

JİNEKOLOJİK ENDOSKOPI PLATFORMU



# Pelvic Neurofunctional Anatomy

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# Nervous System

- Autonomic nervous system
  - Sympathetic nervous system
  - Parasympathetic nervous system
- Somatic nervous system

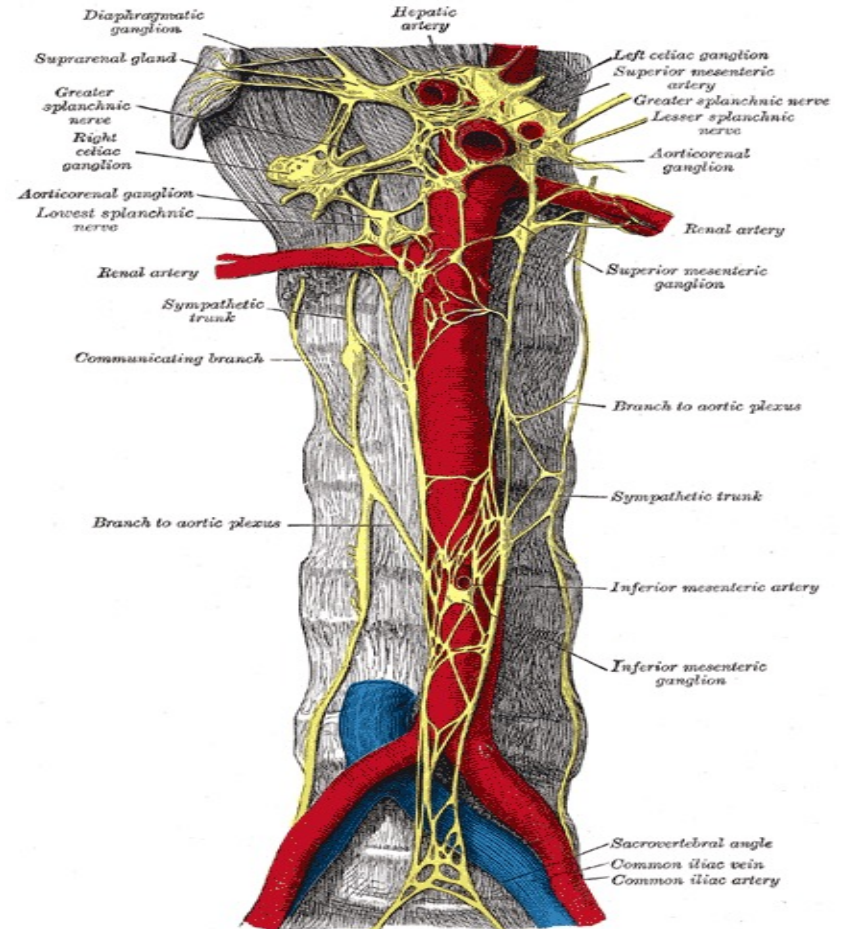
# Pelvic Sympathetic Nervous System

Sympathetic trunk

Superior hypogastric plexus (SHP)

Hypogastric nerves (HN)(right/left)

