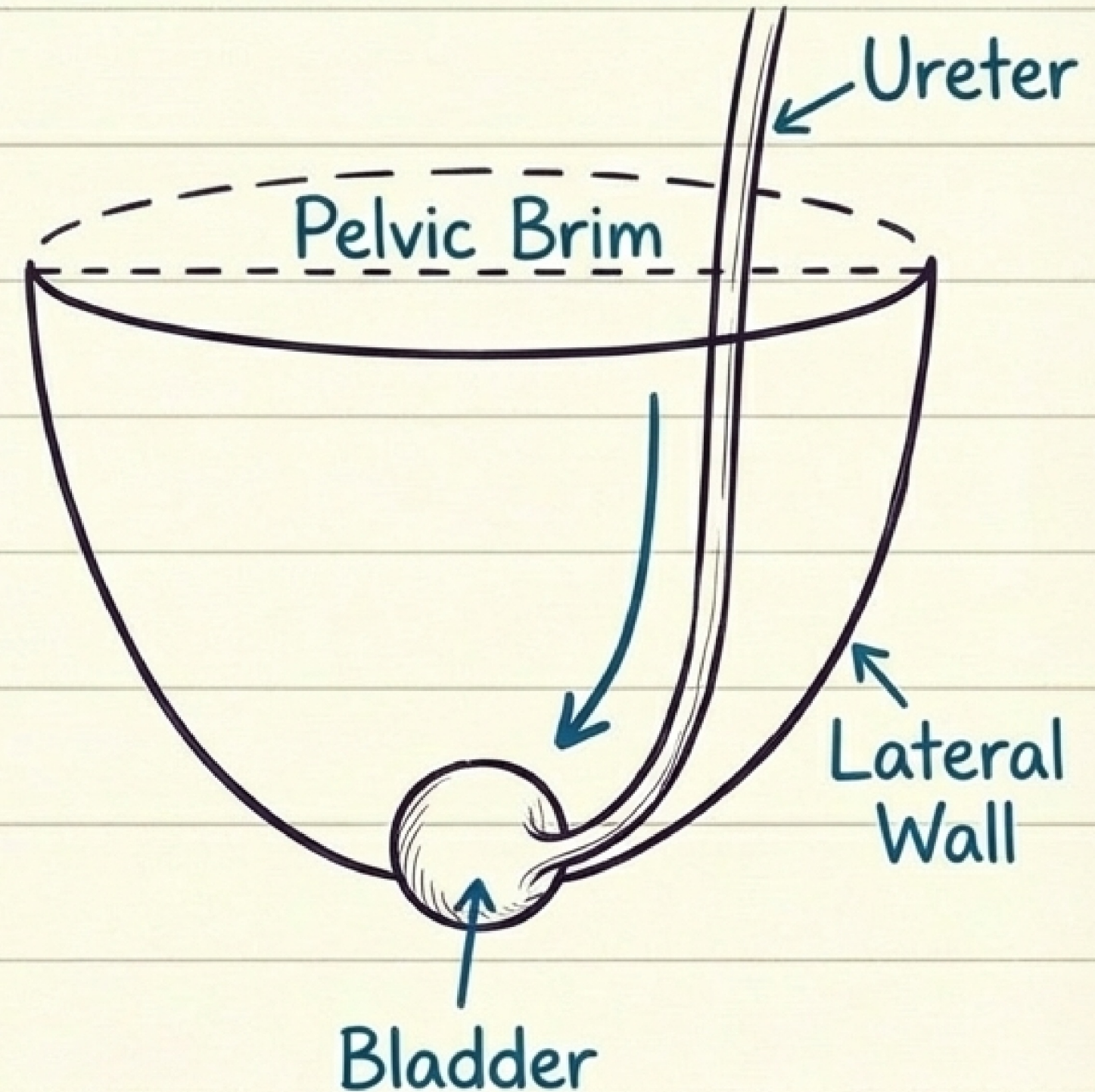
Path from Kidney to Pelvis

- Begins at the pelvi-ureteric junction (PUJ), usually at the level of the L1/L2 vertebra.
- Descends vertically on the psoas major muscle.
- It passes just in front of the tips of the transverse processes of L2-L5 vertebrae.
- Anteriorly, it is crossed by the gonadal artery and vein.
- At the pelvic brim, the right ureter is close to the appendix.



