# Lateral pelvic wall

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# Competency

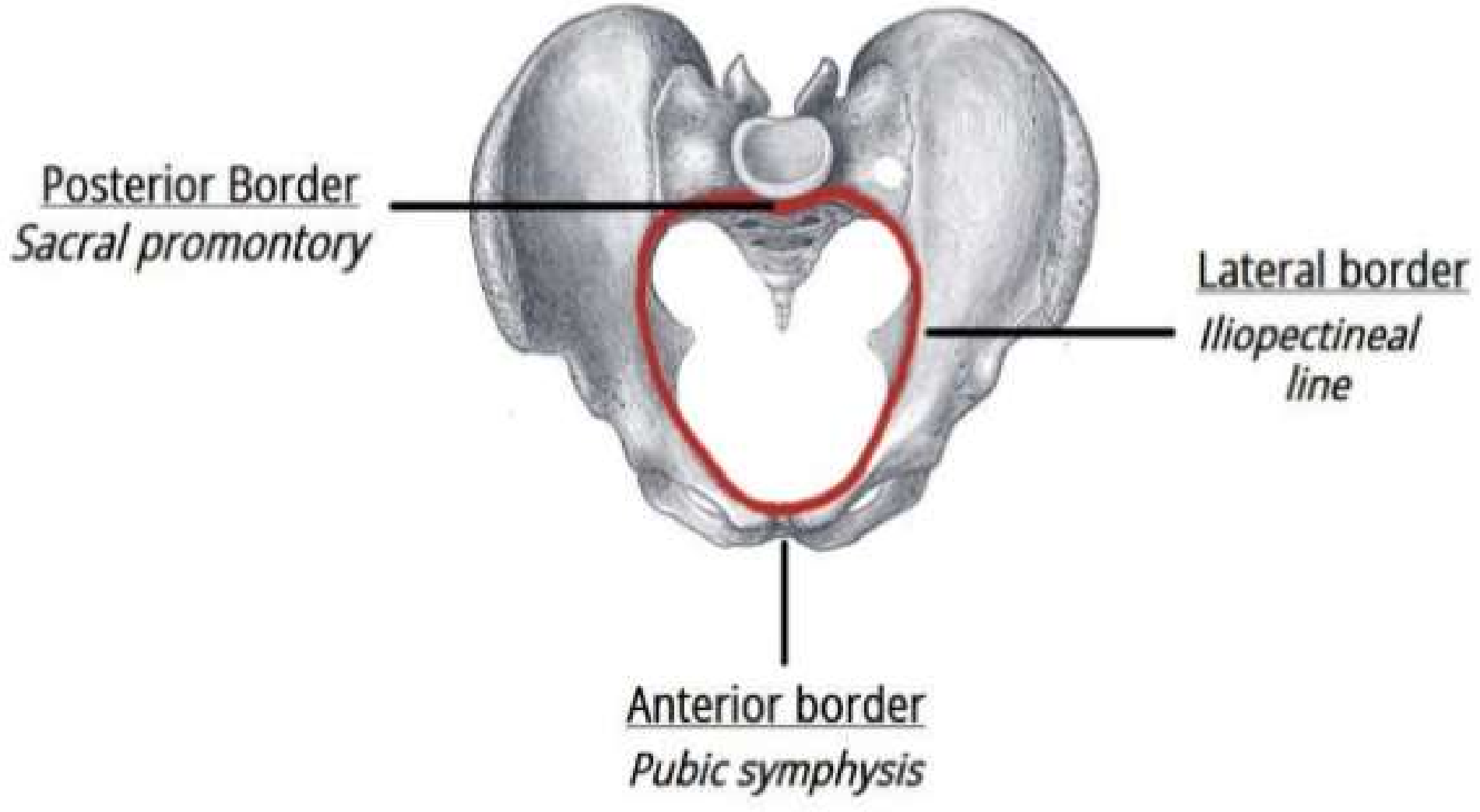
- **AN:47.9, 48.3, 48.4 Lateral pelvic wall, common and internal iliac artery, Sacral plexus**

- The pelvis is divided by the plane of the pelvic inlet or pelvic brim, or superior aperture of the pelvis into two parts :

