Comparison of the equine and human fascial system

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BACKGROUND: Clinical perspective of the equine fascial system is recognized and multiple therapists are treating fascia likewise in human treatments. Fascial system of the equine haven’t been thoroughly investigated and exposed nor functional meaning of the layers hasn’t been discussed yet. Fascial system of the human has been under magnification few years now, amount of studies is increasing and the terminology is more defined than couple of years ago. Equine fascial system has been studied only very little and the amount of studies is minor. Purpose of the study was to highlight the properties of equine fascial system from the superficial to deep fascia and compare it to the human fascial system.

MATERIAL AND METHOD: 20 equine dissections, fresh cadavers; dissections were executed by 2 physiotherapists and group of assistants under supervision of the local veterinarian. 2013 and 2014 6-day-intensive cadaver labs (4+6 embalmed cadavers) in St Andrew’s University under supervision of PhD Gil Hedley. 1 fresh cadaver lab in Padova University under supervision of professor Carla Stecco, 2015. All dissections were executed in years 2012-2015. All dissections were carried out with approval by local authorities and performed in accord with national standards.

RESULTS: Anatomical variations are present in human and equine cadavers. Fascial system has various similarities and few exceptions. Force transmission and coordination seems to interact in both human and equine fascial systems. Architecture of fascial layers differs and it is bind with the anatomical exceptions such as foreleg anatomy. Areolar tissue is more present in equine cadavers, on the contrary in subcutaneous layer the amount of adipose tissue is fewer than in humans, especially in the limbs.

CONCLUSION: Bony and muscular anatomy differs from quadruped to biped therefore fascial force transmission and propulsion is directed differently. Overall equine and human fascial system equals. Amount of the areolar tissue and panniculus carnosus in equine anatomy might play a role in clinical point of view.

Images 1-3: Areolar fascia between superficial and deep fascia: (x60 zoom), left side horse (1), in the middle human (2). Right side areolar fascia of the horse. (3)