

# Anatomical Description of a Sciatic Ancillary Branch to the Gluteus Maximus

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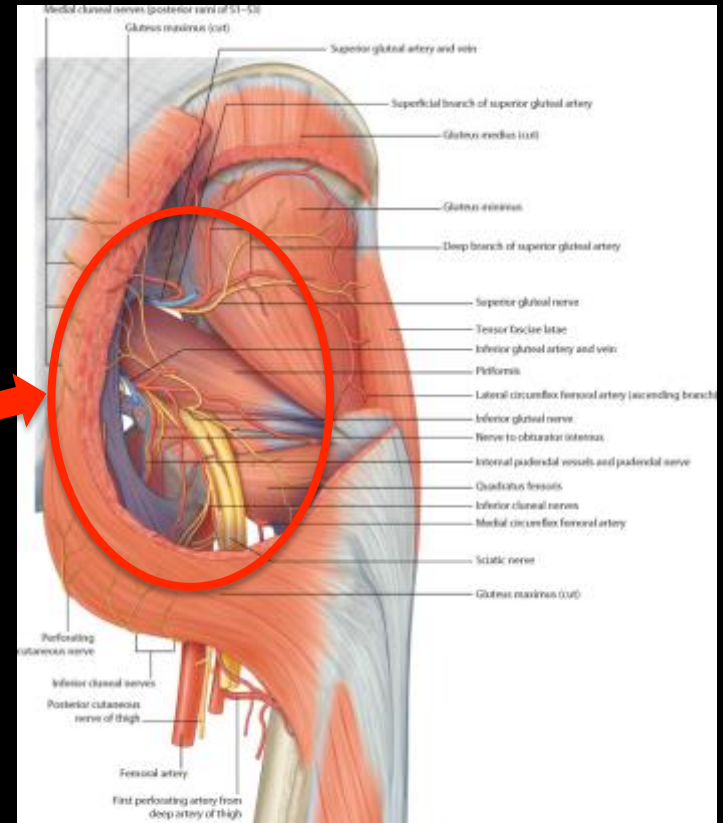
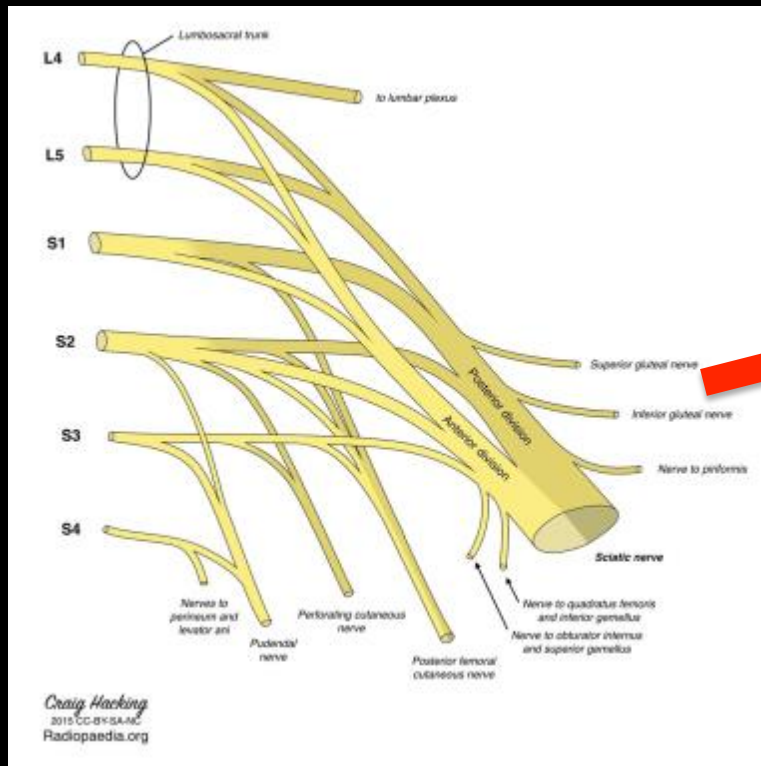


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# Background

- Innervation of the Gluteus Maximus Muscle (GMM) is supplied by the Inferior Gluteal Nerve (IGN).
- The Inferior Gluteal Nerve leaves the pelvis via greater sciatic foramen, inferior and anterior to the Piriformis muscle and lateral to the Sciatic Nerve.
- The IGN then divides into branches that pass posteriorly into the deep surface of the Gluteus Maximus Muscle.