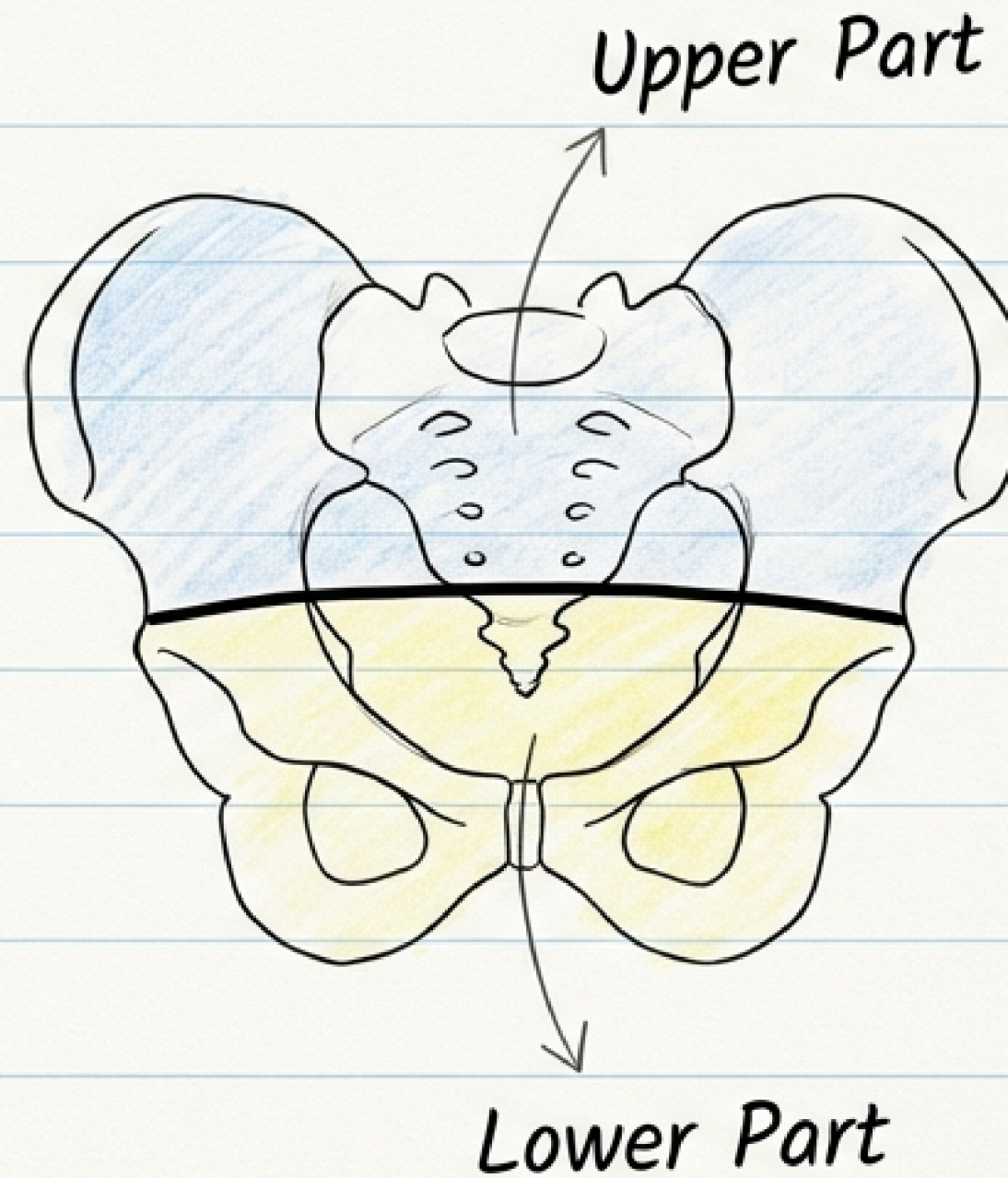
Part 2: The Pelvic Course

- * After crossing the pelvic brim, the ureter travels down.
- * It runs along the lateral wall of the pelvis.
- * Finally, it turns forward and medially to enter the bladder.



