1. A 63-year-old female patient says that she has pain in her groin and upper thigh. Upon examination, you palpate a lump located below the inguinal ligament lateral to its attachment to the pubic tubercle. You suspect that this may be a hernia passing through the:
   - femoral canal
   - adductor hiatus
   - obturator canal
   - deep inguinal ring
   - superficial inguinal ring

2. The femoral canal contains the:
   - Deep inguinal lymph node(s)
   - Femoral artery
   - Femoral nerve
   - Femoral vein
   - Ilioinguinal nerve

3. Which movement would fail in case of paralysis of the quadriceps femoris muscle?
   - Adduction at the hip
   - Extension at the hip
   - Extension at the knee
   - Flexion at the knee
   - Medial rotation at the knee

4. Which structure does NOT enter or leave the inguinal region by passing deep to the inguinal ligament?
   - Femoral artery
   - Femoral nerve
   - Femoral vein
5. An elderly woman was found to have a hernial sac in the right femoral triangle and a marked weakness in adduction at the right hip joint. Which nerve was likely compressed by this herniation?
   A. Femoral
   B. Inferior gluteal
   C. Obturator
   D. Pudendal
   E. Sciatic

6. When walking, the action of the iliopsoas muscle results in what motion at the hip joint?
   A. Abduction
   B. Adduction
   C. Extension
   D. Flexion
   E. Medial rotation

7. The pulse of the femoral artery is best felt at which superficial reference point?
   A. Anterior to the ankle joint
   B. Femoral triangle
   C. Mid-thigh
   D. Popliteal fossa
   E. Right lateral portion of the hypogastrium

8. If the femoral artery is occluded at the beginning of the adductor canal, which artery could help provide viability to the leg through collateral circulation?
   A. Descending branch of the lateral circumflex femoral
   B. Descending genicular
First perforating branch of the deep femoral
Medial circumflex femoral
Obturator

9. At which site could one expect to enter the femoral vein with a simple percutaneous (through the skin) introduction of an instrument?
- Above the middle of the inguinal ligament
- Lateral to the femoral arterial pulse
- Lateral to the pubic tubercle
- Medial to the femoral arterial pulse
- Medial to the pubic tubercle

10. What anterior thigh muscle must be retracted to expose the adductor canal and its contents?
- Adductor magnus
- Gracilis
- Rectus femoris
- Sartorius
- Vastus intermedius

11. A serious complication of fractures of the femoral neck is avascular necrosis of the femoral head. This usually results from rupture of which artery?
- Acetabular branch of obturator
- Deep circumflex iliac
- Descending branch of lateral circumflex femoral
- Medial circumflex femoral
- Second perforating branch of lateral circumflex

12. A ruptured aneurysm in the most proximal portion of the deep femoral artery would result in a hematoma located initially in the:
- Adductor canal.
13. Following a penetrating injury to the left femoral triangle, a patient related that walking was virtually impossible because at every step the left knee collapsed into flexion. This history suggests paralysis of which muscle?

A. Adductor magnus.
B. Biceps femoris.
C. Gluteus maximus.
D. Quadriceps femoris.
E. Sartorius.

14. A patient with a tuberculous abscess (localized collection of pus) on the iliopsoas muscle in the femoral triangle presented impaired flexion of the thigh and extension of the leg. Which of the following nerves was likely involved?

A. Femoral
B. Inferior gluteal
C. Obturator
D. Sciatic
E. Superior gluteal

15. An obturator hernia that compresses the obtur tor nerve in the obturator canal may affect the function of all of the following muscles EXCEPT:

A. Adductor brevis
B. Adductor longus
C. Gracilis
D. Obturator externus
E. Pectineus
16. Childhood immunizations are sometimes given via intramuscular injections into the quadriceps muscles of the anterior thigh. At the mid-thigh level, a needle passing into the space deep to the sartorius muscle might pierce the femoral vessels as they lie in the:

A. Adductor canal
B. Adductor hiatus
C. Adductor triangle
D. Femoral canal
E. Femoral ring

17. A female patient complains of pain in her groin region that increases with coughing. An MRI reveals a loop of ilium passing inferiorly, posterior to the superior pubic ramus. What type of hernia is this?