(a) The upper part is known as the greater or false pelvis

(b) The lower part is known as the lesser or true pelvis

# Division of pelvis



# Pelvic walls

1. Anterior wall
2. Posterior wall
3. Inferior wall
4. Lateral wall

# 1. Anterior pelvic wall

- Shallowest wall

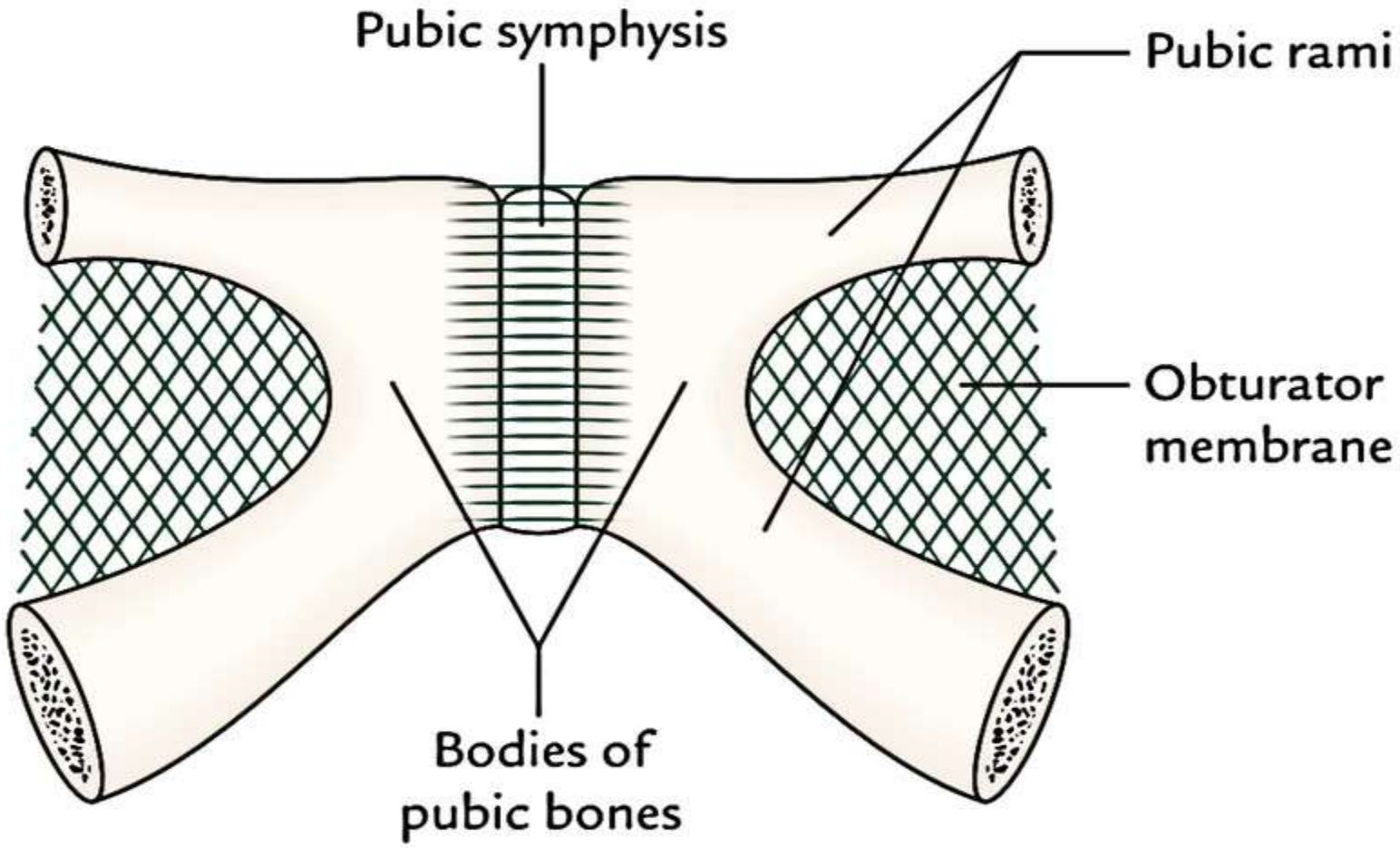
- **Formed by posterior surface of:**

➢ Pubic rami

➢ Symphysis pubis

➢ Pubis bone

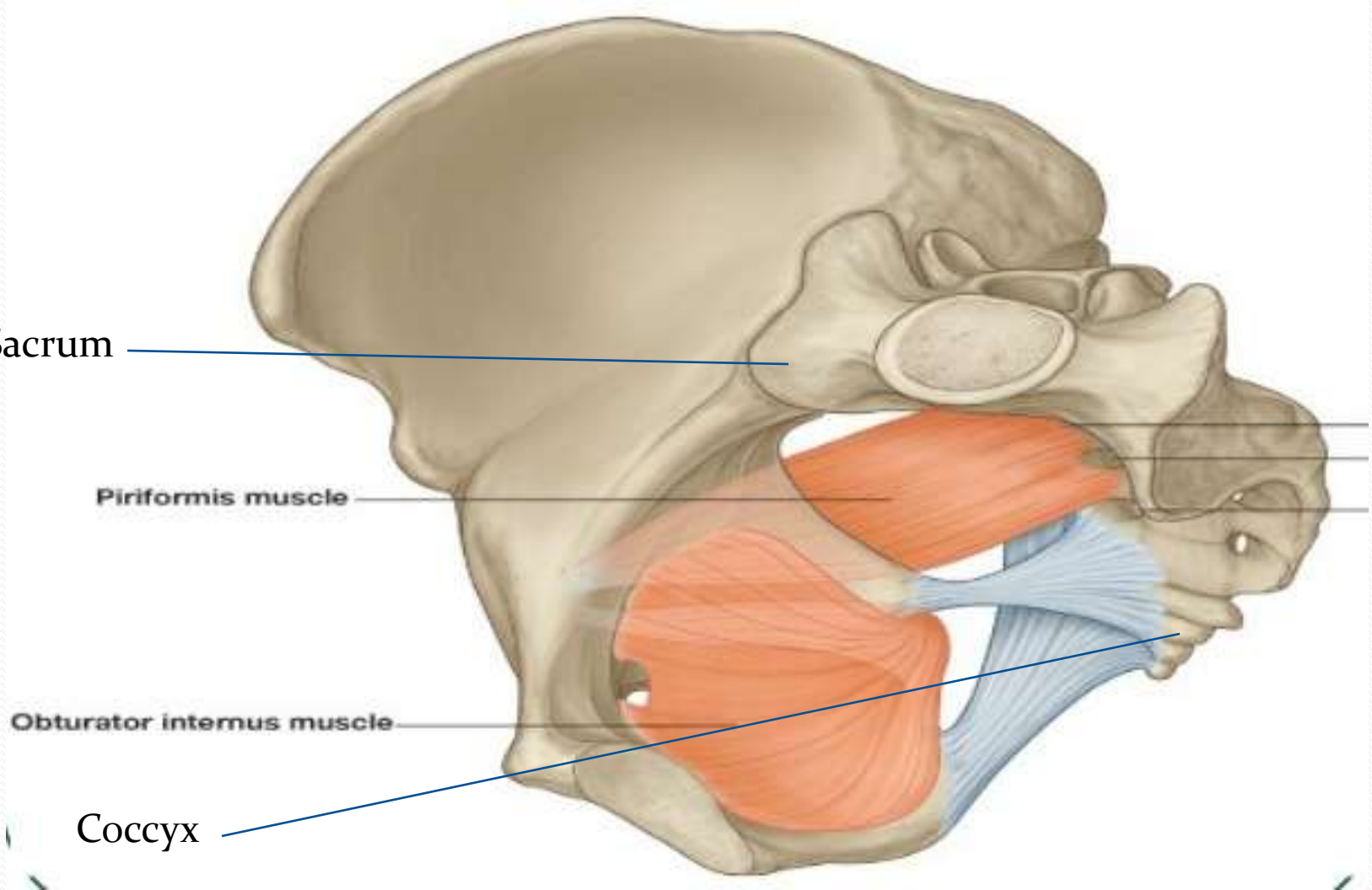
# 1. Anterior pelvic wall



# 2. Posterior pelvic wall

- **Formed by:**
  - Sacrum
  - Coccyx
  - Piriformis muscle

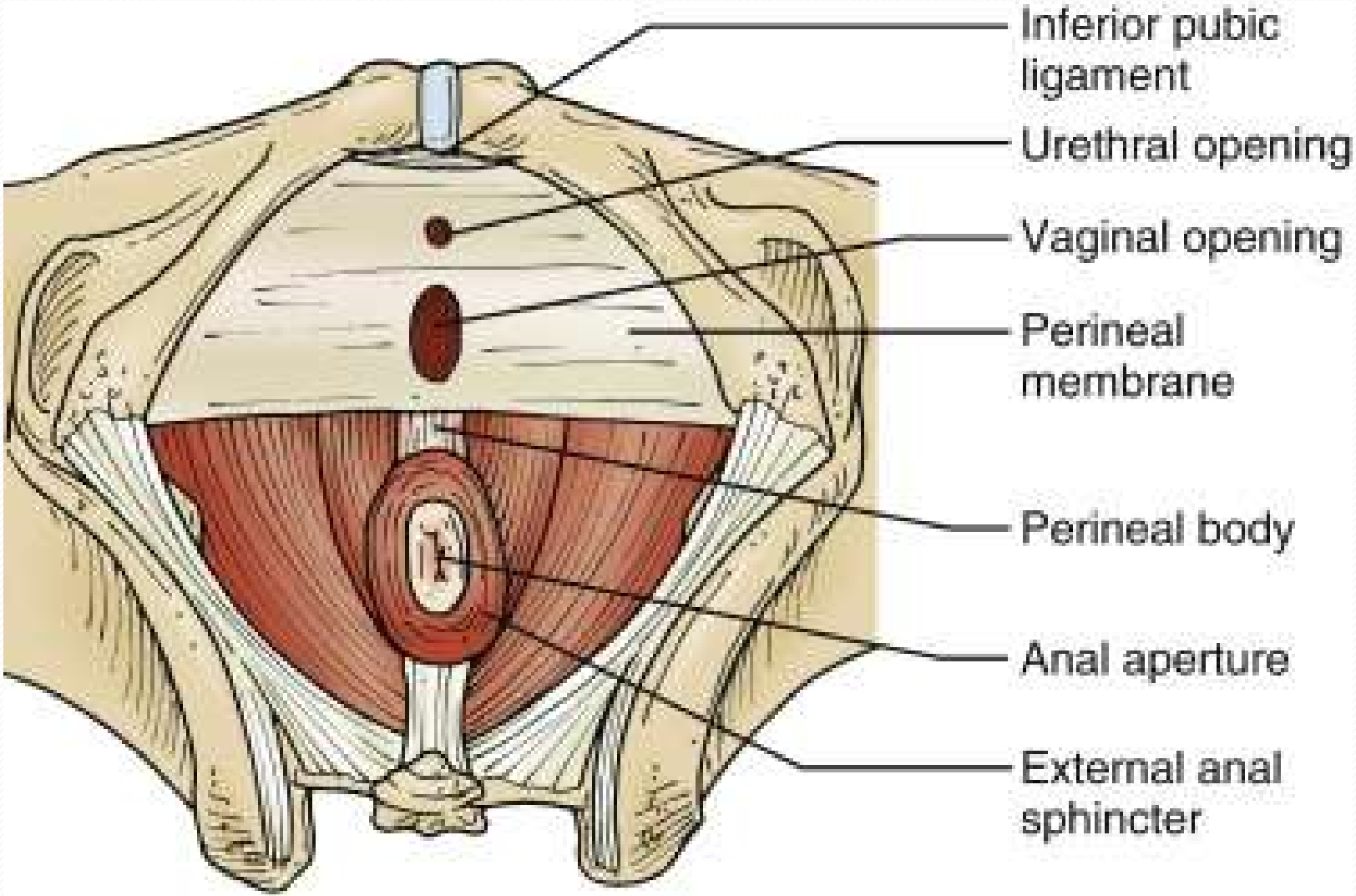
# 2. Posterior pelvic wall



# 3. Inferior wall (Pelvic floor)

- Supports the pelvic viscera
- Formed by pelvic diaphragm
- In order to allow for urination, parturition(in female), and defecation

