

Morphometry of the sciatic, tibial and common fibular nerves in man

[Morfometría de los nervios isquiático, tibial y fibular común en el hombre]

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The sciatic nerve, the longest of the human body, emerging from the pelvis through the greater sciatic foramen, dividing proximal to the knee joint in the tibial and common fibular nerves.

Frequently these nerves are affected by accidents, therefore, the repairing microsurgery requires detailed anatomical information in order to successfully complete these procedures. The sciatic nerve can be damaged by penetrating injuries in the posterior luxations of the hip joint, and by intramuscular injections, given incorrectly the gluteal region. Injury to the tibial nerve is rare as it is deeply located and protected. On the other hand, injury to the common fibular nerve is frequent due to its superficial position, leaving it exposed when it leaves the popliteal fossa and surrounds the fibular neck. The study was conducted due to scarce morphometric and stereologic information on these nerves. The sciatic tibial and common fibular nerves in five cadavers of individual male adults were dissected. Transverse section of each of the nerves were obtained at the level of the division of the sciatic nerve and of the origin of the tibial and common fibular nerves. Sections of 5 μ m were cut which were stained with H.E. We obtained quantitative information regarding morphometric measurements, determined the number of nerve fibres of each fascicle, as well as the number of existing fascicles in each nerve. We also determined by planimetry, through counting of points, the area of the fascicles that constituted each nerve. The number of fascicles in the sciatic nerve varied from 63 to 70 with an average of 66.8 (S.D. 2.59). In the tibial nerve the number of fascicles varied from 17 to 25 with an average of 21 (S.D. 2.92). The mean number of fibres in the sciatic nerve as of 64,535 (S.D. 3,193). In the tibial nerve it was 40,317 (S.D. 4,067) and in the common fibular nerve it was: 22,191 (S.D. 1,038). The median area of the sciatic, tibial and common fibular nerves

was: 11,42 mm² (S.D. 0,54), 8.27 mm² (S.D. 0.69) y 3.71 mm² (S.D. 0.30), respectively. With this study we hope to contribute to morphometric knowledge of these nerves, thereby providing anatomical as well as surgical support.

Common fibular nerve

Morphometry

Sciatic nerve

Tibial nerve