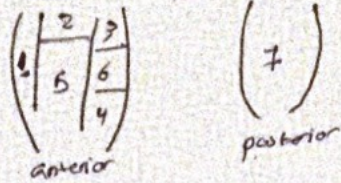


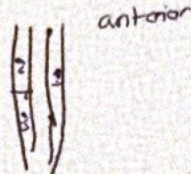
* Cutaneous innervation of the lower limb:

1] The thigh:

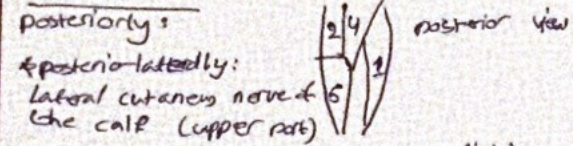


- ① lateral cutaneous nerve of the thigh.
- ② femoral branch of obturator femoral.
- ③ Dorsal inguinal
- ④ medial cutaneous nerve of the thigh.
- ⑤ Intermedial cutaneous nerve of the thigh.
- ⑥ medial branch of obturator nerve.
- ⑦ posterior cutaneous nerve of the thigh

2] The legs

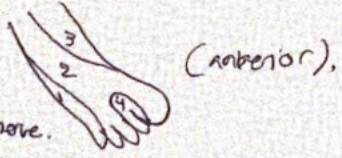


- ① Anteromedially → saphenous nerve
- ② Anterior laterally
- ③ lateral cutaneous nerve of the calf (branch of common peroneal).
- ④ superficial peroneal nerve

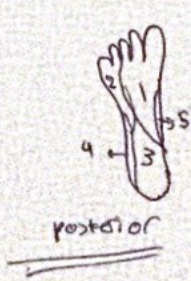


- ④ posterior cutaneous nerve of the thigh:
 - * supplies skin over the popliteal fossa, upper part of back of leg.
- * the saphenous nerve supply also posterior medial side of leg.
- ⑤ sural nerve → posterior laterally → lower part.

3] The foot:



- ① lateral side: sural nerve.
- ② superficial peroneal nerve
- ③ medial side: saphenous nerve
- ④ area between big toe and second toe: Deep peroneal nerve.

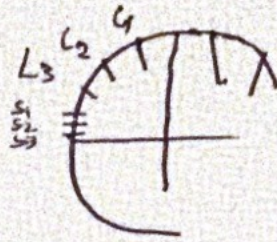


- ① medial plantar nerve
- ② lateral side: lateral plantar nerve (upper)
- ③ fibial nerve (heel)
- ④ lateral → sural nerve (lower)
- ⑤ saphenous nerve.

[4] Gluteal region:

① Upper medial quadrant:

* posterior rami of
L1 - L3 and S1 - S3



② Upper lateral quadrant

* anterior rami of:

① lateral cutaneous nerve of subcostal nerve T12.

② lateral cutaneous branch of Iliohypogastric nerve.

③ lower medial quadrant

anterior rami of branches

* posterior cutaneous nerve
of the thigh.

④ lower lateral quadrant

anterior rami of branches from

* lateral cutaneous nerve of the thigh

*Fascia of lower limb:

1 Thigh:

- ① superficial fascia:
 - ① cutaneous nerves
 - ② superficial arteries (from femoral artery, emerge from the saphenous opening).
 - ③ superficial inguinal lymph nodes

↳ below inguinal ligament

→ two groups: ① Horizontal group: [below and parallel to inguinal ligament]

- medial:
 - ↳ drain from:
 - ① Anterior abdominal wall (below umbilicus)
 - ② Perineum
 - ③ Urethra
 - ④ External genitalia (except testis → considered inside organ).
 - ⑤ Lower half of anal canal
 - ⑥ Lower third of vagina.

- lateral → from the back, below level of iliac crest

② Vertical group: most of the vessels of lower limb. [these lie along the terminal part of saphenous vein]

- efferent vessels from superficial inguinal lymph nodes → go to saphenous opening to join deep group.

* Any enlargement of the nodes → you should check mentioned areas.

④ superficial veins
* Great saphenous vein.

2 Deep fascia: (fascia lata)

- ① forms saphenous opening on antero-medial side of the thigh
- ② this fascia is connected to linea aspera by 3 inter muscular septa:
 - ① medial inter muscular septum.
 - ② lateral inter muscular septum.
 - ③ posterior inter muscular septum.
- ↳ thus we have 3 compartments in the thigh:
 - ① anterior compartment
 - ② lateral compartment
 - ③ posterior compartment.

fascia lata:
 ① fibrous sheath. (surrounds the whole thigh like → tight trousers.
 * thin on the medial side.
 * thicker on lateral → to form (Iliotibial tract).

