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Anatomical Investigation of Superficial Fascia Relationships with the Skin and Underlying Tissue in the Greyhound Rump, Thigh, and Crus

Authors : Oday A. Al-Juhaishi, Sa`ad M. Ismail, Hung-Hsun Yen, Christina M. Murray, Helen M. S. Davies

Abstract : The functional anatomy of the fascia in the greyhound is still poorly understood, and incompletely described. The basic knowledge of fascia stems mainly from anatomical, histological and ultrastructural analyses. In this study, twelve specimens of hindlimbs from six fresh greyhound cadavers (3 male, 3 female) were used to examine the topographical relationships of the superficial fascia with the skin and underlying tissue. The first incision was made along the dorsal midline from the level of the thoracolumbar junction caudally to the level of the mid sacrum. The second incision was begun at the level of the first incision and extended along the midline of the lateral aspect of the hindlimb distally, to just proximal to the tarsus, and, the skin margins carefully separated to observe connective tissue links between the skin and superficial fascia, attachment points of the fascia and the relationships of the fascia with blood vessels that supply the skin. A digital camera was used to record the anatomical features as they were revealed. The dissections identified fibrous septa connecting the skin with the superficial fascia and deep fascia in specific areas. The presence of the adipose tissue was found to be very rare within the superficial fascia in these specimens. On the extensor aspects of some joints, a fusion between the superficial fascia and deep fascia was observed. This fusion created a subcutaneous bursa in the following areas: a prepatellar bursa of the stifle, a tarsal bursa caudal to the calcaneus bone, and an ischiatic bursa caudal to the ischiatic tuberosity. The evaluation of blood vessels showed that the perforating vessels passed through fibrous septa in a perpendicular direction to supply the skin, with the largest branch noted in the gluteal area. The attachment points between the superficial fascia and skin were mainly found in the region of the flexor aspect of the joints, such as caudal to the stifle joint. The numerous fibrous septa between the superficial fascia and skin that have been identified in some areas, may create support for the blood vessels that penetrate fascia and into the skin, while allowing for movement between the tissue planes. The subcutaneous bursae between the skin and the superficial fascia where it is fused with the deep fascia may be useful to decrease friction between moving areas. The adhesion points may be related to the integrity and loading of the skin. The attachment points fix the skin and appear to divide the hindlimb into anatomical compartments.

Keywords : attachment points, fibrous septa, greyhound, subcutaneous bursa, superficial fascia
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