MEDICAL EDUCATION RESOURCE

Popliteal Fossa: FAQs,MCQs and Viva Voce

Frequently Asked Questions — Popliteal Fossa

1. What are the boundaries of the popliteal fossa?

- **Superomedial:** Semimembranosus and semitendinosus.
- **Superolateral:** Biceps femoris.
- **Inferomedial and Inferolateral:** Two heads of gastrocnemius.
- **Roof:** Skin, superficial fascia, and popliteal fascia.
- **Floor:** Popliteal surface of femur, posterior capsule, and popliteus muscle

  Volume 2, BD Chaurasia’s Human …

  .

---

2. What is the arrangement of structures from superficial to deep?
From posterior to anterior:
Tibial nerve ? Popliteal vein ? Popliteal artery.

---

3. What is the order of structures from medial to lateral in the upper part of the fossa?
Artery, Vein, Nerve (A–V–N).

---

4. Which artery lies deepest in the popliteal fossa?
The **popliteal artery** — continuation of the femoral artery.

---

5. What are the branches of the popliteal artery?

- Cutaneous: Small arteries to skin and fascia.
- Muscular: To gastrocnemius, plantaris, soleus, and popliteus.
- Articular: Five genicular arteries forming the **genicular anastomosis**.

---

6. Which vein drains into the popliteal vein?
The **small (short) saphenous vein** — joins the popliteal vein at the mid-fossa level.

---

7. What are the branches of the tibial nerve in the popliteal fossa?

- Muscular: Gastrocnemius, plantaris, soleus, and popliteus.
- Articular: To the knee joint.
- Cutaneous: **Medial sural cutaneous nerve**.

---

8. What is the most superficial structure in the popliteal fossa?
Tibial nerve.

---

9. Which nerve winds around the neck of the fibula?
Common peroneal nerve — very superficial and easily injured, causing **foot drop**.

---

10. What are the contents of the popliteal fossa?

- **Nerves:** Tibial and common peroneal nerves.
- **Vessels:** Popliteal artery and vein.
- **Lymph nodes:** Popliteal nodes.
- **Fat and areolar tissue.**

11. What are the main lymph nodes present in the popliteal fossa?

6–7 popliteal lymph nodes, draining lateral foot and posterior leg into deep inguinal nodes.

---

12. What is the function of popliteus muscle?

Unlocks the knee joint by **laterally rotating femur** on tibia during flexion initiation.

---

13. What is the genicular anastomosis?

A vascular network around the knee formed by:

- Superior and inferior genicular arteries (medial and lateral).
- Descending genicular and descending branch of lateral circumflex femoral artery.
- Anterior and posterior tibial recurrent arteries.

---

14. What is the clinical significance of the popliteal fossa?

- Site for **popliteal pulse palpation**.
- Common site for **popliteal aneurysm**.
- **DVT**, **Baker's cyst**, or **entrapment syndromes** may occur here.

---

15. What is the safest site for popliteal artery palpation?

Deep in the fossa with **knee flexed** — relaxes fascia and hamstrings for easy palpation.

---

16. Why is the popliteal artery prone to aneurysm?

Because it is **deeply placed and fixed** between rigid structures (femur and fascia), preventing expansion.

---

17. What is the "locking and unlocking" mechanism of the knee?

- **Locking:** Medial rotation of femur on tibia during full extension (stabilizes joint).
- **Unlocking:** Lateral rotation of femur by **popliteus muscle** during flexion initiation.

---

18. Which nerve supplies sensation to the posterior knee and leg?
Posterior cutaneous nerve of thigh (S1–S3).

---

19. Which structure connects the popliteal fossa to the posterior compartment of the leg?
Tibial nerve and popliteal artery — both pass deep to popliteus to reach posterior leg.

---

20. How is the popliteal fossa clinically examined?
By palpating pulses, checking for swelling (aneurysm/cyst), and observing muscle strength (nerve injuries).

These FAQs summarize key anatomical and clinical points that are **frequently tested in practicals, vivas, and written exams** related to the **Popliteal Fossa**.

