BLOOD SUPPLY OF LOWER LIMB

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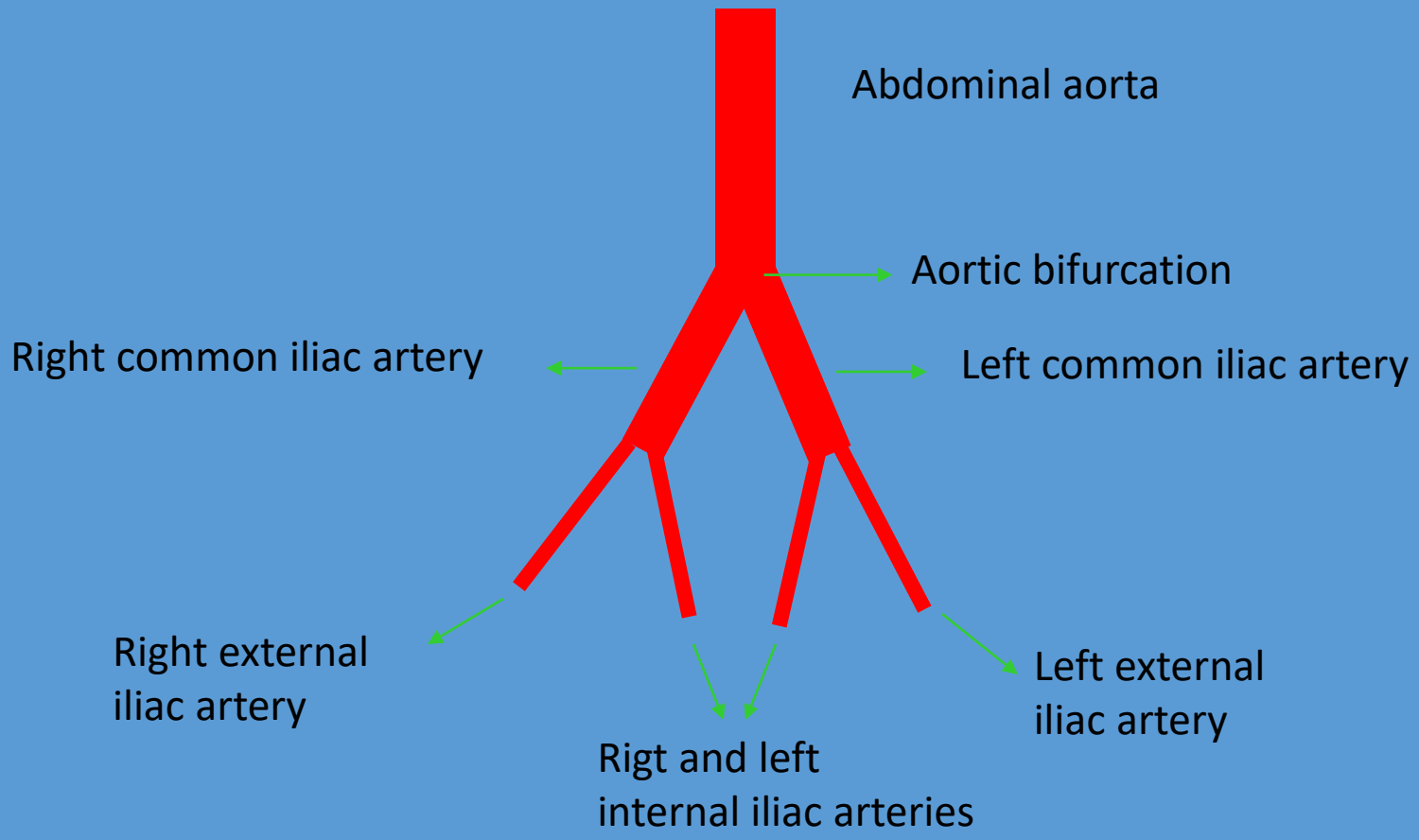

Abdominal aorta
Aortic bifurcation
Right common iliac artery
Left common iliac artery
Right external iliac artery
Left external iliac artery
Rigt and left internal iliac arteries