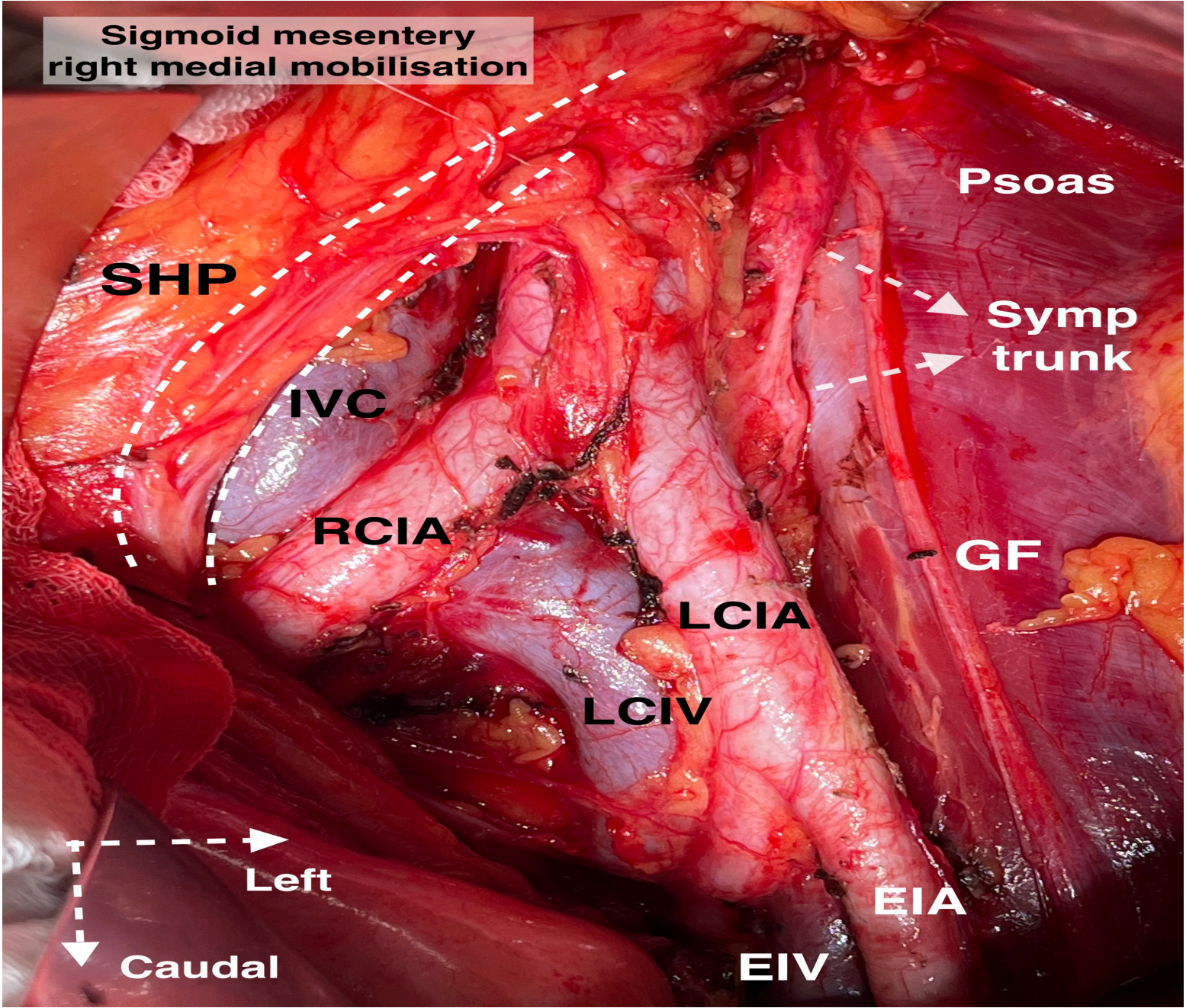
Inferior hypogastric plexus



# Sympathetic trunk

- Lateral to the vertebrae from the skull base to the coccyx
  - Left side → 1-2 cm lateral the aorta
  - Right side → Behind the IVC
- Innervation
  - Skin
  - Blood vessels
  - Sweat glands
- Destruction → Peripheral vasodilation