A. Obturator
B. Femoral
C. Direct inguinal
D. Indirect inguinal
E. Lumbar

18. During a surgical procedure in which the lower abdominal wall has been opened, the retractor blades damaged a nerve lying between the iliacus and psoas major muscles. The patient has weakened hip flexion and an inability to extend the knee, as well as analgesia on the anterior thigh and medial leg. What nerve has been compressed?

A. Obturator
B. Femoral
C. Sciatic
D. Tibial
E. Common fibular

19. Which of the following is NOT located within the adductor canal?
20. Inability to extend the knee and loss of cutaneous sensation over the anterior surface of the thigh would indicate a lesion or compression of the:

A. Superior gluteal nerve  
B. Lateral femoral cutaneous nerve  
C. Sciatic nerve  
D. Femoral nerve  
E. Obturator nerve

21. Which statement is true?

A. The femoral artery lies medial to the femoral vein  
B. The femoral vein lies medial to the femoral artery  
C. The external iliac veins join to form the inferior vena cava  
D. The inferior vena cava can not be imaged radiographically  
E. A and C

22. Blood flow around an occlusion of the femoral (superficial femoral) artery at the apex of the femoral triangle could be provided by:

A. Anterior tibial recurrent  
B. Descending branch of the lateral circumflex femoral  
C. Descending genicular  
D. Medial circumflex femoral  
E. Perforating branches of the deep femoral

23. After suffering a penetrating injury in the left femoral triangle, a patient was unable to walk normally because her left knee
collapsed into flexion upon weight bearing. The nerve to which muscle was damaged?

- Adductor magnus
- Biceps femoris
- Gluteus maximus
- Gluteus medius
- Quadriceps femoris

24. “Scissor gait” is a condition in which one limb crosses in front of the other during stepping as a result of powerful hip adduction caused by continuous, unwanted nerve activity. What is the nerve involved in this condition?

- Femoral
- Inferior gluteal
- Obturator
- Tibial

25. In the middle third of the thigh, the superficial and deep femoral arteries are separated by:

- Adductor longus
- Adductor magnus
- Gracilis
- Pectineus
- Vastus medialis

26. Fracture of the femoral neck may lead to avascular necrosis of the femoral head due to the interruption of which artery?

- First perforating branch of the deep femoral
- Inferior epigastric
- Internal pudendal
- Lateral circumflex femoral
- Medial circumflex femoral
27. Following surgical opening of the adductor canal, a patient experienced a loss of cutaneous sensation of the medial side of the leg. Which nerve was cut?

A. Ilioinguinal
B. Femoral
C. Obturator
D. Medial sural cutaneous
E. Saphenous

1. The correct answer is: **A** femoral canal

To understand the anatomy of a femoral hernia, you need to understand the relationships in the femoral triangle. The femoral triangle is an area bounded superiorly by the inguinal ligament, laterally by the sartorius, and medially by the medial edge of adductor longus. There are two main things in the femoral triangle: the femoral nerve and the femoral sheath, which encloses the femoral artery, vein, and canal. The femoral nerve is at the lateral edge of the triangle—it is not enclosed by the femoral sheath. Medial to the femoral nerve, you can see the femoral sheath, enclosing the artery, vein, and canal, in that order from lateral to medial. The femoral canal is the most medial structure in the triangle. It opens up to the abdominal cavity through the femoral ring, so abdominal contents might herniate through that ring and into the femoral canal. Because the hernia is inferior to the inguinal ligament, it has entered the femoral canal.

