

Anatomical, histological and ultrasound study of retinaculum of the proximal attachment of hamstring muscles and the connective tissue surrounding the sciatic nerve

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BACKGROUND: The proximal attachment of the hamstring muscle's injury is very common in sports practice and it is usually associated to the sciatic nerve neuropathy (1-3). Recently, the presence of a retinaculum in the proximal attachment of hamstring muscles has been evidenced [4]. The aim of the present study is to further analyze the retinaculum and its fascial connections to the surrounding anatomic structures at the level of the ischial tuberosity by means of ultrasound, anatomy and histology.

METHODS: 20 cryopreserved lower limbs have been sequentially studied by means of anatomy (dissection and anatomical sections), histology (optic microscopy and fluorescence microscopy) and ultrasound images.

RESULTS: The hamstring muscles retinaculum can be visualized by ultrasound, anatomy and histology. Further study of the connective tissue of the region studied has evidenced a fascial-like tunnel around the sciatic nerve. Moreover, there exist fascial connections between the retinaculum and the sciatic nerve fascial tunnel.

CONCLUSIONS: The hamstring muscles retinaculum and the sciatic nerve fascial tunnel provide stability to the subjacent structures. The fascial connections between the hamstring muscles retinaculum and the sciatic nerve fascial tunnel could explain why the injuries of the hamstring muscles proximal attachment and the sciatic nerve neuropathy are frequently related. The possibility to visualize the retinaculum by ultrasound could be the first step to analyze the implications of this structure in patients.

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