**Sigmoid mesentery  
right medial mobilisation**



# Superior hypogastric plexus (SHP)

T10-L2 sympathetic nerves

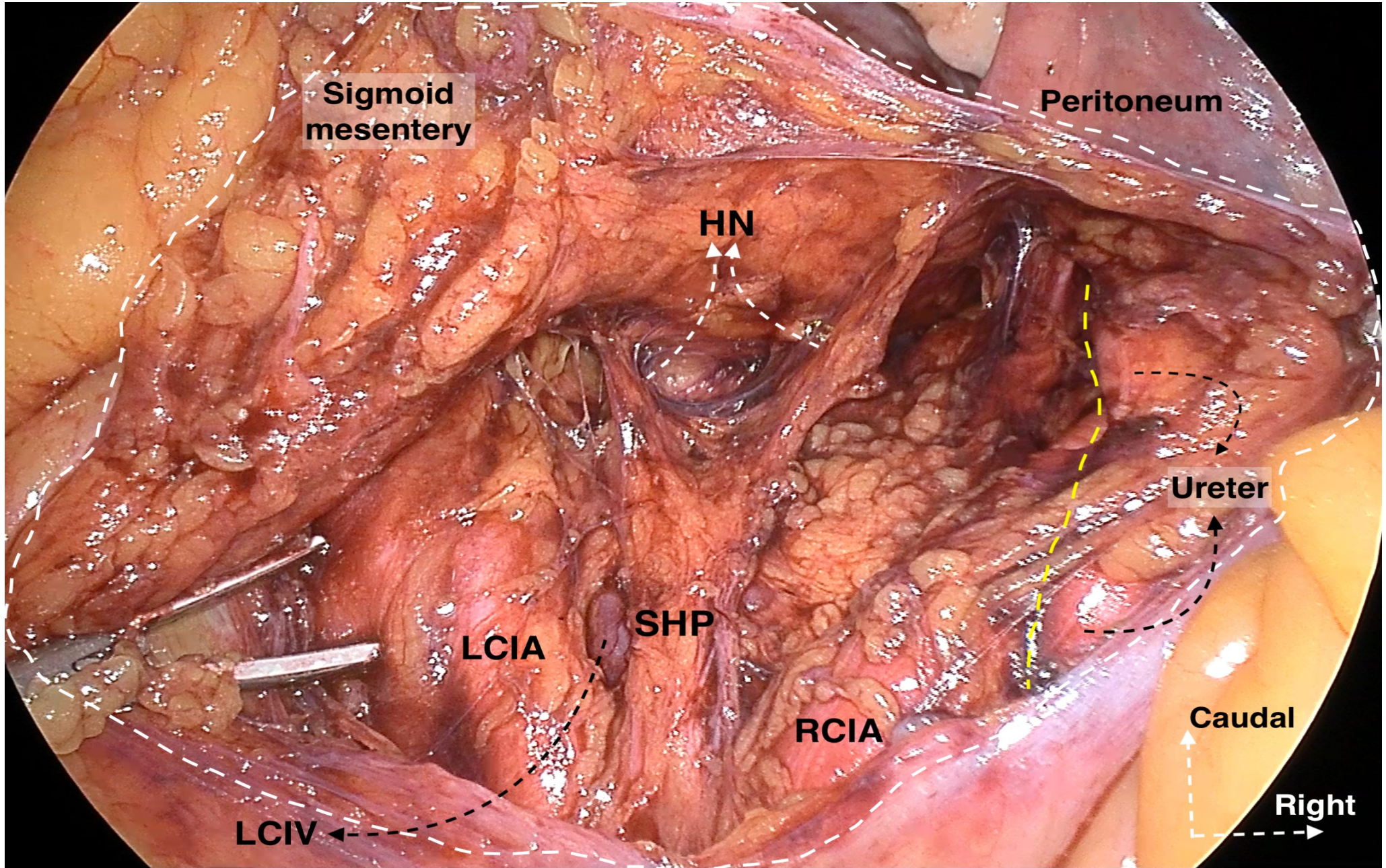


Aortic plexus

L3-L4 splanchnic nerve



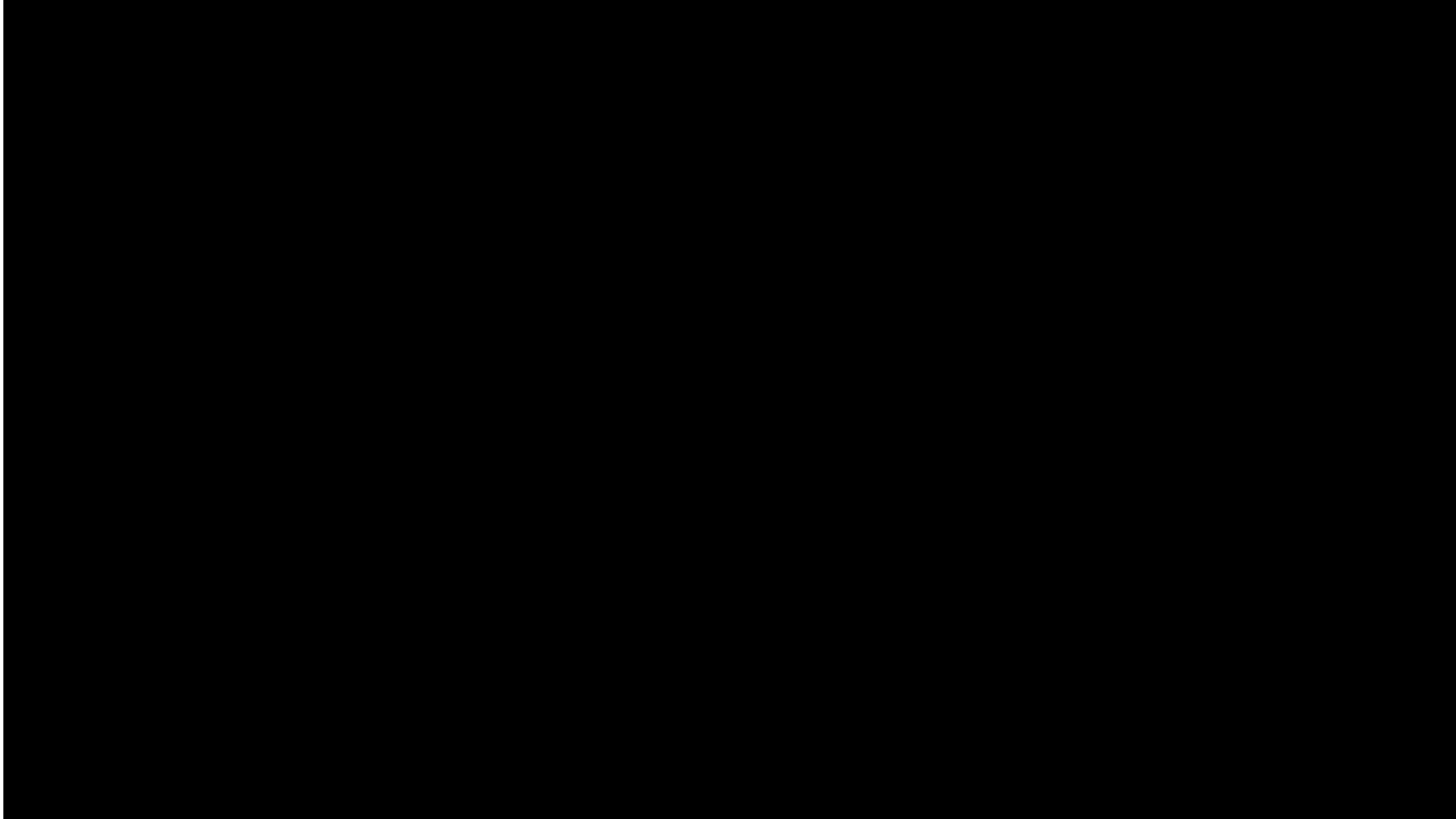
Superior hypogastric plexus (SHP)



# Hypogastric nerves (HN)

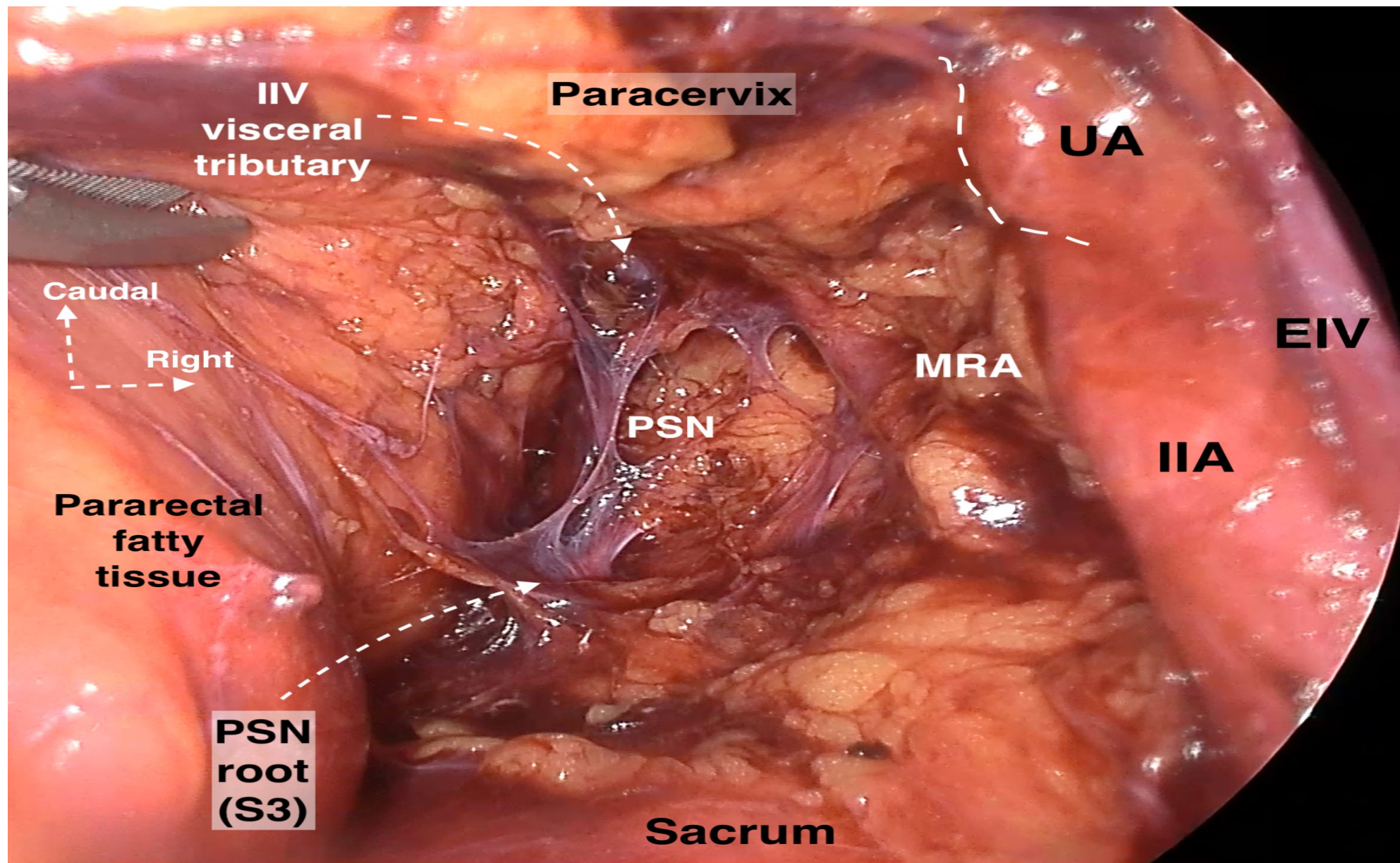
- SHP splits into the right and left HN
- Lies in the posterolateral rectal plane at the anterolateral part of the presacral space
- Travels approximately 2cm inferior to the ureter medial aspect of the pararectal space





