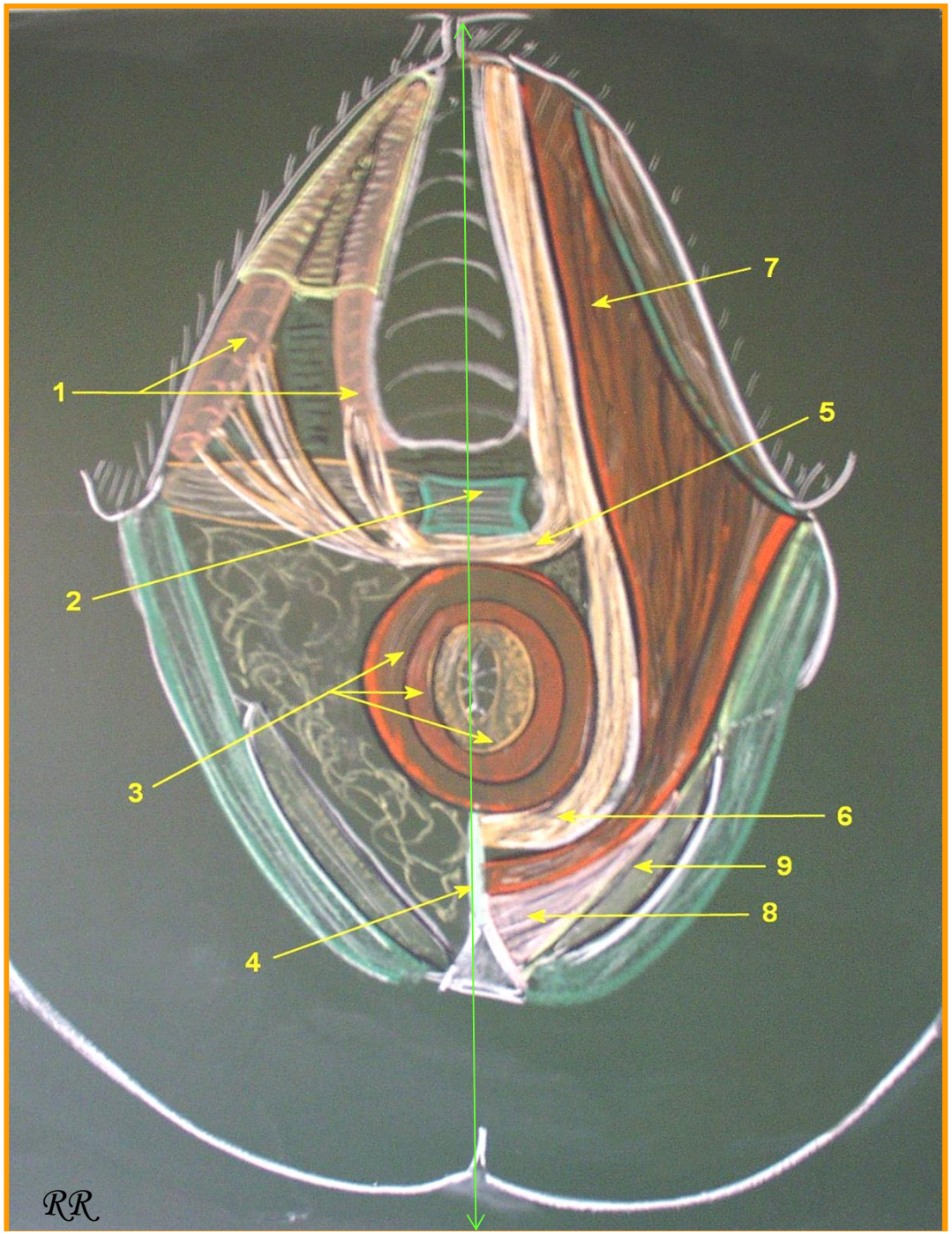
Pelvic and perineal truncular and radicular neuropathic pain

R ROBERT
Anatomist- Neurosurgeon
Nantes
FRANCE



Anatomical facts

1 perineal muscles

2 fibrous central perineal nucleus

3 external anal sphincter

4 median raphe

5 pubo prerectal fibers

6 Pubo retrorectal fibers

7 ilioretrorectal fibers

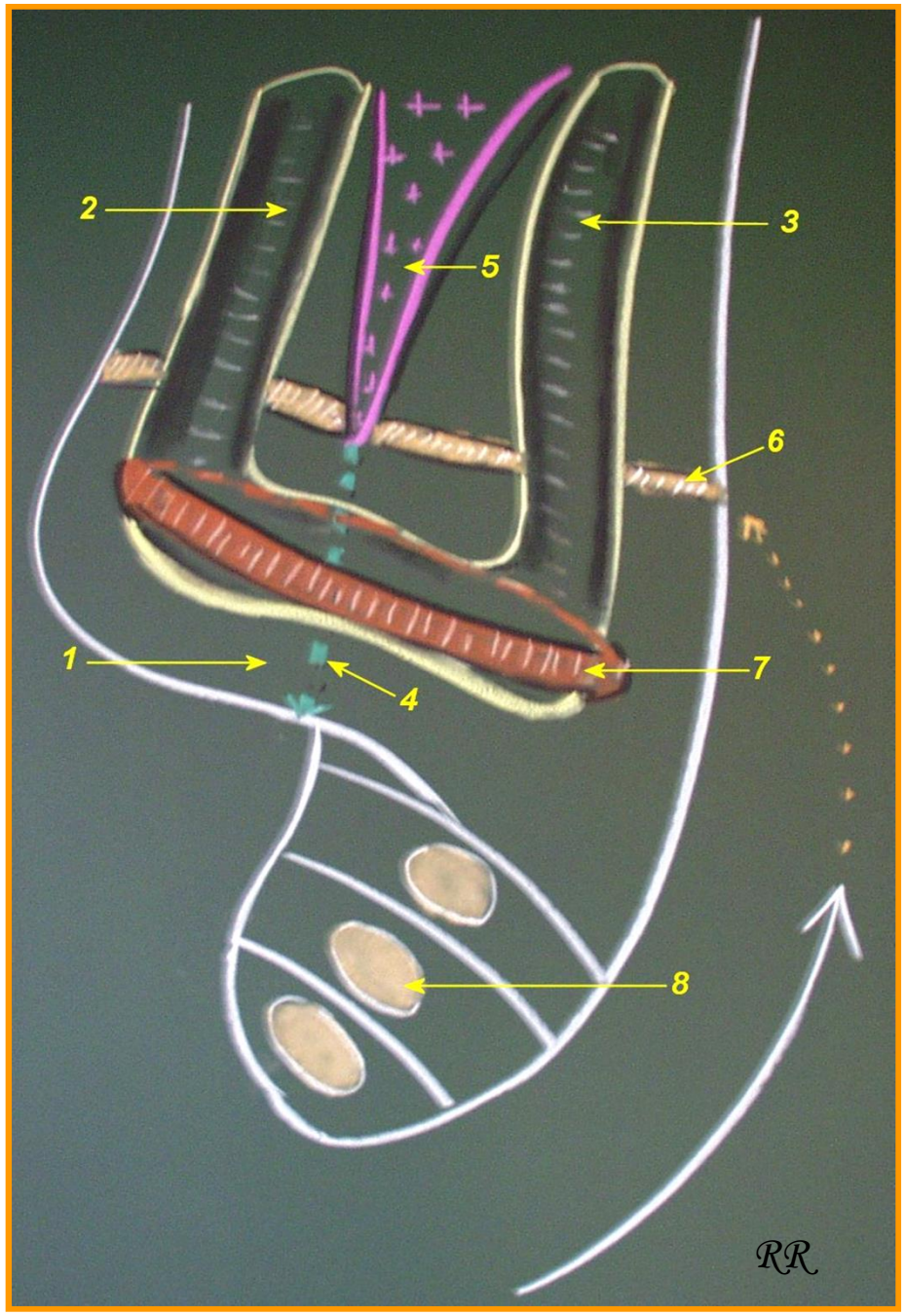
8 ischiococcygian fibers

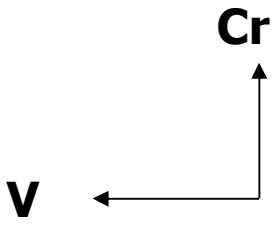
9 sacrospinal ligament

V

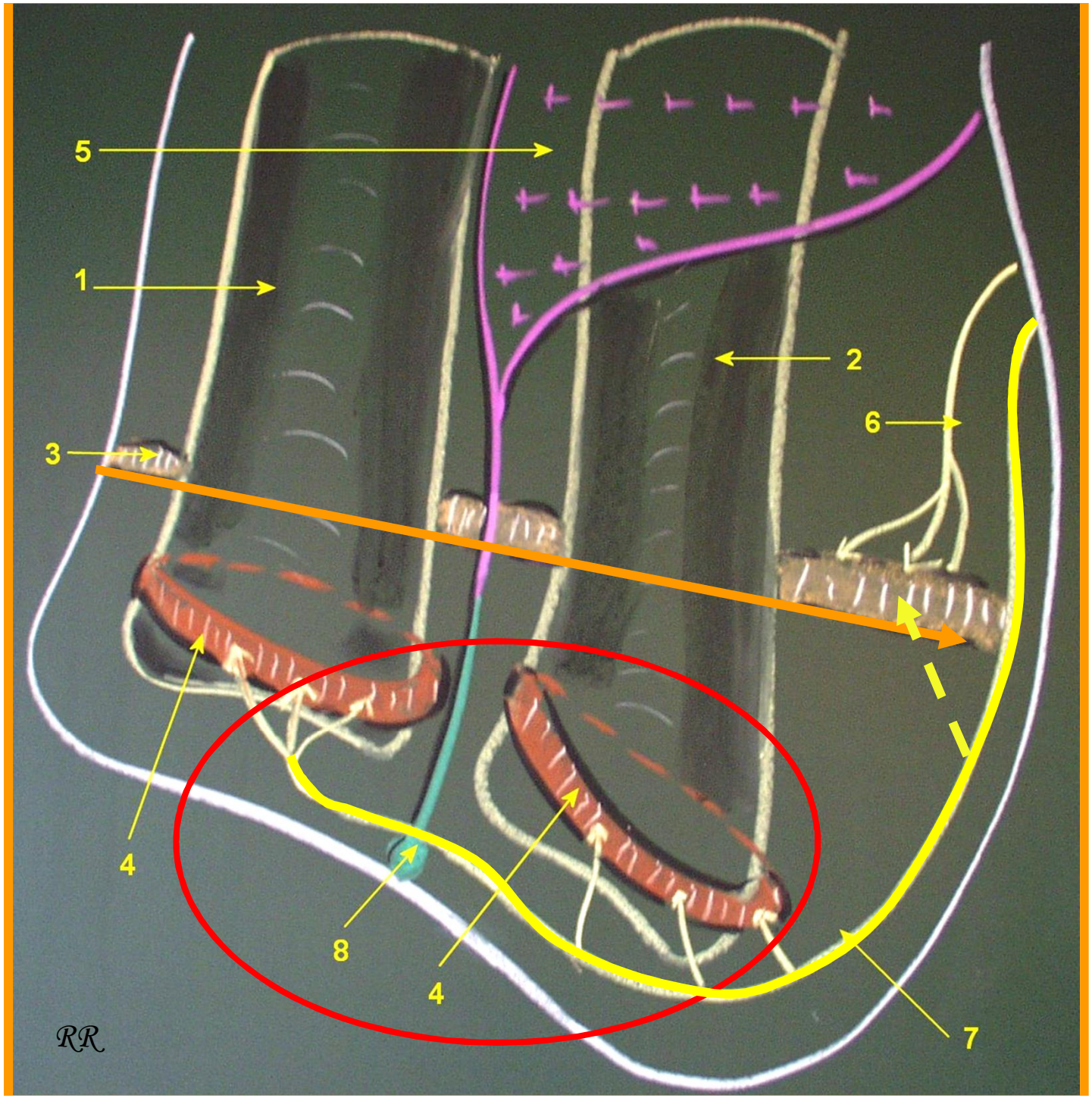
L

Morphogenesis





1 cloacum
2 urin. Tube
3 rectal Tube
4 pelv-per spur
5 peritoneum
6 levator ani M
7 ext sphinct
8 caudal scler.


5
1
2
6
3
4
8
4
7
RR
Cr
V
1 UG
2 REC
3 LA
4 sphin
5 perit.
6 S roots
7 Pud N
8 CFNP

Two kinds of innervation

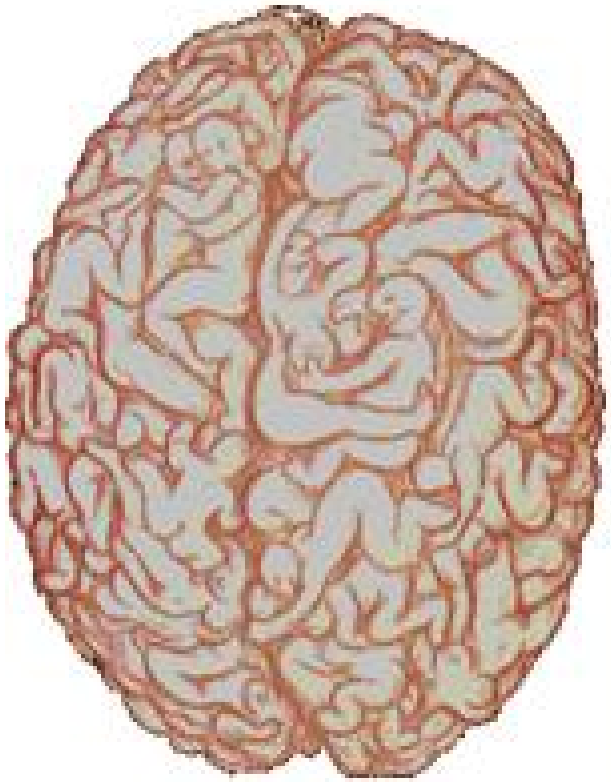
- Somatic: Pudendal nerve and alé
- Vegetative: sympathetic for pain

Pudendal nerve entrapment
A classical syndrom

R ROBERT, JJ LABAT, T RIANT, B RIOULT,
S PLOTEAU, A LEVEQUE

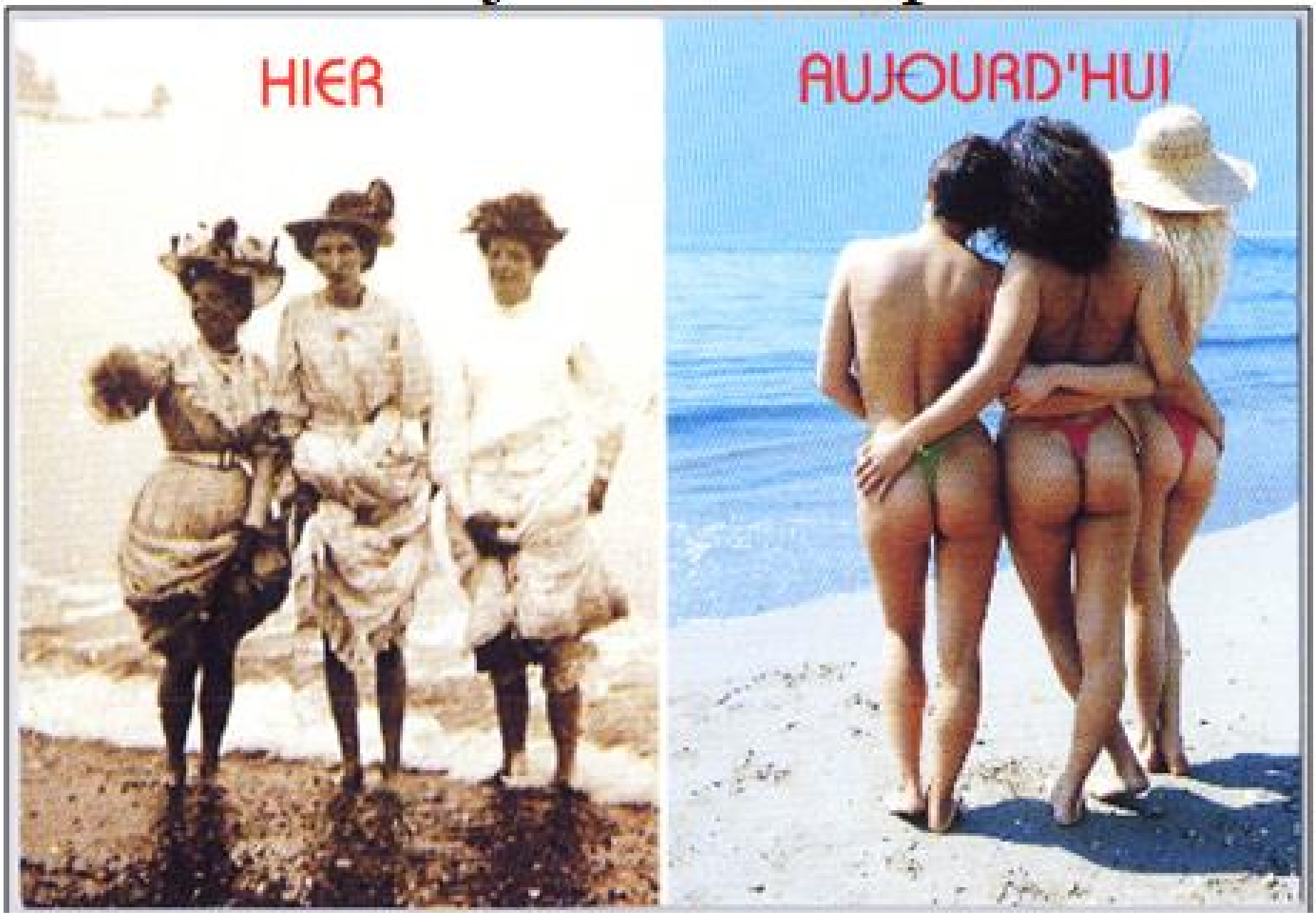
Nantes France

Ce ne fut pas facile!... Au début



A pain reaching different peripheral structures may be from neuropathic origin

De nos jours, on en parle



An unknown entity 30 years ago

Idiopathic proctalgias, vulvodynias Ano-rectal neuropathy pelvic neuralgias, coccygodynias, prostatodynias (prostatitis ou chronic pelvic pain syndrom), levator ani syndrom, idiopathic chronical rectal pain, etcé é é é é é é é é ..
pudendal neuralgia...

G.AMARENCO 1987:

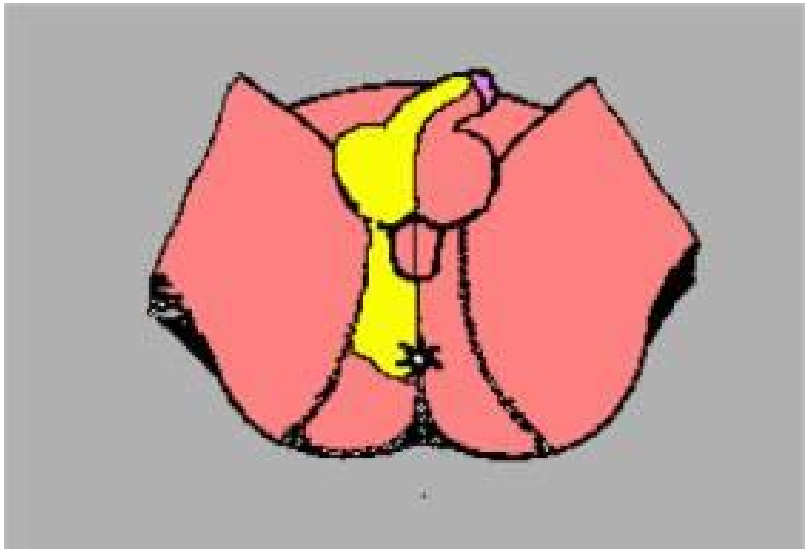
Perineal neuropathic syndrom: clinical datas

R.ROBERT 1989:

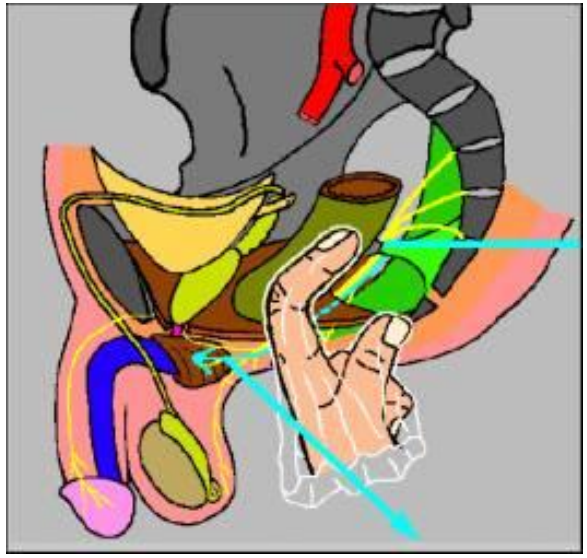
Anatomical findings. Entrapment syndrom

La névralgie pudendale : pathologie neurologique

- Topographie tronculaire
- Position assise
- Brûlures
- Examen clinique normal
- Complication neuro du Richter = expérimental!
- Données EMG: la LD

