Is there a fascial canal for the lateral femoral cutaneous nerve?

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BACKGROUND: Meralgia paresthetica (MP) is characterized by symptoms of pain, numbness or itching at the anterolateral thigh, commonly caused by mechanical entrapment of the lateral femoral cutaneous nerve (LFCN) and associated with various sports and physical activities. The mechanical entrapment site is believed at the point where the nerve exits the pelvis around the anterior superior iliac spine (ASIS). The aim of this study was to reveal the fascial configuration around the LFCN in the inguinal and upper thigh region. METHODS: Thirty-six cadavers (18 females, 18 males; age range, 38-97 years) and 11 living subjects (7 females, 4 males; age range, 22-62 years) were studied. Thirty cadavers were used for microdissection and measurements. Six cadavers were prepared as the transverse (2 sets) and sagittal (4 sets) plastinated slices which were examined under a confocal laser scanning microscope. Ultrasound examination was performed in 11 healthy volunteers. This study was performed in accord with our institutional ethical guidelines and approved by the institutional ethics committees. RESULTS: (1) The LFCN coursed medially and inferiorly to the ASIS and pieced three tendinous or ligamental fibrous septa. It ran from the iliac fascial compartment to a tendinous canal bordered by the internal and external oblique abdominis, then to a compartment between the fascia lata and sartorius, and finally to a ligamental canal formed by 2-3 curtain strip-like ligaments which attached to the ASIS and were termed “the iliolata ligament” in this study. (2) The distances from the ASIS to the tendinous and ligamental canals were 2.15± 0.94 cm and 5.07±1.59 cm, respectively, and the angle between the two canals was 40 ± 23°. (3) The LFCN was visualized as a small mesh-like structure embedded in rigid tendinous/ligamental structructures under ultrasound scanning medially and inferiorly to the ASIS. CONCLUSIONS: The tendinous and ligamental canals may make the LFCN susceptible to mechanical entrapment. Their nature, configuration and location suggest that (1) any conservative management which can reduce the tension of the abdominal muscles and iliolata ligaments on the ASIS may alleviate the entrapment and (2) different approaches may be required to surgically expose the LFCN.