3 Gluteal region:

- ① superficial fascia:
 - ↳ thick (especially in women) → contributes to prominence of buttock
- ② Deep fascia:
 - * continuous with deep fascia of thigh (fascia lata).

* Iliotibial tract:
 * strong wide band ⇒ thickening of fascia lata.
 lateral side of the thigh

Attachment: ① above → tubercle of Ilium.
 ② below → lateral condyle of tibia.
 receives insertion of: ① G. maximus
 ② tensor fascia latae.

*The leg:

*Deep fascia forms

① anterior intermuscular septum.] these attached to fibula.
② posterior intermuscular septum.

*these two with the interosseous membrane
divide leg into three compartments:

① anterior

② lateral

③ posterior

↓ we have:

① superficial transverse septum → superficial muscles

② deep transverse septum → deep muscles.

*Foot:

we have retinacula → to keep tendons in their positions.

① superior extensor retinaculum.

② inferior extensor retinaculum

*flexor retinacula → from medial malleolus to medial surface of calcaneum.

*plantar aponeurosis:

*triangular thickening of deep fascia

*support skin and hold it.

* Blood supply of the lower limb:

* General story of the arteries:

- ① Abdominal aorta (L4) → right common iliac
→ left common iliac.
- ② Common iliac → External iliac artery.
→ Internal iliac artery.
- ③ External iliac → under inguinal ligament → femoral artery.
- ④ Femoral artery → adductor hiatus → popliteal artery.
- ⑤ popliteal artery → lower border of popliteus → anterior tibial → anterior leg.
→ posterior tibial → posterior and lateral.
- ⑥ anterior tibial → terminates in front of ankle → Dorsalis pedis
- posterior tibial → under flexor retinaculum → medial planter arteries.
→ lateral planter arteries.

* The full course of each artery (important).

□ The femoral artery.

* general relations:

- ① Enters the thigh at the mid inguinal point "half the distance between anterior iliac spine and the pubis symphysis"
- ② in the femoral triangle → it is lateral to femoral vein and runs next to it in the femoral sheath "accompanied by the femoral branch of the genito-femoral (L4/L5)"
- ③ as it descends down it in the lower half of the thigh, through the adductor canal. the artery cross in front of [anterior to] the femoral vein. "it also become deep to subsartorial canal."
- ④ descends vertically toward the adductor tubercle and ends at the adductor hiatus.

* upper half of thigh → superficial:

* exposed to injuries, * we can feel its pulse "it's palpated"

* In the triangle → the artery → anterior to it is skin + fascia

* In the lower part → anterior to it is the Saphenous nerve

but only a part of it which is (1.5 inch) is covered by the sheath and crossed by the femoral branch of the genito-femoral.

In the triangle:

anterior to it: skin + fascia

posterior to it → Psoas major, separate it from hip joint "protective"

lateral to it → femoral nerve and branches.

medial: → upper part of Δ → femoral vein

- the femoral vein becomes posteriorly.

- posterior: the femoral vein becomes posterior to it in the apex. of Δ

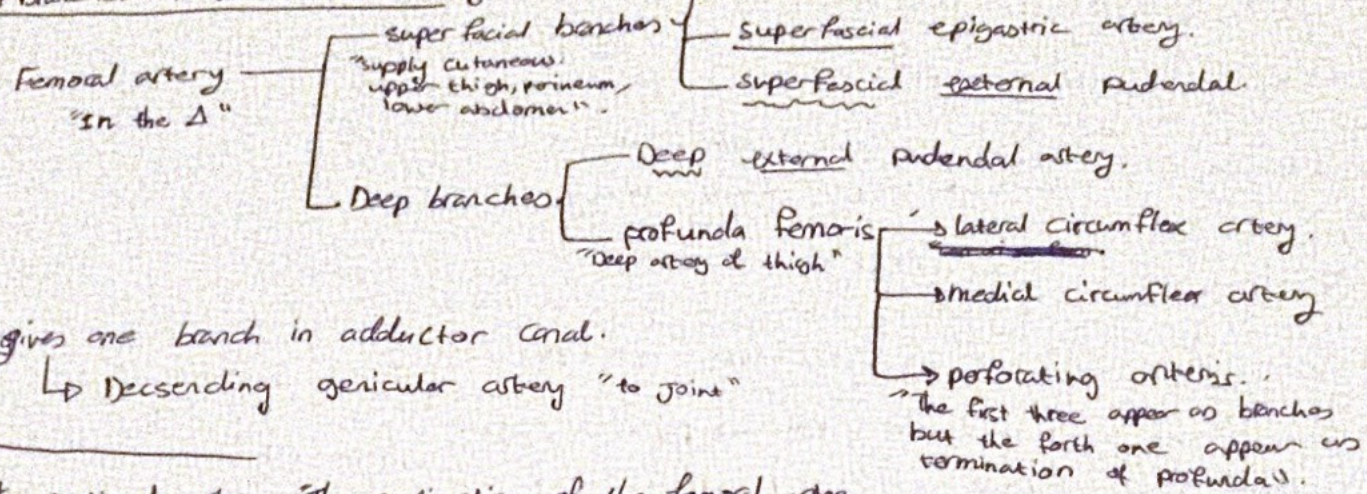
In adductor canal:

anteriorly: ① skin, ② fascia, ③ sartorius muscle, ④ fibrous roof of the canal, ⑤ saphenous nerve.

anteriorly: ① vastus medialis ② nerve to vastus medialis

posteriorly → femoral vein.

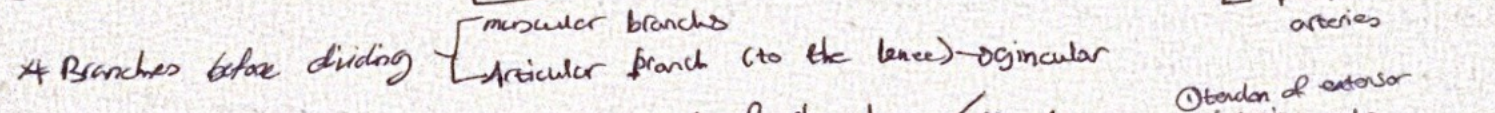
*Branches of the femoral artery:



*gives one branch in adductor canal.
 ↳ Descending genicular artery "to joint"

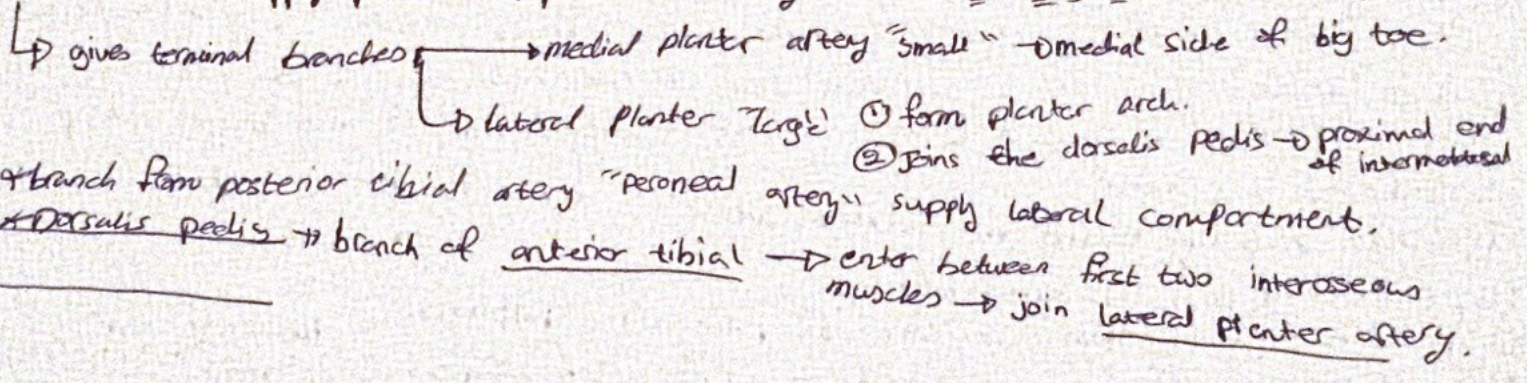
[2] The popliteal artery; "The continuation of the femoral artery in the popliteal fossa"

- ① Enters the popliteal fossa through the adductor hiatus.
- ② the deepest structure in the fossa.
- ③ terminates at the level of [popliteus muscle] - its lower border by dividing