The other common hernia site listed among the answers are the superficial and deep inguinal rings. However, these hernias would be palpated near the superficial inguinal ring, which is superolateral to the pubic tubercle. The adductor hiatus is a space in the adductor magnus that allows the femoral vessels to pass through and reach the posterior surface of the leg, where they become the popliteal vessels. Finally, the obturator canal is the space in the obturator foramen through which the obturator nerve and vessels travel.
2. The correct answer is: **A** Deep inguinal lymph node(s)

The femoral canal usually contains a deep inguinal lymph node, called the gland or node of Cloquet. This canal opens to the abdominal cavity through the femoral ring, so it might be the site of a femoral hernia. The femoral artery and vein are enclosed in the femoral sheath with the femoral canal, but they are not in the femoral canal. The femoral nerve is also in the femoral triangle, but it is not enclosed by the femoral sheath. It is the most lateral structure in the femoral triangle. The ilioinguinal nerve is not really part of the anatomy of this region. It innervates muscles of the lower abdominal wall and is associated with the superficial inguinal ring.

Make sure to remember the difference between the femoral canal and femoral sheath!

3. The correct answer is: **C** extension at the knee.

Quadriceps femoris extends the leg (rectus femoris and the vastus muscles) and helps flex the hip (rectus femoris). It is innervated by the femoral nerve, which is made from the contributions of L2, 3, and 4 in the lumbar plexus. If a patient could not adduct at the hip, the adductor muscles might be damaged. These are supplied by the obturator nerve, which also comes from L2, 3, and 4 in the lumbar plexus. If a patient could not extend at the hip or flex the leg, the hamstring muscles might be damaged. These muscles are supplied by the tibial nerve, a branch of the sciatic nerve. If a patient could not rotate the knee medially, popliteus might be injured. This muscle, which is innervated by the tibial nerve, allows the knee to twist and unlock from a fully extended position, as in erect stance.

4. The correct answer is: **E** round ligament of the uterus

The round ligament of the uterus travels through the inguinal canal, superior to the inguinal ligament. It eventually leaves the canal through the superficial ring, enters the perineum, and terminates in the labia.
majora. So, it is never passing deep to the inguinal ligament. The femoral nerve, artery, and vein all travel deep to the inguinal ligament to enter the femoral triangle. The psoas major also travels deep to the inguinal ligament. It then joins with the iliacus to form the iliopsoas, which inserts on the lesser trochanter of the femur via the iliopsoas tendon.

5. The correct answer is: C obturator

Use the defect in motion, not the location of the injury, to answer questions like this one! It's true that the femoral nerve is in the femoral triangle, so you might want to jump to that answer. However, an injury to the femoral nerve would not cause problems with adduction. Instead, the patient would have problems extending her knee. The nerve which supplies the adductor compartment is the obturator nerve, so that must be the structure that was injured. Although the obturator nerve is not in the femoral triangle, it enters the thigh by passing through the obturator canal and under pectineus, part of the floor of the femoral triangle. So, it could be injured by an obturator hernia passing through the obturator canal.

The inferior gluteal nerve passes through the greater sciatic foramen inferior to the piriformis muscle--it innervates gluteus maximus. The pudendal nerve supplies muscles and skin in the perineum. The sciatic nerve has no direct muscular branches. It does, however have two important branches that supply many muscles: the tibial and common fibular nerves. The tibial nerve supplies the posterior (hamstrings) compartment of the thigh and the posterior compartment of the leg. Branches of the common fibular nerve supply the lateral and anterior compartments of the leg. There would be a major motor deficit if the sciatic nerve was injured.

6. The correct answer is: D flexion

The iliopsoas is a combination of the iliacus muscle and the psoas major which inserts on the lesser trochanter of the femur. It is the most
powerful hip flexor. Other hip flexors include sartorius, rectus femoris, and pectineus. These muscles are in the anterior compartment of the thigh, with the exception of pectineus (medial compartment). The abductor muscles are in the lateral compartment of the thigh. They include gluteus medius and minimus, tensor fasciae latae, piriformis, and obturator internus. Adductor longus, brevis, and magnus are muscles in the medial compartment which adduct the hip. The major hip extenders are the hamstrings--semimembranosus, semitendinosus, and biceps femoris. They are in the posterior compartment. Gluteus maximus, in the lateral compartment, is also an important muscle for powerfully extending the hip. Finally, the adductors and gluteus medius, minimus, and tensor fasciae latae are the medial rotators of the thigh.

