

Does Patients with Ehlers-Danlos Syndrome and/or Hypermobility Syndrome have Reduced Number of Contractile Cells in Fascia?

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BACKGROUND Ehlers-Danlos Syndrome (EDS) as well as Hypermobility Syndrome (HMS) are among other things characterized by increase joint mobility and - depending on the condition - also by hyperextensibel skin and broad papyraceous scar formation. Also decreased proprioception may be present.

A negative correlation between density of myofibroblasts and joint mobility has been reported from conditions such as Palmar Fibromatosis, Plantar Fibromatosis, and Frozen Shoulder.

We hypothesize that fascia and/or joint capsules from persons with hypermobility lack contractile elements and that this could be part of the impaired proprioception and therefore predispose to the increased prevalence of osteoarthritis.

METHODS Ten persons with EDS of the hypermobile type (EDS-HT) fulfilling the Villefranche criteria, 10 persons with general joint hypermobility (GJH) – i.e. Beighton Score ≥ 5 of nine tests – fulfilling the criteria for HMS, 10 persons with GJH without symptoms, and 16 normals controls will be included. Tendon and fascia biopsies are taken a) during knee surgery as samples cut from the infra-patellar ligament, and b) the knee joint capsule and c) in local anesthesia from the distal third part of the Fascia Lata at the lateral part of both thighs.

The specimens are placed in 5% neutral buffered formalin and finally embedded in paraffin. Samples blinded with respect to the identity and clinical situation of the person /patient will be analyzed immunohistochemically for the presence of myofibroblasts using a monoclonal antibody for alpha-smooth muscle actin (cat. no. AM128, BioGenex) as well as a monoclonal antibody for vimentin (cat. no. V2258, Sigma-Aldrich). Density of stained areas will be quantified by use of high-resolution light microscope (Zeiss Axiophot) connected with a digital image analysis system (Diskus Vers. 4.0).

RESULTS Pilot studies confirm that samples can be taken, transported and analyzed as intended.

CONCLUSION The prerequisites for analysing fascia and tendons from patients with EDS-HT, HMS is present.

REFERENCE

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