# Pelvic Splanchnic Nerves (PSN)

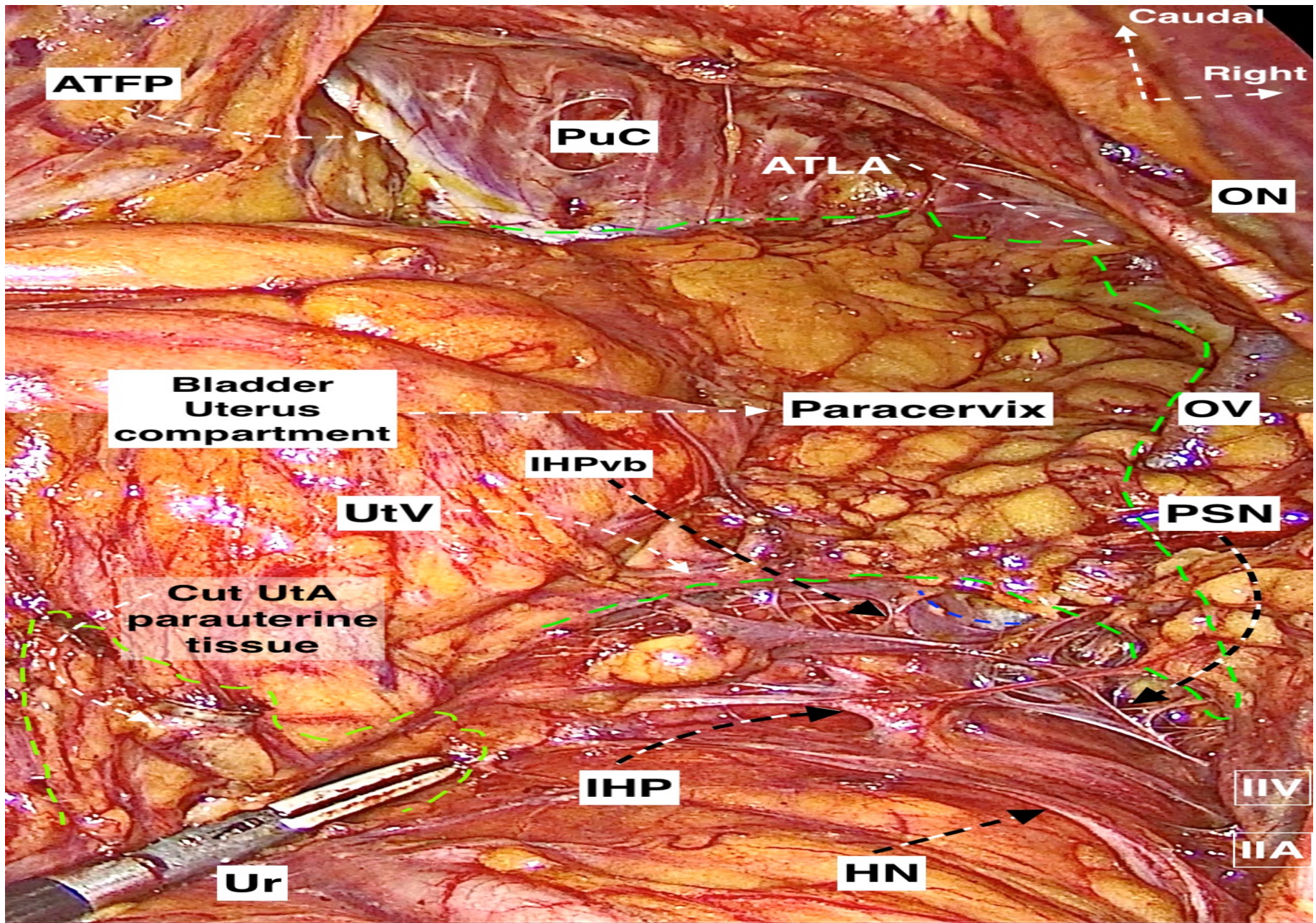
- Sacral Nerve Roots S2, S3 and S4
- Cross the sacral fascia
- Runs posteromedial to the internal iliac vein
- Joins to the IHP at the deep part of the paracervix
- Ascending fibers of PSN contribute to SHP
  - Innervation of the left colon and rectum