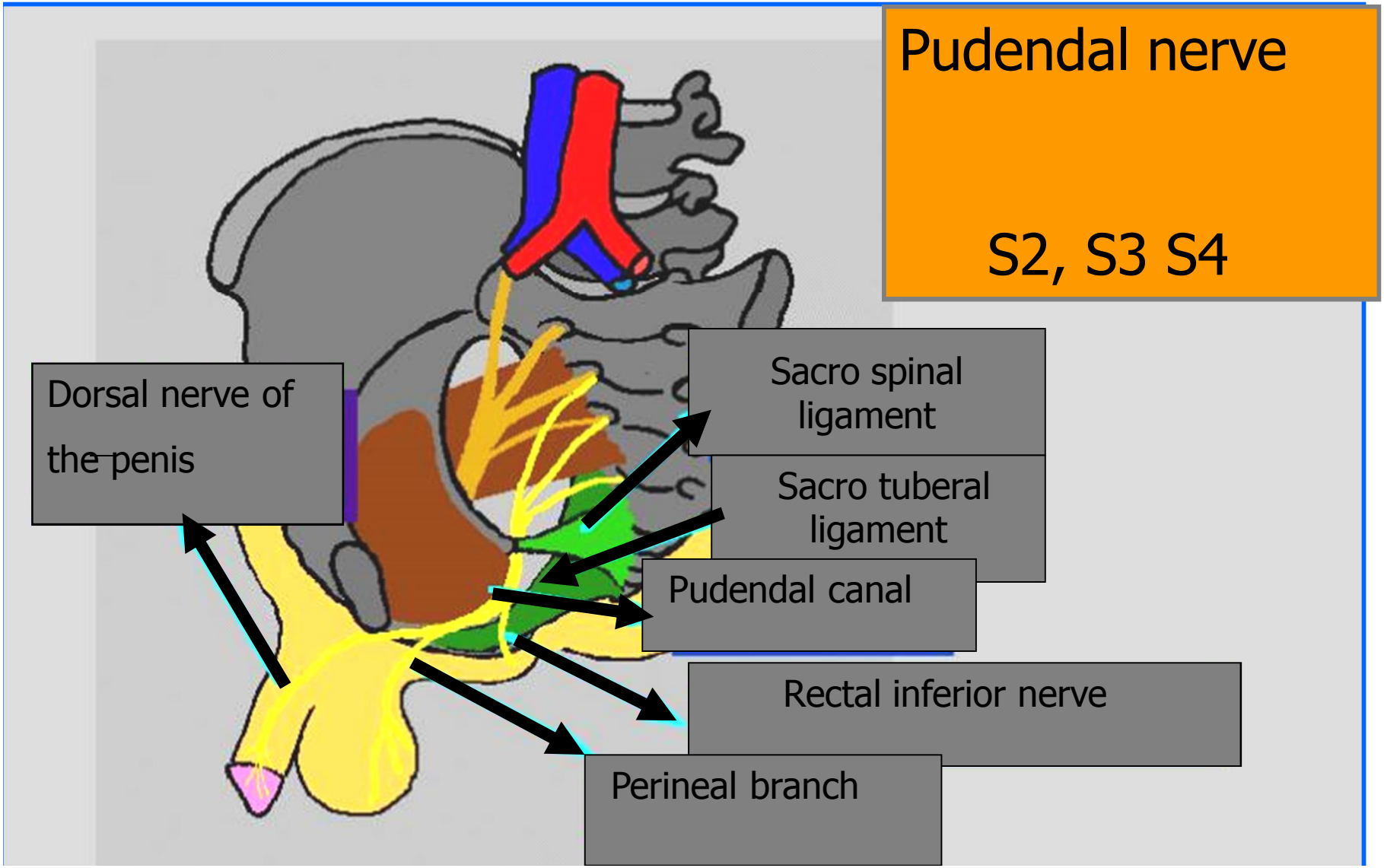


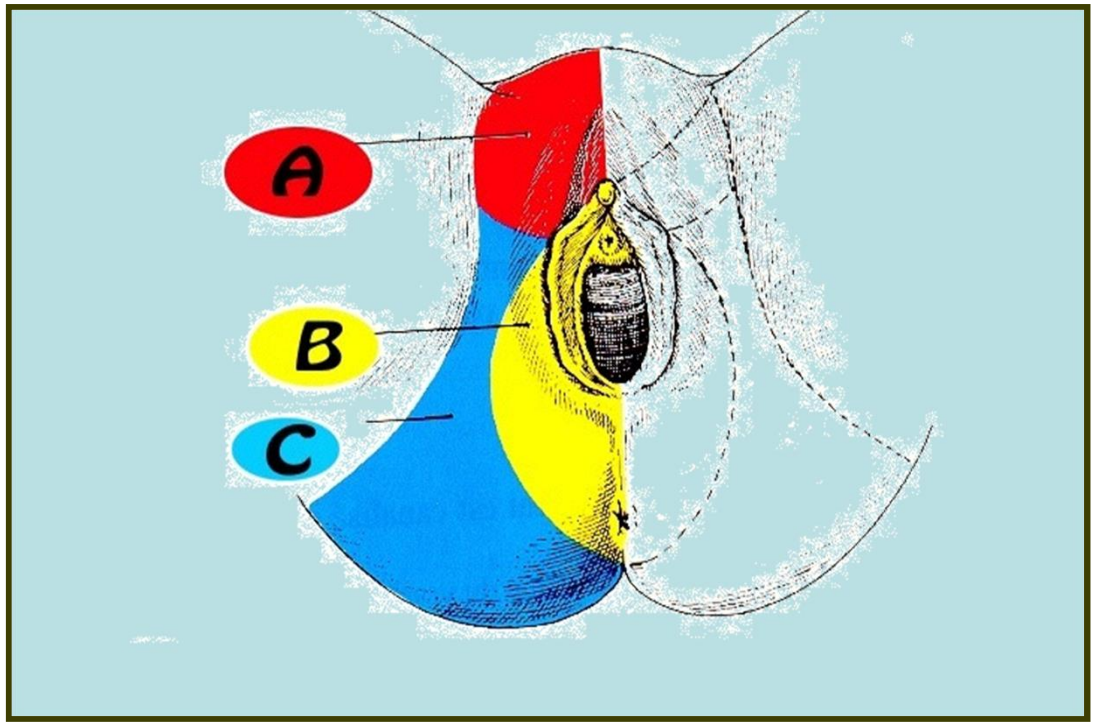
- Résistance aux antalgiques habituels
- Efficacité des médic de la douleur neuropathique
- Efficacité des infiltrations



SOMATIC INNERVATION

PUDENDAL NERVE:
Somatic innervation





(Kamina)

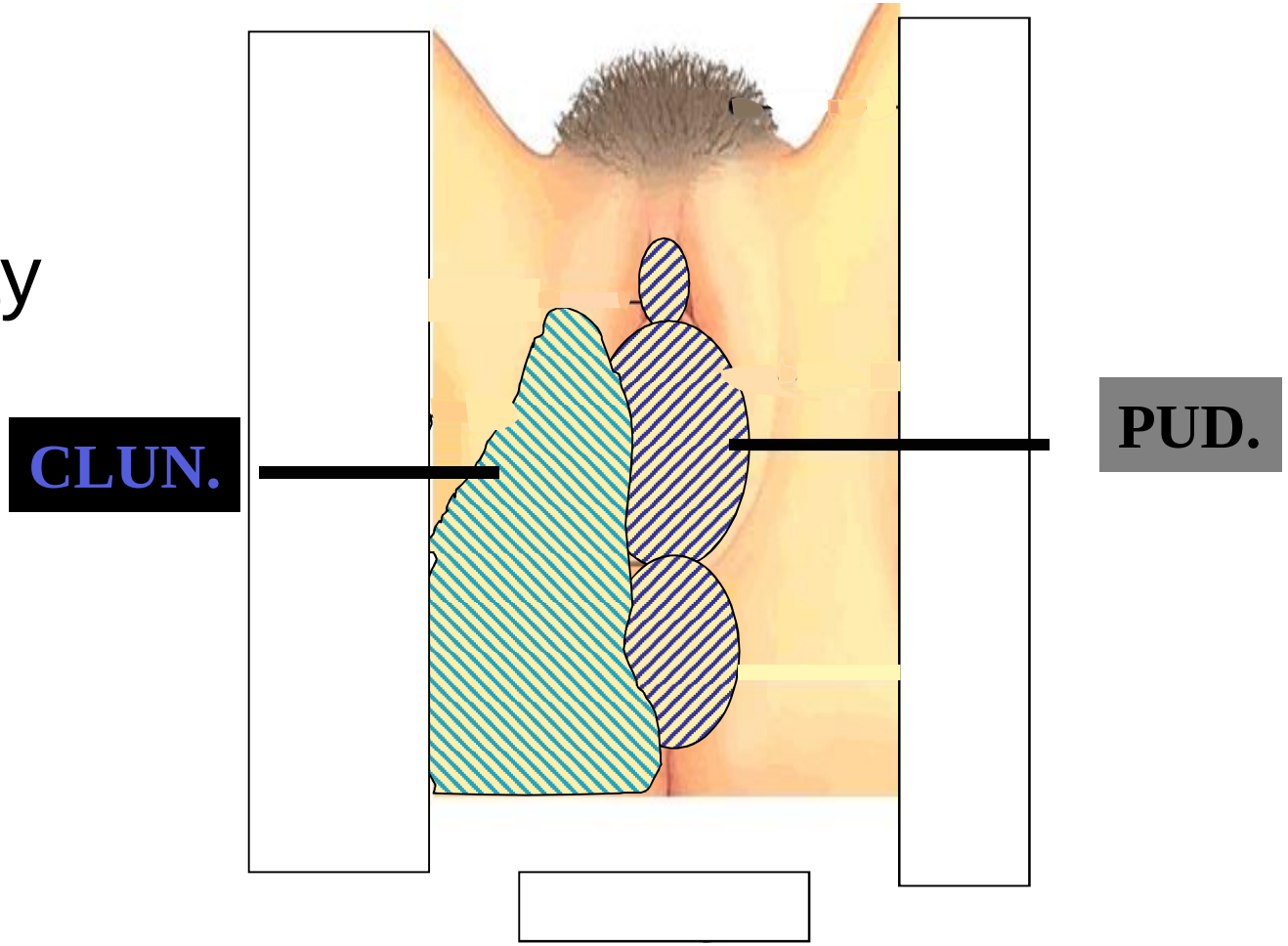
A:*Ilio-inguinal, Ilio hypogastric, Genito-femoral nerves*

B: *Pudendal nerve*

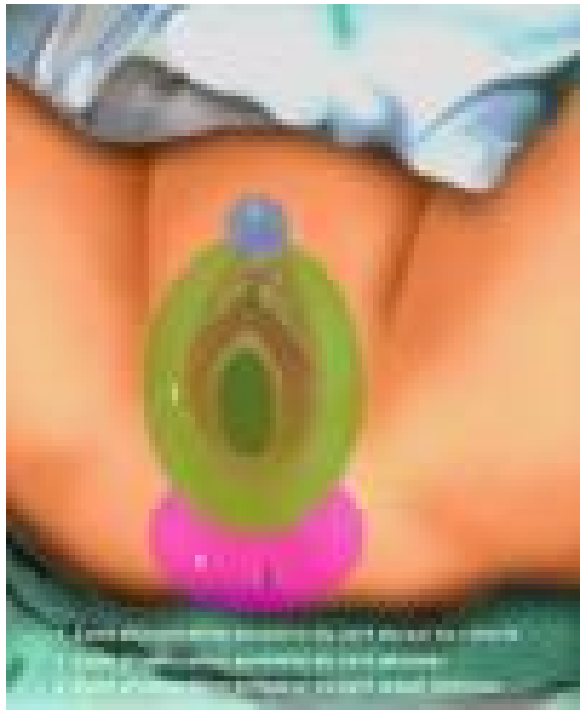
C: *Inferior Cluneal nerve*

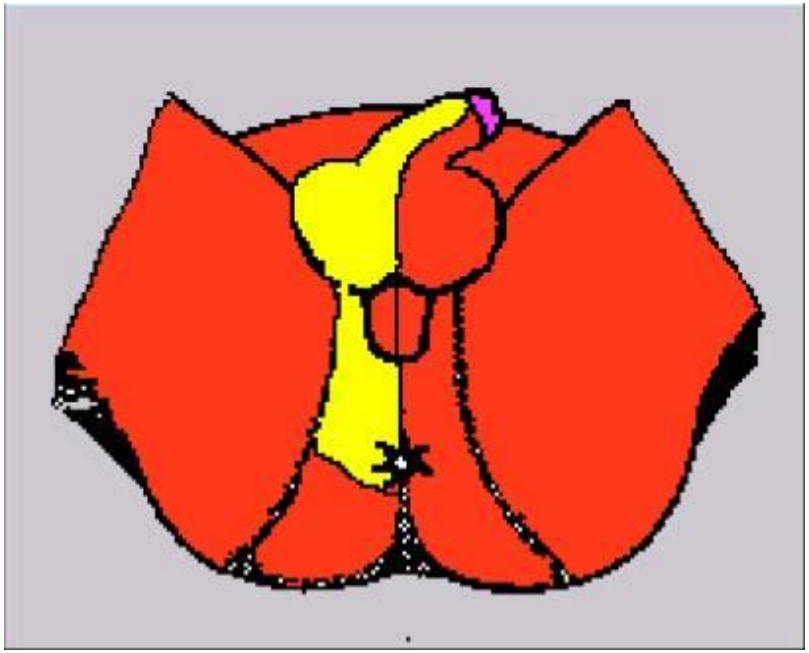
Sensitive supply

Seated position may entrap two nerves:



