Gross Anatomy of the GLUTEAL REGION,

M1 - Gross and Developmental Anatomy
8:00 AM, October 29, 2008
Dr. Milton M. Sholley
Professor of Anatomy and Neurobiology

Anterior superior iliac spine
Greater trochanter
Gluteal tuberosity
Posterior superior iliac spine
Greater trochanter

Anterior view
Posterior view

Gluteal Region and Posterior Thigh

Gluteus maximus
Hamstrings
Tibial nerve
Gastrocnemius, medial head
Gastrocnemius, lateral head
Iliotibial tract
Semitendinosus
Semimembranosus
Biceps femoris, long head

Gluteus maximus
Hamstrings
Iliotibial tract
Semitendinosus
Semimembranosus
Biceps femoris, long head

Location and Attachments of Gluteus Maximus Muscle

Common peroneal nerve
Gastrocnemius, lateral head

Grant’s Atlas, 12th ed.
Fig. 5.22A, p. 380
Grant’s Atlas, 12th ed.
Fig. 5.22B, p. 381
Grant’s Atlas, 12th ed.
Fig. 5.22C, p. 381

Grant’s Atlas, 12th ed.
Fig. 5.25B, p. 384
Grant’s Atlas, 12th ed.
Fig. 5.25C, p. 385

Grant’s Atlas, 10th ed.
Fig. 5.23, p. 327
Grant’s Atlas, 10th ed.
Fig. 5.24, p. 328
Grant’s Atlas, 10th ed.
Fig. 5.40, p. 343
**Gluteal Muscles**

Gluteus maximus

Nerve: Inferior gluteal

Gluteus medius

Nerve: Superior gluteal

Gluteus minimus

Nerve: Superior gluteal

Lateral views of gluteal region-right side

**Layering of Gluteal Muscles**

Max

Med

Min

Maximus

Medius

Minimus

Lateral views of gluteal region-right side

Frontal view of gluteal region-right side

**Actions of Gluteal Muscles**

**Gluteus maximus**-

Powerful hip extension

(as in standing-up from a sitting position or climbing stairs)

**Gluteus medius/minimus muscle complex**-

Hip abduction

(or the opposite action - lateral balance of pelvis)

Other actions like those of the deltoid muscle

(the "deltoid of the hip")

**Gluteus Medius/Minimus Muscle Complex**

Gluteus medius

Gluteus minimus

Lateral views of gluteal region-right side

Paralysis of the Gluteus Medius/Minimus Muscle Complex causes a **Trendelenburg's Sign**

**Location and Attachments of Tensor Fascia Lata Muscle**

Tensor fascia lata muscle

Iliotibial tract

Nerve: Superior gluteal

Lateral view

Anterior view

The sacrotuberous and sacrospinous ligaments close off the greater and lesser sciatic notches to form the **Greater and Lesser Sciatic Foramina**

Posterior view
Short Rotator Muscles
(Syllabus-Topic E, page 193)

Piriformis—“the key to the gluteal region”

Grant’s Atlas, 12th ed.
Fig. 5.28A, p. 390

Posterior views

Grant’s Atlas, 12th ed.
Fig. 5.28C, pp. 391

From: Hollinshead’s Text, 5th ed.
Fig. 18-18, p. 364

Structures leaving the greater sciatic foramen:

**Above piriformis**
- Superior gluteal n, a & v

**Below piriformis**
- Inferior gluteal n, a & v
- Sciatic n
- Posterior femoral cutaneous n
- N to sup. gemellus & obturator int.
- Internal pudendal a & v
- Pudendal n

Structures entering the lesser sciatic foramen:
- N to obturator internus
- Internal pudendal a & v
- Pudendal n

Sciatic nerve

- **Two divisions**
  - Tibial
    - medial position
  - Common peroneal (fibular)
    - lateral position

  Both divisions usually pass inferior to piriformis.

Below piriformis, but deep to tendon of obturator int. and gemelli
- N to inf. gemellus & quadratus fem.

Structures entering the lesser sciatic foramen:
- N to obturator internus
- Internal pudendal a & v
- Pudendal n

What might happen to a person who has this variation and hypertrophies his/her piriformis because of repeated lateral rotation? Say, for example, from playing a lot of racketball.

87%
12%
1%
Don’t stick needles into the sciatic nerve!

Bursa
- A closed sac lined with synovial membrane and containing fluid, usually found in an area subject to friction; e.g., where a tendon passes over a bone.

Ischial bursa
(Gluteus maximus slides over ischial tuberosity)

Trochanteric bursa
(Gluteus maximus slides over greater trochanter)

Gross Anatomy of the POSTERIOR THIGH and POPLITEAL FOSSA

M1 Gross and Developmental Anatomy 9:00 AM, October 29, 2008
Dr. Milton M. Sholley
Professor of Anatomy and Neurobiology

Compartmentalization of the Thigh

Hamstring Muscles

From: Hollinshead’s Text, 6th ed. Fig.18-18, p. 364
Compartmental Innervations and Actions of Contained Muscles

Syllabus page 184

Pes anserinus

Combined tendons of:
- Sartorius
- Gracilis
- Semitendinosus

Dynamic Stabilizers of the Knee Joint

Iliotibial tract

Pes anserinus

Medial side

Lateral side

Popliteal fossa

Cutaneous nerves arising in the popliteal fossa

Peroneal communicating n

Medial sural cutaneous n

Lateral sural cutaneous n
Cutaneous nerves arising in the popliteal fossa
High origin of sural nerve

Major Segmental Innervation of Muscles Crossing Lower Extremity Joints

<table>
<thead>
<tr>
<th>Joint</th>
<th>Muscles crossing joint Anteriorly</th>
<th>Muscles crossing joint Posteriorly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hip:</td>
<td>Flexion</td>
<td>Extension</td>
</tr>
<tr>
<td></td>
<td>L2, L3</td>
<td>L4, L5</td>
</tr>
<tr>
<td>Knee:</td>
<td>Extension</td>
<td>Flexion</td>
</tr>
<tr>
<td></td>
<td>L3, L4</td>
<td>L5, S1</td>
</tr>
<tr>
<td>Ankle:</td>
<td>Dorsiflexion</td>
<td>Plantar flexion</td>
</tr>
<tr>
<td></td>
<td>L4, L5</td>
<td>S1, S2</td>
</tr>
</tbody>
</table>

Geniculate Anastomosis

Femoral/Popliteal Artery Angiograms

Normal
Bilateral occlusion of femorals