

Fasciocytes: specialized fibroblast-like cells that secrete the hyaluronan-rich matrix in fascial tissue

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The presence of hyaluronan (HA) in samples of fascia lata were determined in eight volunteers undergoing elective surgical procedures at the Orthopedic Clinic of Padova University. The methods used were: Alcian Blue staining with differential concentrations of the electrolyte MgCl₂, immunohistochemistry with anti-HABP (HA-binding protein) and transmission electron microscopy (TEM). In additional biochemical studies, we extracted and quantified HA in fascial tissue using an HA assay (Biocolor). The results demonstrated the rich presence of HA within fascia. HA forms thin layers throughout the various fascial fibrous layers. The quantification assay documented a mean value of 40 μ g HA/g in fascia. Histological and TEM analyses demonstrated the presence of two different types of stromal cells within fasciae: apparent fibroblasts and some modified fibroblast-like cells with specialized functions of HA synthesis and secretion. We termed these cells "fasciocytes". They may represent a new class of cells not previously recognized. This study confirmed that copious levels of HA occur within fascia, and provide quantification for the first time. In future studies, it will be important to compare these results in tissue from patients with myofascial pain and with rheumatic diseases.

Keywords

Fascia, connective tissue, hyaluronan, myofascial pain, fasciocytes