# Inferior hypogastric plexus (IHP)

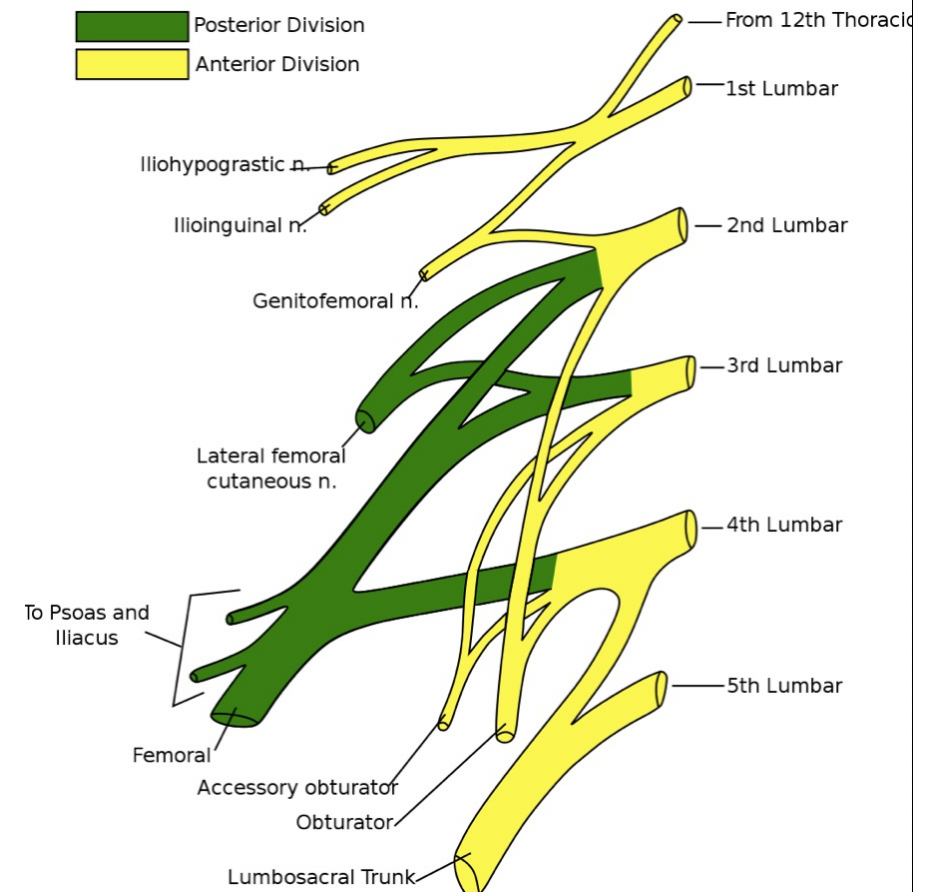
- Formed by contributions from PSN, HN and sacral splanchnic n. the posterior aspect of the deep uterine v.
- IHP is the pelvic ganglion
  - Sympathetic and parasympathetic nerve fibers synapse
  - Postsynaptic fibers run within the secondary plexuses to rectum, uterus, vagina and bladder



# Pelvic Somatic Nervous System

## Lumbar Plexus

- Iliohypogastric nerve (T12,L1)
- Ilioinguinal nerve (L1)
- Genitofemoral nerve (L1,L2)
- Lateral femoral cutaneous nerve (L2, L3)
- Femoral nerve (L2-L4)
- Obturator nerve (L2-L4)