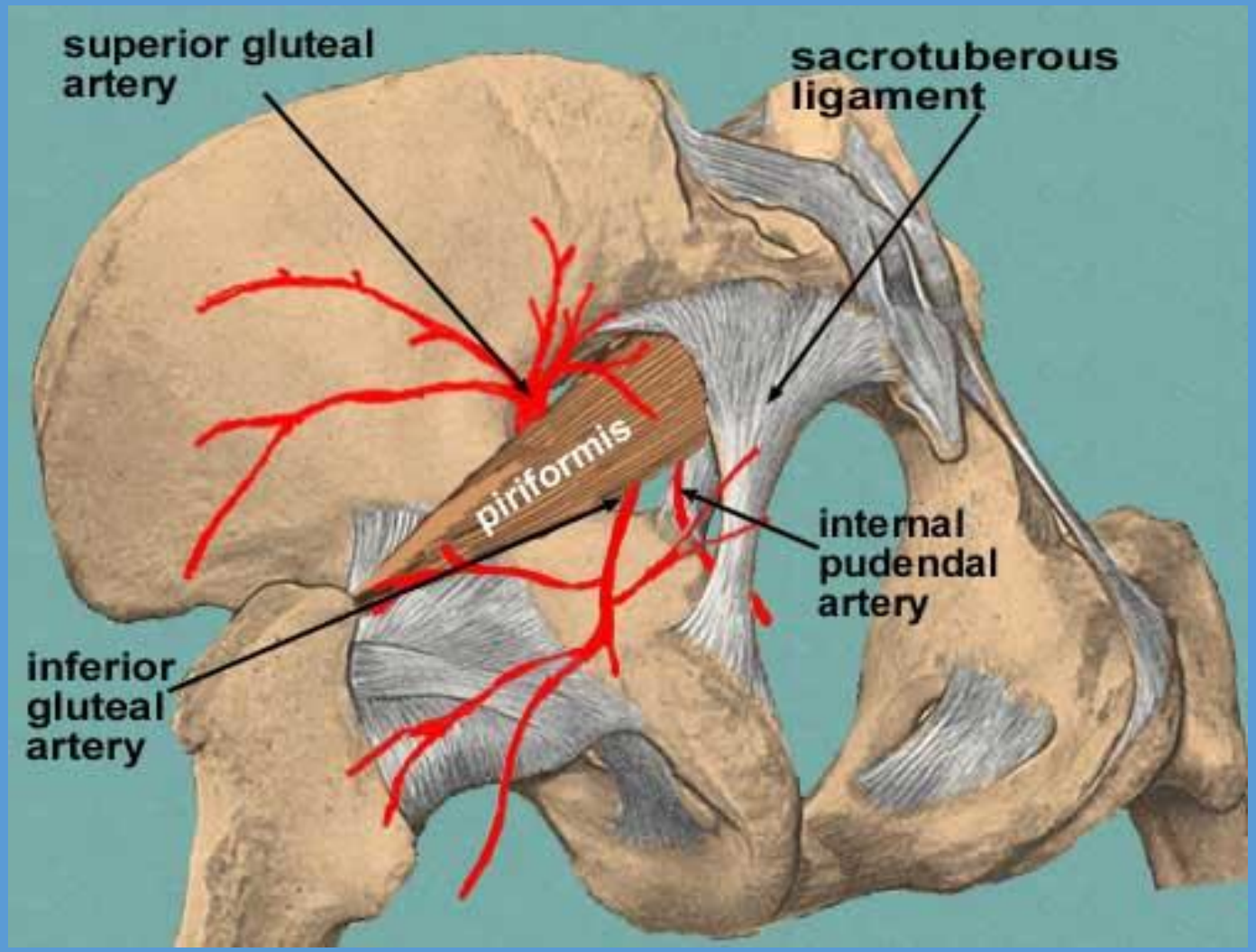
GLUTEAL REGION

Structures passing through the **suprapriform foramen**

- **Superior gluteal artery and vein**
- Superior gluteal nerve

Structures passing through the **infrapriform foramen**

- **Inferior gluteal artery and vein**
- Inferior gluteal nerve
- Sciatic nerve
- Posterior femoral cutaneous nerve
- **Internal pudendal artery and vein**
- Pudendal nerve



- ***Femoral artery*** is the principal artery of the lower limb

- Femoral artery is the continuation of the **external iliac artery**
  - External iliac artery becomes the femoral artery as it passes posterior to the inguinal ligament

- Femoral artery, first enters the **femoral triangle**. Leaving the tirangle it passes through the adductor canal and then adductor hiatus and reaches to the popliteal fossa, where it becomes the ***popliteal artery***

Contents of the femoral triangle
(from lateral to medial)