7. The correct answer is: **femoral triangle**

The femoral artery passes through the femoral triangle. It lies between the femoral nerve on its lateral side and the femoral vein on its medial side. This is where you would take the femoral pulse. Anterior to the ankle joint, you can feel for the pulse of the dorsalis pedis artery. In the popliteal fossa, you can feel for the pulse of the popliteal artery. (Although, this can be somewhat difficult since the popliteal artery is deep to the popliteal nerve and vein.)

8. The correct answer is: **descending branch of the lateral circumflex femoral**

The descending branch of the lateral circumflex femoral artery anastomoses with both the descending genicular branch of the femoral artery as well as the lateral superior genicular branch of the popliteal artery. These connections provide collateral circulation to the knee and leg. The descending genicular artery branches from the femoral artery just superior to the adductor hiatus. If the femoral artery was occluded, this artery would not receive blood flow. The perforating branches of the deep femoral artery provide blood to the posterior thigh. The medial circumflex femoral artery is a branch of the femoral that supplies blood to the medial thigh and hip. The obturator artery is a branch of the
anterior division of the internal iliac which supplies the medial thigh and hip. None of these arteries would be involved in any anastomoses with the leg.

9. The correct answer is: **medial to the femoral arterial pulse**

From lateral to medial, these are the structures in the femoral triangle: femoral nerve, artery, vein, and canal. The artery, vein, and canal are in the femoral sheath, but the nerve is not! So, the vein would be found medial to the arterial pulse. Although the femoral triangle is lateral to the pubic tubercle, that answer is too general. If you were entering the femoral vein, you would find the femoral pulse, use that as a landmark, then insert the instrument medial to that pulse.

10. The correct answer is: **sartorius**

Sartorius is the roof of the adductor canal. If it was retracted, the contents of the adductor canal would be exposed. The structures contained in the adductor canal are: the femoral artery, femoral vein, saphenous nerve, and nerve to vastus medialis. Adductor longus and magnus make the posterior boundary of the canal, and vastus medialis is the lateral boundary of the canal.

11. The correct answer is: **medial circumflex femoral**

It is important to remember that the medial circumflex femoral artery supplies blood to the femoral neck. During fractures of the femoral neck, this artery may be ruptured, and the femoral neck will be deprived of blood. The acetabular branch of the obturator artery provides blood to the acetabulum of the hip bone, which articulates with the head of the femur to form the hip joint. The deep circumflex iliac artery is a branch of the external iliac artery that runs on the deep aspect of the anterior abdominal wall, supplying that region. The descending branch of the lateral circumflex femoral supplies the lateral thigh and hip. Finally, the
perforating branches of the deep femoral artery all go to supply the posterior thigh.

12. The correct answer is: C femoral triangle

The deep femoral artery branches from the femoral artery in the femoral triangle. So, if the aneurysm ruptured in the most proximal portion of the deep femoral artery, the hematoma would be in the femoral triangle. The femoral artery travels in the adductor canal, but this is after the deep femoral artery has already been given off. Remember--the femoral artery is in the femoral sheath, but not in the femoral canal! The femoral canal is medial to the femoral artery, and it contains a deep inguinal lymph node.

13. The correct answer is: D Quadriceps femoris

If a knee is continually collapsing into flexion, it means that there is something wrong with the knee extensors--the quadriceps muscles. This makes sense given the clinical history--the injury to the left femoral triangle probably damaged the femoral nerve which innervates the quads. Sartorius is also a flexor of the hip and knee which is innervated by the femoral nerve. However, it is a much weaker muscle and damage to this muscle would not be as debilitating as damage to the quadriceps. Adductor magnus is innervated by the obturator nerve, except for the part inserting on adductor tubercle, which is innervated by tibial nerve. An injury to this muscle or nerve would result in impaired adduction of the thigh. Biceps femoris is a hamstring muscle of the posterior compartment which extends the hip and flexes the knee. Its long head is innervated by the tibial nerve and its short head is innervated by the common fibular nerve. Gluteus maximus is the muscle for powerful extension of the hip--it is innervated by the inferior gluteal nerve.