# 3. Inferior wall (Pelvic floor)



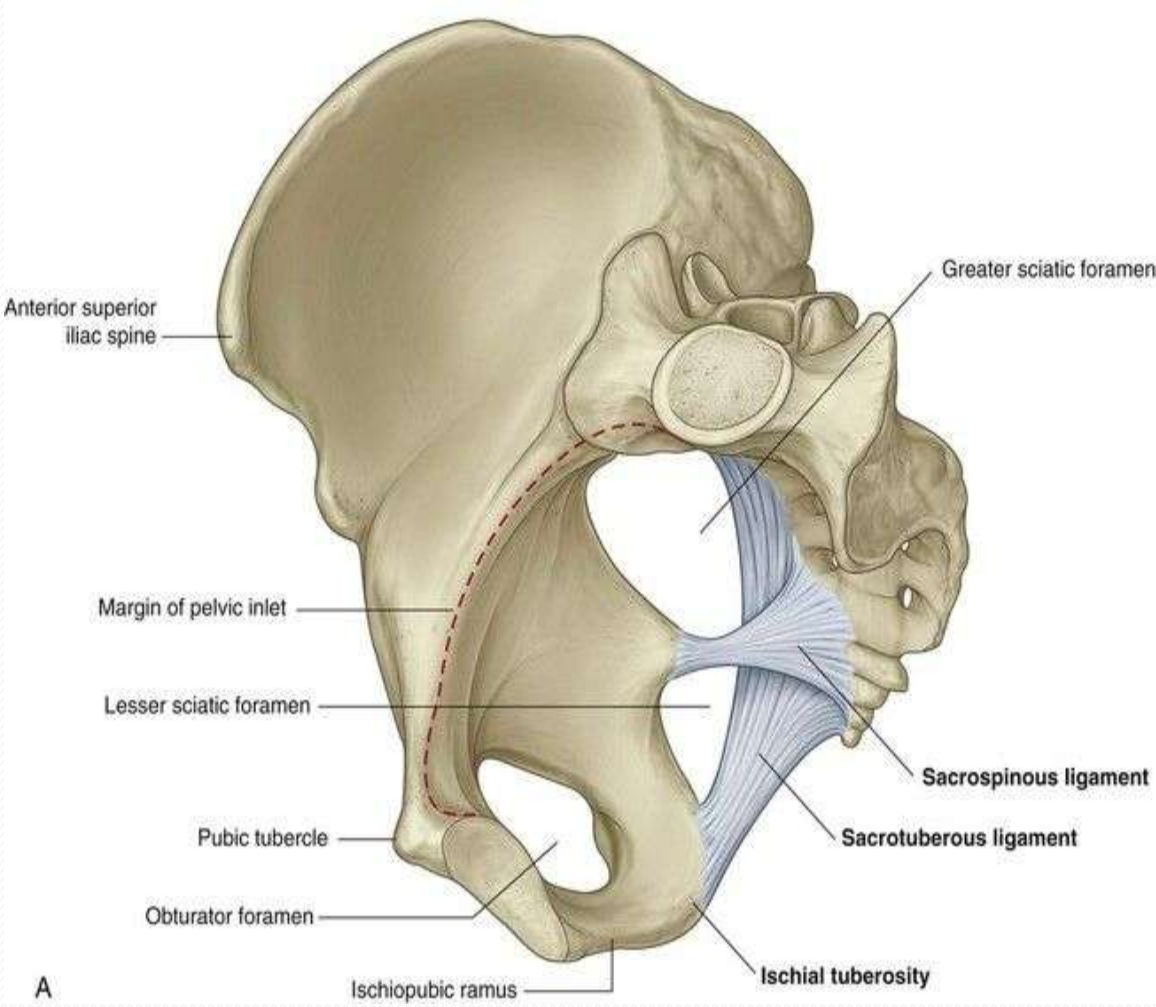
# 4. Lateral pelvic wall

- **Formed by:**

- Bones – sacrum and coccyx
- Pelvic inlet below linea terminalis
- Ligaments- Sacrotuberous ligament, Sacrospinous ligament, Obturator internaus ligament, Obturator membrane
- Muscle- piriformis and obturator internus

# Ligaments

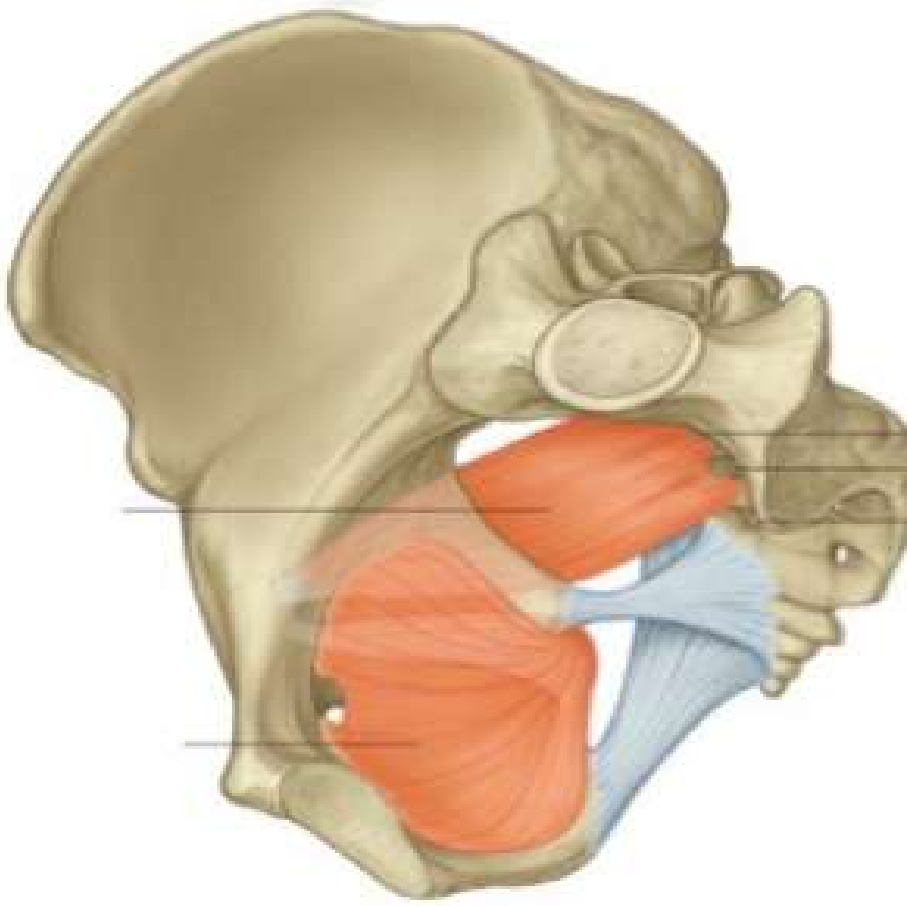
- Sacrotuberous lig.
- Sacrospinous lig.
- Both will form the greater and lesser sciatic foramina