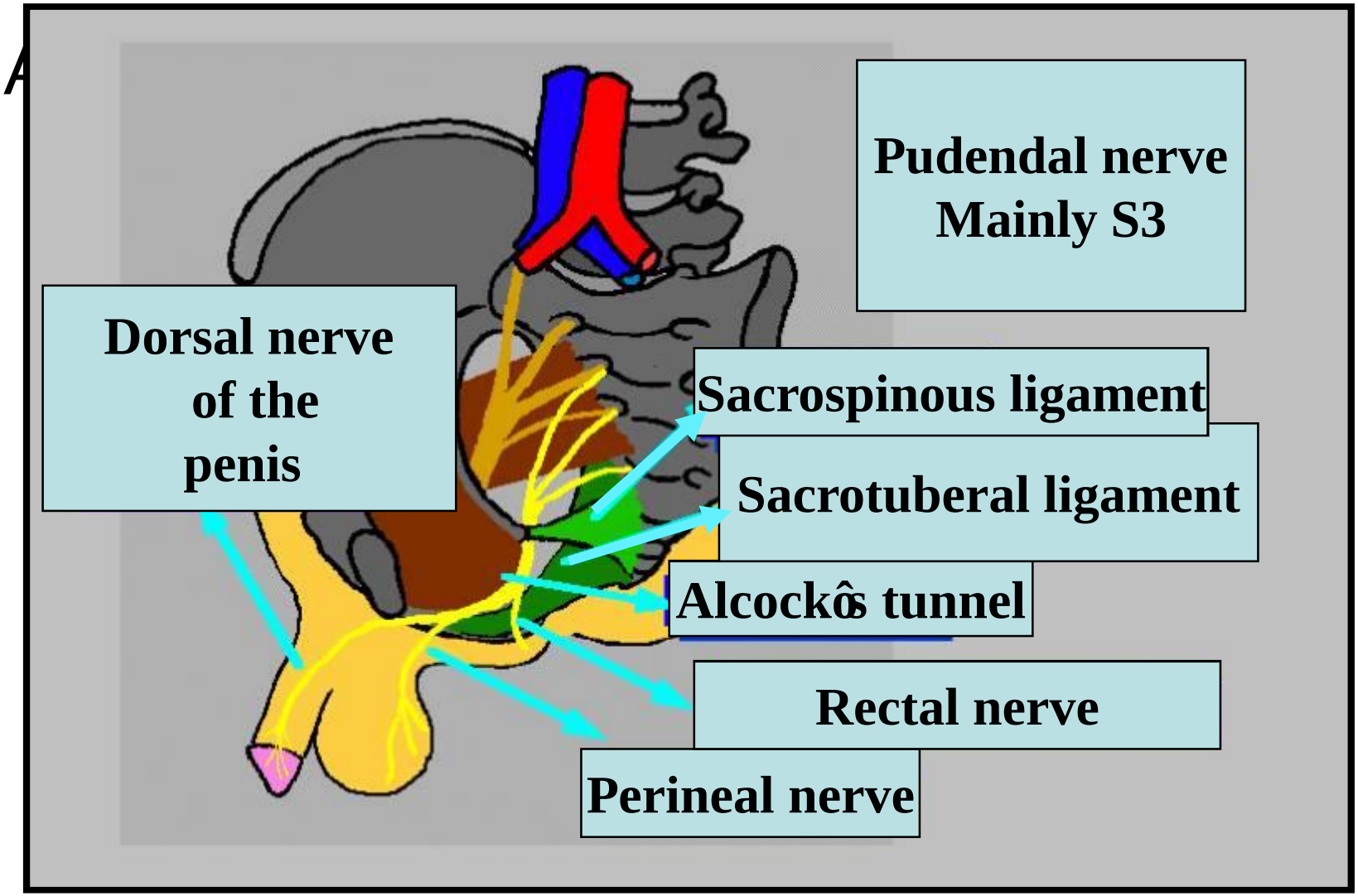
Pudendal nerve





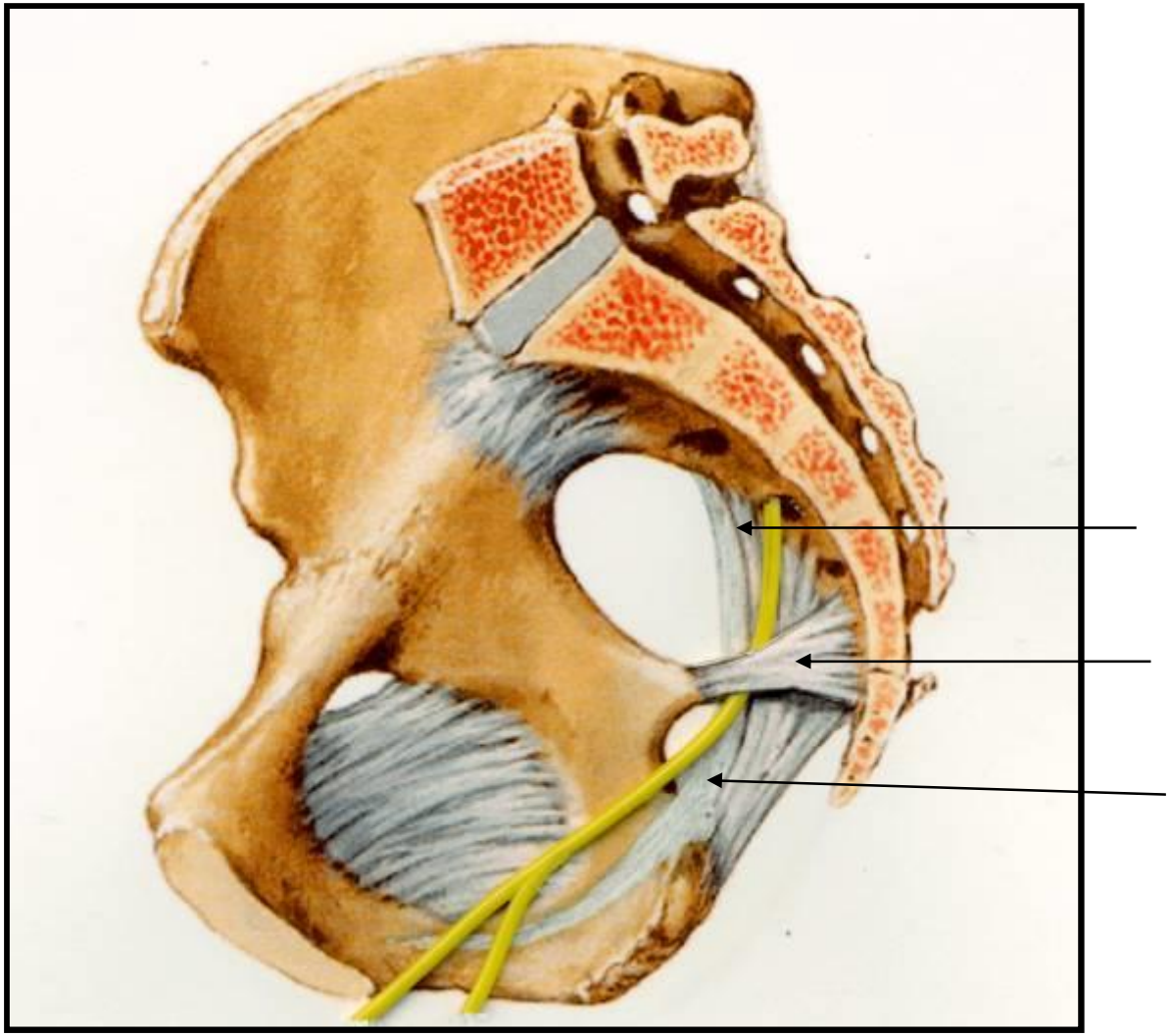
Pudendal neuralgia

Å A

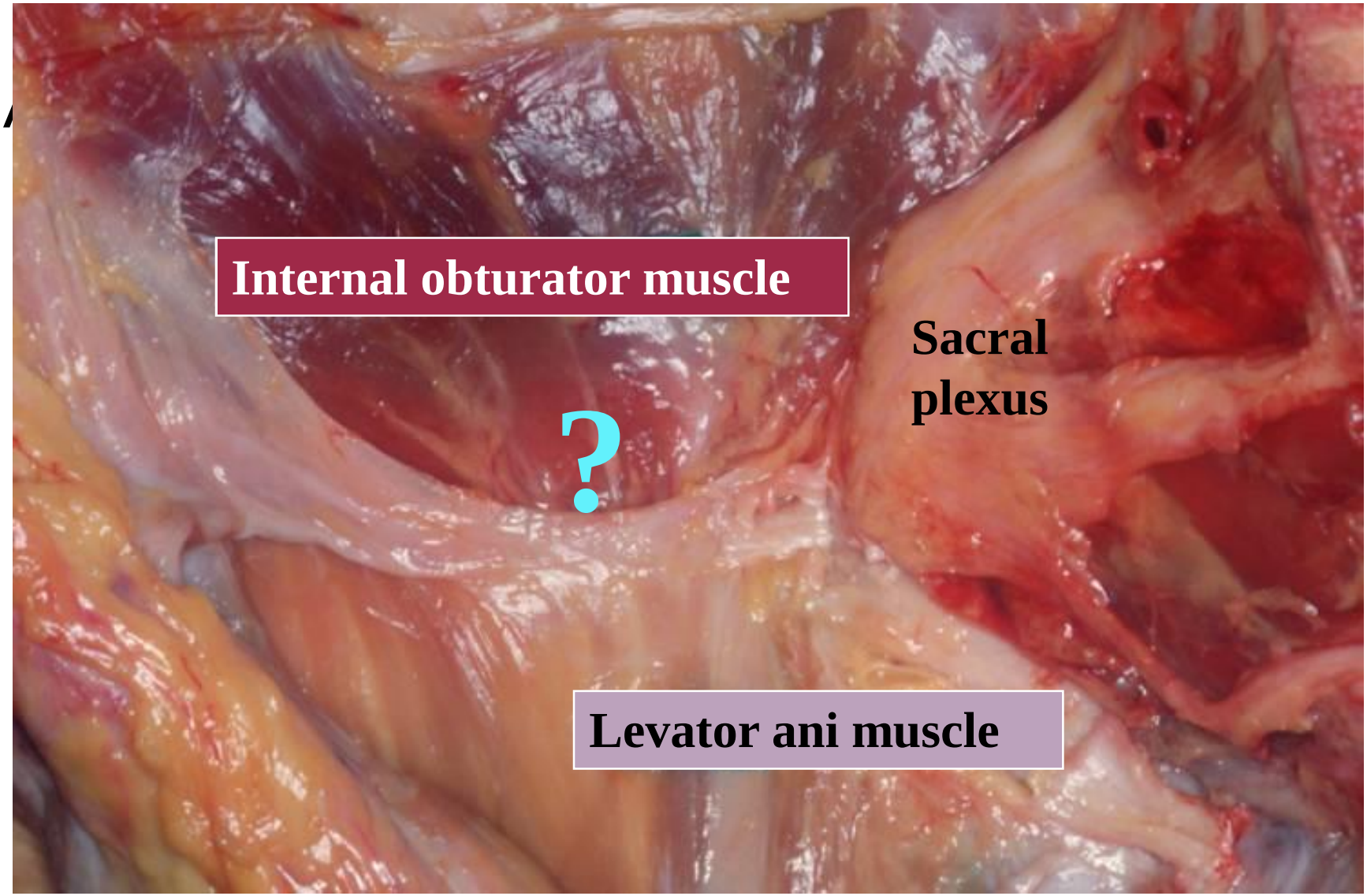


Pudendal neuralgia

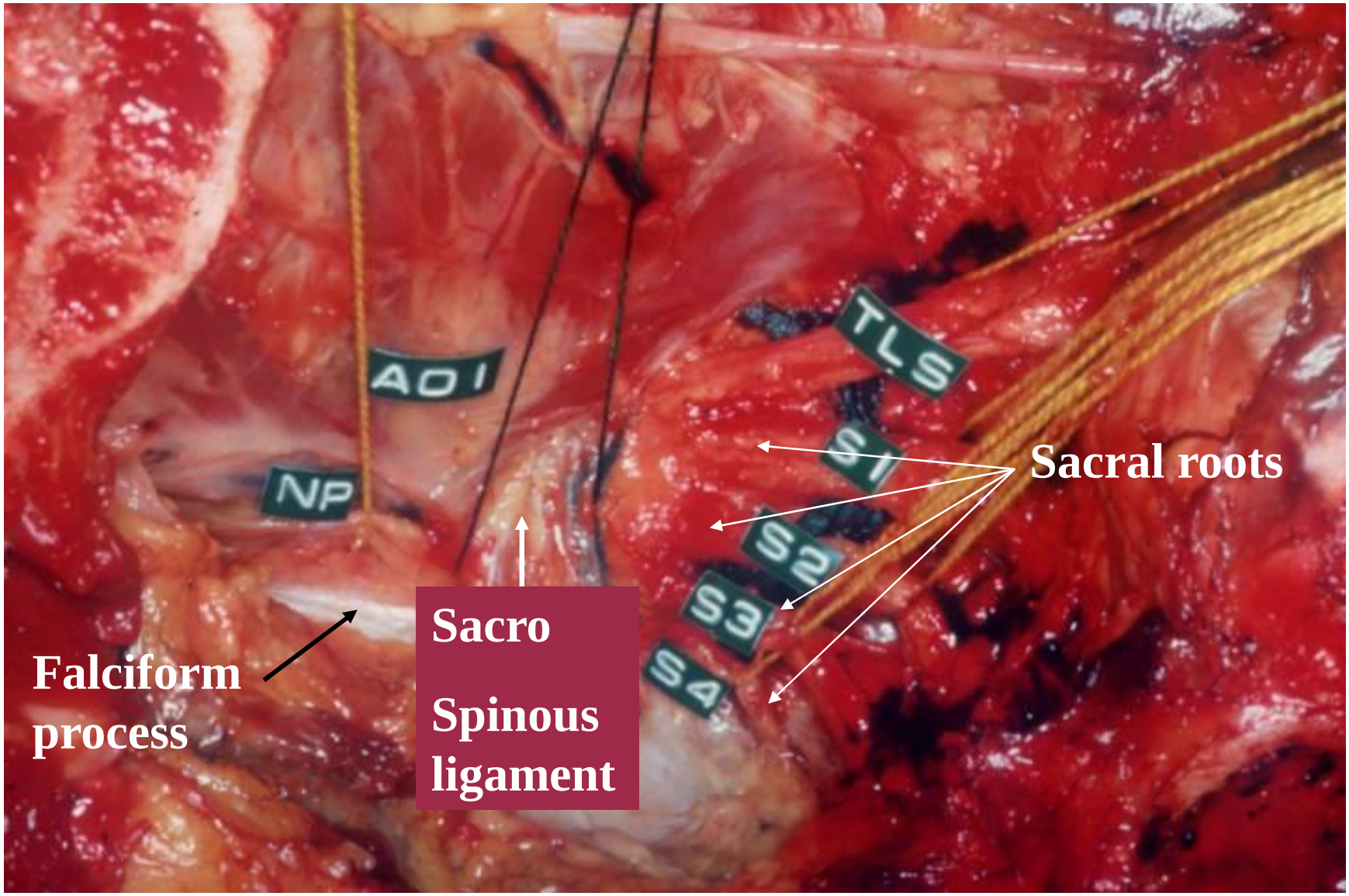
- Anatomy



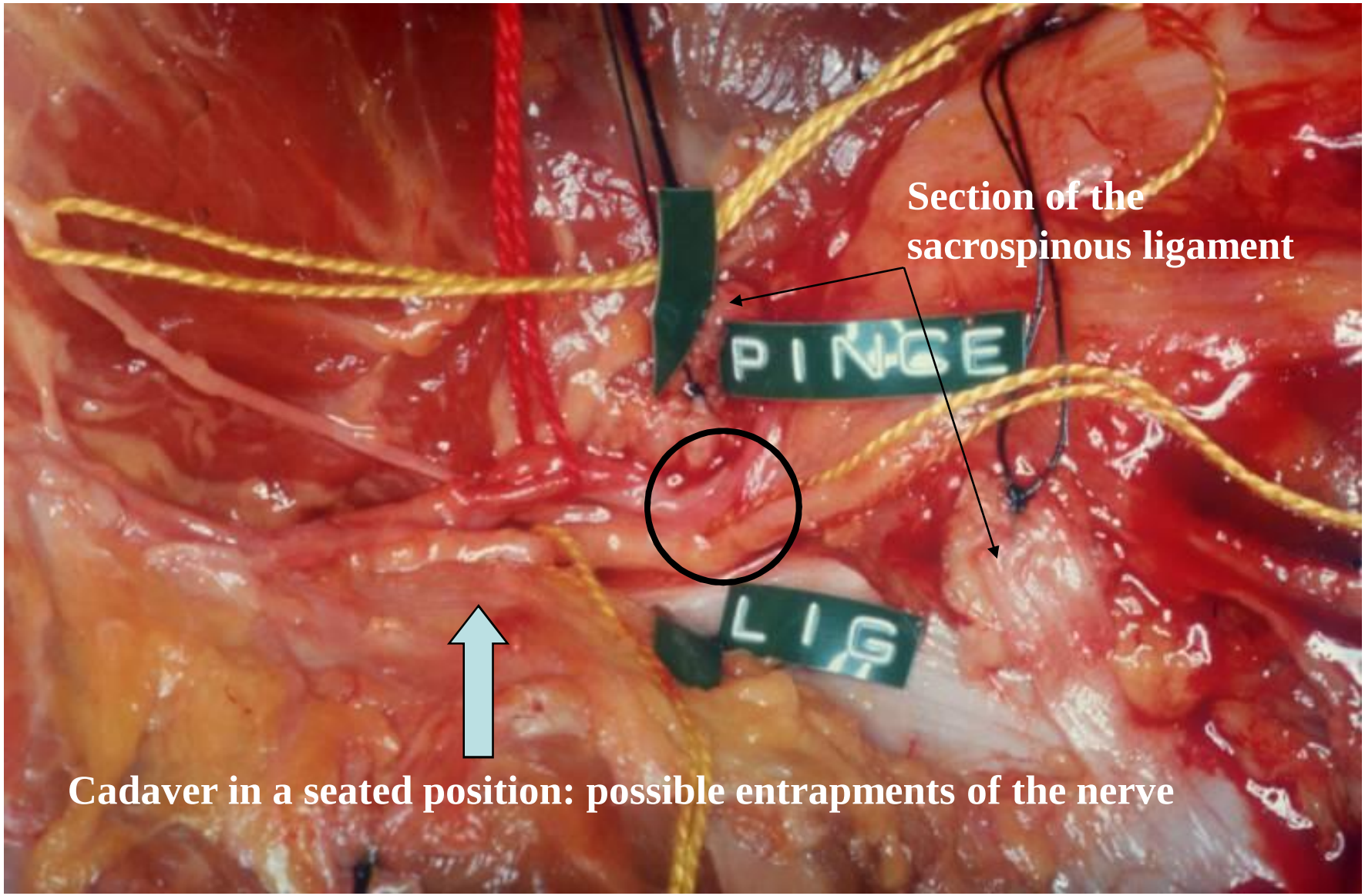
Pudendal neuralgia



Pudendal neuralgia

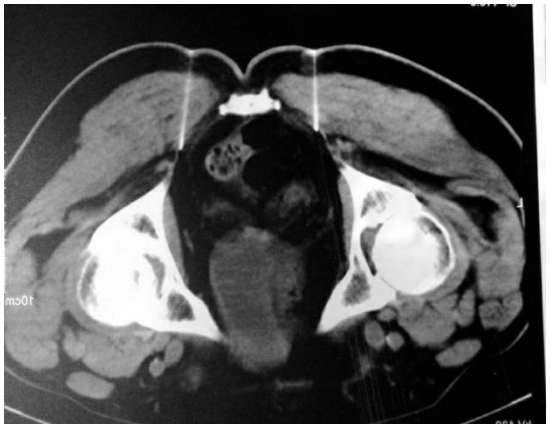


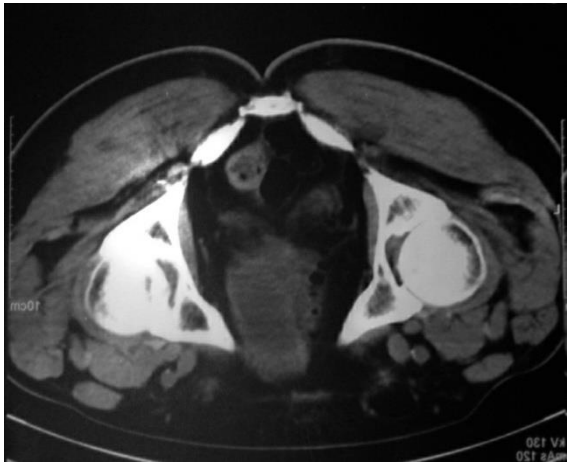
Pudendal neuralgia



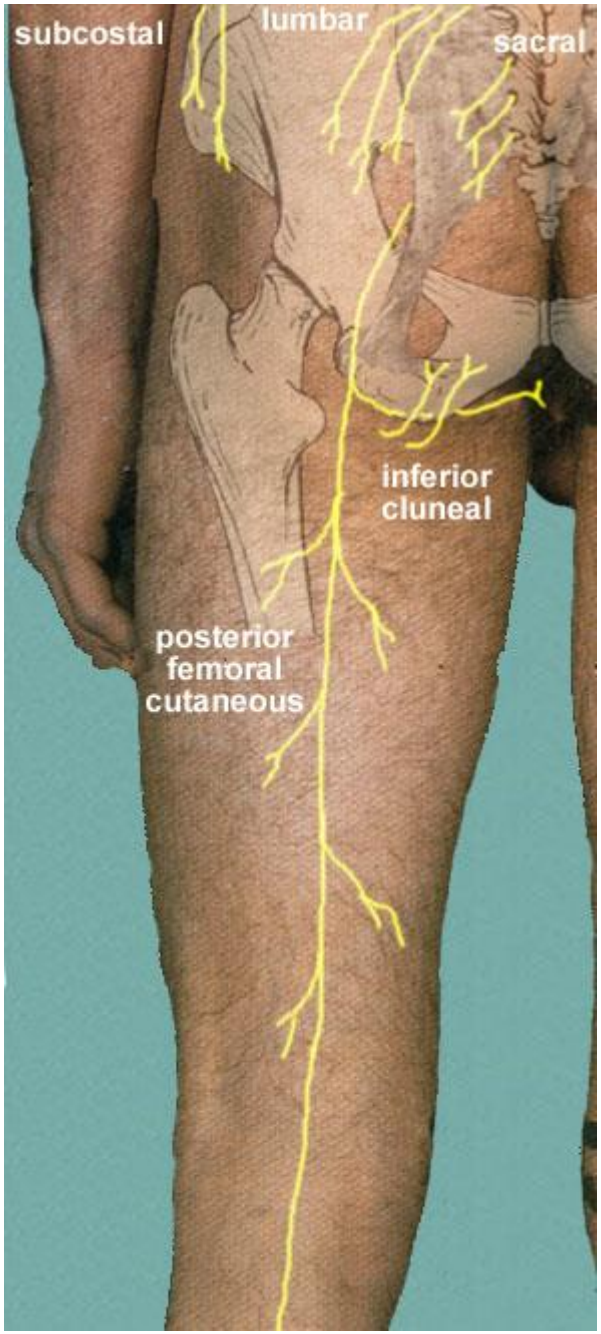
Infiltration au LSE

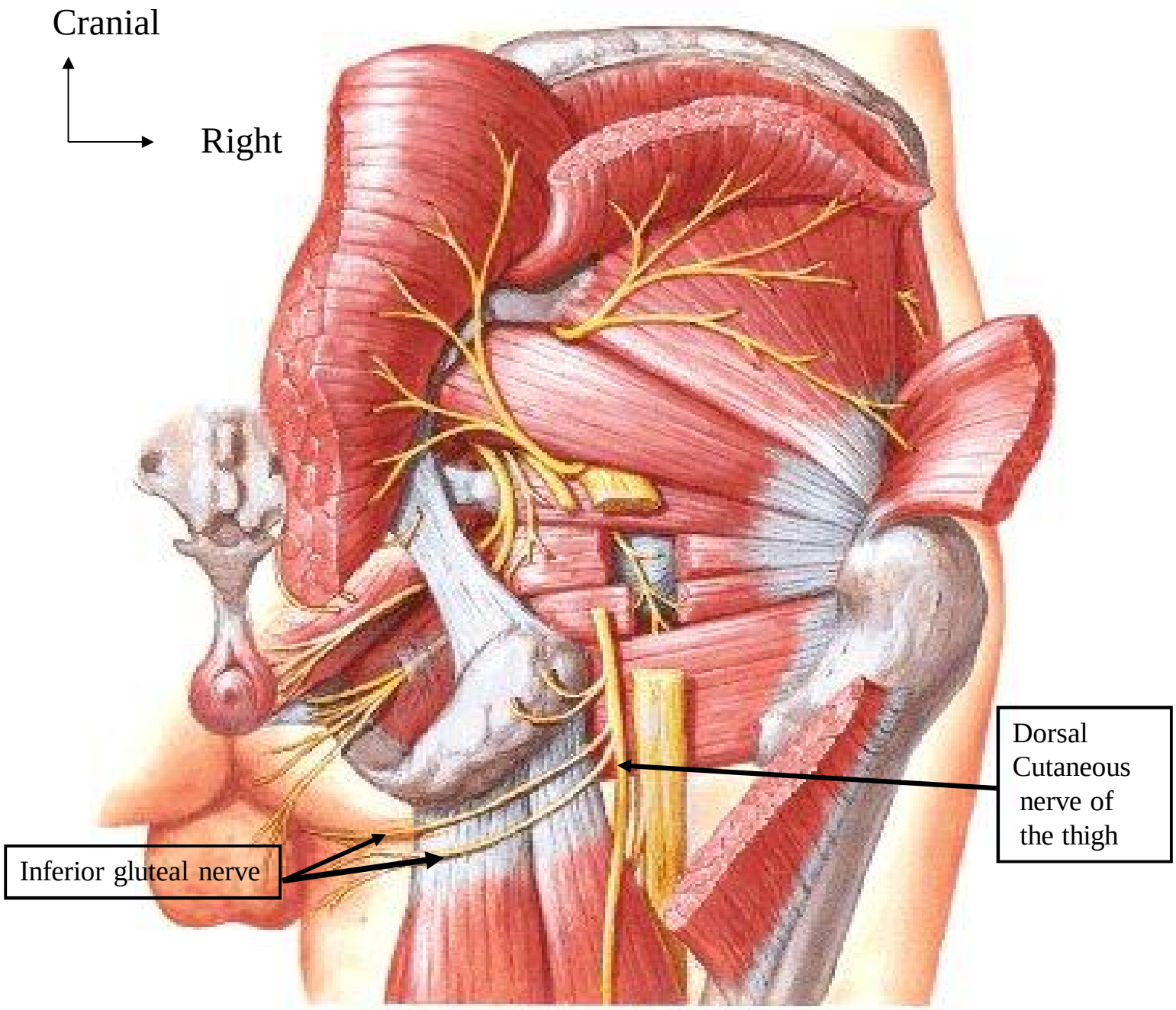
- Utilité diagnostique
- Principale zone de conflit
- En première intention
  - En amont du canal dôArcock
  - Variation anatomique