- Femoral nerve (and its branches)
    - Saphenous nerve (sensory branch of the femoral nerve)
- Femoral artery (and its several branches)
    - Deep femoral artery (deep artery of the thigh) and its branches in this region; medial and lateral circumflex femoral arteries and perforating branches
- Femoral vein (and veins draining to its proximal part such as the great saphenous vein and deep femoral vein)
- Deep inguinal lymph nodes

MUSCULAR AND VASCULAR COMPARTMENTS

The passageway posterior to the inguinal ligament is divided into two compartments by a septum

- Muscular comparment (lateral)
- Vascular compartment (medial)

Contents of the muscular comparment (lacuna)

- Iliacus and psoas muscles
- Femoral nerve

Contents of the vascular compartment (lacuna)

- Femoral artery
- Femoral vein
- Femoral branch of the genitofemoral nerve
- Lymph vessels

Branches of the external iliac artery

- Inferior epigastric artery
- Deep circumflex iliac artery

Branches of the femoral artery

- Superficial epigastric artery
- Superficial circumflex iliac artery
- External pudendal arteries
- Descending genicular artery
- Deep artery of the thigh
  - Lateral circumflex femoral artery
  - Medial circumflex femoral artery

POPLITEAL FOSSA

- Contents of the politeal fossa
  - Politeal artery and branches (continuation of the femoral artery)
  - Popliteal vein (comitant veins associating the anterior and posterior tibial veins unites to form the popliteal vein)
  - Tibial and common peroneal nerves
  - Termination of the lesser (small) saphenous vein (drains into the popliteal vein here)
  - Posterior cutaneous nerve of the thigh
  - Popliteal lymph nodes and lymph vessels

- Popliteal artery supplies a number of branches around the knee joint that participate the formation of genicular anastomoses

- Popliteal artery terminates by giving its two terminal branches at the inferior border of the popliteus muscle
  - **Anterior tibial artery** (terminal branch)
  - **Posterior tibial artery** (terminal branch)

Anterior tibial artery

Descends in the anterior compartment

Continues as the **dorsal artery of the foot (dorsalis pedis artery)** as it passes between the malleoli

- Gives of **arcuate artery** (gives rise to 2nd, 3rd and 4th metatarsal arteries)
- Dorsal artery of the foot terminates by giving its two terminal branches
  - 1st dorsal metatarsal artery
  - Deep plantar artery (unites with the lateral plantar artery to form the ***deep plantar arch)***

CLINICAL NOTE

Palpation of dorsalis pedis artery pulse

- Important during physical examination of the vascular system
- Pulse is easily palpable lateral to the tendon of the extensor hallucis longus muscle, with the foot slightly dorsiflexed
- A diminished and absent pulse suggests vascular insufficiency

Posterior tibial artery

- Descends in the posterior compartment
- Gives of the **peroneal (fibular) artery**
- Posterior tibial artery gives of its two terminal branches as it reaches the sole of the foot by passing posterior to the medial malleolus
    - **Medial plantar artery**
    - **Lateral plantar artery** (unites with the deep plantar branch of the deep artery of the foot to form the deep plantar arch)

CLINICAL NOTE

Palpation of posterior tibial artery pulse

- Important during physical examination of the vascular system
- Pulse is easily palpable posterior to the medial malleolus and lateral to the calcaneal tendon
- Abscence of the pulse may be an indication of peripheral arteriel disease, especially if it is associated with ***intermittent claudication*** (leg pain and cramps developing during walking and dissapears with rest)

VEINS OF THE LOWER LIMB

Veins of the lower limb is classified as superficial veins and deep veins

Deep veins follow the arteries and generally referred as the comitant veins or given the same name as the artery it follows

Deep veins finally drain into the **femoral vein**

Femoral vein becomes the external iliac vein as it passes posterior to the inguinal ligament

CLINICAL NOTE

Cannulation of the femoral vein

- Is used for recording the pressures and take blood samples from the right heart and/or pulmonary artery
- A long slender catheter is inserted and advanced through the internal iliac, common iliac and inferior vena cava respectively and to the right atrium finally

Superficial veins

- There are two major superficial veins in the lower limb
  - **Great saphenous vein** (on the medial side)
  - **Small saphenous vein** (on the lateral side)

These veins collect all the venous blood from the superficial structures

- **Great saphenous vein** ascends to the level of femoral triangle and passes through the saphenous opening to drain into the femoral vein

- **Small saphenous vein** terminates by draining into the popliteal vein, at the level of popliteal fossa