Multiple Choice Questions — Popliteal Fossa

1. The most superficial structure in the popliteal fossa is:
A. Popliteal vein
B. Popliteal artery
C. Tibial nerve
D. Common peroneal nerve
Answer: C. Tibial nerve
Explanation: The tibial nerve lies most superficial; popliteal vein is intermediate, and the artery is deepest.

---

2. The deepest structure in the popliteal fossa is:
A. Popliteal vein
B. Popliteal artery

C. Tibial nerve

D. Common peroneal nerve

Answer: B. Popliteal artery

Explanation: The popliteal artery lies deepest, against the floor formed by the femur and popliteus.

---

3. The roof of the popliteal fossa is formed by:

A. Popliteal fascia

B. Skin and superficial fascia

C. Deep fascia

D. Tendons of hamstring muscles

Answer: B. Skin and superficial fascia

Explanation: The roof includes skin, superficial fascia, and deep popliteal fascia.

---

4. The floor of the popliteal fossa is formed by:

A. Gastrocnemius and plantaris

B. Popliteus and posterior surface of femur

C. Soleus

D. Deep fascia only

Answer: B. Popliteus and posterior surface of femur

Explanation: Floor comprises the popliteal surface of femur, posterior capsule, and popliteus muscle.

---

5. The boundaries of the popliteal fossa are formed above by:

A. Adductor magnus and biceps femoris

B. Semimembranosus and biceps femoris

C. Gastrocnemius only

D. Gracilis and adductor longus

Answer: B. Semimembranosus and biceps femoris

Explanation: Superomedial boundary — semimembranosus and semitendinosus; superolateral — biceps femoris.

---

6. The popliteal artery is a continuation of:

A. Profunda femoris artery

B. Femoral artery

C. Anterior tibial artery

D. Posterior tibial artery

Answer: B. Femoral artery

Explanation: Femoral artery becomes popliteal artery after passing through adductor hiatus.

---

7. The popliteal artery ends at the level of:

A. Upper border of popliteus

B. Lower border of popliteus

C. Middle of popliteal fossa

D. Upper border of gastrocnemius

Answer: B. Lower border of popliteus

Explanation: Here it divides into anterior and posterior tibial arteries.

---

8. The popliteal vein is formed by union of:

A. Great and small saphenous veins

B. Anterior and posterior tibial veins

C. Peroneal and posterior tibial veins

D. Lateral and medial genicular veins

Answer: B. Anterior and posterior tibial veins

Explanation: These unite at lower border of popliteus to form popliteal vein.

---

9. Which vein joins the popliteal vein in the fossa?

A. Great saphenous vein

B. Small saphenous vein

C. Perforating vein

D. Genicular vein

Answer: B. Small saphenous vein

Explanation: It drains into the popliteal vein at the mid-fossa.

---

10. Which muscle forms the floor of the lower part of popliteal fossa?

A. Soleus

B. Popliteus

C. Plantaris

D. Gastrocnemius

Answer: B. Popliteus

Explanation: The popliteus forms the floor and unlocks the knee joint during flexion.

---

11. The nerve supplying popliteus muscle is:

A. Common peroneal nerve

B. Tibial nerve

C. Femoral nerve

D. Obturator nerve

Answer: B. Tibial nerve

Explanation: Tibial nerve gives a branch to popliteus within the fossa.

---

12. Which structure crosses the popliteal artery from lateral to medial side?

A. Tibial nerve

B. Popliteal vein

C. Plantaris tendon

D. Common peroneal nerve

Answer: B. Popliteal vein

Explanation: The vein crosses superficial to the artery from lateral to medial side.

---

13. The popliteal artery gives how many genicular branches?

A. Three

B. Four

C. Five

D. Six

Answer: C. Five

Explanation: Superior medial, superior lateral, inferior medial, inferior lateral, and middle genicular arteries.

---

14. Which artery participates in the genicular anastomosis?

A. Descending genicular artery

B. Deep femoral artery

C. Peroneal artery

D. Lateral plantar artery

Answer: A. Descending genicular artery

Explanation: A branch of femoral artery contributing to genicular anastomosis.