# Background

- Ancillary neurologic branches innervating tissue may arise in a given population.
- Three case reports from around the globe have reported an ancillary branch from SN.
- An ancillary branch from the SN to the GMM observed during endoscopic release of the SN in the deep gluteal space has not been described.
- The objective of this study was to examine the presence of a Sciatic Ancillary Branch independent from IGN going to the GMM. The hypothesis states that an ancillary branch from the SN, independent from IGN, extends directly to the GMM in the deep gluteal space.

# Methods

- Thirteen hips from seven fresh frozen human cadaveric pelvises were analyzed.
- A Posterolateral approach was utilized with the GMM reflected from lateral to medial to expose the deep gluteal space. The deep gluteal space was examined by blunt dissection to identify the SN and potential presence of an ancillary branch.
- A digital caliper (Gaging Inside, San Clemente, California, USA; 0.01 accuracy) was used for all measurements. The following four measurements were recorded by the same investigator:
  - (I) SN diameter at the greater sciatic foramen
  - (II) Sciatic Ancillary Branch diameter at the origin of the SN
  - (III) length from the greater sciatic foramen to the point of origin of Sciatic Ancillary Branch on the Sciatic Nerve, and
  - (IV) Sciatic Ancillary Branch length from Sciatic Nerve to the initial point of contact to the Gluteus Maximus Muscle.

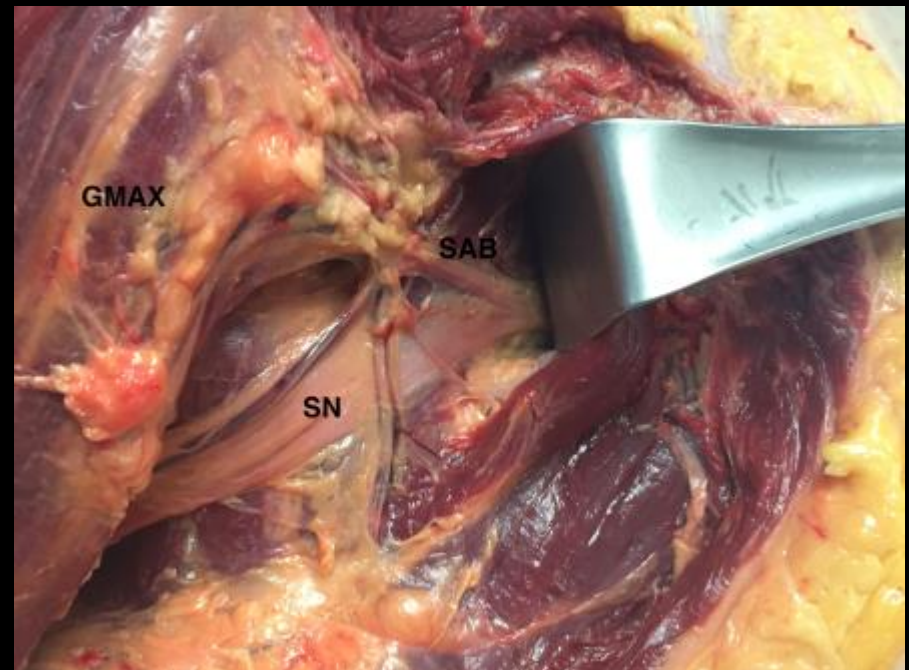
# Results

- Five of thirteen hips analyzed (38%) showed the presence of Sciatic Ancillary Branch. Two cadavers (4 hips) showed a SAB bilaterally. 1 hip presented a unilateral SAB identified in the right hip.

Results in the Hips with SAB

Hip	SN		SAB	
	Diameter (mm)	Diameter (mm)	Origin (mm)	Length (mm)
5	16.79	2.99	30.96	28.74
6	15.7	2.47	13.36	27.8
7	8.85	1.83	10.7	11.46
8	16.06	0.88	23.4	9.16
13	10.68	4.09	0.6	1.6
Mean	13.61	2.45	15.80	15.75
SD	± 3.69	± 1.2	± 11.73	± 10.44

Table 1 show the results in five hips with SAB of 7 human cadavers studied.



# Conclusion

The SAB was observed in 38% of the analyzed human cadaveric hips. The present findings provide a better understanding of the neurological variations in the deep gluteal space, which help to guide treatment decisions.

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