14. The correct answer is: A femoral
The quadriceps muscles, innervated by the femoral nerve, are the most important leg extensors. Rectus femoris, a component of the quads, is also a hip flexor. So, the patient's deficits, as well as the clinical history of an abscess in the femoral triangle, are consistent with an injury to the femoral nerve. The inferior gluteal nerve innervates gluteus maximus. If this nerve or muscle was injured, the patient would have trouble extending his leg powerfully. The obturator nerve innervates the adductor compartment; a defect with this nerve would result in impaired adduction. The sciatic nerve does not innervate any muscles itself. However, it has two branches, the common fibular and tibial nerves, which innervate the posterior (hamstring) compartment of the thigh and all of the muscles of the leg and foot. Clearly, an injury to the sciatic nerve would lead to a huge motor impairment. Finally, the superior gluteal nerve innervates gluteus medius and minimus and tensor fasciae latae. If this nerve is injured, a patient will exhibit Trendelenburg's sign, which means that when the patient stands on the injured leg only, the pelvis will drop on the unsupported side. This indicates that the gluteus medius and minimus on the supported side are not functional.

15. The correct answer is: **E** Pectineus

Pectineus is a muscle of the medial compartment of the thigh. Most of the muscles in this compartment are adductors and medial rotators, innervated by the obturator nerve. However, pectineus is the exception of the medial compartment--it's innervated by the femoral nerve, and it's a hip flexor. So, damage to the obturator nerve would not affect pectineus!

Adductor brevis, adductor longus, and gracilis are muscles of the medial compartment which adduct and medially rotate the thigh--they are all innervated by the obturator nerve. Obturator externus is also innervated by the obturator nerve--it is a lateral rotator found in the medial compartment of the thigh.

16. The correct answer is: **A** Adductor canal
Sartorius is the roof of the adductor canal. The femoral artery, femoral vein, saphenous nerve, and nerve to vastus medialis are all found in the adductor canal, deep to sartorius. So, if a needle pierced sartorius to enter the femoral vessels, the needle would be entering the adductor canal. The adductor hiatus is a space in the distal thigh, between the two insertions of adductor magnus. This is the place where the femoral vessels leave the adductor canal, travel to the posterior thigh, and become the popliteal vessels. There is no such thing as an adductor triangle.

The femoral canal is one of the structures in the femoral sheath--it usually contains a deep inguinal lymph node, called the gland of Cloquet. This canal opens to the abdominal cavity through the femoral ring, so a femoral hernia could pass into the femoral canal through the femoral ring. Remember: the femoral vein and artery are contained in the femoral sheath, but NOT in the femoral canal!

17. The correct answer is: **A** Obturator

An obturator hernia is a protrusion of a loop of bowel through the obturator canal. This is exactly what is being described here, with a loop of ilium passing inferiorly, posterior to the superior pubic ramus. A femoral hernia is a protrusion of abdominal viscera through the femoral ring into the femoral canal. It often appears as a tender mass in the femoral triangle, inferolateral to the pubic tubercle.

A direct inguinal hernia leaves the abdominal cavity medial to the inferior epigastric artery and protrudes through the posterior wall of the inguinal canal. It will be felt superior to the pubic tubercle, and it usually does not enter the scrotum. An indirect inguinal hernia leaves the abdominal cavity lateral to the inferior epigastric vessels and enters the deep inguinal ring. It will usually traverse the entire length of the inguinal canal and enter the scrotum. It should also be palpated superior to the pubic tubercle.

