

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**.
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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**.
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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.**
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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.
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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.
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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.
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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
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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.**
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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.
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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.
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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.
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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.