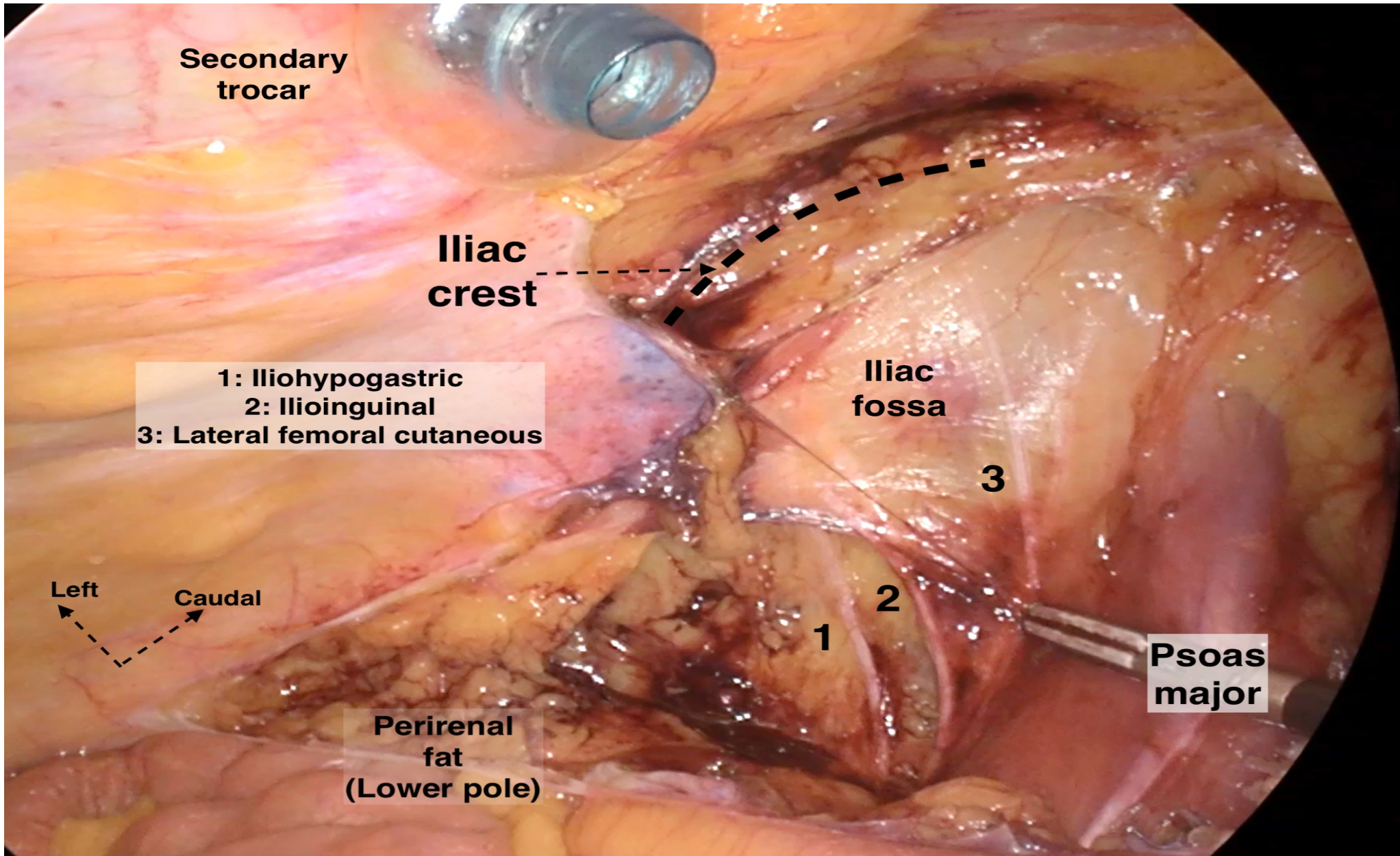
# Iliohypogastric nerve

- L1, T12 spinal nerves
- Emerges from the upper posterolateral aspect of the psoas major muscle
- **Motor innervation:** Transversus abdominis m., abdominal internal oblique m.
- **Sensory innervation:** Suprapubic area, hypogastric area (above the inguinal lig.)



# Ilioinguinal nerve

- L1 nerve
- Lies below the iliohypogastric nerve
- Emerges from the upper posterolateral aspect of the psoas major muscle