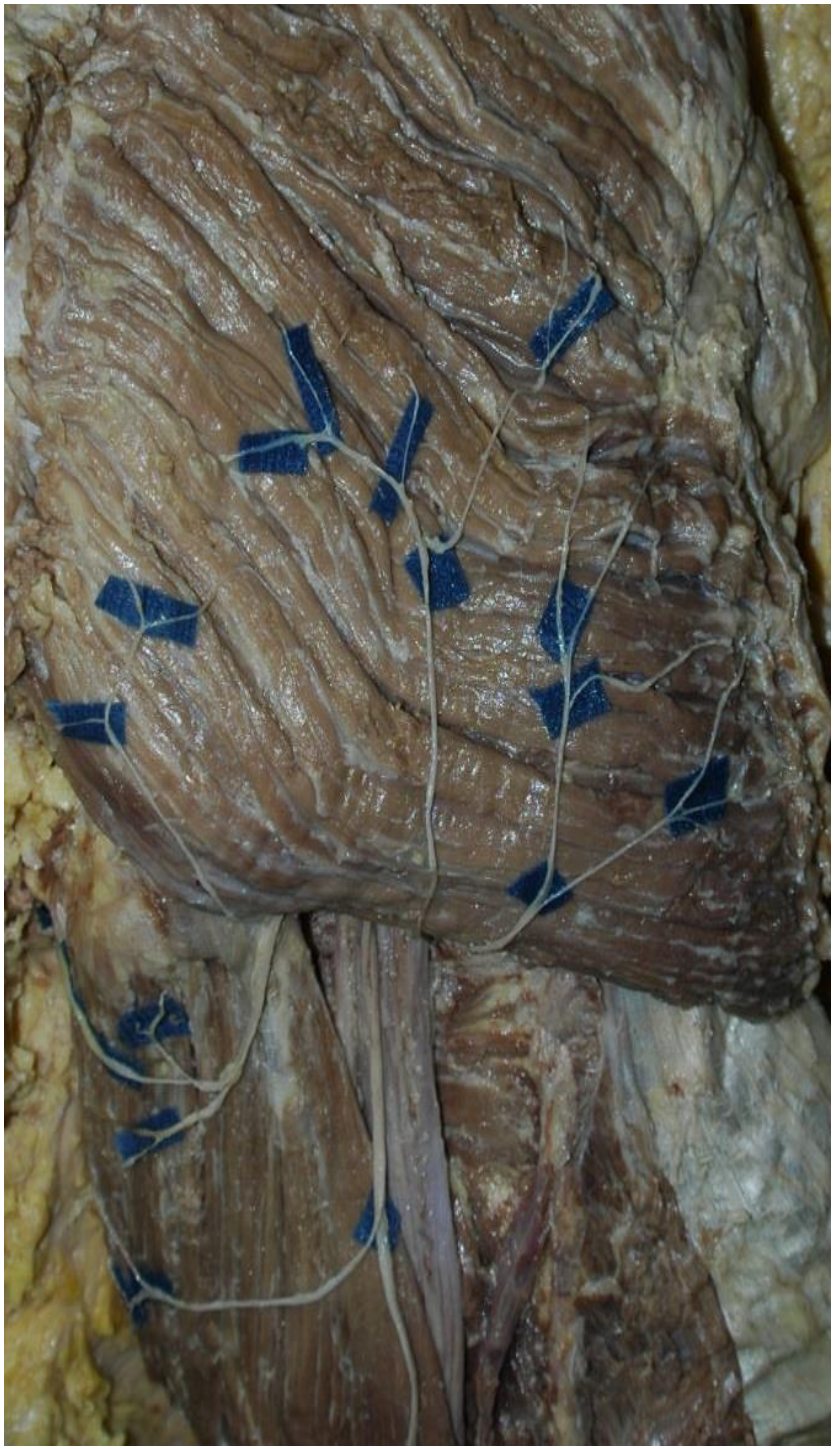


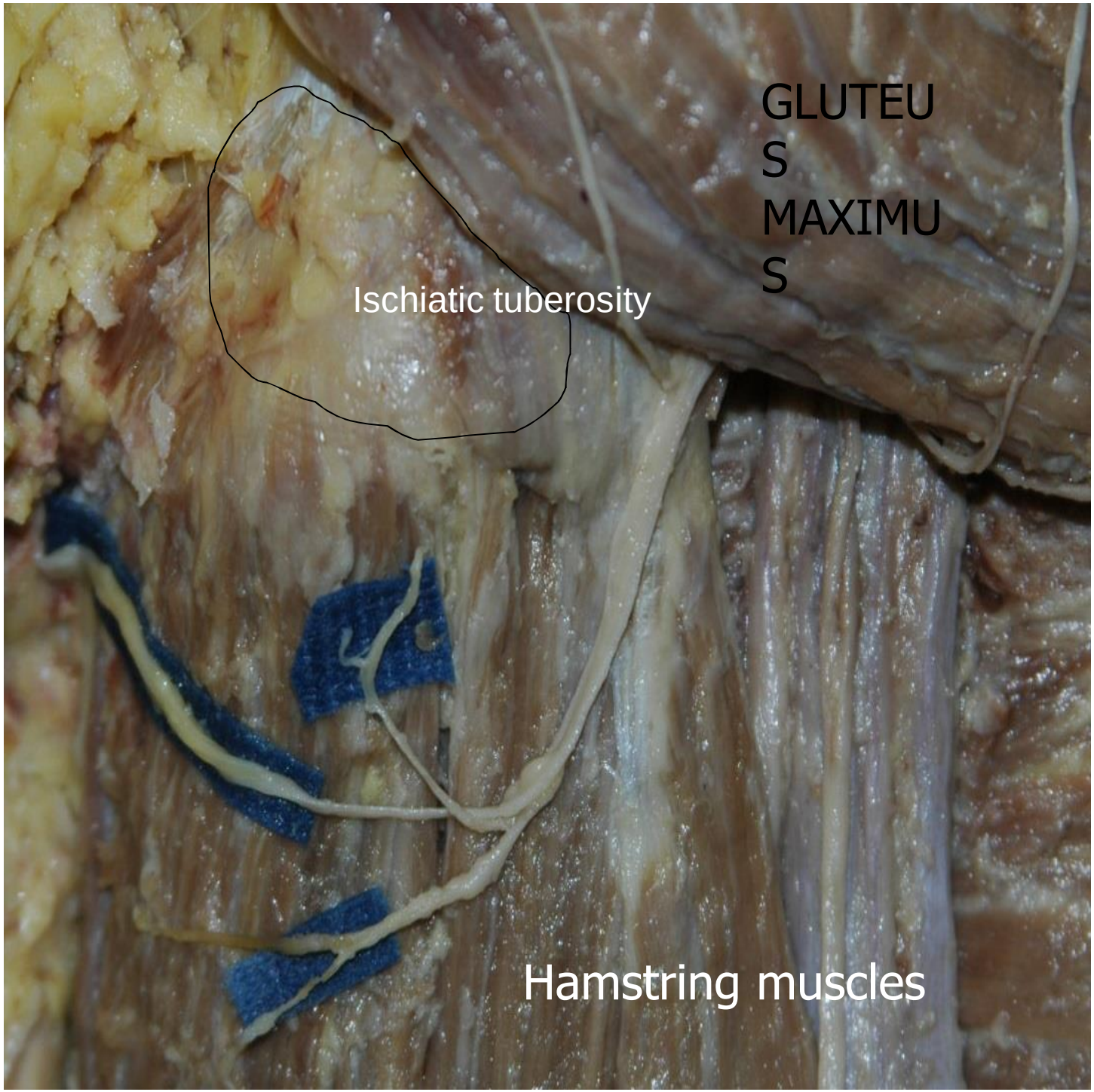


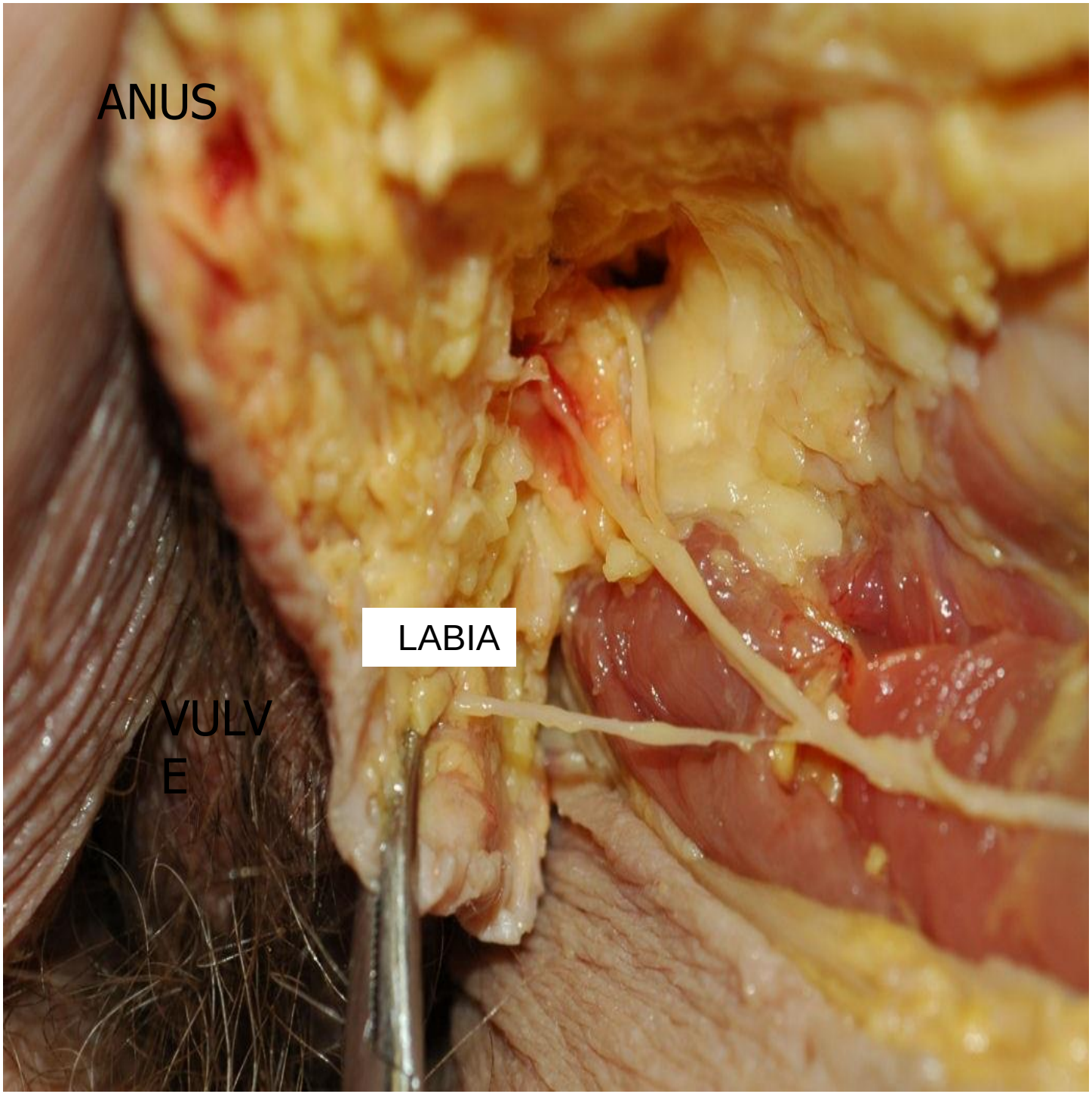
Inferior cluneal nerve




Cranial
Right
Dorsal Cutaneous nerve of the thigh
Inferior gluteal nerve




GLUTEUS MAXIMUS
Ischiatic tuberosity
Hamstring muscles


ANUS
LABIA
VULVE

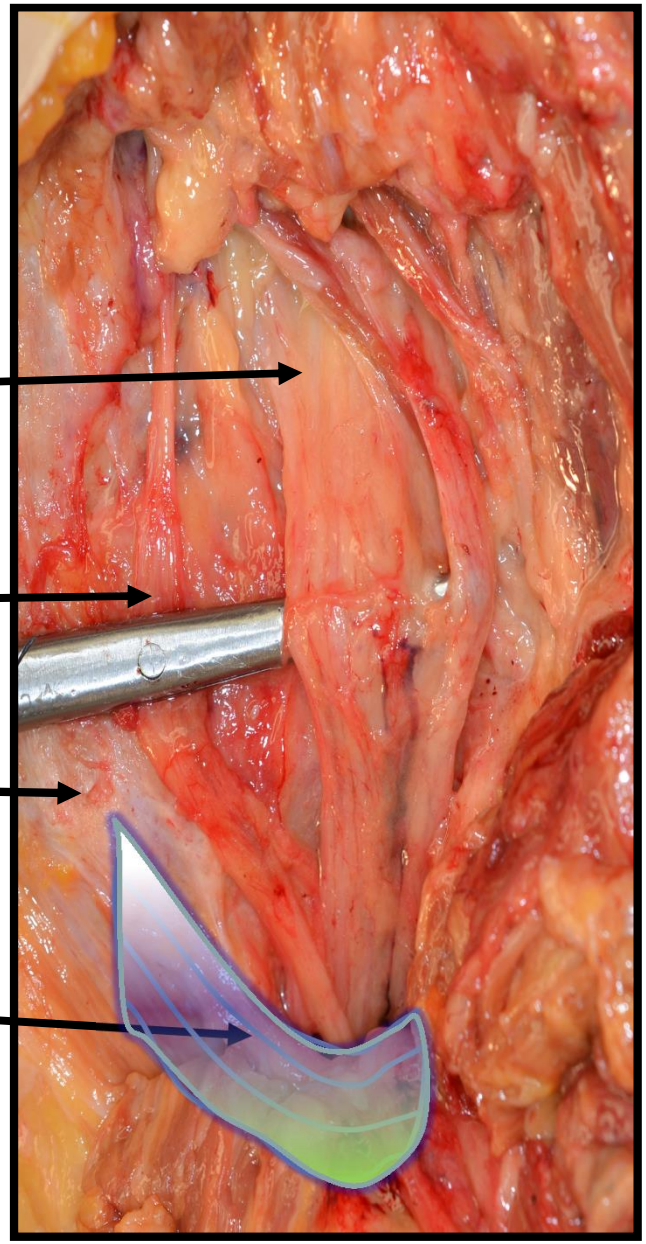
HERE IS THE PROBLEM

Ischiatic trunk

Dorsal cutaneous nerve of the thigh

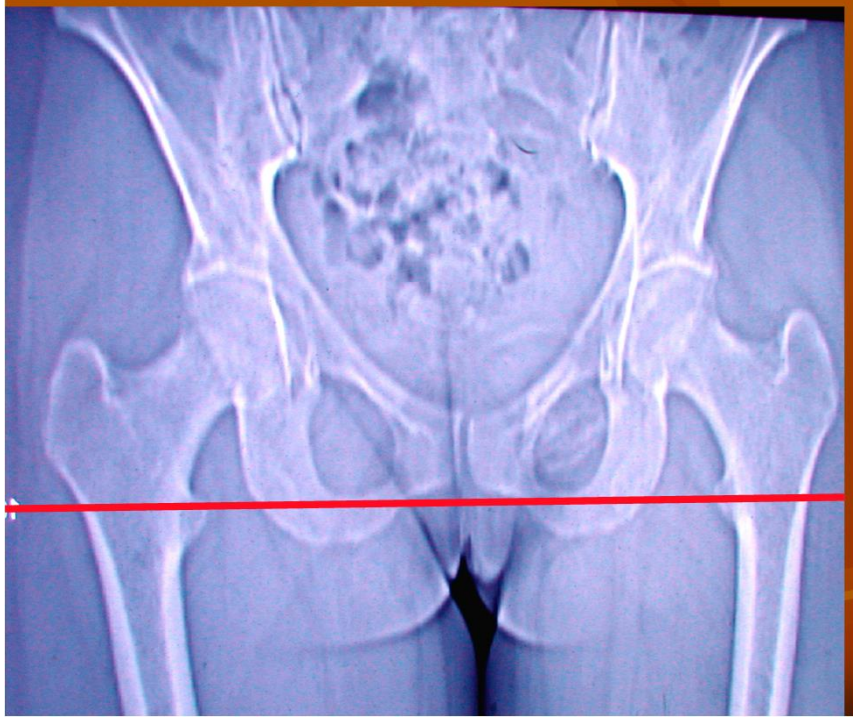
Ischiatic tuberosity

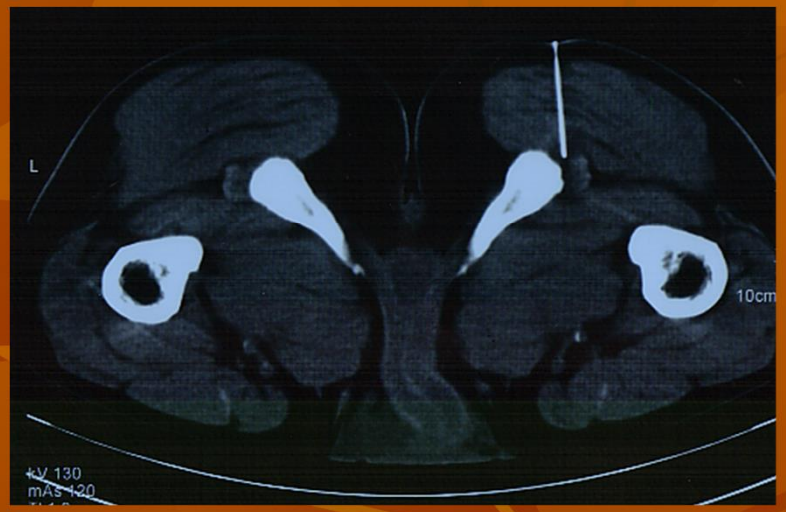
Fibrous arcade

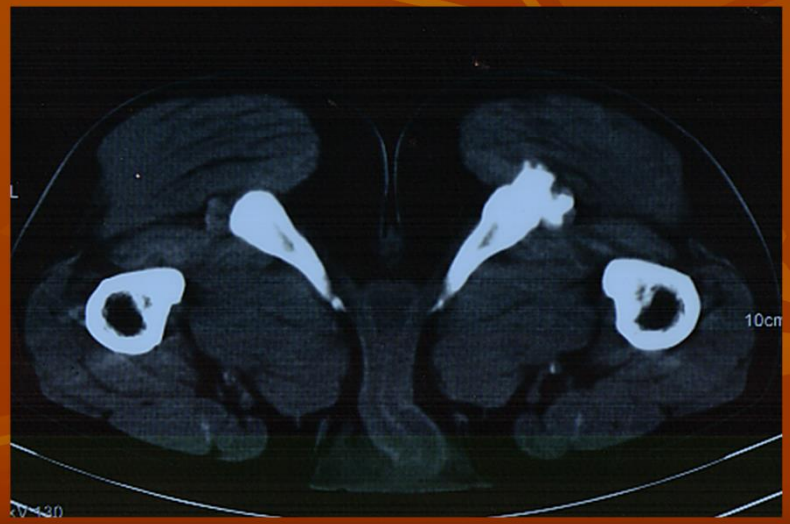


Bloc cluneal

- Bloc clunéal, cutané postérieur
- Technique







The differences between the two pains

- **Pudendal nerve**
- Medial pain
- On soft seats
- Penis/clitoris
- Anus itself
- Sympathetic signs

- **Cluneal nerve**
- More lateral pain
- Sparing the penis/clitoris
- On hard seats
- Endo-ischiatic pain
- Dorsal aspect of the thigh
- No sympathetic signs

Nantes criteria

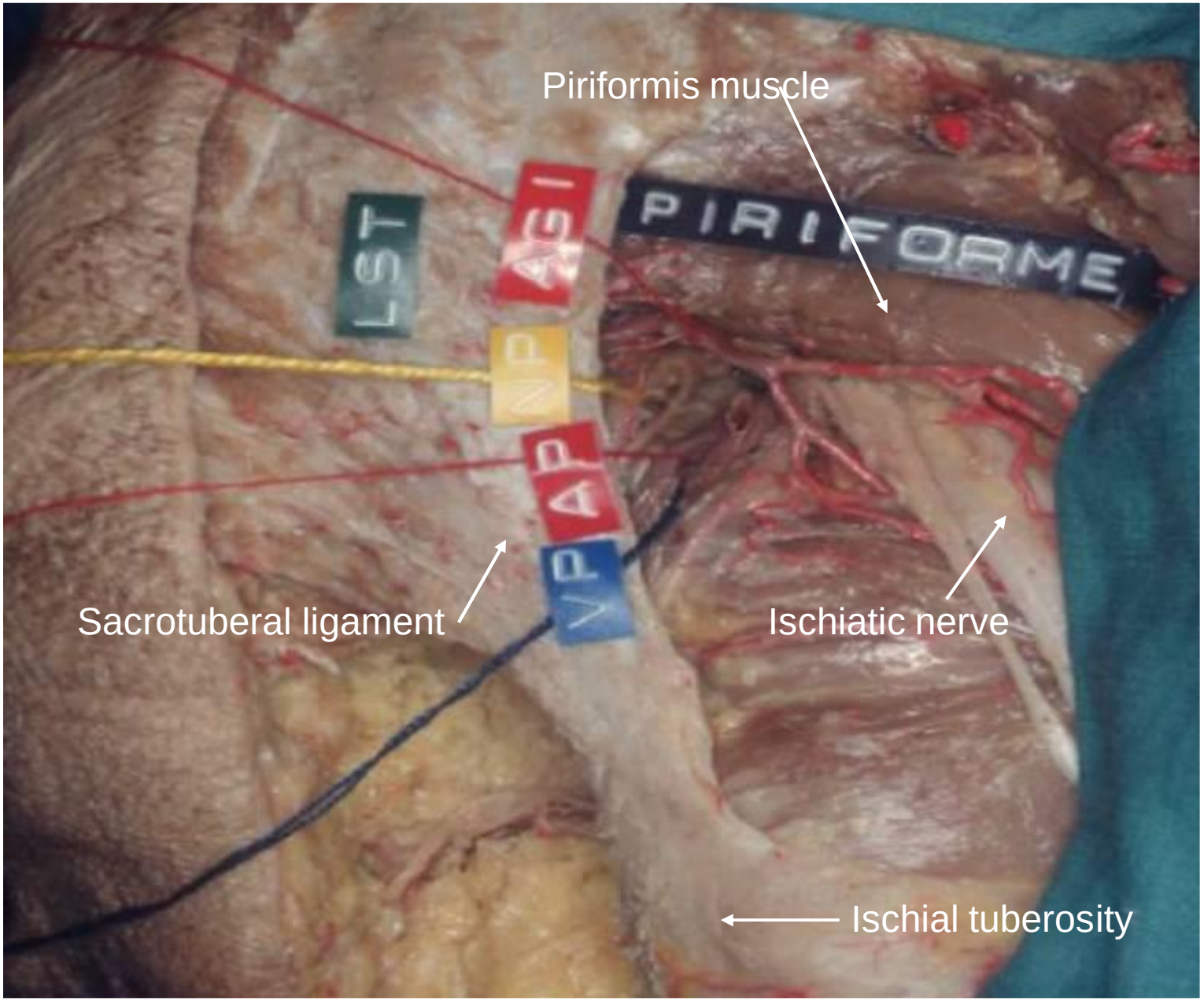
Pain in the PN territory

Does not awake patient when sleeping

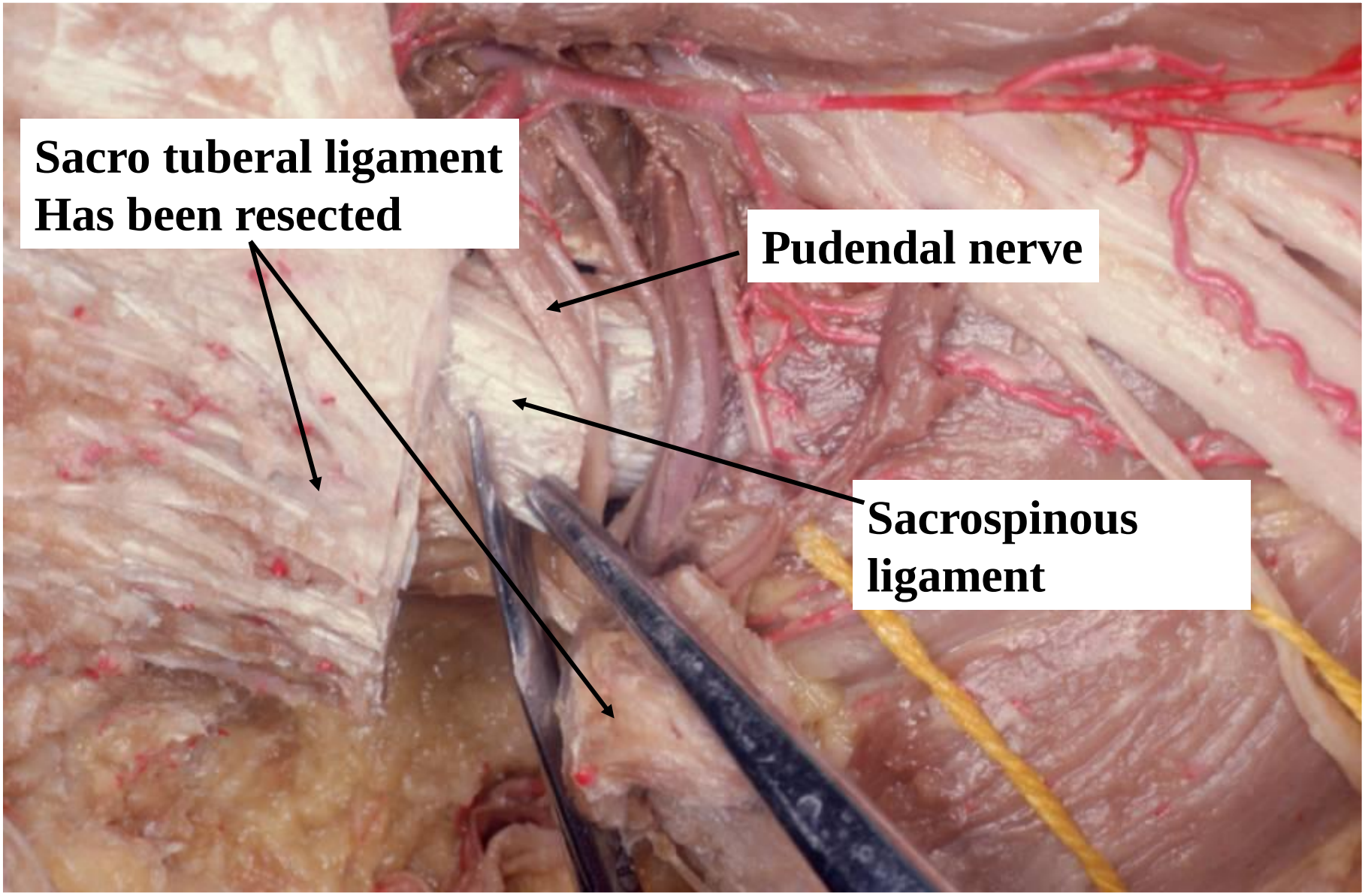
In sitting position

Normal neurological examination

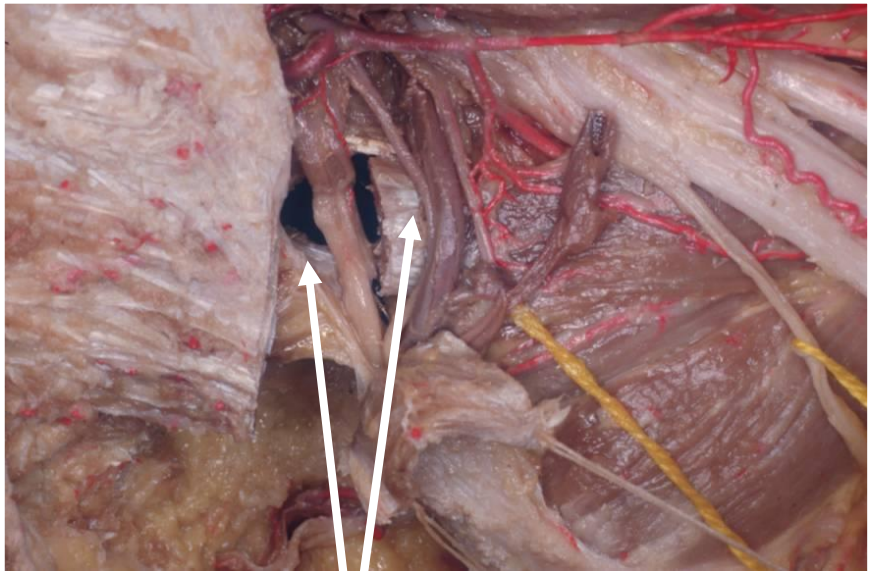
One positive block

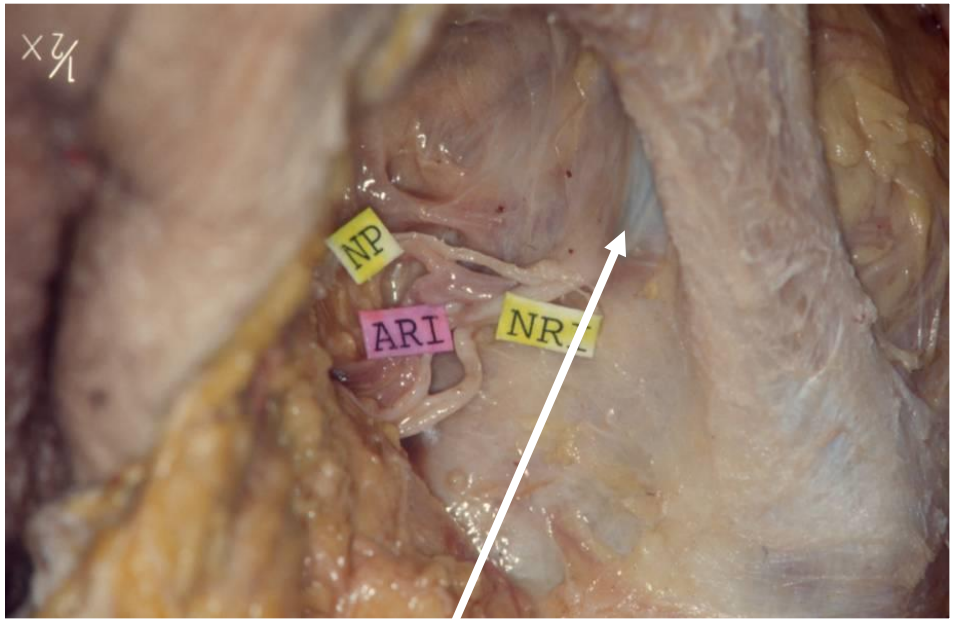

Piriformis muscle
PIRIFORME
Sacrotuberal ligament
Ischiatic nerve
Ischial tuberosity

Goal of the surgery: liberation of the nerve



Liberation - transposition of the pudendal nerve





Surgery of the pudendal nerve: a randomized prospective controlled trial

- Surgery versus control group
- Principal goal:
  - Surgery improves 60% patients at 3 months
  - No surgery (control) improves 30%patients at 3 months
  - Ris k α=5% et ß= 10%
- Secondary goals
  - Improvment at 12 months
  - Side effects of each procedure