THE MAIN IDEA

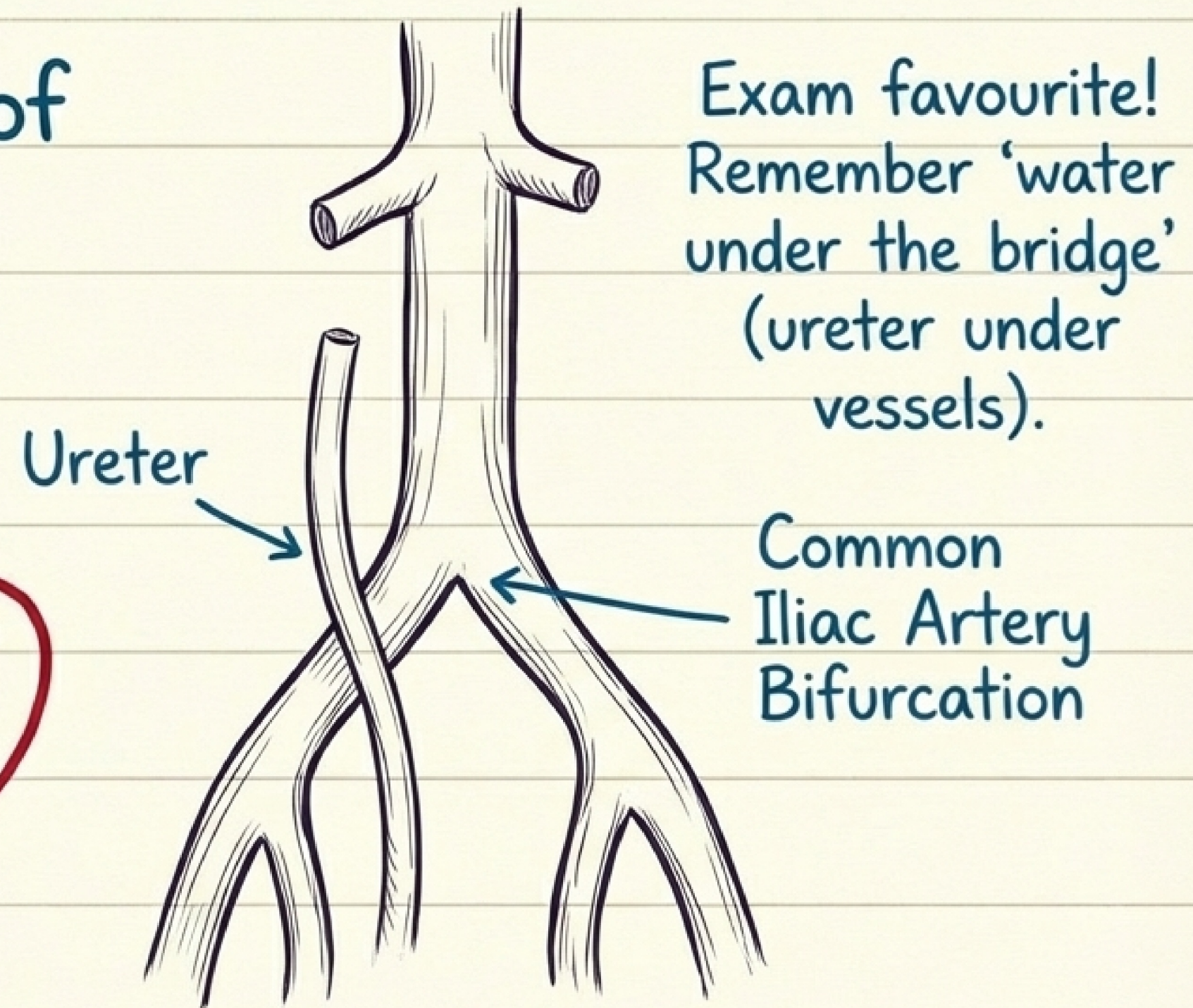
- The bony pelvis is divided into two parts.
- An imaginary line called the **Pelvic Brim** separates them.
- This creates an upper part and a lower part.



Easy way to understand the whole pelvic region!

Landmark: Crossing the Pelvic Brim

- * This happens at the level of the **sacroiliac joints**.
- * At this point, the ureter enters the pelvic cavity.
- * Crucial Relation: It crosses the bifurcation of the common iliac artery.