---

15. Which nerve is most prone to injury around the knee?

A. Tibial nerve

B. Common peroneal nerve

C. Sural nerve

D. Obturator nerve

Answer: B. Common peroneal nerve

Explanation: Winds around neck of fibula, vulnerable to trauma or casts, leading to foot drop.

---

16. Which of the following arteries pierces the posterior capsule of the knee joint?

A. Superior lateral genicular

B. Middle genicular

C. Inferior medial genicular

D. Descending genicular

Answer: B. Middle genicular

Explanation: The middle genicular artery pierces capsule to supply cruciate ligaments and synovium.

---

17. The popliteal lymph nodes receive lymph from:

A. Medial side of leg

B. Lateral side of foot and posterior leg

C. Anterior thigh

D. Perineum

Answer: B. Lateral side of foot and posterior leg

Explanation: They drain into deep inguinal nodes.

---

18. The popliteal vein continues upward as:

A. Deep femoral vein

B. Femoral vein

C. External iliac vein

D. Inferior vena cava

Answer: B. Femoral vein

Explanation: Continuation occurs at the

---

19. Which nerve gives rise to medial sural cutaneous branch?

A. Common peroneal nerve

B. Tibial nerve

C. Posterior cutaneous nerve of thigh

D. Sural nerve

Answer: B. Tibial nerve

Explanation: It joins the communicating branch of common peroneal to form the sural nerve.

---

20. The popliteal pulse is best palpated with:

A. Leg extended

B. Leg flexed

C. Prone position with leg extended

D. Sitting position

Answer: B. Leg flexed

Explanation: Flexion relaxes fascia, allowing deeper palpation of the popliteal artery.

---

21. Which muscle helps unlock the knee joint?

A. Gastrocnemius

B. Soleus

C. Popliteus

D. Plantaris

Answer: C. Popliteus

Explanation: Laterally rotates femur on tibia to initiate flexion.

---

22. The popliteal fossa contains how many lymph nodes on average?

A. 2–3

B. 4–5

C. 6–7

D. 10–12

Answer: C. 6–7

Explanation: Usually arranged along popliteal vessels and small saphenous vein.

---

23. Foot drop results from injury to:

A. Tibial nerve

B. Common peroneal nerve

C. Sciatic nerve

D. Sural nerve

Answer: B. Common peroneal nerve

Explanation: Causes loss of dorsiflexion and eversion.

---

24. Which of the following is a content of the popliteal fossa?

A. Femoral artery

B. Great saphenous vein

C. Small saphenous vein termination

D. Anterior tibial artery

Answer: C. Small saphenous vein termination

Explanation: It drains into the popliteal vein within the fossa.

---

25. The popliteal artery is most prone to aneurysm because:

A. It is superficial

B. It lies in a fixed, deep compartment

C. It has no collateral branches

D. It lies in loose connective tissue

Answer: B. It lies in a fixed, deep compartment

Explanation: Compression between bone and fascia predisposes it to aneurysmal dilation.

Viva Voce — Popliteal Fossa

1. What is the popliteal fossa?

A diamond-shaped depression on the **posterior aspect of the knee joint**, formed by muscles of the thigh and leg, containing major vessels and nerves.

---

2. What is the position of the limb to study or palpate the popliteal fossa?

The knee should be **slightly flexed** to relax the fascia and hamstrings.

---

3. Name the boundaries of the popliteal fossa.

- **Superolateral:** Biceps femoris
- **Superomedial:** Semimembranosus and semitendinosus
- **Inferolateral and Inferomedial:** Two heads of gastrocnemius

---

4. What forms the roof of the popliteal fossa?
Skin, superficial fascia (containing small saphenous vein and cutaneous nerves), and deep fascia (popliteal fascia).

---

5. What forms the floor of the popliteal fossa?
Popliteal surface of femur, posterior capsule of knee joint, oblique popliteal ligament, and popliteus muscle.