Prospective randomized study

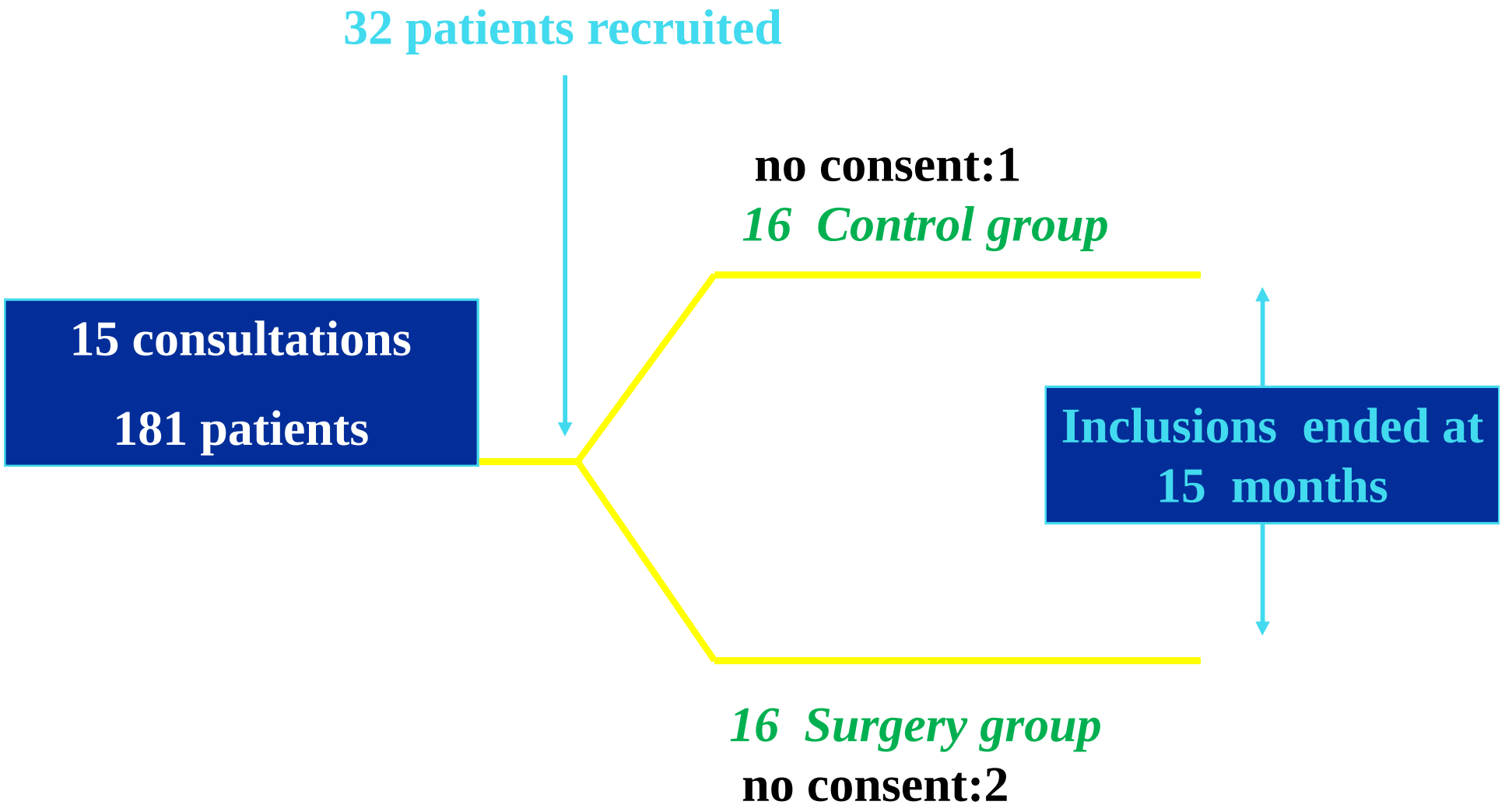
- Inclusion criterias: Pain
  - VAS Ó7
  - verbal scale 6 levels Ó3

  - Efficacity when:

    VAS decreases < 3 cms

    VS decreases < 2

Randomized prospective study: the 2 cohortes



Randomized controlled trial

Groups	3 months	12 months
Surgical	8/14	10/14
Control	1/15	1/15

Surgical procedure with Robertûs technic is therefore validated.

It allows a complete decompression of the nerve, without more complication than any other surgery.

No sphincterian nor sexual problems

No sacro-iliac joint instability

Results and long time effect of the surgery

Å 70% improve or are painless

29 have no benefit

Å 1% is worse

70% of improvment

Robertôs surgery: transgluteal approach

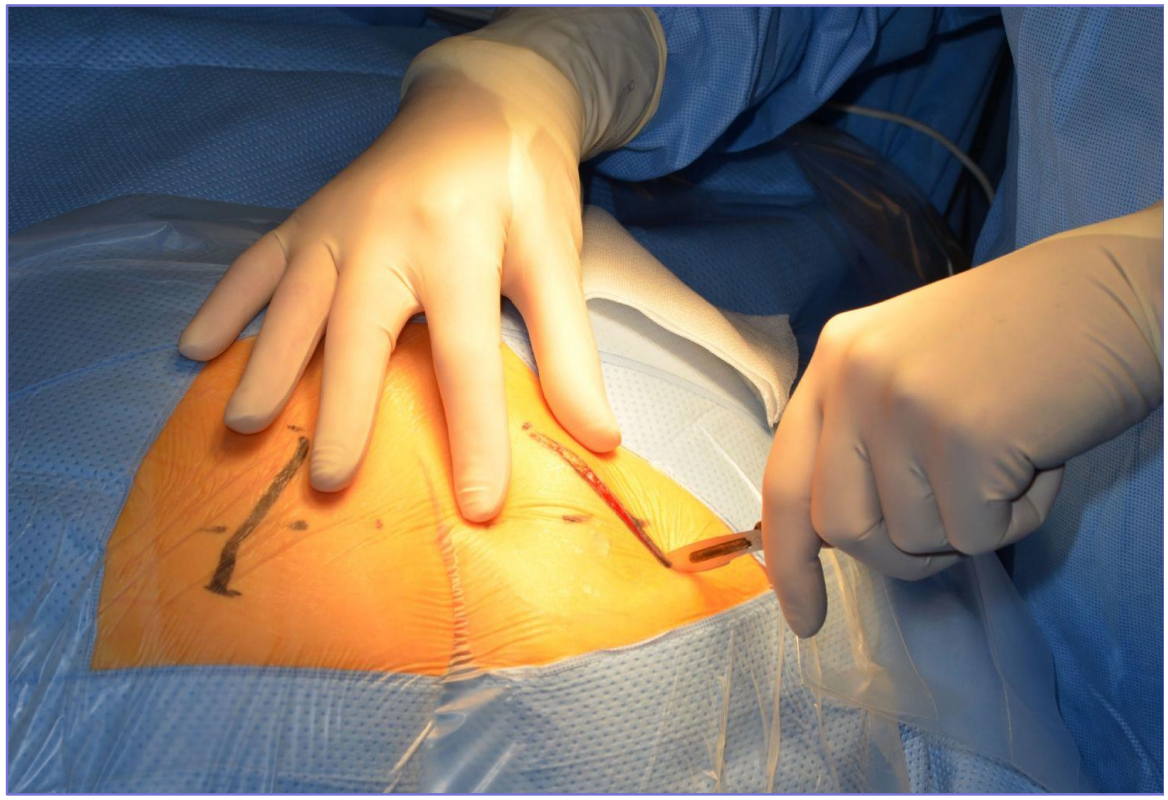
The nerve under view

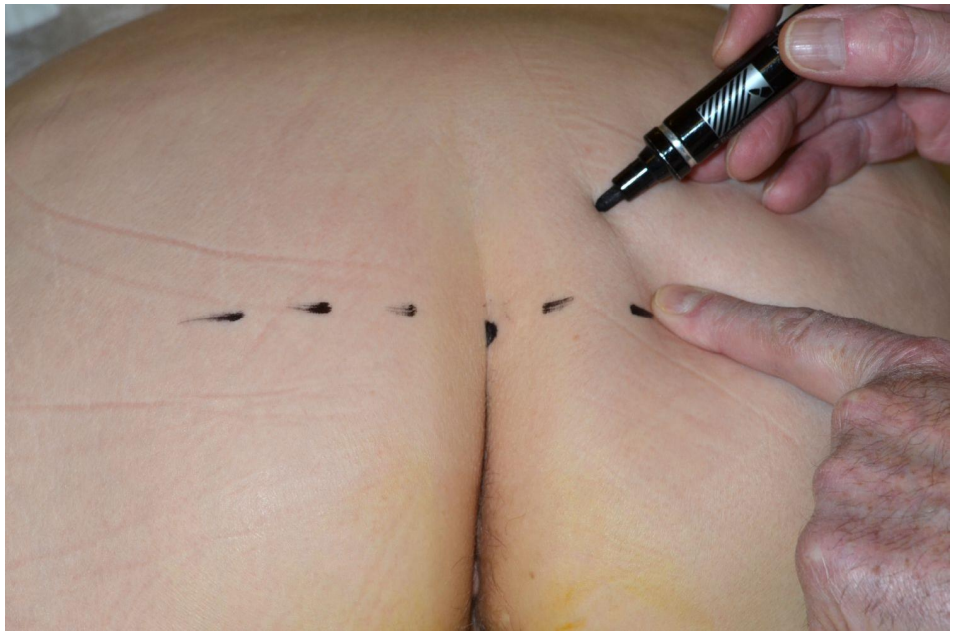
Entrapment zones:

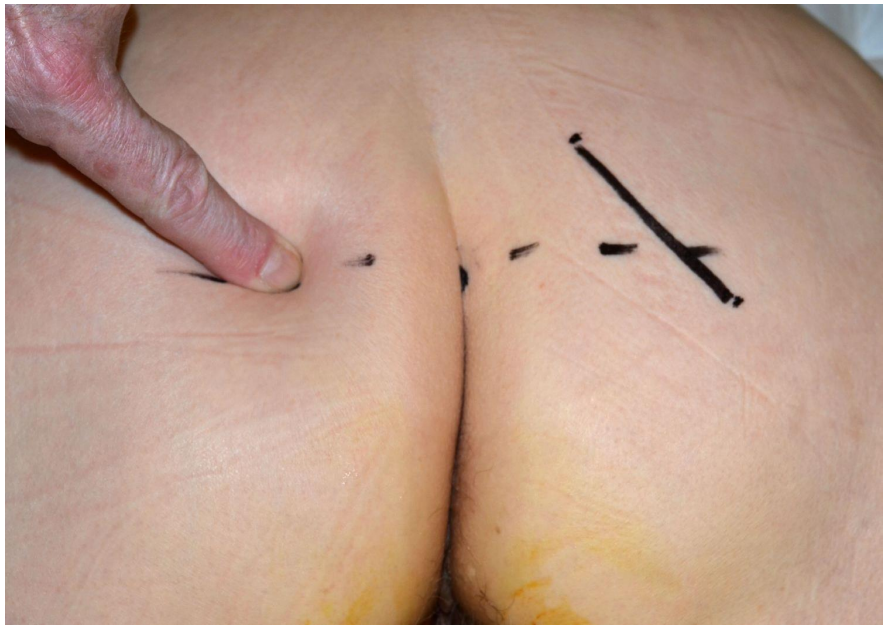
-Ligamentous claw

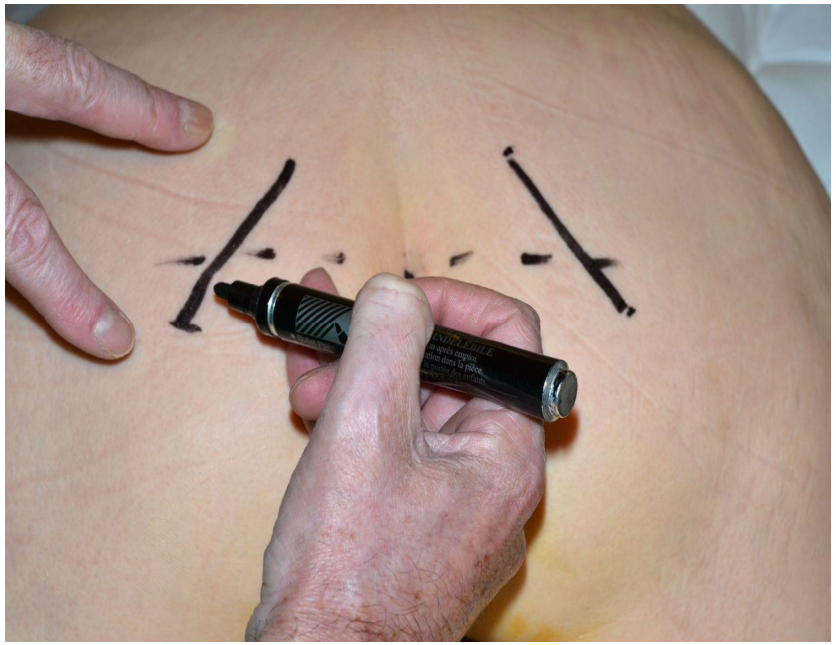
-Falciform process

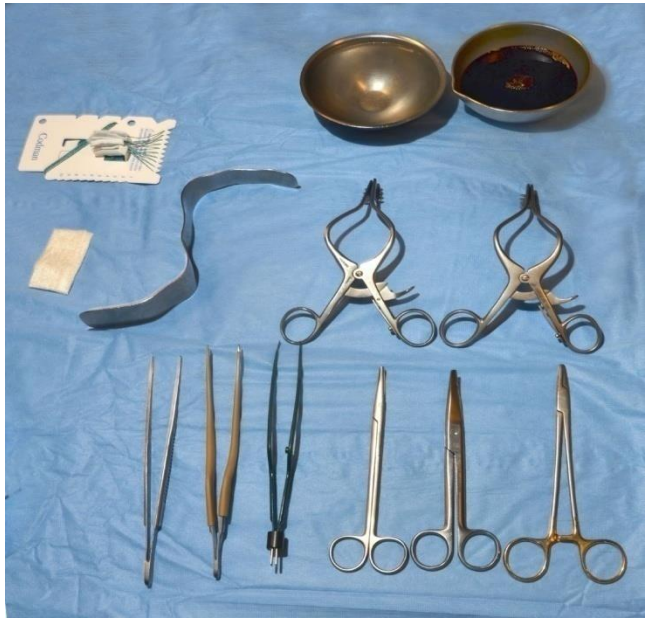
-Alcockôs tunnel

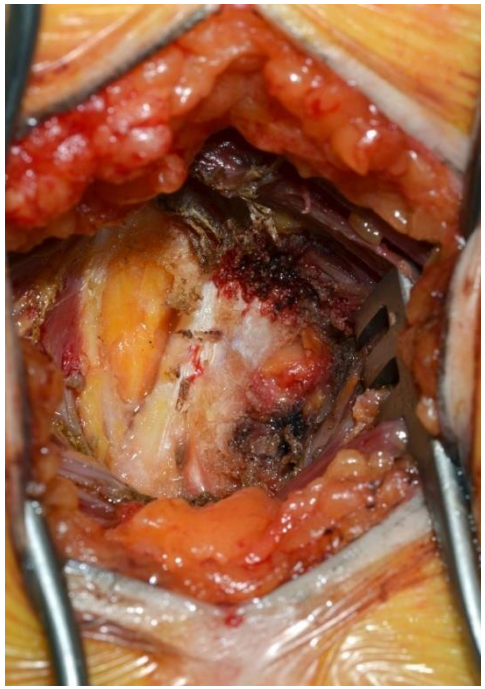
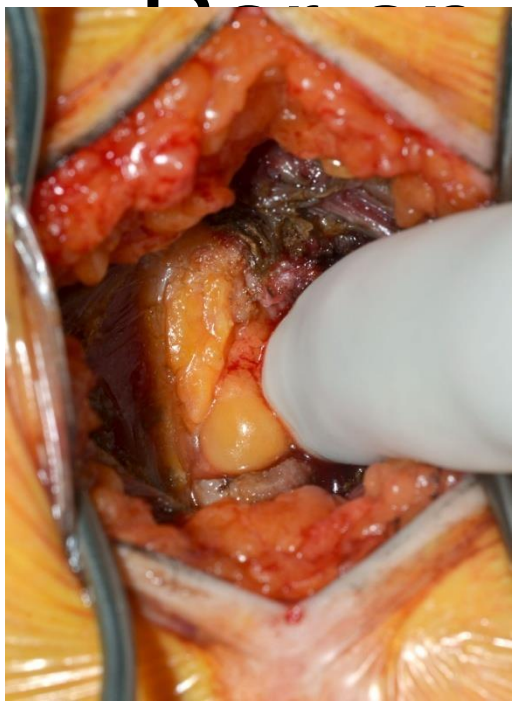
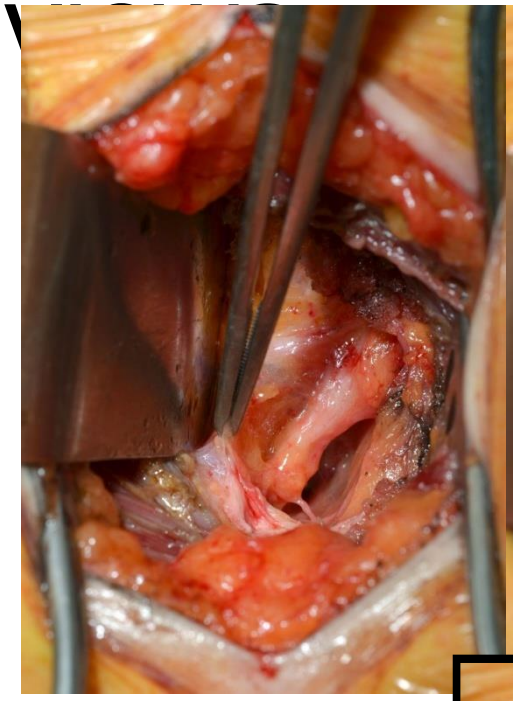
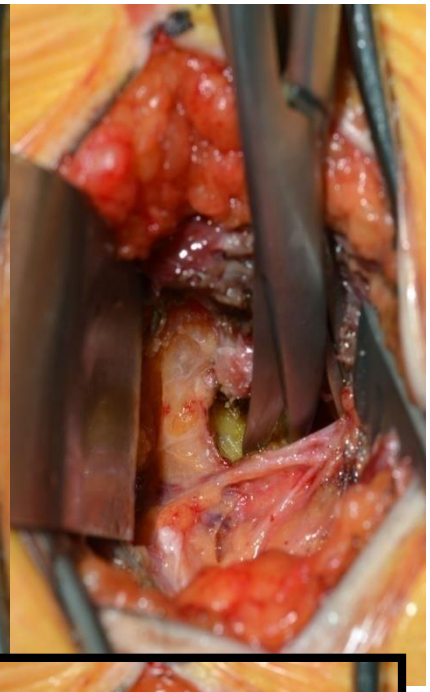
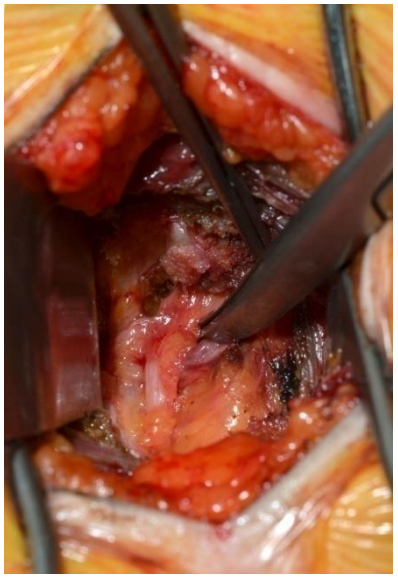
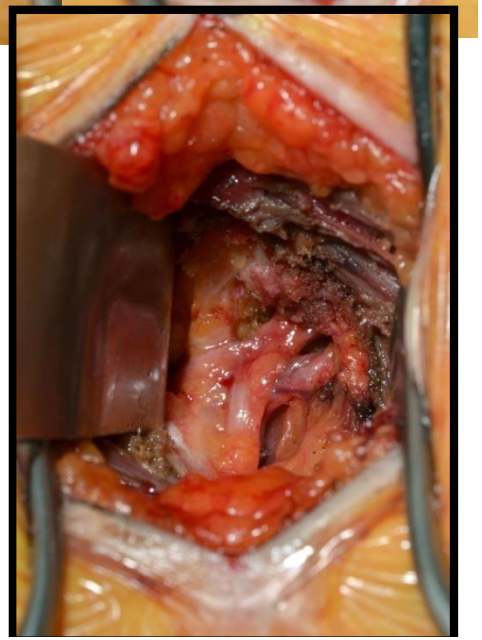


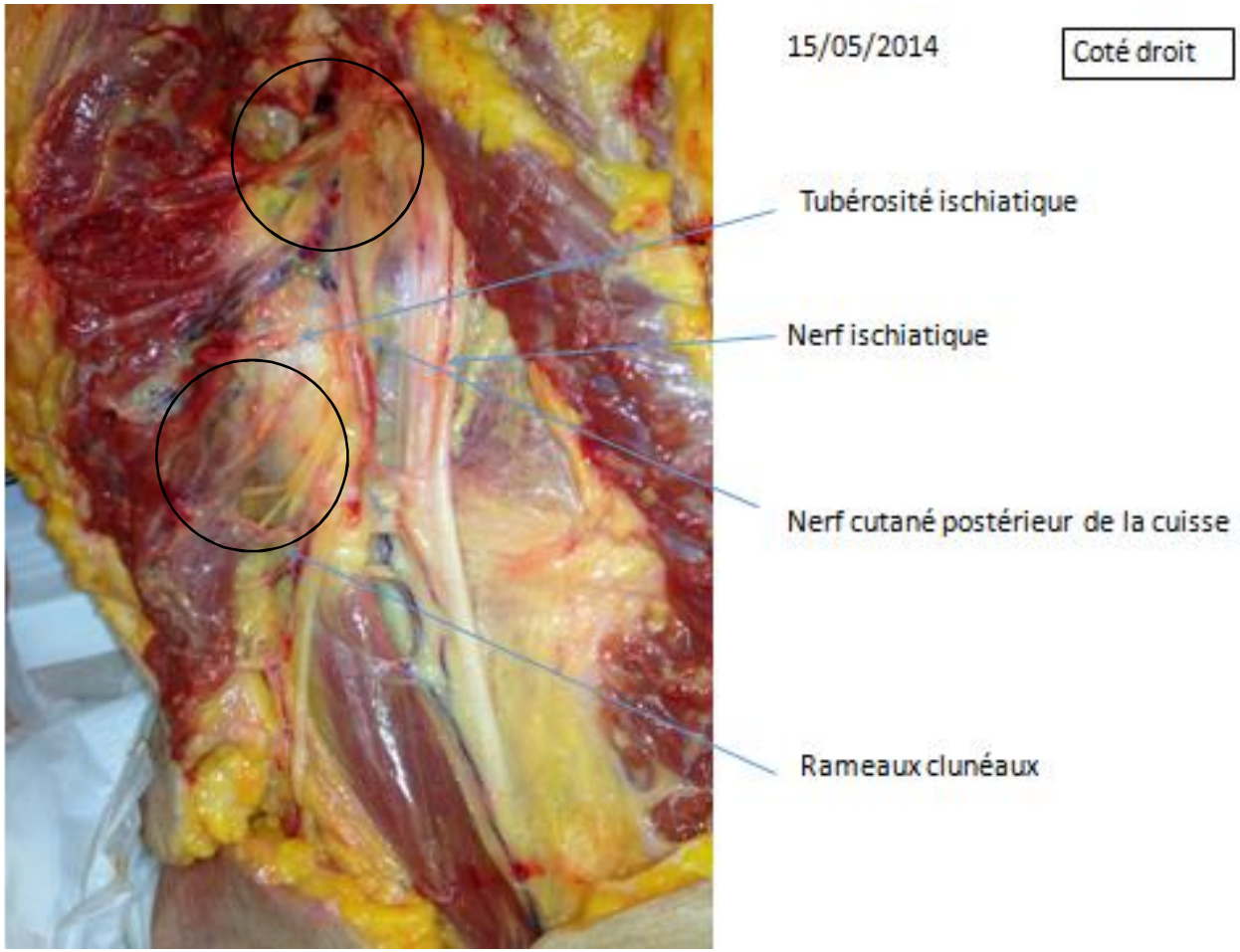








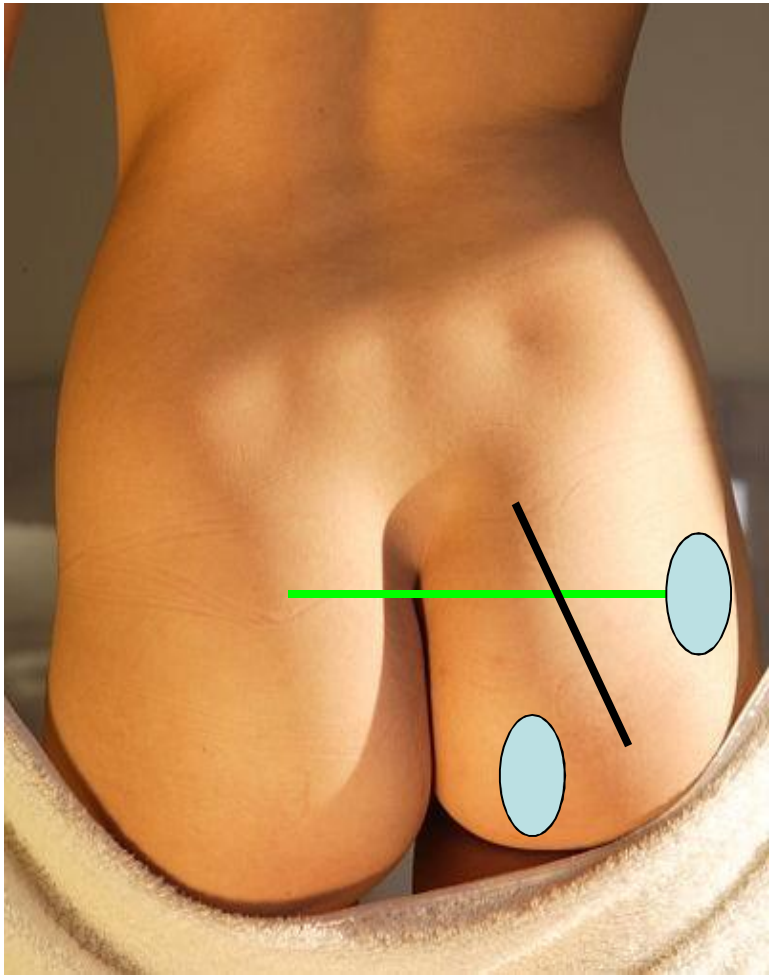









Our Inferior cluneal nerve: aim of the surgery

Surgery (R ROBERT, S PLOTEAU)