- **Motor innervation:** Transversus abdominis m., abdominal internal oblique m.
- **Sensory innervation:** Superior-medial thigh and groin region, anterior one third of labia major, root clitoris



Secondary  
trocar

Iliac  
crest

1: Iliohypogastric  
2: Ilioinguinal  
3: Lateral femoral cutaneous

Iliac  
fossa

3

Left      Caudal

1

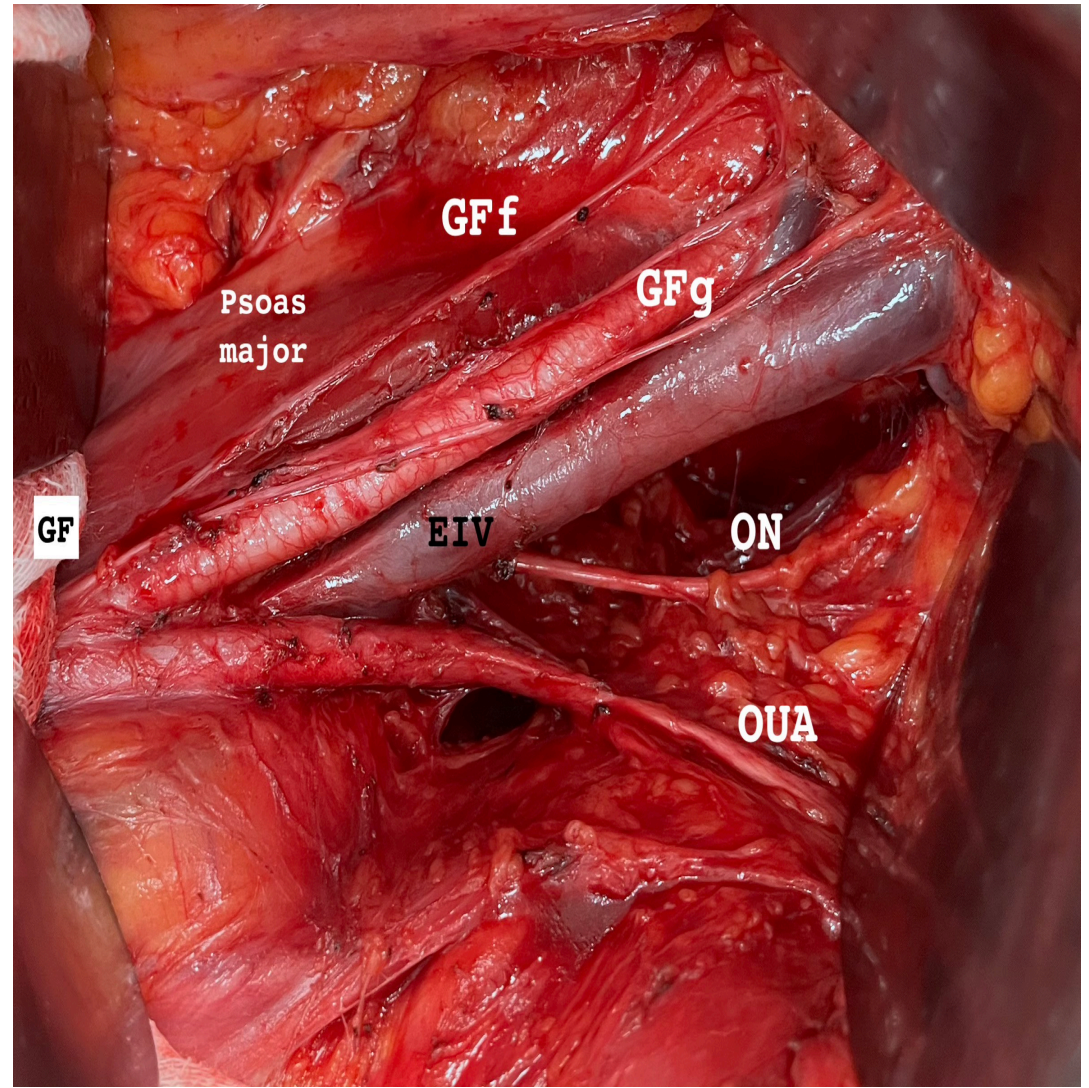
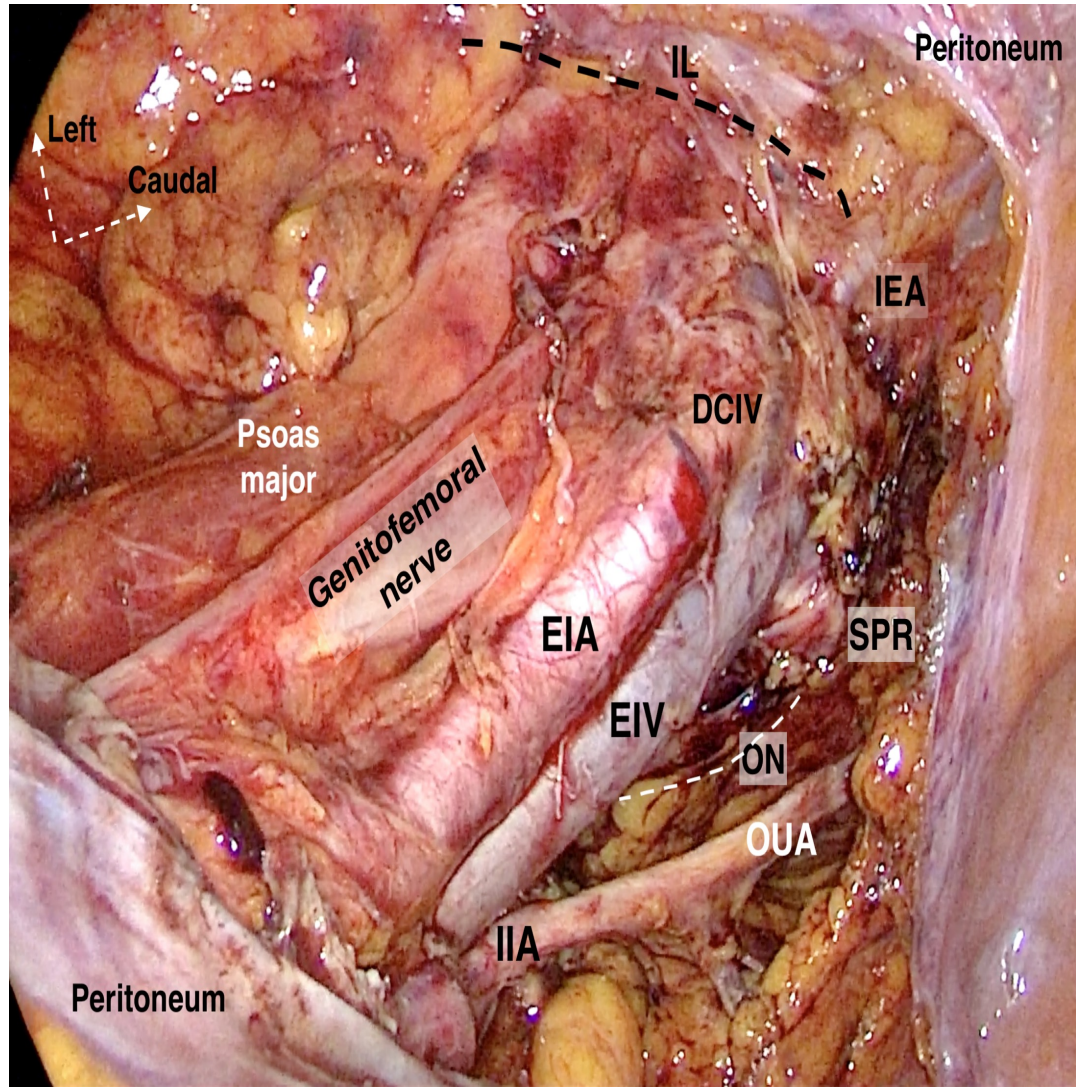
2