Lumbar hernias are hernias through the lumbar triangle, which is bordered medially by the latissimus dorsi, laterally by the external abdominal oblique, and inferiorly by the iliac crest.
18. The correct answer is: \textbf{B} Femoral

The femoral nerve lies between the iliacus and psoas major muscles. So, if a surgeon pulls these muscles apart with a retractor, the femoral nerve can be easily injured. This patient’s symptoms match with an injury to the femoral nerve. Because the quadriceps are denervated, she cannot extend her knee. The femoral nerve also innervates powerful hip flexors like pectineus, rectus femoris, part of iliopsoas, and sartorius. With these muscles denervated, she can't flex her hip well. Finally, consider cutaneous innervation—the anterior cutaneous branches of the femoral nerve supply cutaneous sensation to the anterior thigh, and the saphenous nerve (which is a branch of the femoral nerve) supplies cutaneous sensation to the medial leg. This is exactly where she is experiencing analgesia. So, everything here points to a femoral nerve injury.

The obturator nerve innervates the medial compartment of the thigh—an injury to this nerve would cause weakness in adduction and medial rotation. The sciatic nerve is found in the posterior thigh—it does not innervate any muscles directly, but its branches are the common fibular and tibial nerve. If the sciatic was damaged and these two branches were lost, there would be severe motor and sensory deficits throughout the posterior thigh and the leg and foot. The tibial nerve innervates the hamstrings, the posterior compartment of the leg, and the plantar foot. Damaging the tibial nerve would impair flexion at the knee and plantarflexion of the foot. The common fibular nerve has branches that innervate the lateral and anterior compartment of the leg and provide sensory innervation to the lower anterior leg and dorsum of the foot. An injury to this nerve would impair dorsiflexion of the foot, causing foot drop, and cause numbness on the dorsal foot.

19. The correct answer is: \textbf{E} Deep femoral artery

The adductor canal contains: the femoral artery, femoral vein, saphenous nerve, and nerve to vastus medialis. Adductor longus and magnus make the posterior boundary of the canal, and vastus medialis
is the lateral boundary of the canal. The roof of the canal is formed by sartorius.

The deep femoral artery branches from the femoral artery in the femoral triangle; it then travels deep in the thigh, posterior to adductor longus. So, it is deep to the canal. The deep femoral artery supplies blood to the posterior compartment of the thigh through perforating branches.

20. The correct answer is: **D** Femoral nerve

The femoral nerve innervates the quadriceps, which are the muscles that extend the knee. It also provides cutaneous innervation to the anterior thigh and medial leg. This means that the symptoms here fit with an injury to the femoral nerve. The superior gluteal nerve supplies gluteus minimus and medius--two muscles that are important abductors of the hip. These muscles stabilize the pelvis when walking.

The lateral femoral cutaneous nerve is a sensory nerve only--if this nerve was injured, the patient would have a loss of sensation over the lateral thigh but no motor weakness. The sciatic nerve is found in the posterior thigh--it does not innervate any muscles directly, but its branches are the common fibular and tibial nerve. If the sciatic was damaged and these two branches were lost, there would be severe motor and sensory deficits throughout the posterior thigh and the leg and foot. The obturator nerve innervates the medial compartment of the thigh--an injury to this nerve would cause weakness in adduction and medial rotation.

21. The correct answer is: **B** The femoral vein lies medial to the femoral artery

From lateral to medial, the structures in the femoral triangle are organized as follows: femoral nerve, femoral artery, femoral vein, and the femoral canal (with lymph node). So, the vein is medial to the artery. Remember--only the artery, vein, and canal are in the femoral sheath--the femoral nerve is not contained in the femoral sheath!
The external iliac veins do not join to form the inferior vena cava--the common iliac veins are the vessels that form the inferior vena cava. The IVC can be imaged radiographically--remember, you see the inferior vena cava in the axial CT scans of the thorax and abdomen.

22. The correct answer is: **B** Descending branch of the lateral circumflex femoral

The descending branch of the lateral circumflex femoral artery anastamoses with both the descending genicular branch of the femoral artery as well as the lateral superior genicular branch of the popliteal artery. These connections provide collateral circulation to the knee and leg. This could help blood flow around an occlusion to the proximal femoral artery. The anterior tibial recurrent artery is an artery that supplies the knee--it is a branch of the anterior tibial artery and it is not an artery that could help blood flow around an obstruction in the femoral artery. The descending genicular artery branches from the femoral artery just superior to the adductor hiatus. If the femoral artery was occluded, this artery would not recieve blood flow.