- Same approach than for PN surgery
- More caudal
- Latero-STL dissection
- Nerve under view
- The arcade must be cut



FREQUENCY: ONE YEAR 245 CASES

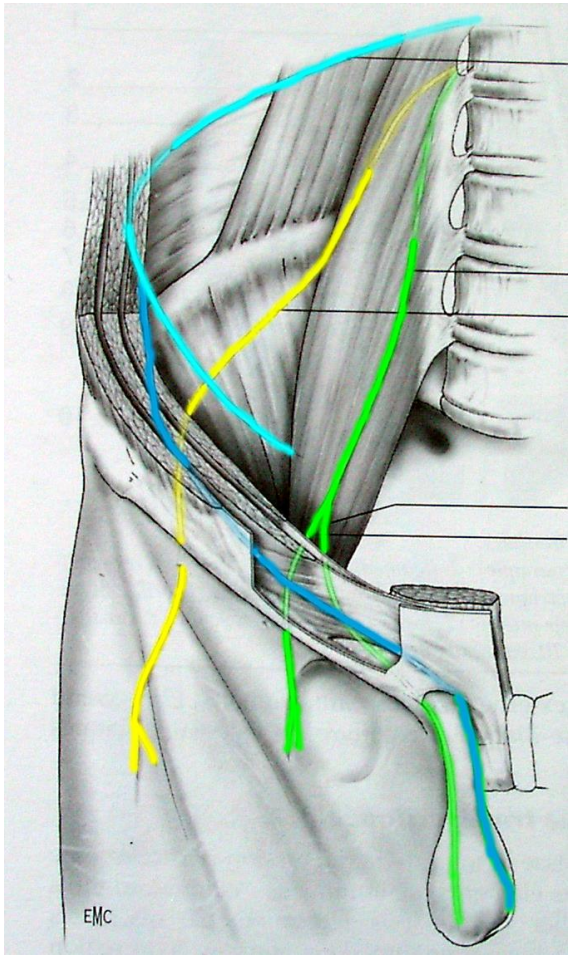
- Isolated pudendal nerves: **176 cases (72%)**
- Isolated ICN: **30 cases (12%)**
- Pudendal+ ICN: **39 (16%)**

Total ICN : 28%

So do not forget it

Gluteal approach required

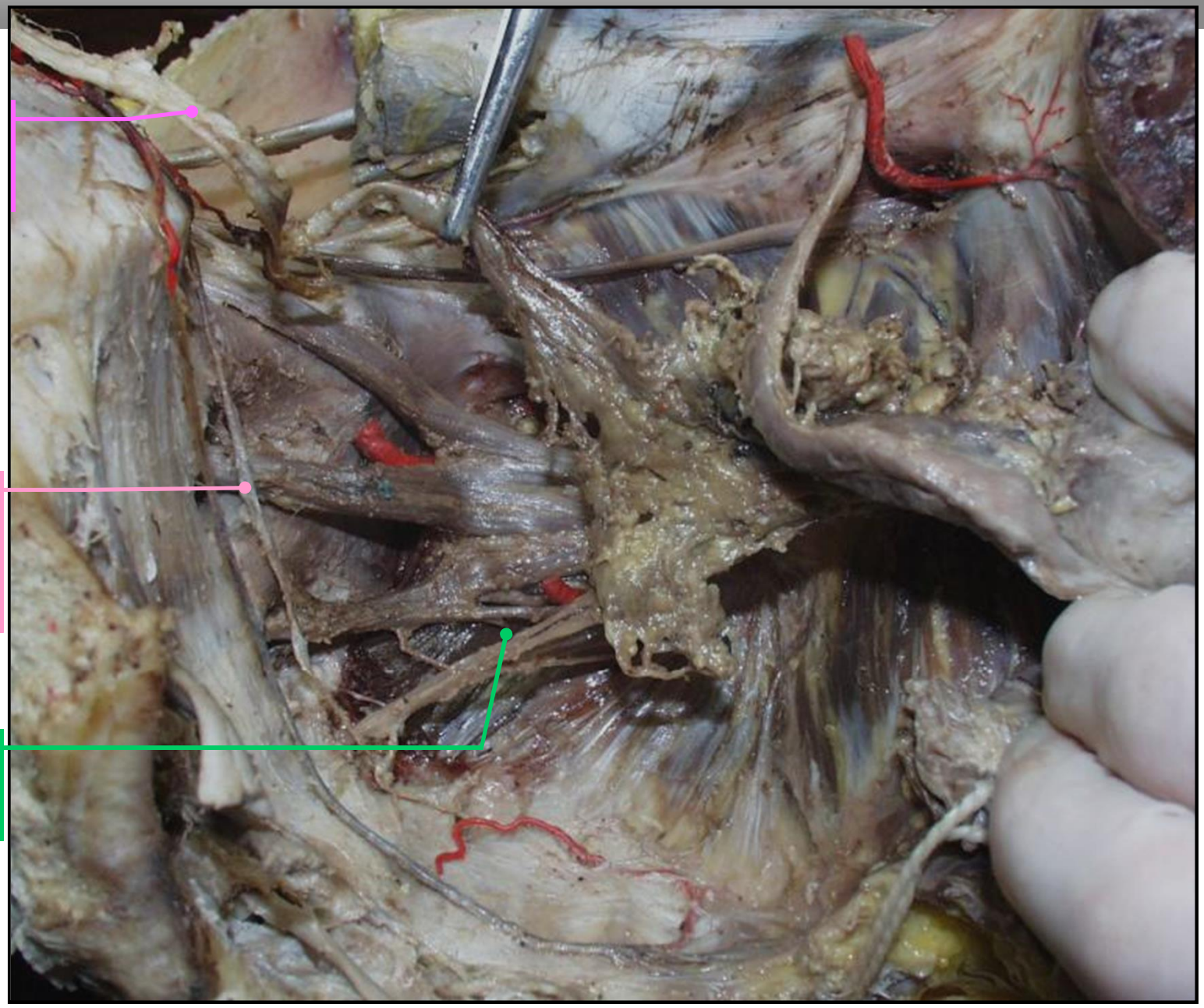
Nerves from above

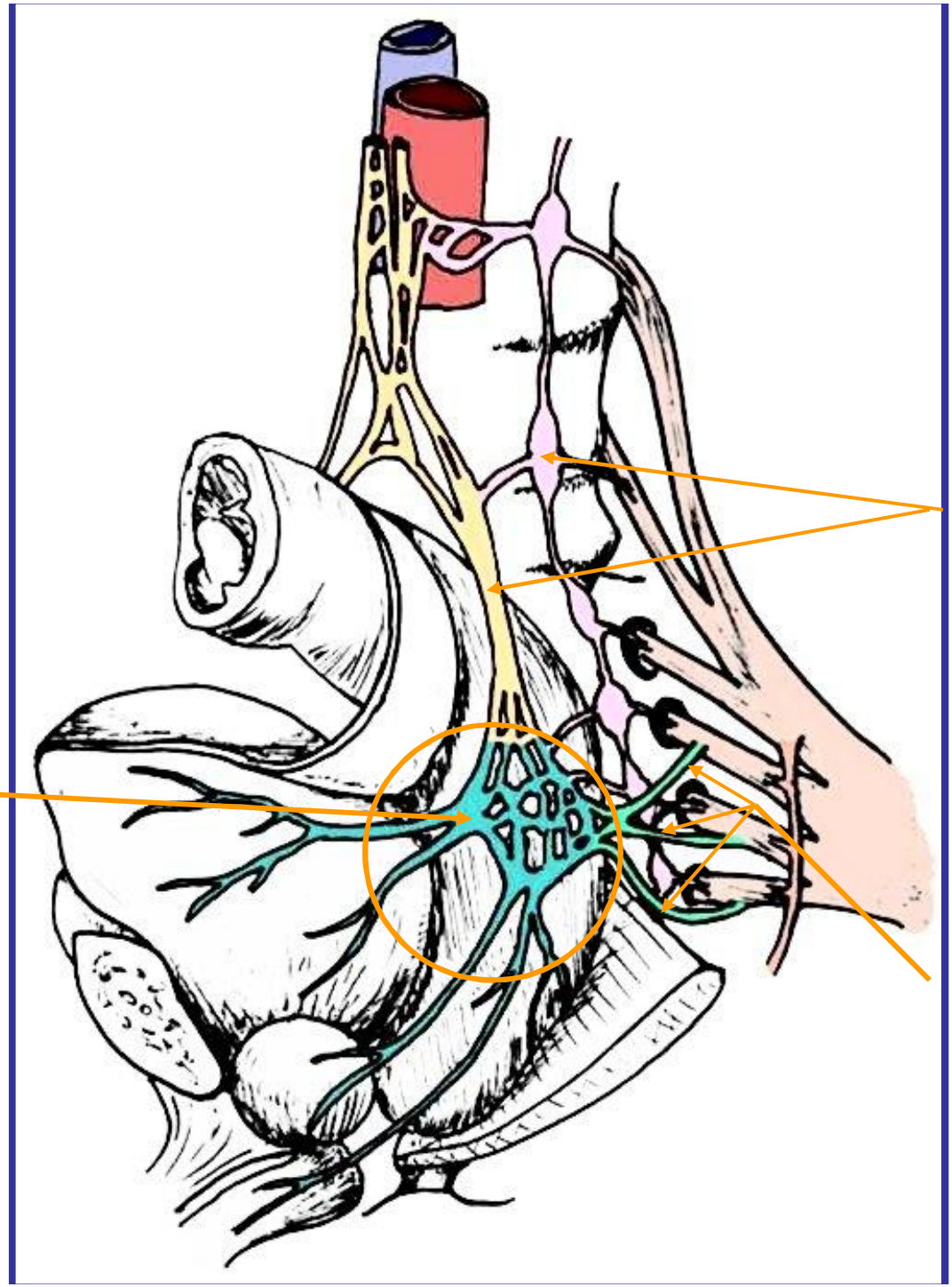


Organization of the sympathtic system

Vegetative innervation

Left endopelvic view





Ortho
sympathetic

Vegetative system

Mixt

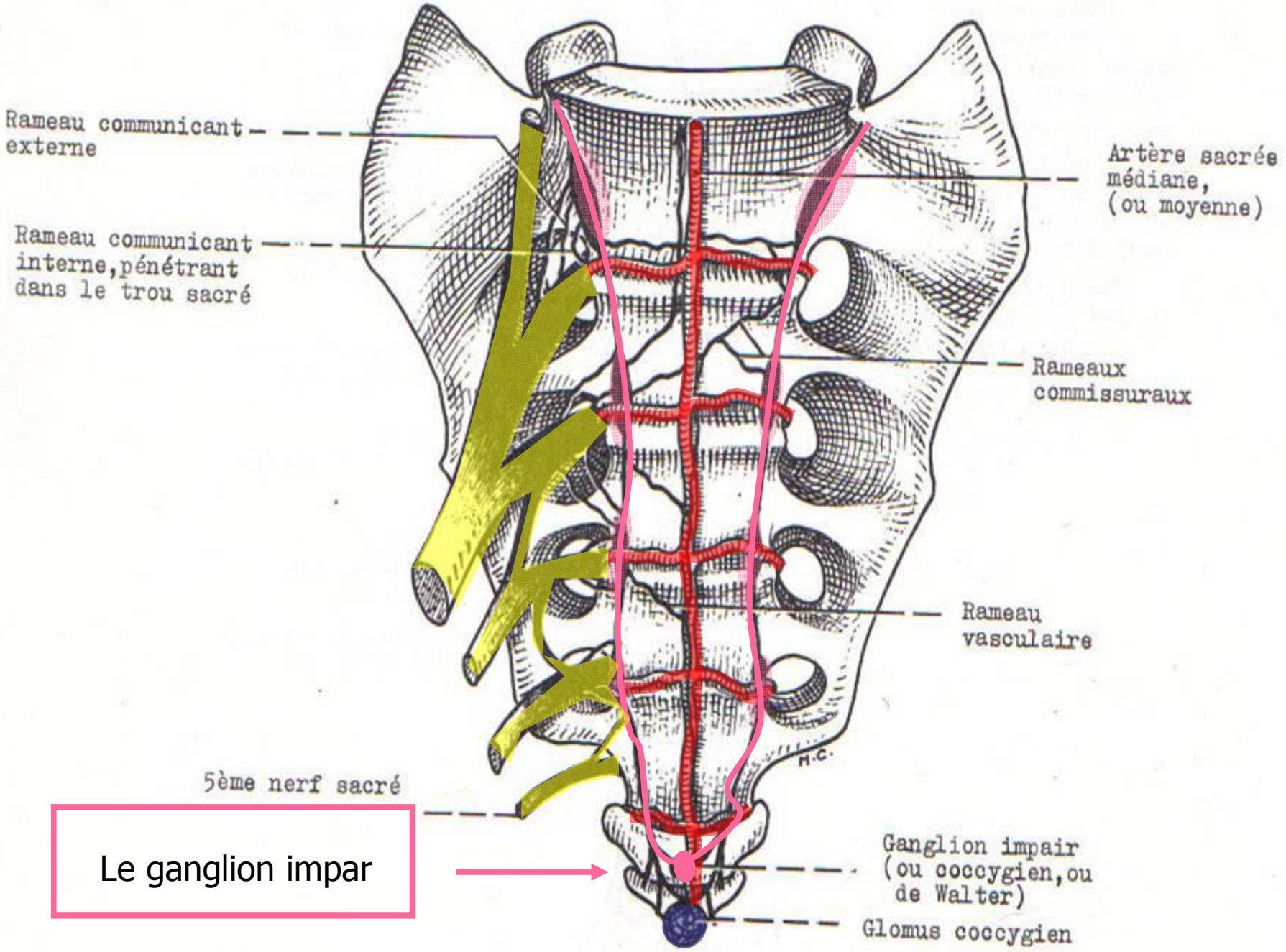
Para
sympathetic

Master I

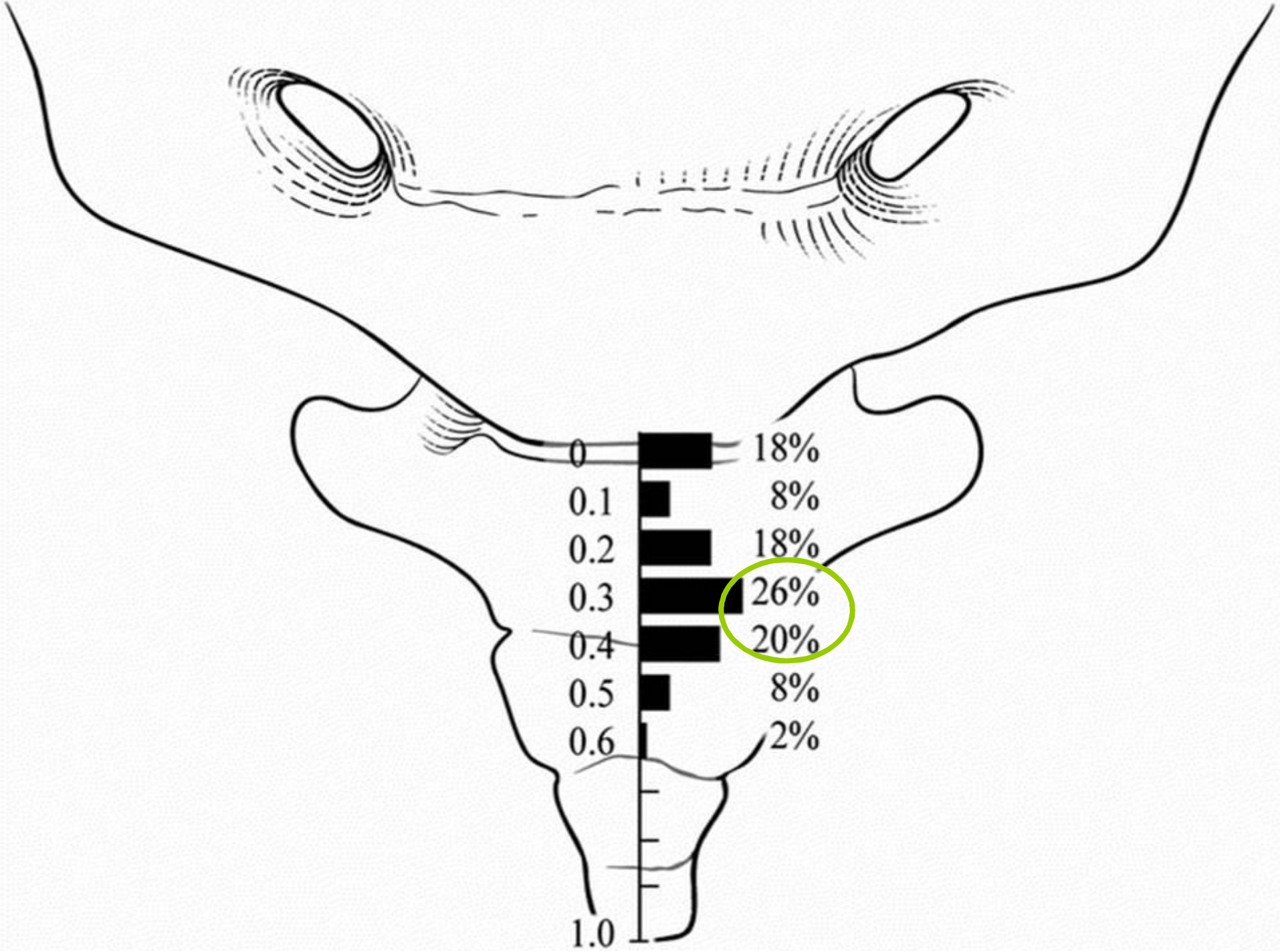
Les bases anatomiques de lôinfiltration du ganglion impar