# Muscle of lateral pelvic wall

- **1- obturator internus m.**

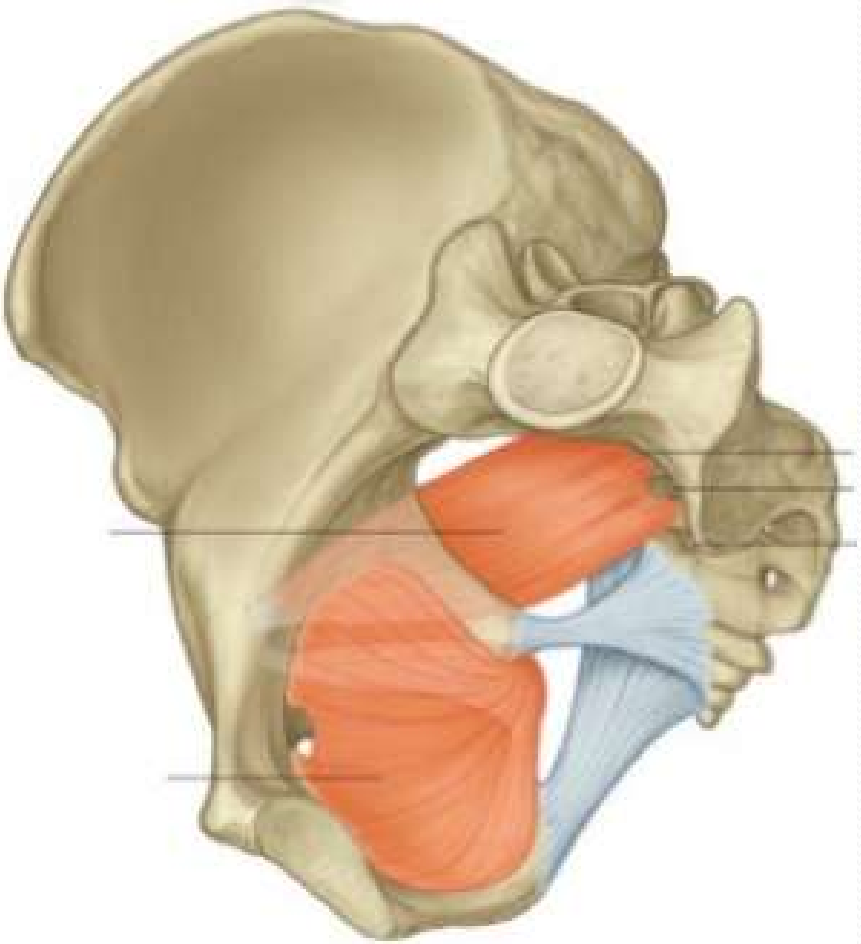
- From a major part pf anterolateral pelvic wall
- Originates from the deep surface of obturator membrane and its associated bony surfaces
- It converge as a tendon that bend 90 degree between the ischial spine and ischial tuberosity to attached to femur
- It is assist in lateral rotation of flexed hip and adduction of extended hip.



# Muscle of lateral pelvic wall

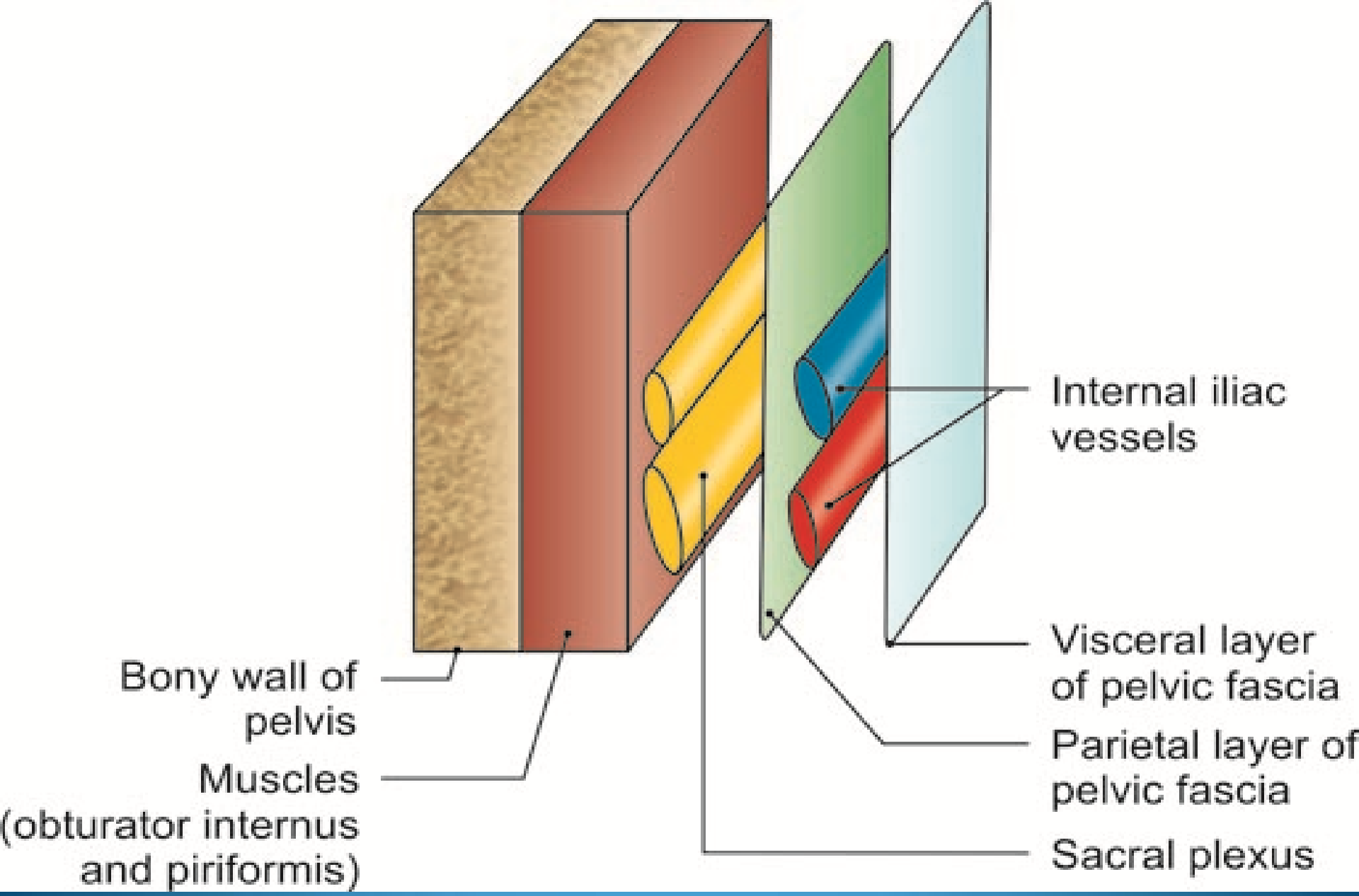
❑ **2- piriformis m.**

- Orginate in between the four anterior sacral foraminae and pass through the GSF
- it insert in the greater trochanter of femur above the insertion of OI muscle.
- It compose a major part of posterioateral wall of pelvic cavity.
- It separate the GSF into two openings.
- Function is like the OI muscle



# Fascia of the Lateral Pelvic Wall

1. The fascia covering the muscles of the lateral pelvic wall is condensed to form thick and strong membranes.
2. The fascia covering the obturator internus is called the obturator fascia.
3. The fascia covering the piriformis is thin.