The medial circumflex femoral artery is a branch of the deep femoral that supplies blood to the medial thigh and hip. The perforating branches of the deep femoral artery provide blood to the posterior thigh. None of these arteries would allow blood to flow around an occlusion in the femoral artery--in fact, these arteries would not receive blood if the femoral artery was blocked.

23. The correct answer is: **E** Quadriceps femoris

This patient cannot extend her knee, so her quadriceps muscle must be injured. Remember, the quadriceps is the major muscle responsible for extending the knee. Also, note that the quadriceps is innervated by the femoral nerve, which is the nerve that would be easily damaged by a penetrating injury to the femoral triangle.
Adductor magnus adducts the thigh; it is innervated by the obturator nerve. Although the obturator nerve might be damaged by an injury to the femoral triangle, the symptoms do not fit with a deficit of this nerve. Biceps femoris is innervated by the tibial nerve and common fibular nerve; gluteus maximus is innervated by the inferior gluteal nerve; gluteus medius is innervated by the superior gluteal nerve. All of these nerves are found in the posterior thigh, and they would not be related to an injury in the femoral triangle.

24. The correct answer is: C Obturator

With "scissor gait" there is overactive adduction of the thigh. So, you need to identify which nerve innervates the adductor compartment. And that nerve is the obturator nerve. The obturator nerve innervates the medial compartment of the thigh, including adductor longus, magnus, and brevis. If the obturator nerve was firing too much, the leg would be constantly adducting, causing the scissor gait.

The femoral nerve innervates the quadriceps muscles, which extend the leg at the knee. The inferior gluteal nerve innervates gluteus maximus, which is important for powerful extension of the thigh. The tibial nerve innervates the hamstrings, which flex the knee and extend the thigh. The tibial nerve also innervates the muscles of the posterior compartment of the leg, which plantarflex the foot.

25. The correct answer is: A Adductor longus

The femoral artery is superficial to adductor longus, while the deep femoral artery is deep to adductor longus. Since adductor longus is the posterior border of the adductor canal, this explains why the femoral artery is considered part of the adductor canal, while the deep femoral artery is not in the adductor canal. The deep femoral artery runs deep to the adductor canal, but immediately superficial to adductor brevis and magnus.
26. The correct answer is: **Medial circumflex femoral**

It is important to remember that the medial circumflex femoral artery supplies blood to the femoral neck. During fractures of the femoral neck, this artery may be ruptured, and the femoral neck will be deprived of blood. The perforating branches of the deep femoral artery supply the posterior compartment of the thigh, including the hamstrings. The inferior epigastric artery is a branch of the external iliac artery that supplies the lower abdominal wall. The internal pudendal artery is the major source of blood to the perineum. The lateral circumflex femoral artery supplies the lateral thigh and hip. Although it contributes to the circulation around the hip, the primary supply to the head of the femur usually comes from the medial femoral circumflex.

27. The correct answer is: **Saphenous**

The saphenous nerve is a branch of the femoral nerve. This nerve, and the nerve to vastus medialis, are the only nerves found in the adductor canal. So, it makes sense that one of these structures was injured. The saphenous nerve is a sensory nerve only; it supplies the skin on the medial side of the leg. The patient's symptoms, as well as the type of procedure done, both point toward an injury to the saphenous nerve.

The femoral nerve does not travel in the adductor canal -- it ends by branching superior to the adductor canal, in the femoral triangle. If this nerve was injured, the quadriceps would be impaired, and the patient would have difficulty extending at the knee. The ilioinguinal nerve is a branch of the lumbar plexus which innervates muscles of the lower abdominal wall. The medial sural cutaneous nerve is a branch of the tibial nerve, responsible for providing cutaneous sensation to the upper posterior calf. The obturator nerve innervates the medial, adductor compartment of the thigh. Neither the symptoms nor the location of injury suggest that any of these other nerves were damaged.