le Clerc Quentin Côme

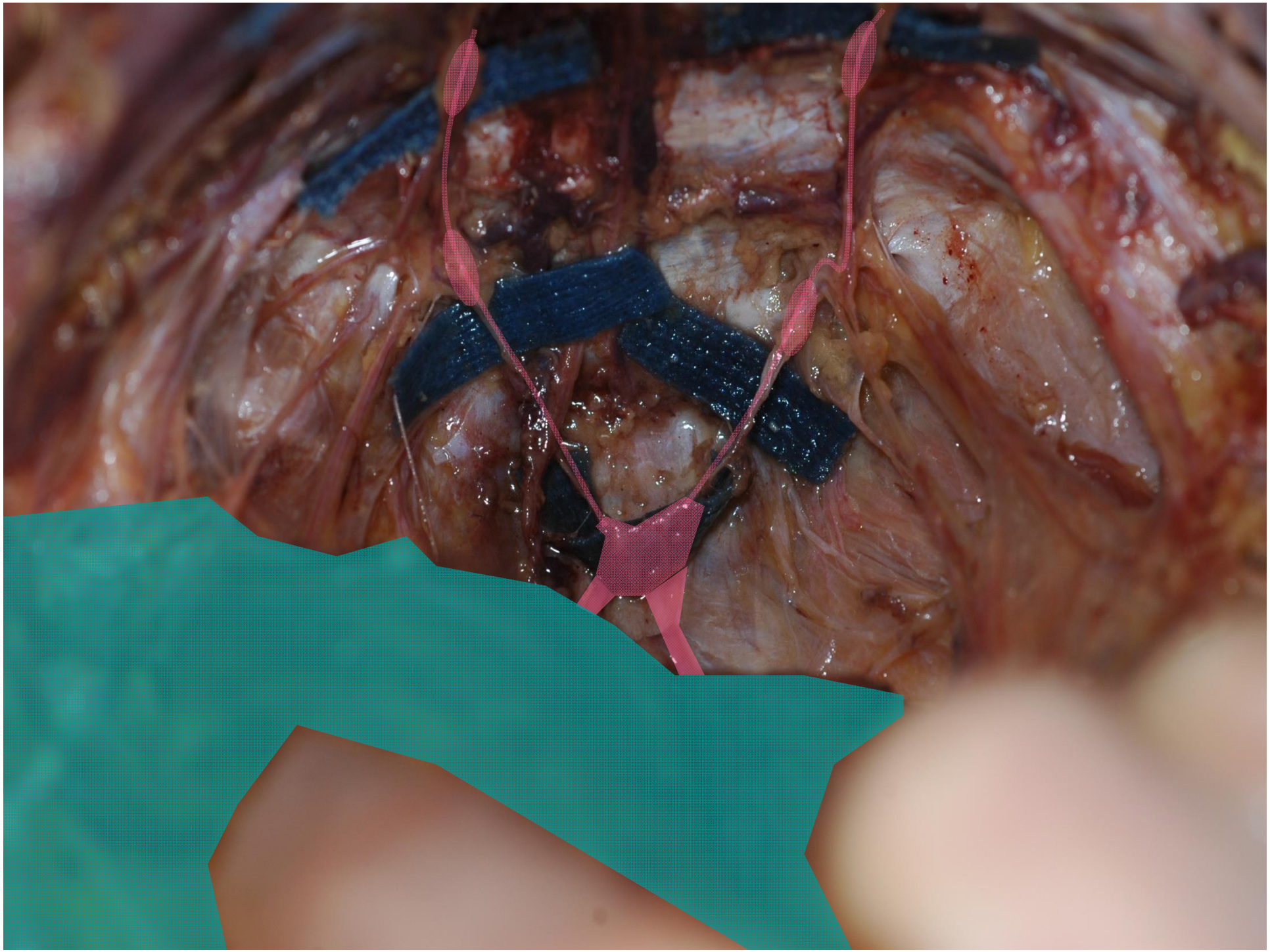
Laboratoire d'anatomie de Nantes

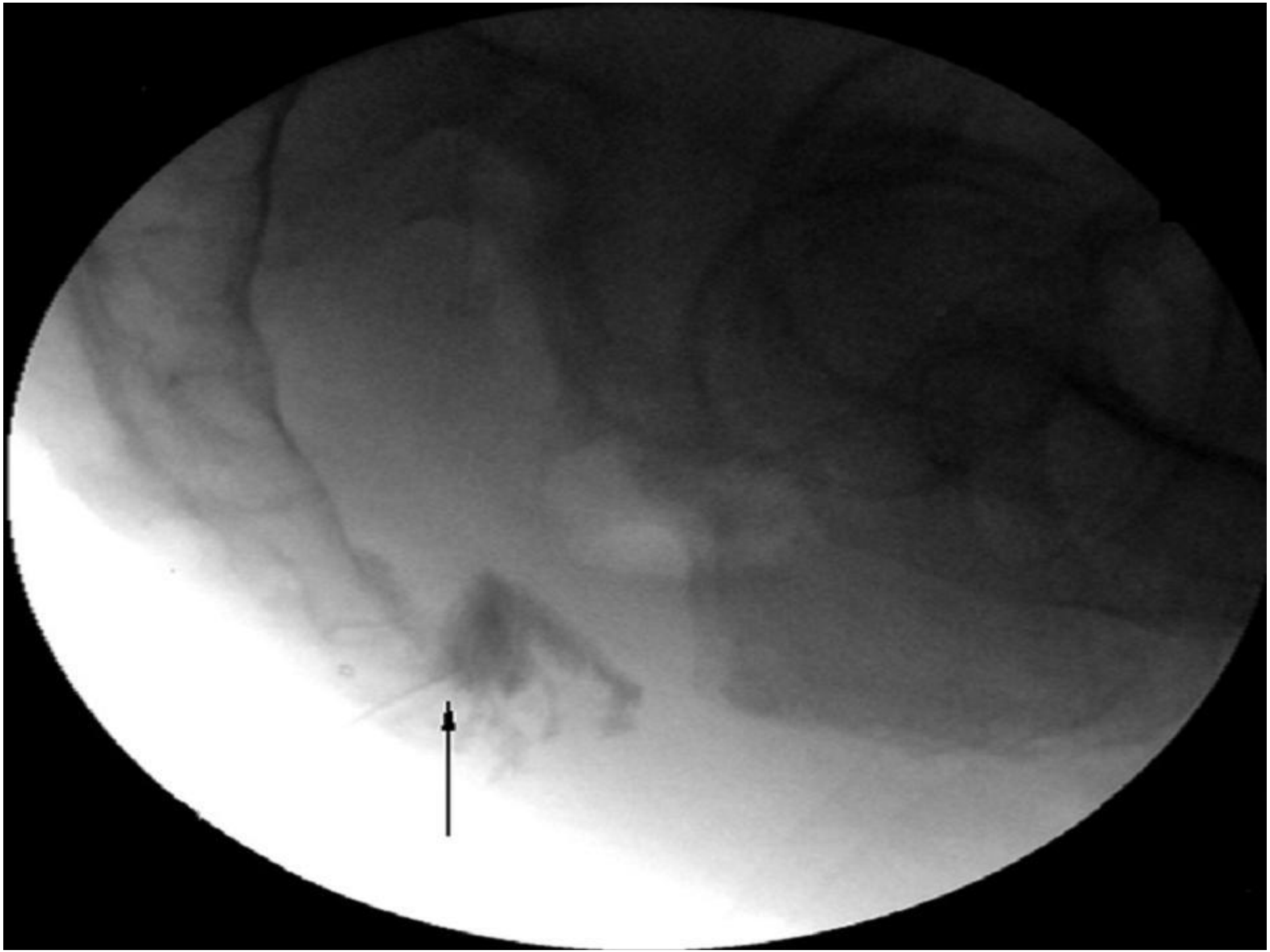


Le ganglion impar

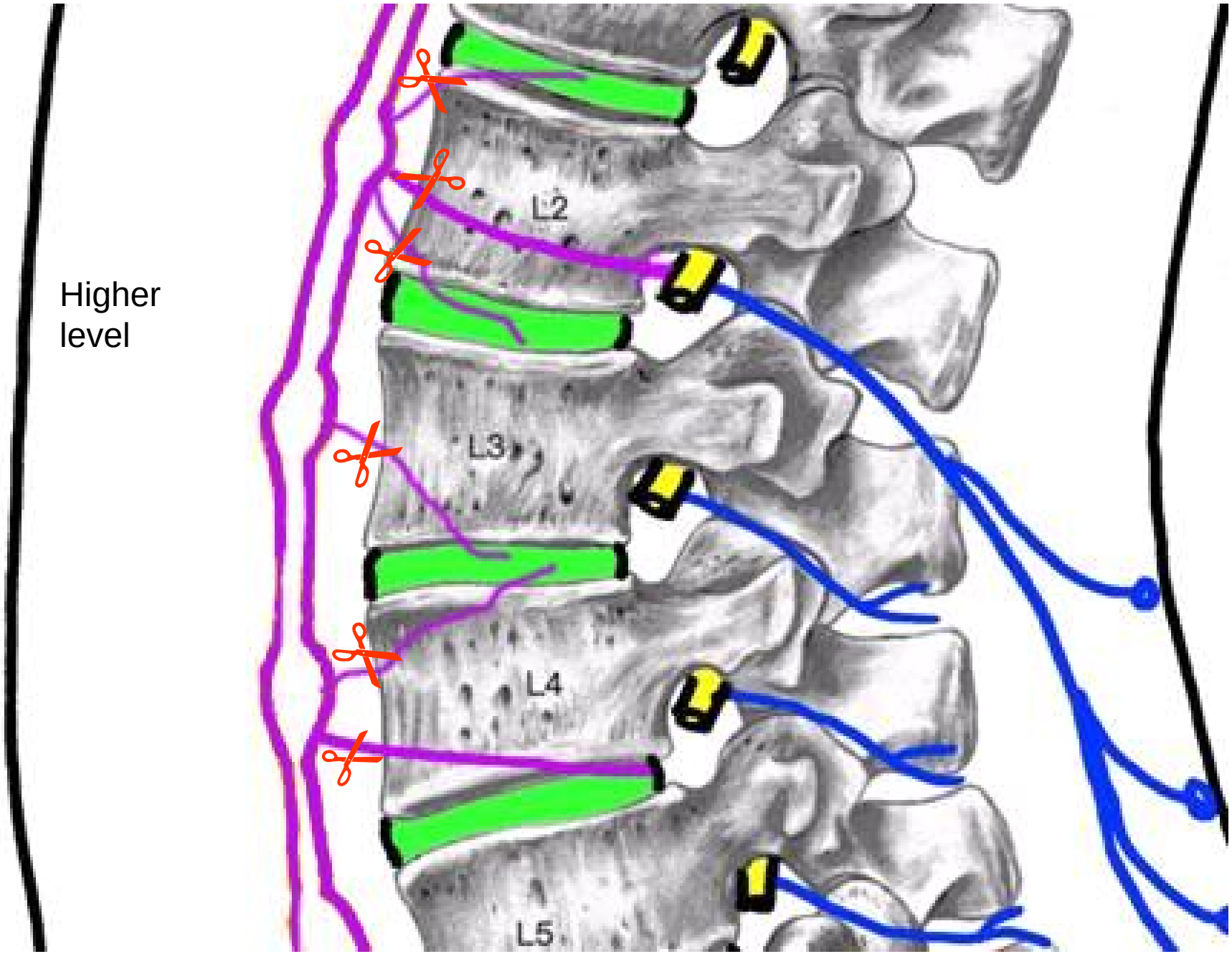

0
0.1
0.2
0.3
0.4
0.5
0.6
1.0
18%
8%
18%
26%
20%
8%
2%


craniâle
Latéral
droite
Latéral gauche
caudal



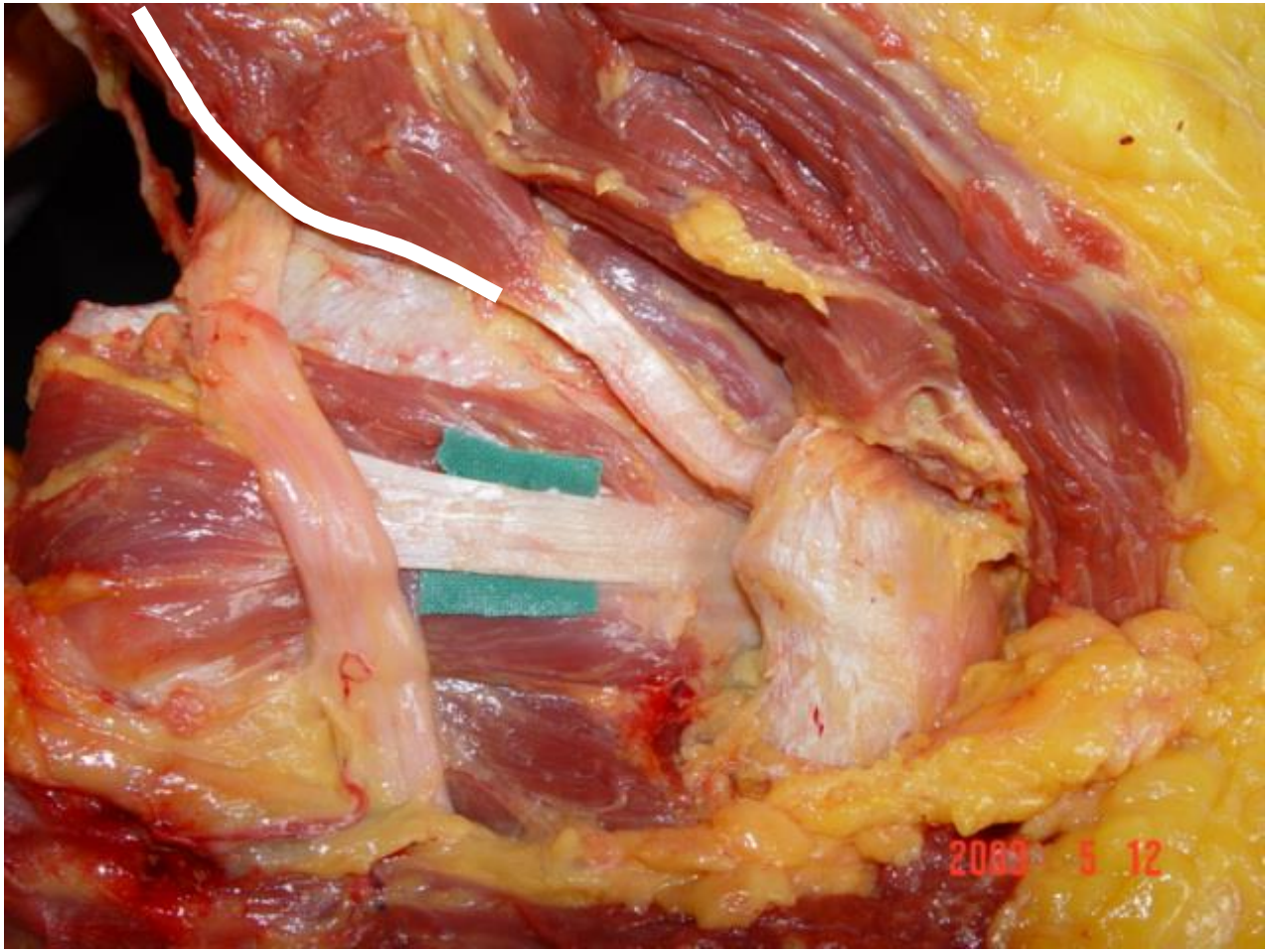


Higher level

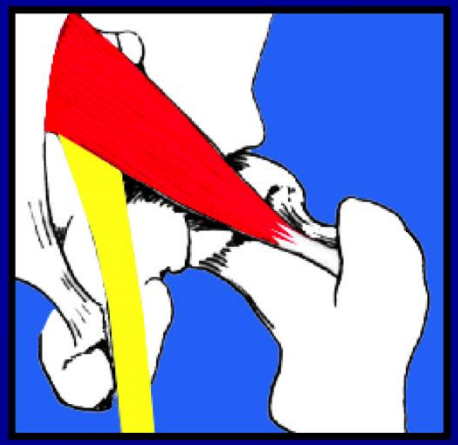


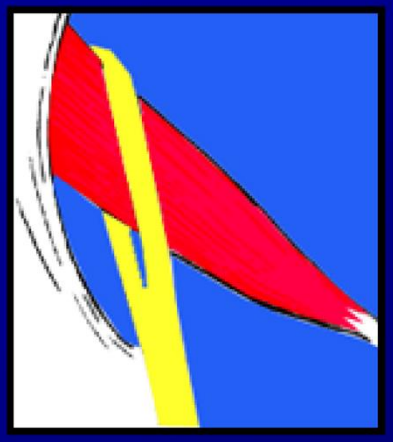
PIRIFORMIS SYNDROM

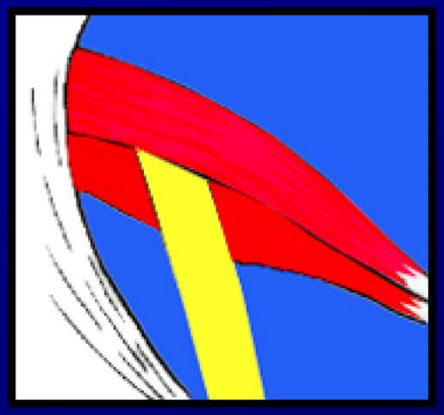
Ischiatic nerve: a possible muscular claw

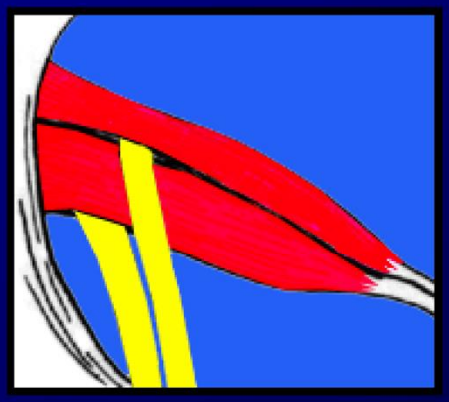


Contingent tibial= dorsal. Contingent Fibulaire= ventral







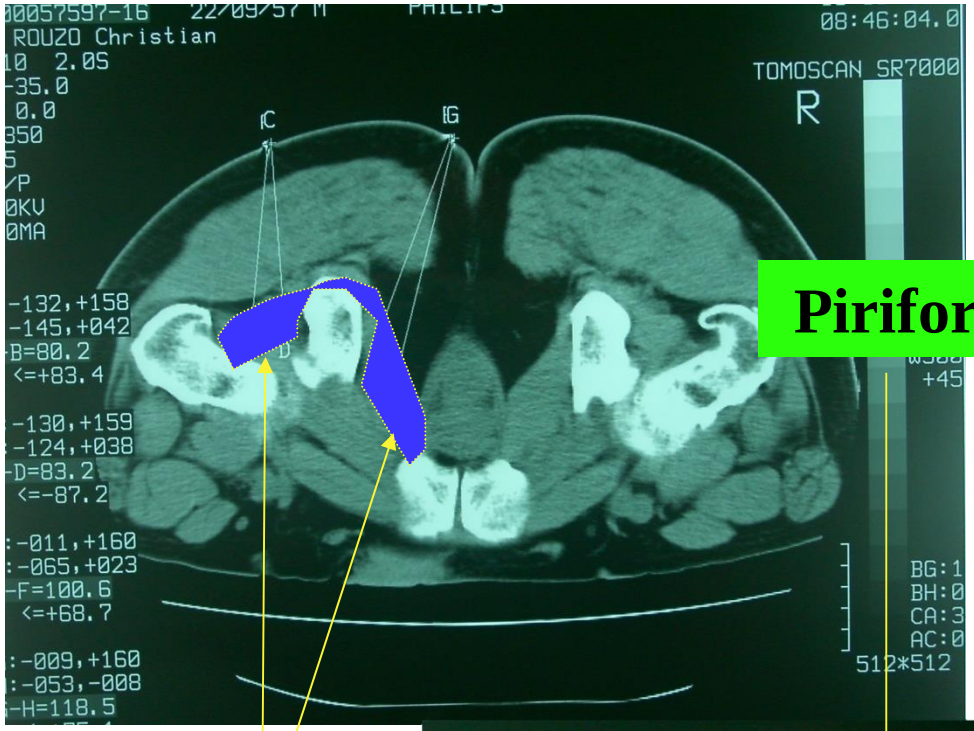


Syndrome du piriforme

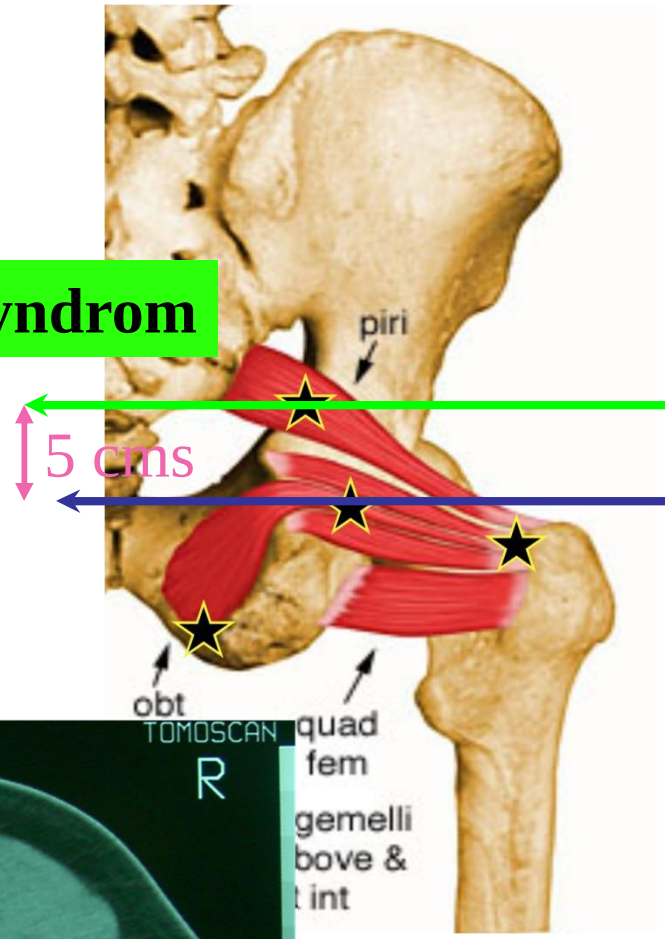
- Variations du muscle piriforme ou des nerfs ischiatiques

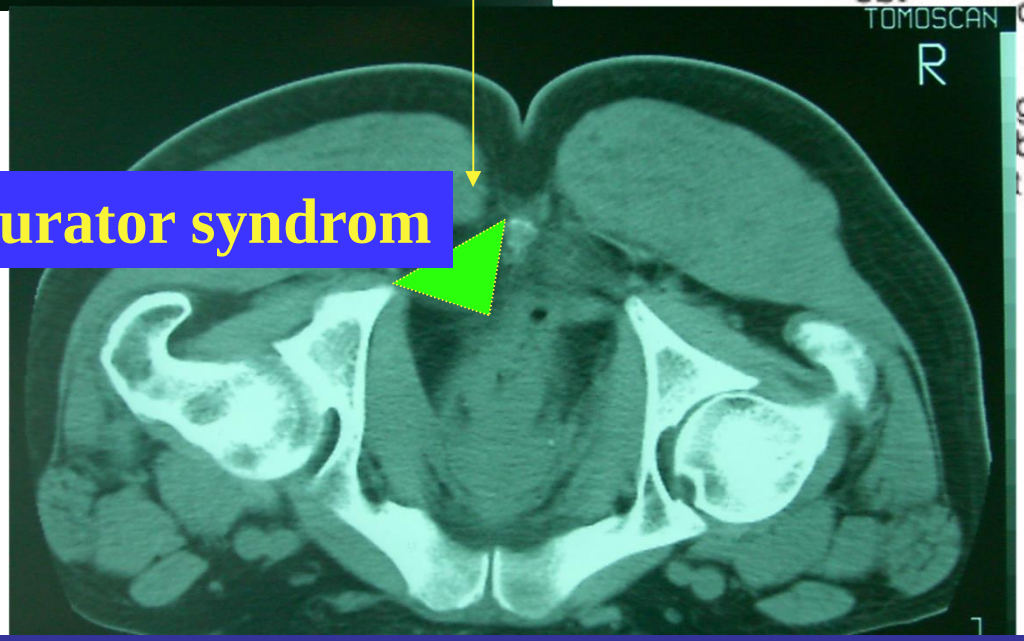
- Douleur dans la fesse avec irradiation à la jambe, gène à l'abduction et la rotation