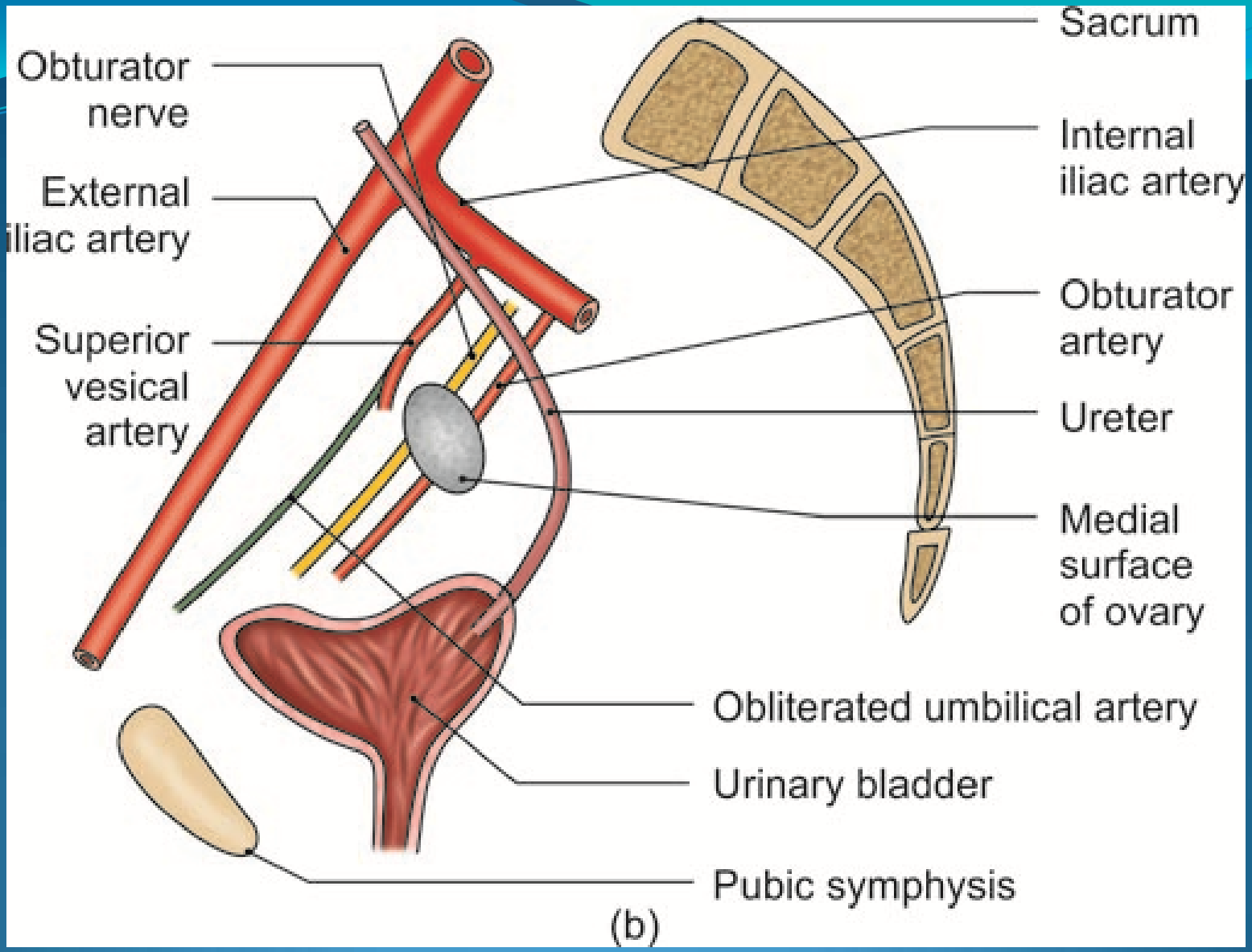



Arrangement of structures on the walls of true pelvis

# Importance of lateral pelvic wall

- Each ovary lies in the ovarian fossa on the lateral pelvic wall.
- The ovarian fossa is bounded:

1. Anteriorly by the obliterated umbilical artery.
2. Posteriorly by the ureter and the internal iliac artery.



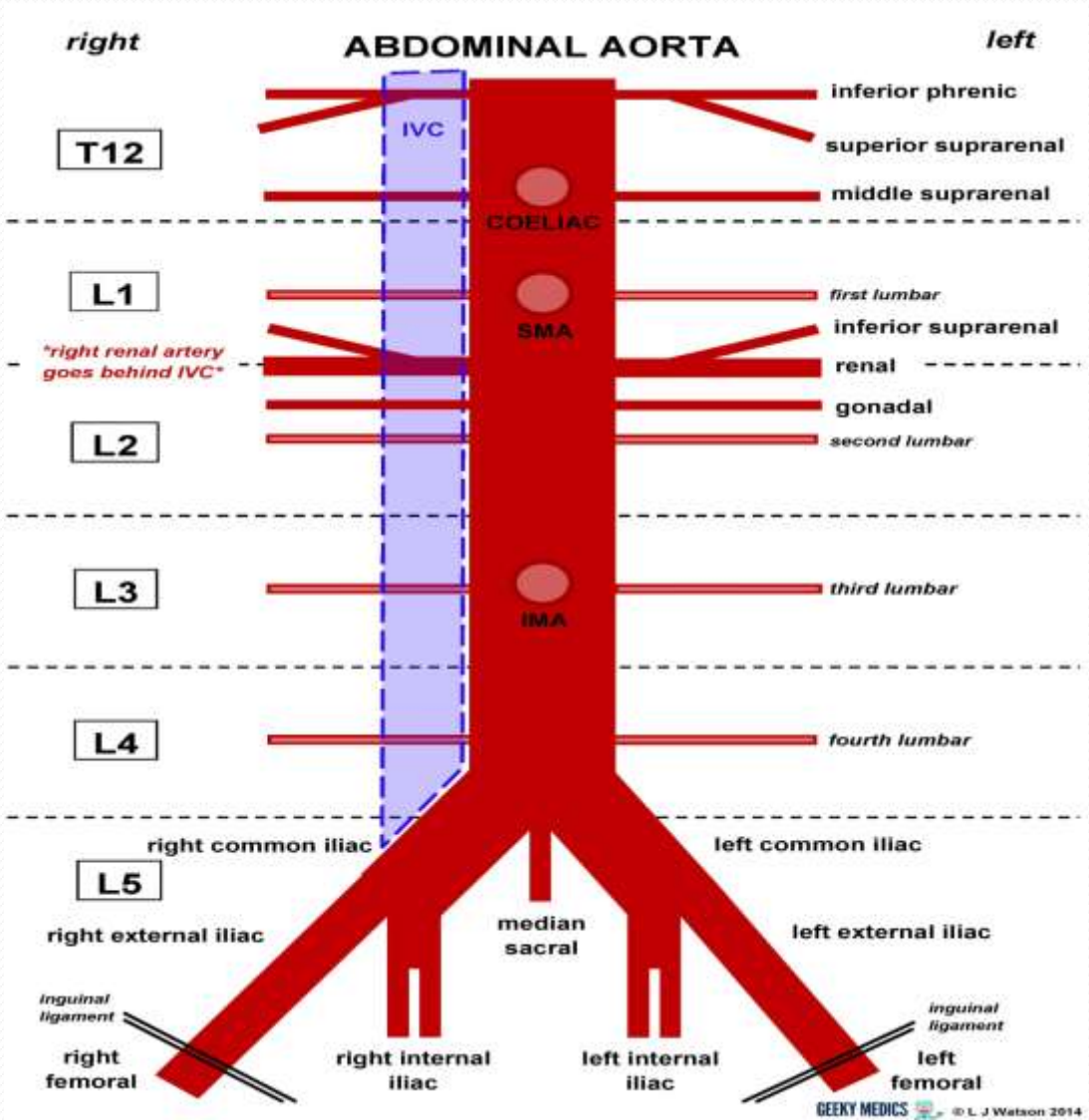

(b) Medial view of boundaries of the ovarian fossa as seen in a sagittal section

# Common iliac artery

- These are common terminal branches of the abdominal aorta
- Beginning in front of L4 and end at the level of the lumbosacral intervertebral disc by dividing into the:

1. External iliac artery
2. Internal iliac artery

# Branches of abdominal aorta



# Internal iliac artery(IIA)

- The internal iliac artery is the smaller terminal branch of the common iliac artery.
- It is 3.75 cm long
- **It supplies:**

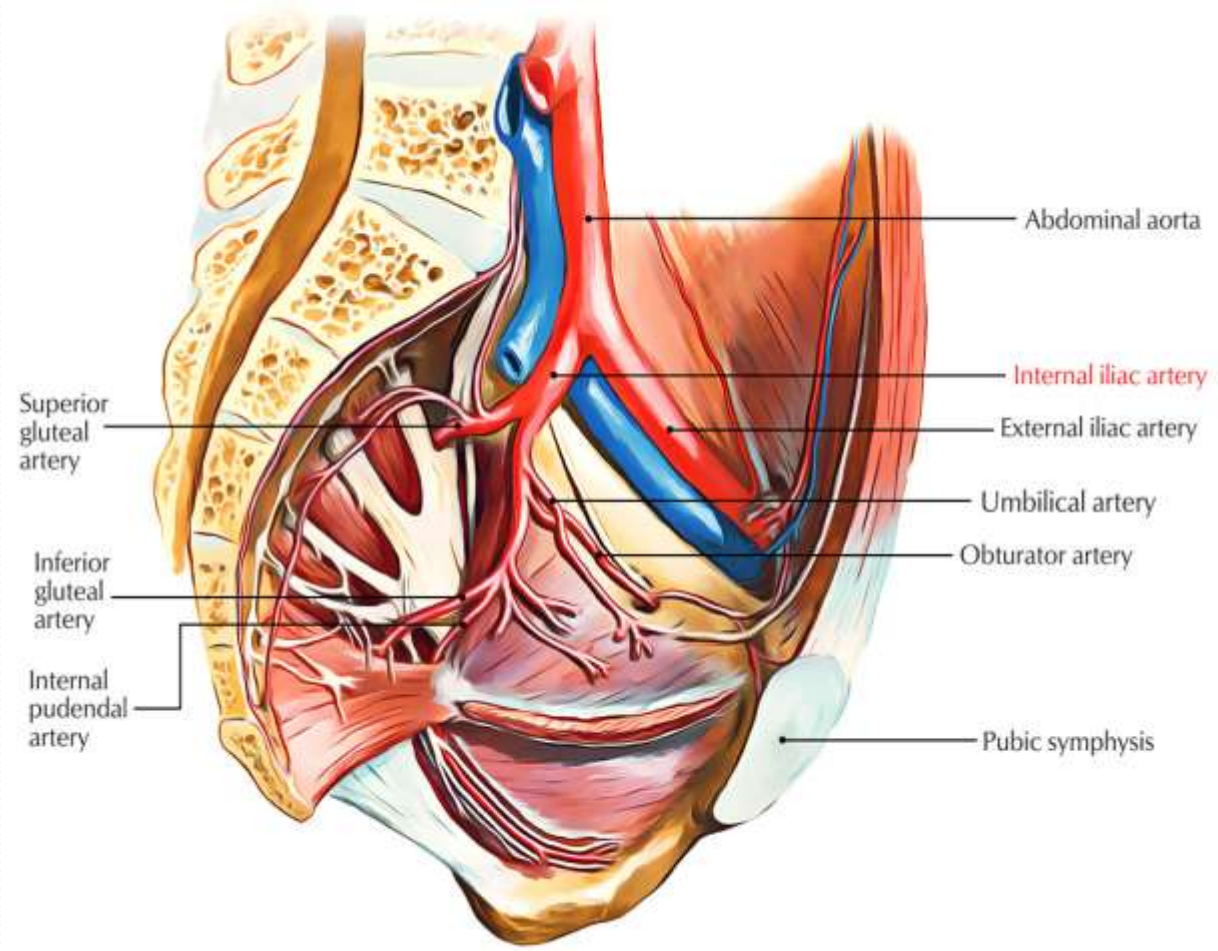
1. The pelvic organs except those supplied by the superior rectal, ovarian and median sacral arteries
2. The perineum
3. The greater part of the gluteal region
4. The iliac fossa.

# Course of IIA

- **Course:**
- Begins in front of the sacroiliac joint, it lies medial to the psoas major
- Ends near the upper margin of the greater sciatic notch by dividing into:

1. Anterior division
2. Posterior division

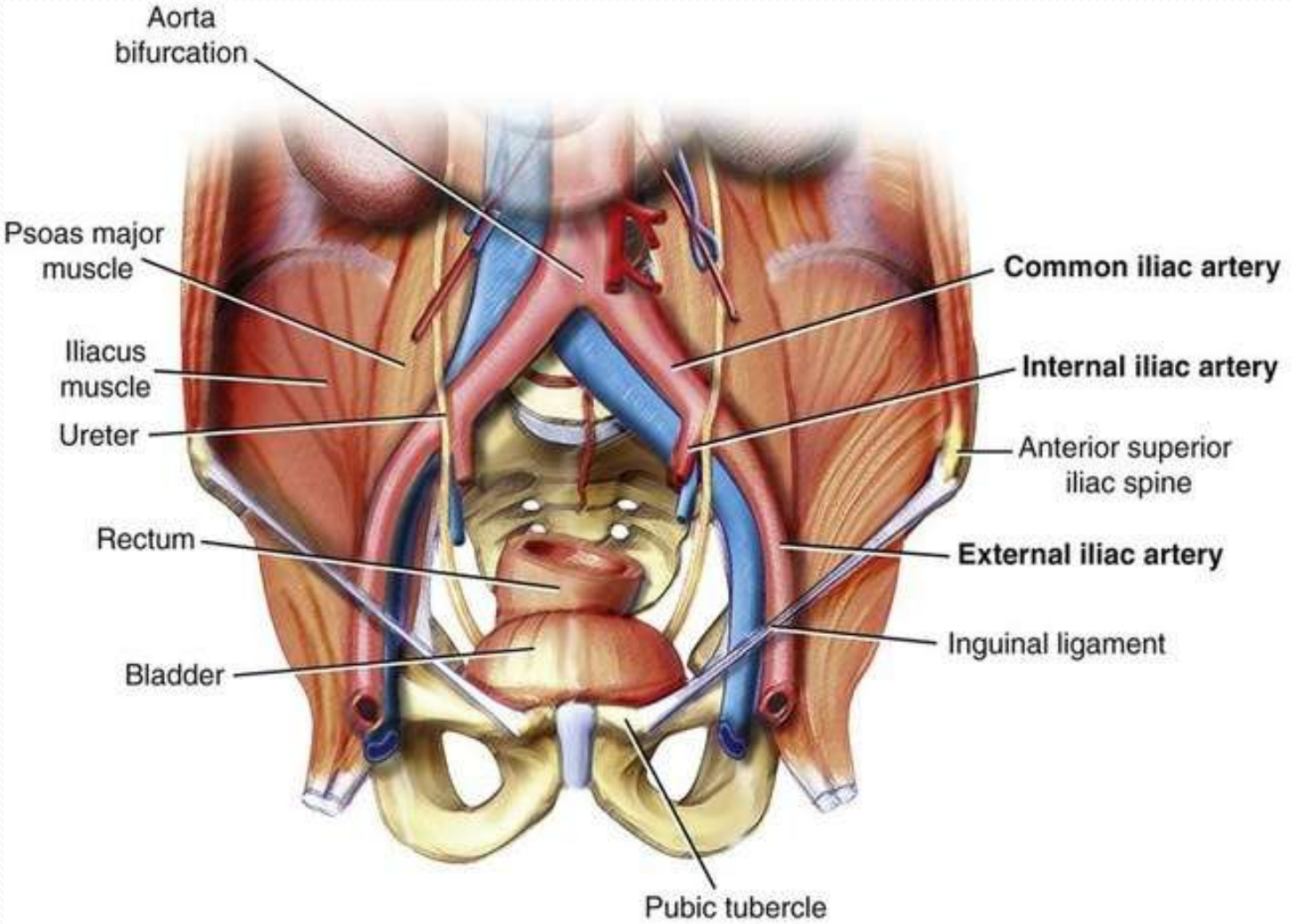
# Course and relation of IIA



# Relation of IIA

- **Anteriorly**- to the ureter
- **Posteriorly**- to the internal iliac vein, lumbosacral trunk, and sacroiliac joint
- **Laterally**- to the external iliac vein and obturator nerve
- **Medially**- to the peritoneum and tributaries of the internal iliac vein