Pelvic Relations: Male vs. Female

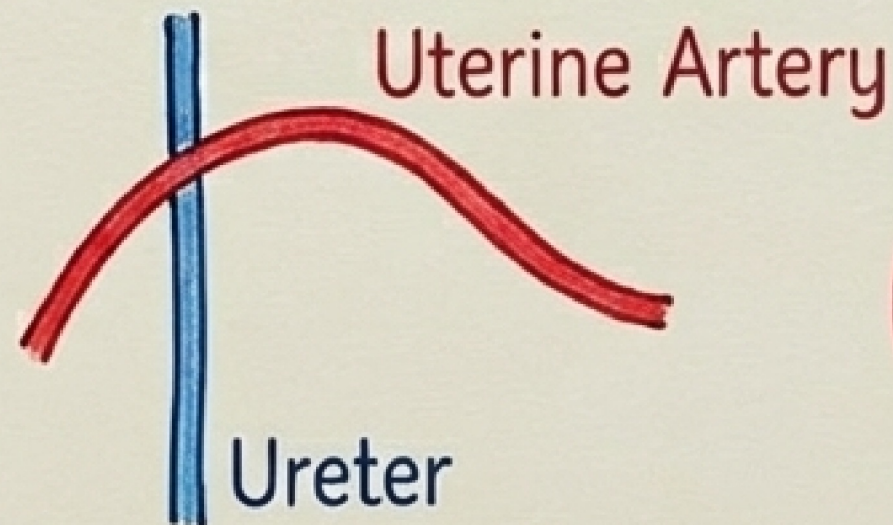
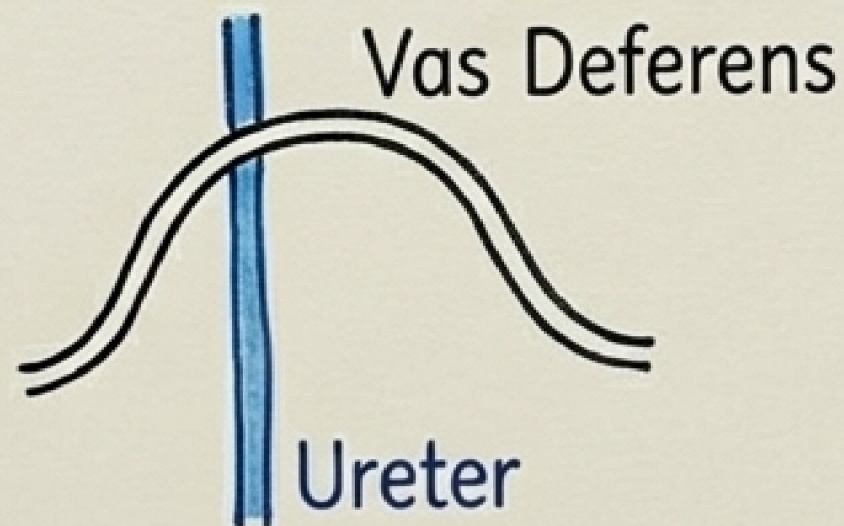
Extremely Important for Exams!

'In MALES':

- The Ductus (Vas) Deferens crosses SUPERIOR to the ureter.
- Ureter passes between the ductus deferens and the seminal vesicle.

'In FEMALES':

- The Uterine Artery crosses SUPERIOR to the ureter.
- The ureter passes about 2 cm lateral to the cervix of the uterus.