---

6. What are the contents of the popliteal fossa?

- **Tibial nerve** (most superficial)
- **Popliteal vein** (middle)
- **Popliteal artery** (deepest)
- **Common peroneal nerve**, **posterior cutaneous nerve of thigh**, **popliteal lymph nodes**, and **fat**.

---

7. What is the order of structures from superficial to deep?
Tibial nerve ? Popliteal vein ? Popliteal artery

---

8. What is the order of structures from medial to lateral in the upper part of the fossa?
Artery ? Vein ? Nerve (A–V–N)

---

9. What is the continuation of the popliteal artery above and below?

- **Above:** Continuation of **femoral artery** (after adductor hiatus)
- **Below:** Divides into **anterior and posterior tibial arteries** at lower border of popliteus.

---

10. What are the genicular branches of the popliteal artery?
Superior medial, superior lateral, inferior medial, inferior lateral, and middle genicular arteries.

---

11. What is the main function of the popliteus muscle?
It **unlocks the knee joint** by **laterally rotating the femur** on tibia to initiate flexion.

---

12. Which vein drains into the popliteal vein?
Small (short) saphenous vein.

---

13. Which nerve forms the sural nerve along with tibial branches?
Common peroneal nerve joins the **medial sural cutaneous branch** of tibial nerve to form the **sural nerve**.

---

14. What is the clinical importance of the popliteal artery?

- Used to **record blood pressure** in the lower limb.
- Site of **aneurysm** or **thrombosis** due to its fixed deep position.

---

15. What is the clinical importance of the popliteal vein?
May develop **deep vein thrombosis (DVT)** after long bed rest or surgery, causing swelling and risk of pulmonary embolism.

---

16. What is the common site of nerve injury near the knee?
Common peroneal nerve around the **neck of fibula**, leading to **foot drop**.

---

17. What is the lymphatic drainage of the lateral foot?

To **popliteal lymph nodes**, then to **deep inguinal nodes**.

---

18. Why is the popliteal artery prone to aneurysm?

Because it lies **deep and fixed** between rigid structures — the femur and popliteal fascia — preventing expansion during pulsation.

---

19. What is a Baker's cyst?

A **fluid-filled swelling** (synovial outpouching) in the popliteal fossa, usually between semimembranosus and medial gastrocnemius due to chronic knee inflammation.

---

20. What is the surface marking of the popliteal artery?

From the **adductor hiatus** to the **midpoint between condyles of tibia**; its pulse is felt in the fossa with knee flexed.

---

21. What is the popliteal pulse and how is it palpated?

Pulse of popliteal artery felt with the knee **flexed**; deep palpation in the midline between tendons of hamstrings.

---

22. What is "locking" of the knee joint?

When in full extension, the femur **medially rotates** on tibia, making the joint stable and energy-efficient in standing.

---

23. What is the role of the genicular anastomosis?

Ensures **collateral circulation** to the leg when the popliteal artery is compressed during flexion or blocked above the knee.

---

24. What happens in injury to the tibial nerve in the fossa?

Loss of **plantar flexion**, **sole sensation**, and **weakness in toe flexion**.

---

25. What happens in injury to the common peroneal nerve at fibular neck?

Foot drop due to paralysis of dorsiflexors and evertors of the foot.

---

26. What does the posterior cutaneous nerve of thigh supply?
Skin of **posterior thigh and upper popliteal fossa**.

---

27. What are the popliteal lymph nodes enlarged in?
Infections or ulcers on **lateral foot** or **posterior leg**.

---

28. What are the main arteries participating in the genicular anastomosis?

- Superior and inferior genicular arteries (medial & lateral)
- Descending genicular artery
- Descending branch of lateral circumflex femoral artery
- Anterior and posterior tibial recurrent arteries.

---

29. Which nerve gives the genicular branch to the knee joint?
Posterior division of obturator nerve.

---

30. What clinical finding indicates coarctation of aorta?
Lower popliteal pulse pressure compared to brachial pulse due to reduced lower limb blood flow.