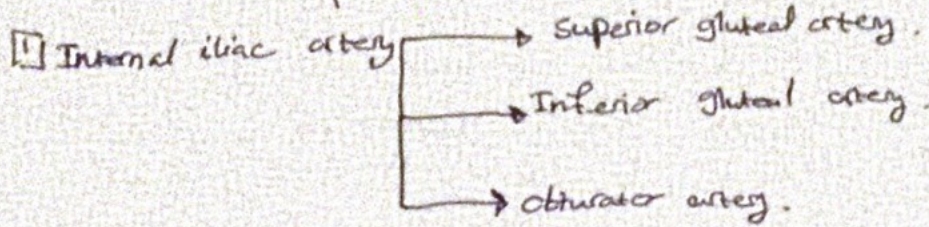


* Anterior tibial → supply anterior compartment of the leg / lies between ^{① tendon of anterior} humerus and ^{② nerves.}

* posterior tibial → supply posterior compartment of leg
 "Tom has very nice dogs and pigs".

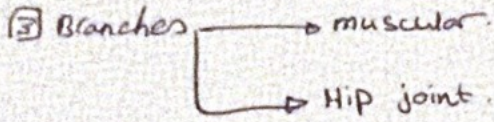


Cont. blood supply:



① Obturator artery:

- ① pass forward on lateral wall of pelvis → with obturator nerve.
- ② pass through the obturator canal



Arteries in the gluteal regions:

	Superior gluteal	Inferior gluteal.
① Relation to Perforans	* enter gluteal region through "greater sciatic foramen" → above Perforans	* through greater sciatic foramen → below Perforans.
② Branches:	① superficial: G. maximus ② Deep: G. medius, G. minimus.	* numerous branches throughout gluteal region

* Anastomosis:

Internal iliac branches with femoral branches.

- ① Trochanteric anastomosis
- ② Cruciate anastomosis.

① Trochanteric:

* purpose → blood supply for head of femur.

* The vessels pass intra capsular, extra synovial

What arteries? * ① Superior gluteal ② inferior gluteal, ③ obturator artery.

* medial femoral circumflex + lateral circumflex "remember branches of femoral."
↳ the branches of these two are called "subsynovial retinacular arteries."

* we also have a branch of obturator artery → through the ligament in foramen capitis femoris
↳ main blood supply to the head.
↳ most of them from the medial circumflex

② Cruciate.

* purpose: at level of lesser trochanter, help trochanteric anastomosis

↳ provides a connection between ① Internal iliac and ② femoral.

* complications and applications:

• abnormal obturator artery:

* normally: it's a branch of internal iliac that has anastomosis with the pelvic branch of epigastric, through this course it's ~~along~~ ^{along} the lacunar ligament "near to femoral canal" and thus safe in hernia operation

* abnormally: replaced by branch of inferior epigastric → pass behind the Sims's "lacunar" ligament → danger in hernia operation - could be cut → aseptic necrosis of head of femur

• lump in popliteal fossa

↳ could be related to artery → popliteal aneurysm.

* features of the neck:

* The ~~subcapital~~ subcapital fracture is the worst → cut off blood supply.

"because blood supply through ligamentum teres "obturator artery" is negligible in adults"

* retrochondritic don't cause much damage → the course of arteries is safe.

Feeling the pulse:

① femoral artery → in Δ → midway between "pubic symphysis" and "anterior superior iliac spine"

* This distance is longer than the inguinal ligament, artery is in ~~the~~ ^{the} middle.

② popliteal artery → difficult to find → deepest in the fossa, ^{↳ anteriorly} medial to midline of fossa.

③ dorsalis pedis → lies between ^{tendons} ① extensor hallucis longus. → ① could be absent is ^{fossa} B.
↳ "go to 2nd toe" ② extensor digitorum longus to second toe

④ posterior tibial → posterior inferior to medial malleolus "between heel and malleolus"

Veins

① Dorsal venous arch

- ↳ medial → great saphenous → anterior to medial malleolus → with saphenous nerve.
- ↳ lateral → small saphenous → posterior to lateral malleolus → with sural nerve.

① great saphenous:

* accompanied by saphenous nerve only in leg and arrives to medial malleolus → but in the thigh the nerve is deep → safe to make operation.

② run on medial side and go behind the knee and then curve to medial side of thigh.

③ pierces the saphenous opening

④ joins the femoral vein ~ 4 cm below and lateral to pubic tubercle.

② small saphenous:

① accompanies sural nerve.

② lateral side, joins the popliteal vein in popliteal fossa

③ the popliteal vein then become the femoral vein.

* The femoral vein run in adductor canal → first posterior to femoral artery.

↳ then it become medial to it in the Δ .