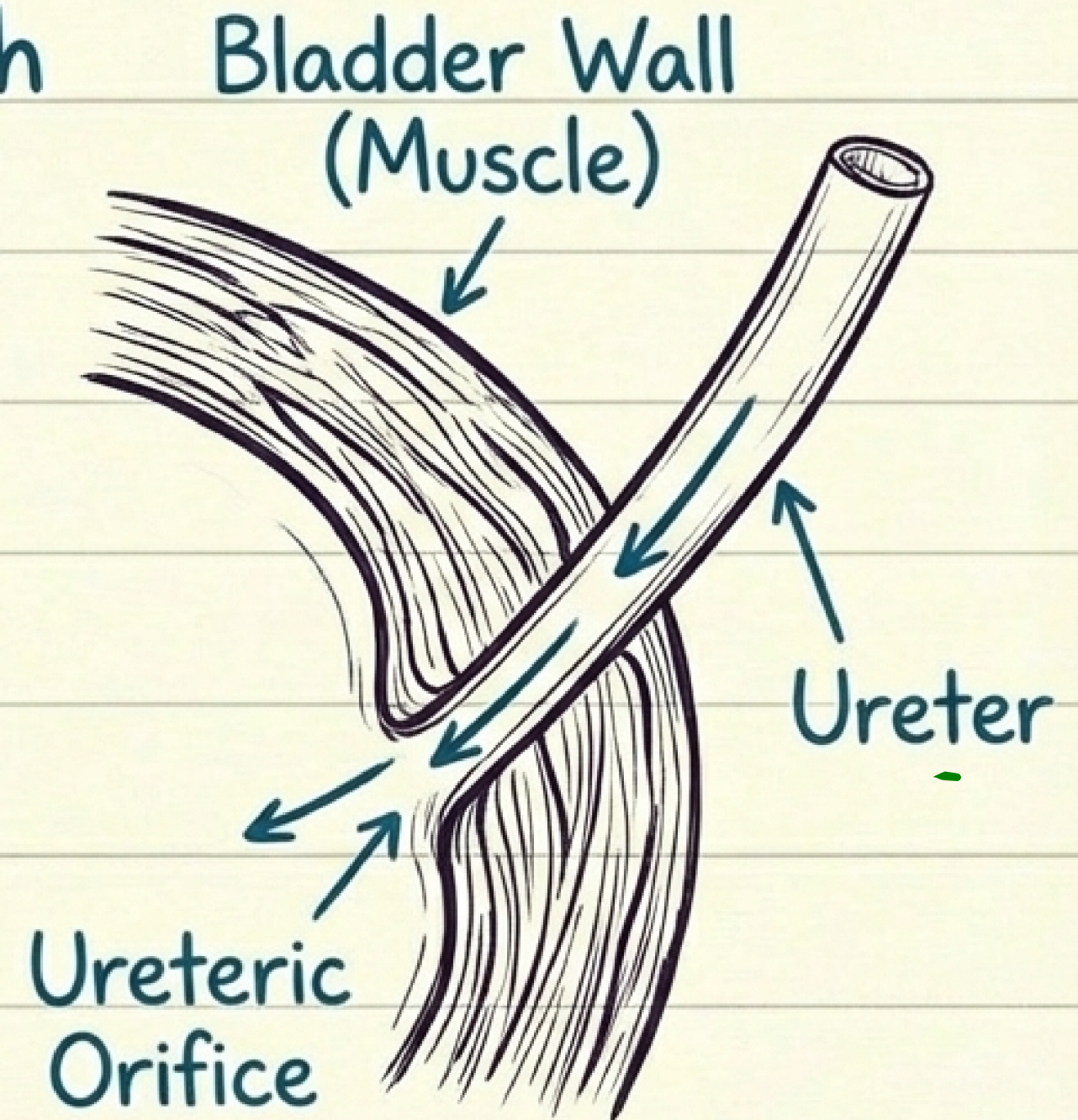
EXAM MANTRA:

Water (Ureter) under the
Bridge (Vessel)
Bridge = Vas Deferens (M)
or Uterine Artery (F)

Part 3: The Intramural Course

(Intramural = within the wall)