- Exacerbée sur la pointe des pieds, par la position assise prolongée……



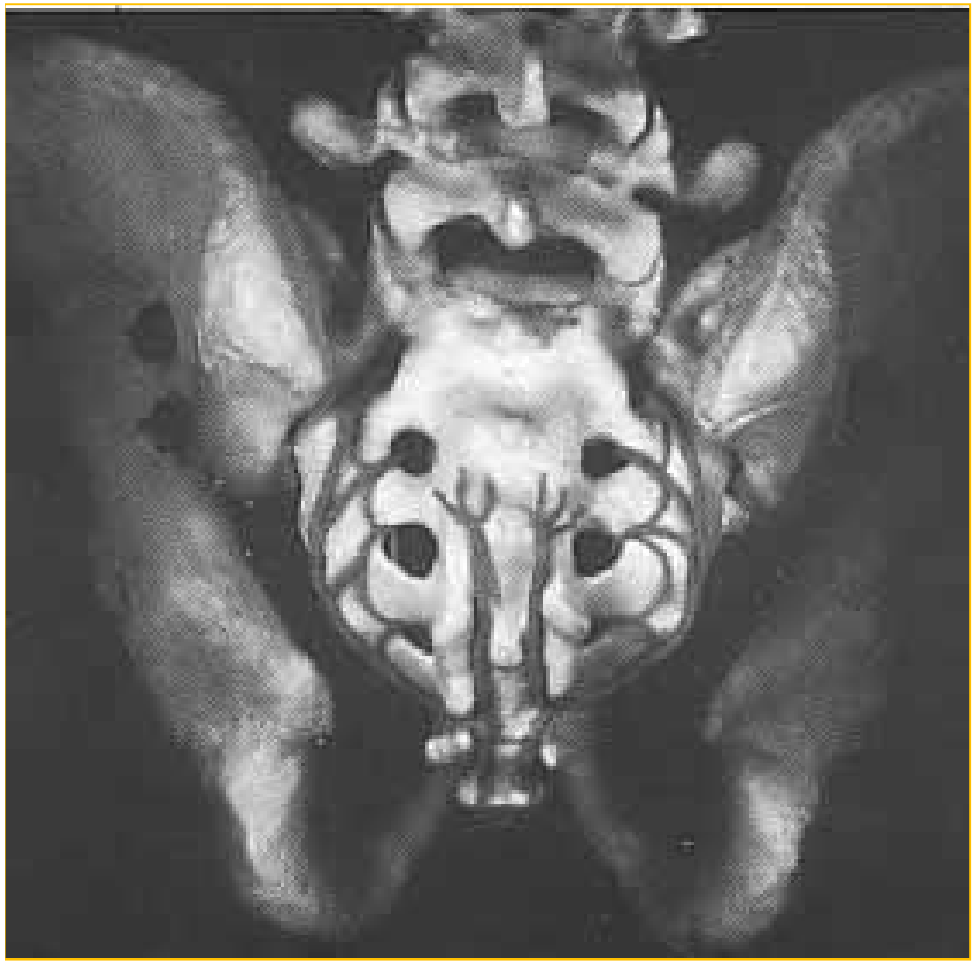
Piriformis syndrom





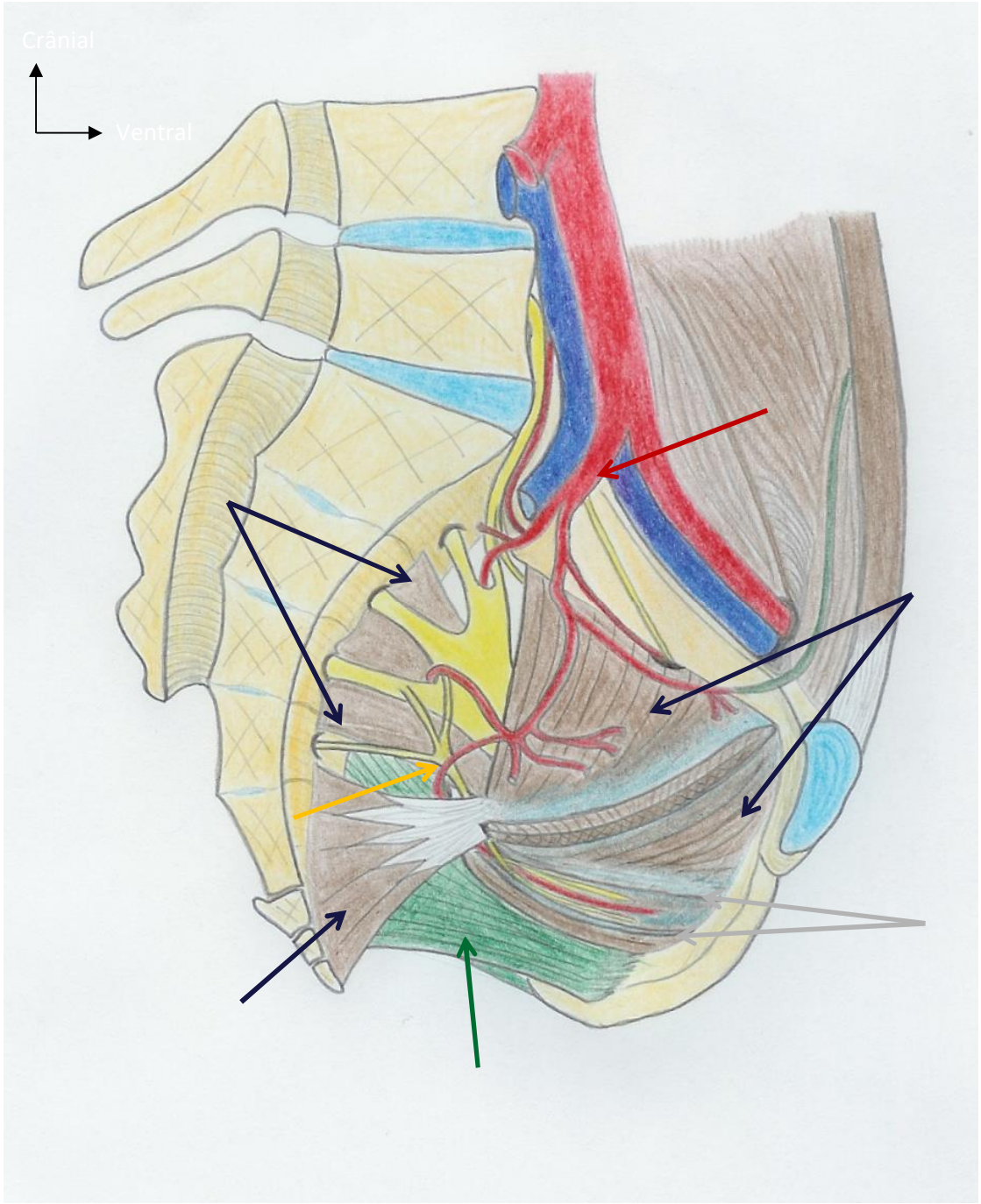
internal obturator syndrom

TROLARD'S NERVE

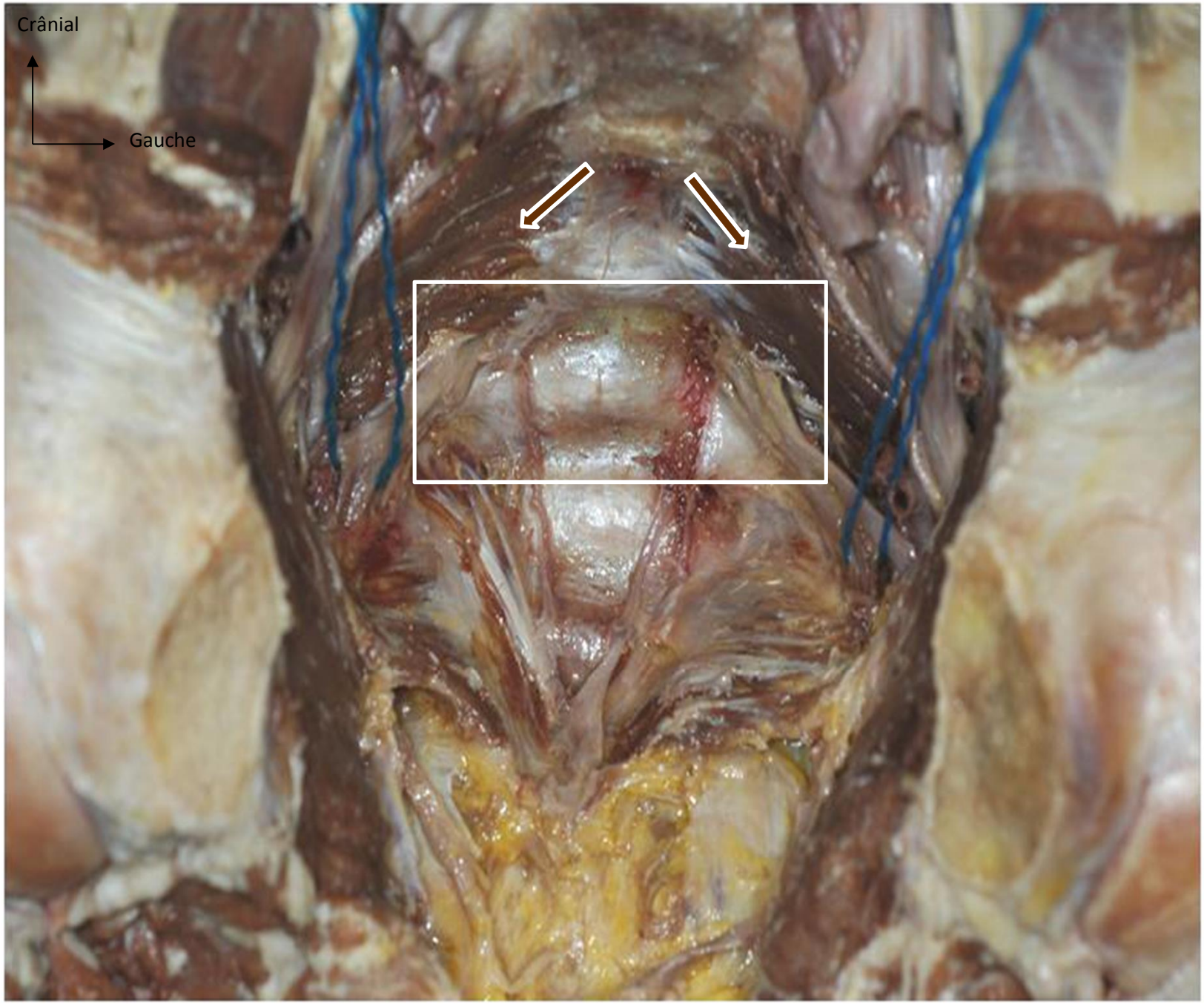


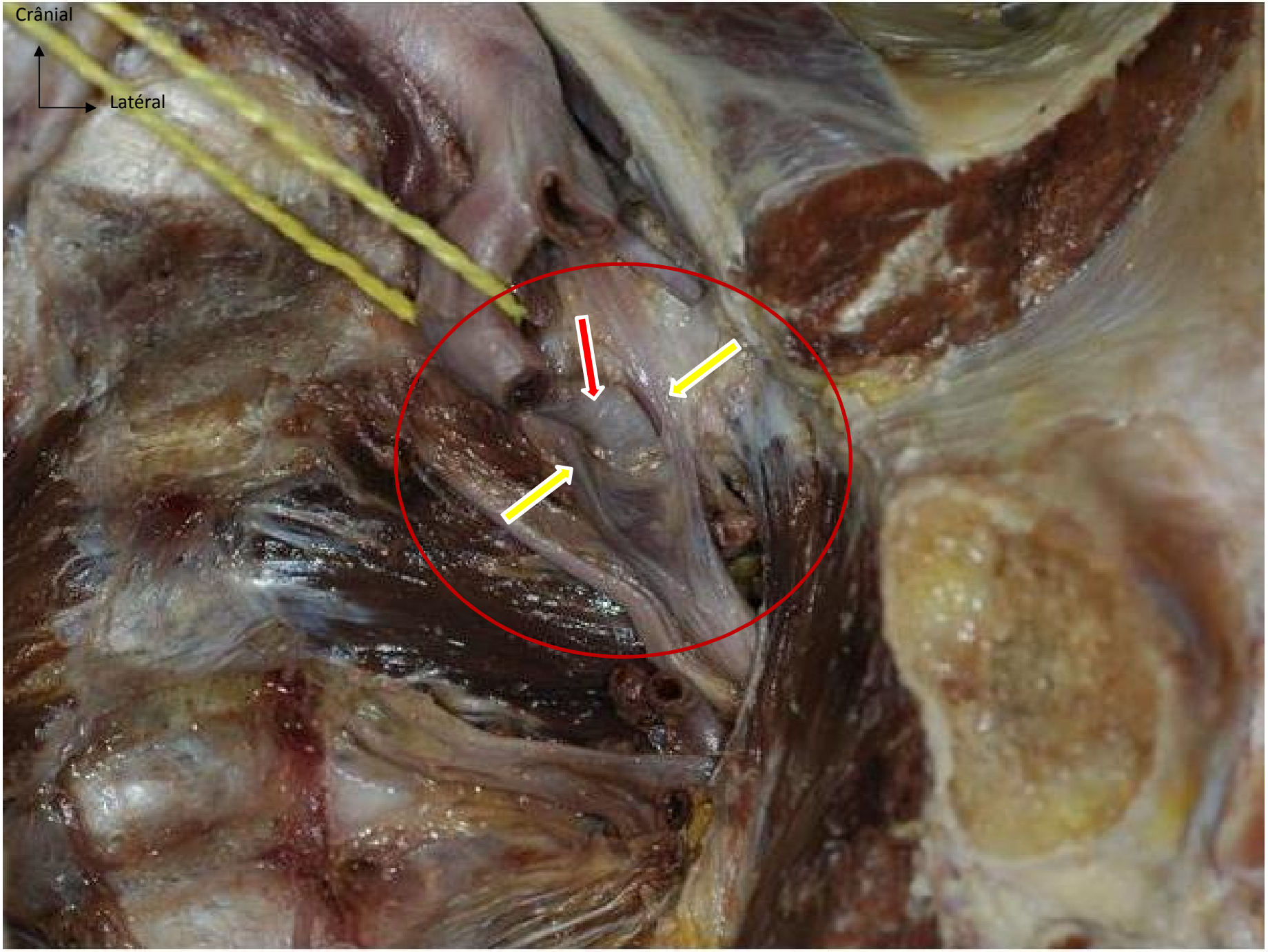
PRE SACRAL CONFLICTS?

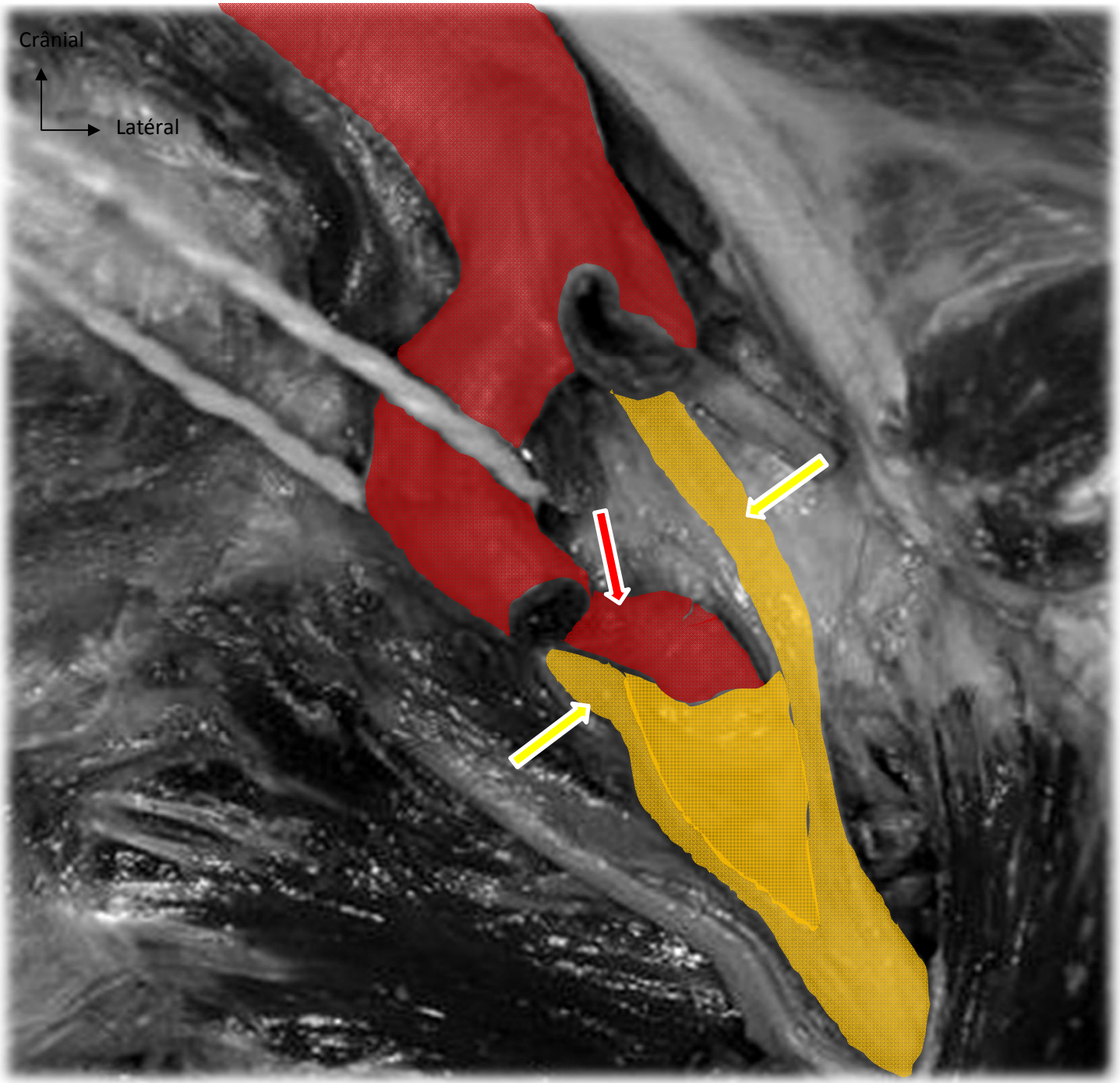
- Pudendal neuralgias
- Negative pudendal block
- Positive S3 block
- Entrapment of roots?

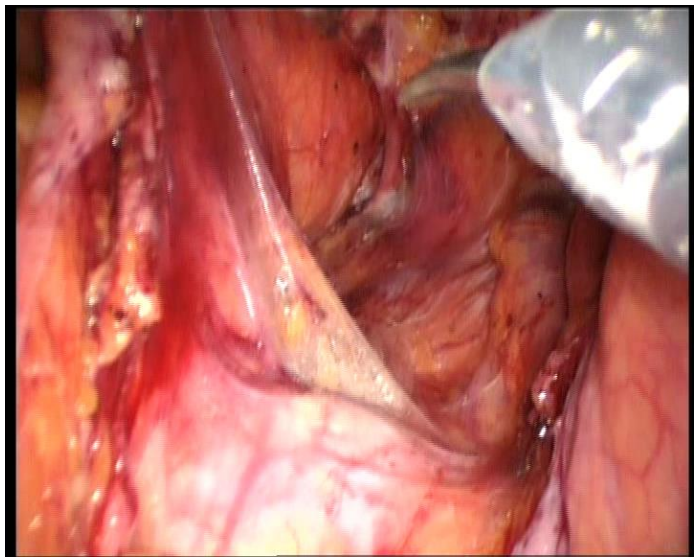

Crânial
Ventral

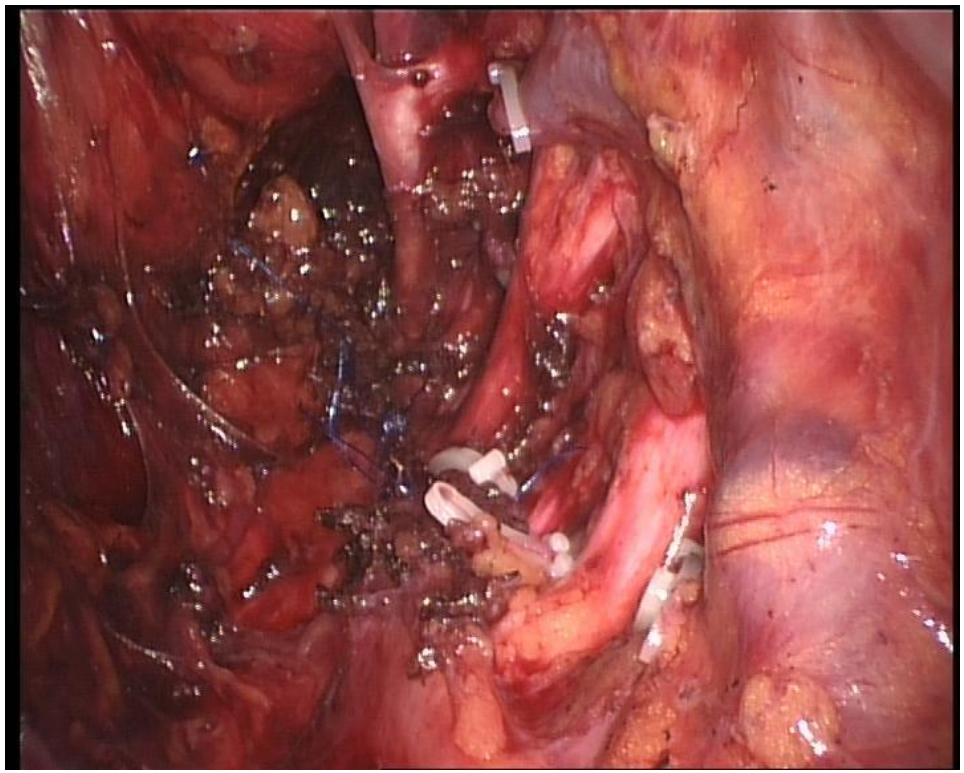
Conflicts with the muscles: Scalene like syndrom


Crânial
Gauche

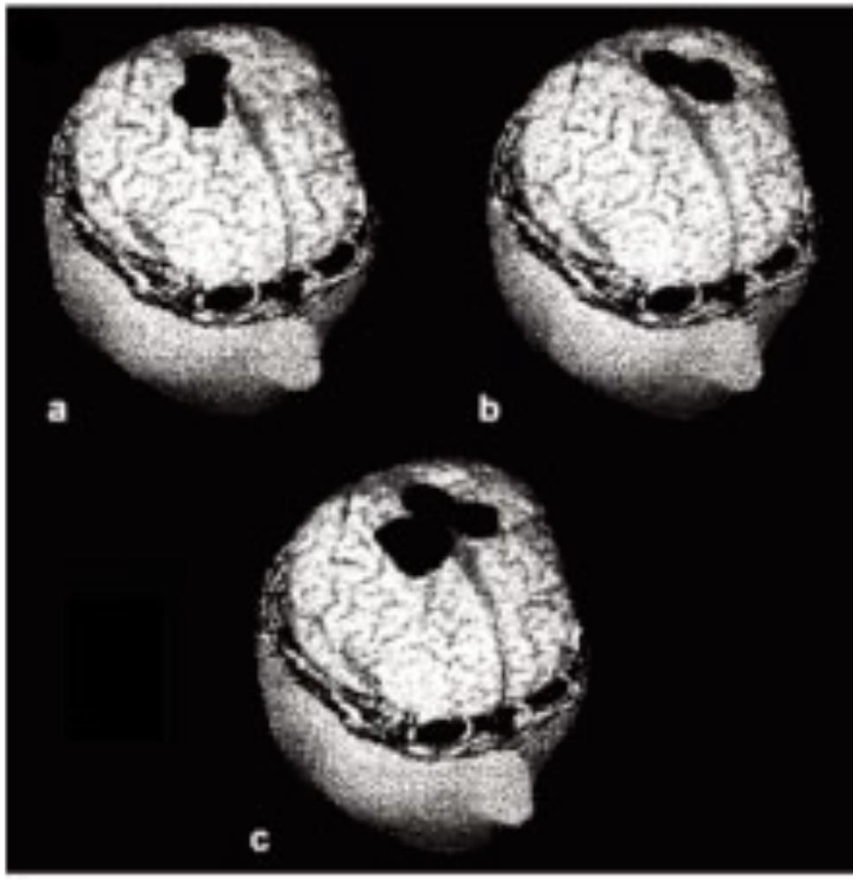

Crânial
Latéral


Crânial
Latéral





CORTICAL STIMULATION



CONUS STIMULATION

- 10 patients
- Prospective study
- 6 improvment
- 3 better seated position but pain is still there
- 1= nul

Letôs goé é é é

CONCLUSIONS

- Two main roads for pain
- Two kinds of pain
- Two targets for blocks
- The future:
  1. Definition of pain (pluri or monometameric)
  2. Appropriated blocks or peripheral nerves surgery
  3. Stimulation of the inhibitor systems