# Relation of IIA



# Branches

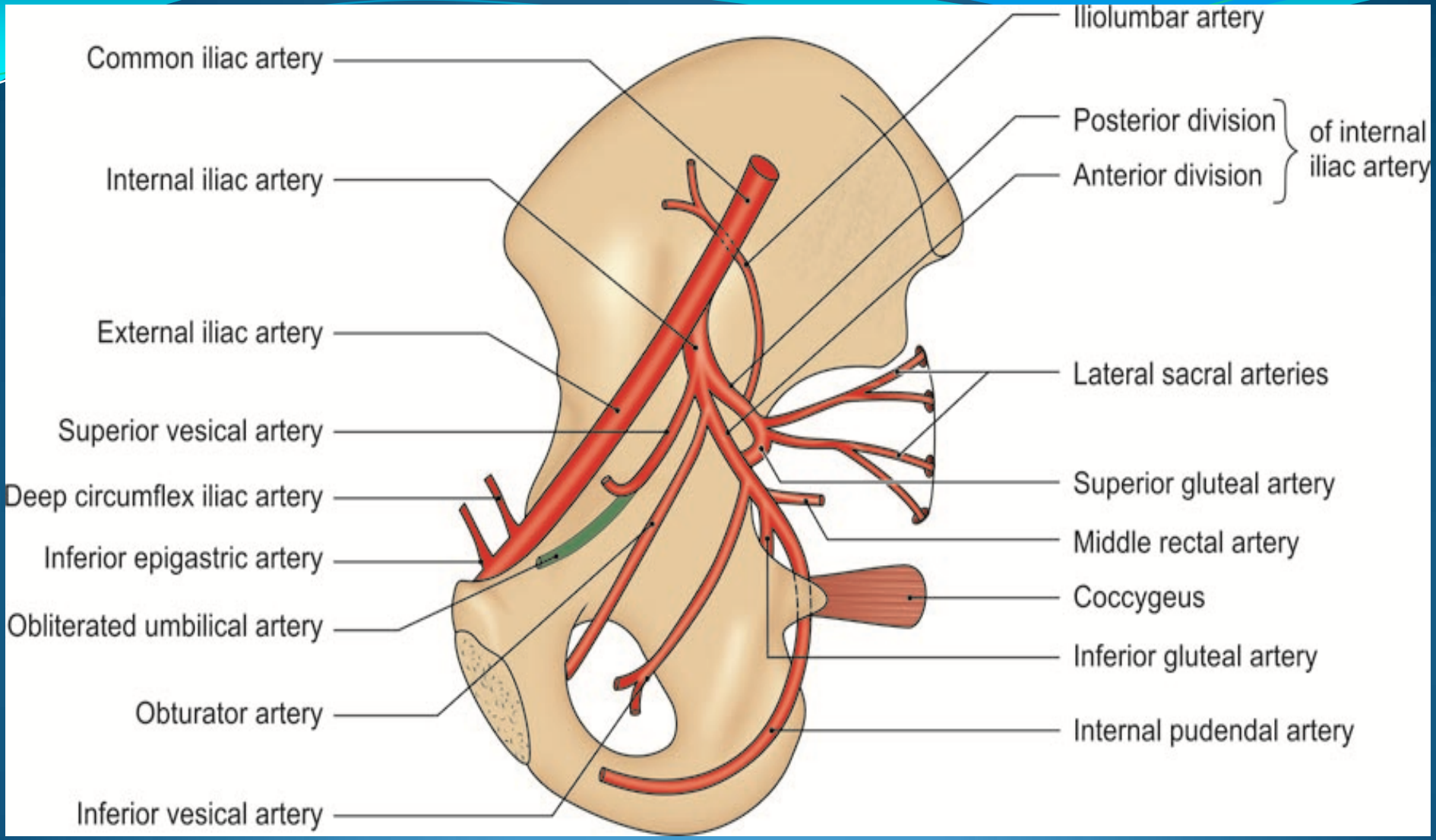
- **From anterior division:**

1. Superior vesical artery
2. Obturator artery
3. Middle rectal artery
4. Inferior vesical artery in male(vaginal in female)
5. Inferior gluteal artery
6. Internal pudendal artery
7. Uterine artery in female only