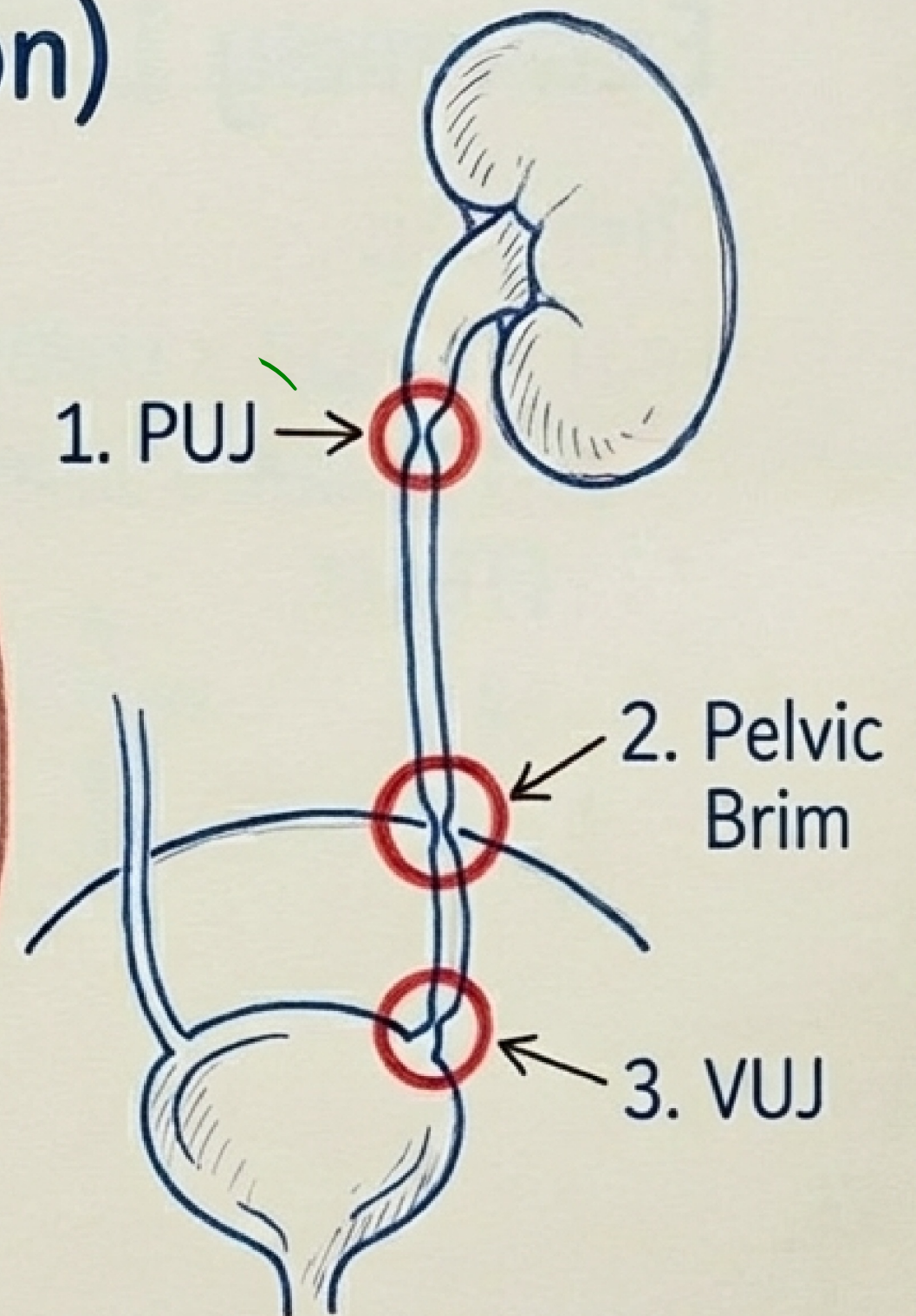
- * The ureter passes **obliquely** through the wall of the urinary bladder.
- * This oblique path creates a valve-like mechanism.
- * Prevents backflow (reflux) of urine from bladder to kidney.
- * It opens into the bladder at the **ureteric orifice**.



The Three Natural Constrictions

(Common Sites for Stone Impaction)

- These are the three narrowest points of the ureter.
- 1. At the **Pelvi-Ureteric Junction (PUJ)**:
Where the renal pelvis joins the ureter.
- 2. At the **Pelvic Brim**: Where the ureter crosses over the iliac vessels to enter the pelvis.
- 3. At the **Vesico-Ureteric Junction (VUJ)**:
Where the ureter enters the wall of the urinary bladder.



URETER CONSTRICTIONS (IMP!)

- These are normal narrow points where stones can get stuck.