Psoas  
major

Perirenal  
fat  
(Lower pole)

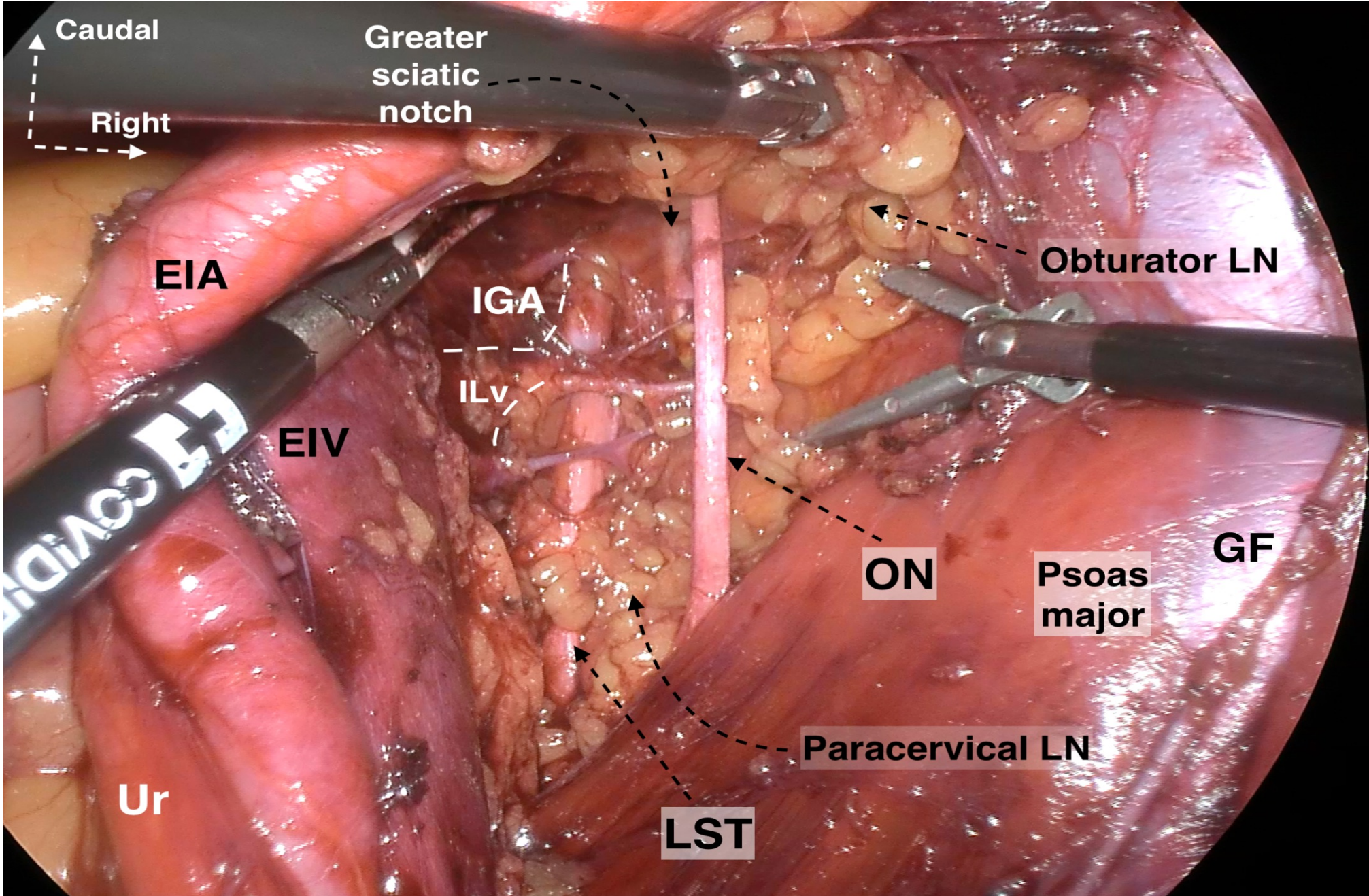
# Genitofemoral nerve

- L1 and L2 spinal nerve
- Genital Branch:
  - Motor innervation: Cremaster m. (males) (Cremasteric reflex)
  - Sensory innervation: Mons pubis & Labia major
- Femoral Branch: Sensory innervation: Anterior upper part of thigh ( below inguinal lig.)



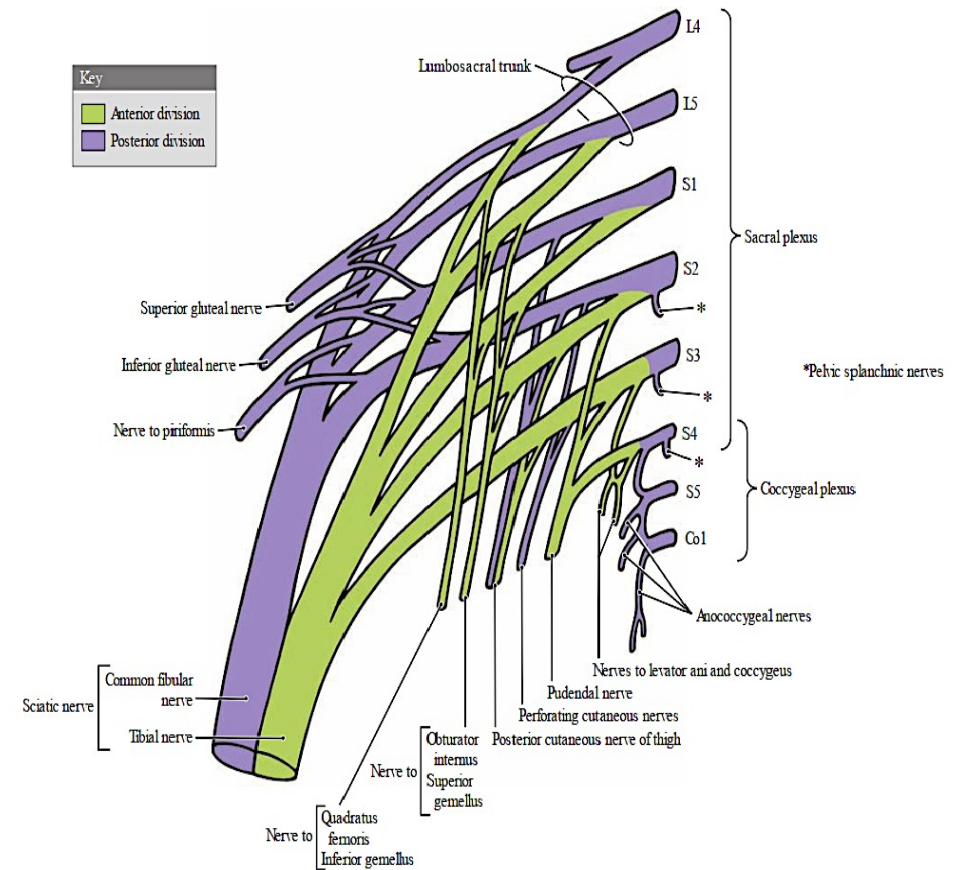
# Obturator nerve

- Anterior division of anterior ramus of L2-L4 spinal n.
- Descends behind the psoas major m.
- Located lateral to the external iliac vessels
- Motor: Adductor m. (adductor longus m., adductor brevis m., adductor magnus m., gracilis m., pectineus m.)
- Sensory : Medial aspect of the thigh



# Sacral plexus

- Lumbosacral trunk (L4, L5) + S1-S4 spinal n.
- Branches
  - Sciatic nerve
    - Common fibular nerve
    - Tibial nerve
  - Pudendal nerve
  - Superior gluteal nerve
  - Inferior gluteal nerve
  - Nerve to the obturator internus
  - Nerve to the quadratus femoris
  - Nerve to the piriformis



# Lumbosacral trunk (L4, L5)

- L4-L5 spinal n.
- Emerges from the deep posteromedial aspect of the psoas major m. cranial to the pelvic brim level
- Lies at the posteromedial part of the obturator n. at the level of the pelvic brim
- Unite with the S1-S3 spinal n. to form the sciatic n.





# Sciatic nerve

- Lumbosacral plexus (L4-L5) + S1-S3 spinal nerve
- Located at the posterolateral aspect of the ischial spine, anterior to the piriformis muscle
- Exits the pelvis through greater sciatic foramen via inferior part of the piriformis m.
- Branches:
  - Tibial n.
  - Common fibular n.



Thank you for your  
attention..

# Pudendal nerve

## Social sphincter

Ext. urethral sphinc. cont.  
Detrusor m. relaxation

Ext. anal sphinc. cont.  
Rectal relaxation