# Branches

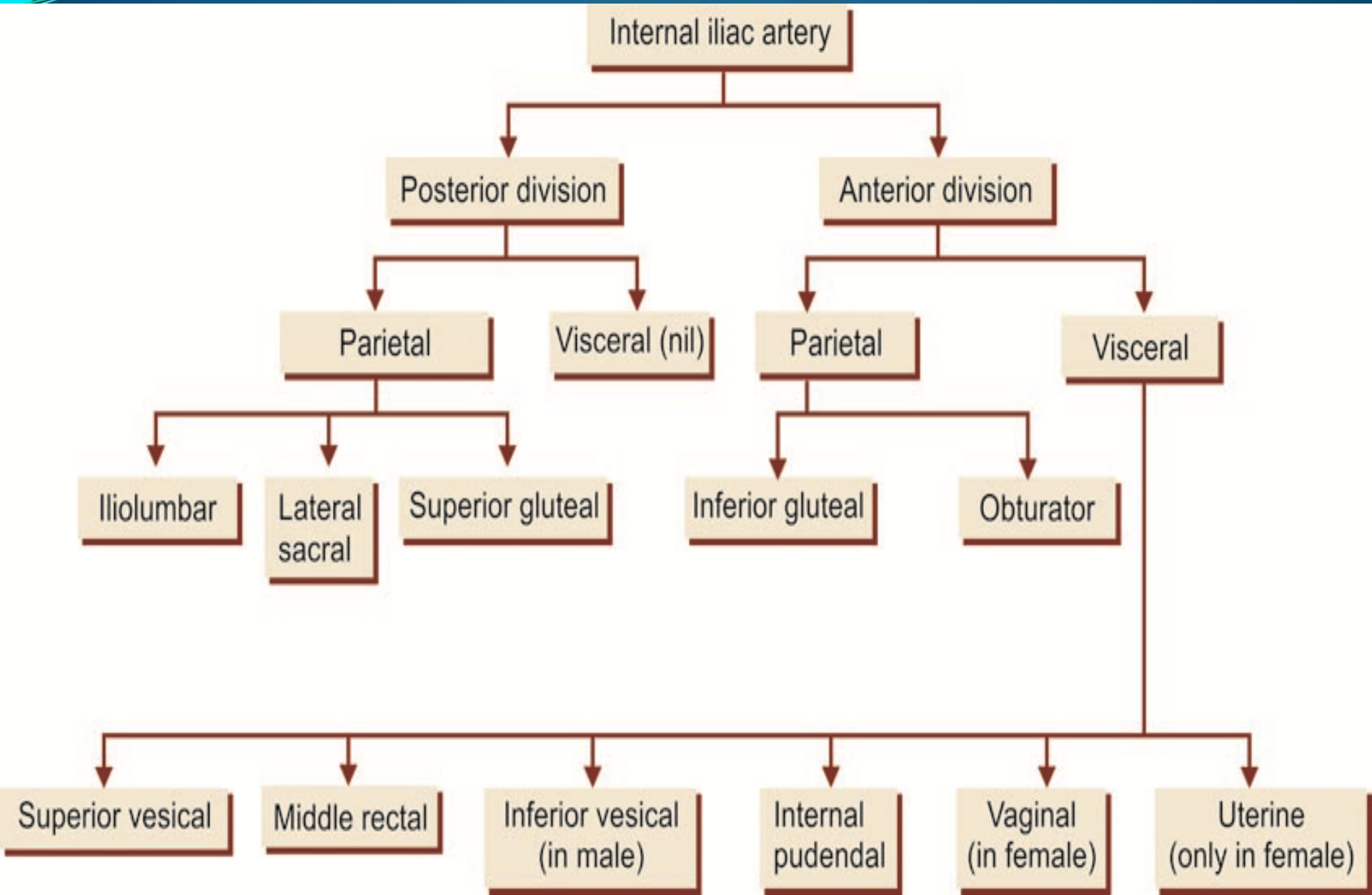
- **From posterior division:**

1. Iliolumbar artery
2. 2 lateral sacral artery
3. Superior gluteal artery




Branches of the right internal iliac artery in a male

# Branches of internal iliac artery



# Branches from anterior division of IIA

1. **Superior vesical artery-** supplies superior surface of urinary bladder and muscular wall of vas deference
2. **Obturator artery-** gives branch to the obturator internus and iliacus muscle and also to adductor group of the thigh
3. **Middle rectal artery-** supplies muscles coat of prostate, seminal vesicals and rectum

# Branches from anterior division of IIA

4. Inferior vesical artery in male- supplies prostate, seminal vesicals, urinary bladder and lower part of ureter(vaginal in female- supplies vagina and base of bladder)
5. Inferior gluteal artery- braches to gluteal region in lower limb
6. Internal pudendal artery- supplies the perineum and external genitalia
7. Uterine artery in female – supplies the vagina, uterus and medial 2/3$^{rd}$ part of oviduct

# Branches from posterior division of IIA

1. Iliolumbar artery- iliac branch supplies iliacus muscle and lumbar branch supplies psoas, quadratus lumborum and erector spinae
2. Lateral sacral artery- supplies cauda equina and muscle of back of sacrum
3. Superior gluteal artery- supplies muscles of gluteal region(gluteus medius and minimus)

# SACRAL PLEXUS

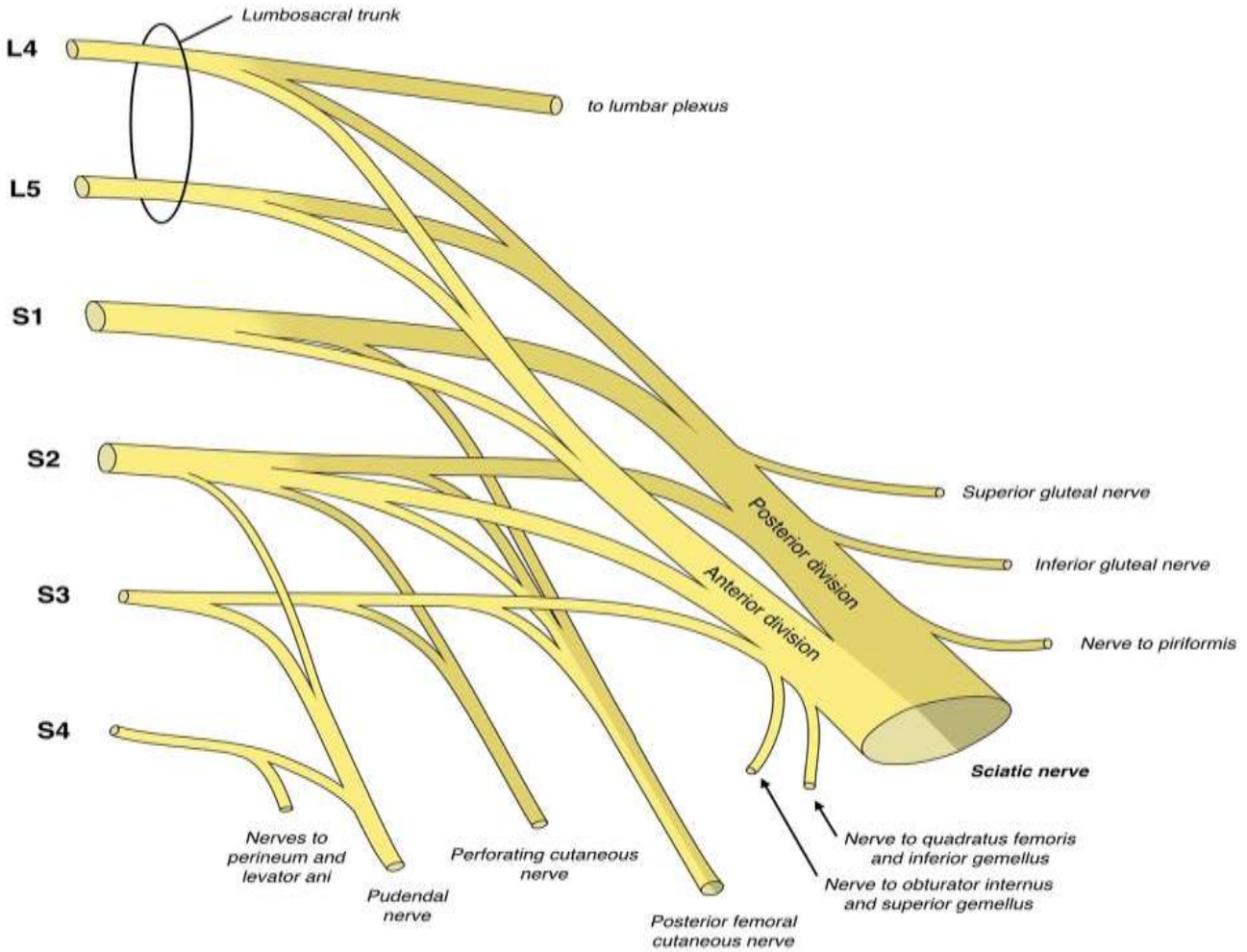
- **Formation**

- The sacral plexus is formed by the lumbosacral trunk and the ventral rami of the first to third sacral nerves, and part of the fourth sacral nerve.

- Lumbosacral trunk- is formed by the descending branch of the ventral ramus of nerve L4 and the whole of L5

- Lumbosacral trunk in front of sacroiliac joint joins with nerve S1

# Sacral plexus



# Branches

- Branches derived from both dorsal and ventral divisions are as follows:

1. Sciatic nerve: 2 components

a. Common peroneal nerve - arises from dorsal divisions of L4, L5, S1, S2. It supplies evertors of foot and dorsiflexors of ankle joint.

b. Tibial nerve- arises from ventral divisions of L4, L5, S1, S2, S3. It supplies the hamstring muscles, all muscles of calf and intrinsic muscles of the sole.

2. Posterior cutaneous nerve of thigh: Dorsal divisions of S1, S2 and ventral divisions of S2, S3.

# Branches from Dorsal Divisions

1. Superior gluteal nerve: L4, L5, S1.
2. Inferior gluteal nerve: L5, S1, S2.
3. Nerve to piriformis: S1, S2.
4. Perforating cutaneous nerve: S2, S3.

# Branches from Ventral Division

1. Nerve to quadratus femoris: L4, L5, S1.
2. Nerve to obturator internus: L5, S1, S2.
3. Pudendal nerve: S2, S3, S4: Supplies sphincter ani externus and all muscles in urogenital triangles.
4. Muscular branches to the levator ani, the coccygeus and the sphincter ani externus, including perineal branch of nerve S4.
5. Pelvic splanchnic nerves: S2, S3, S4.

# Muscular branches

- Nerve S4- supplies  to the levator ani or iliococcygeus part and the coccygeus or ischiococcygeus
- Perineal branch of the S4- supplies  to middle part of the sphincter ani externus, it also supplies the skin between the anus and the coccyx.

# THANK YOU