1. Pelvi-ureteric Junction (PUJ):

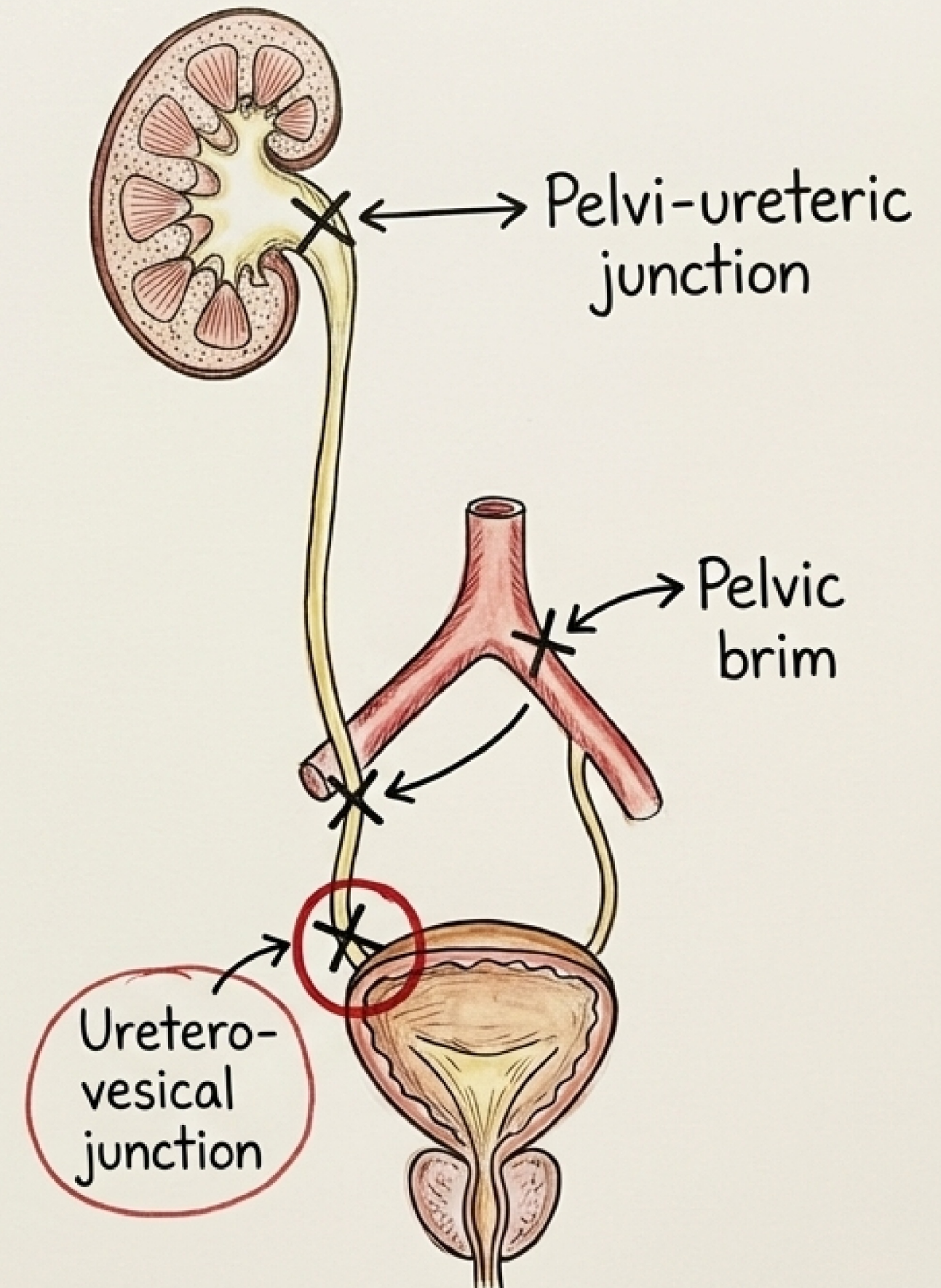
Where renal pelvis joins ureter.

2. Pelvic Brim: Where it crosses the iliac arteries.

3. Opposite Ischial Spine: In the pelvis.

4. Uretero-vesical Junction (UVJ): As it passes into the bladder wall.

(narrowest part!)



Clinical Importance

- * The ureter is a very important topic in Surgery.
- * **Reason:** It is the organ most prone to injury during pelvic operations.
- * Especially in females during removal of the uterus (hysterectomy).

V. Imp for Surgery practicals!