

## **Anatomic and ultrasound correlation of common painful points found during palpation of patients with lateral epicondylopathies.**

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**BACKGROUND** lateral epicondylopathies are the most incident musculotendinous degenerative process affecting the lateral epicondyle of the humerus. The main etiology is overuse of the muscles attaching to the lateral epicondyle, mainly the extensor carpi radialis brevis and the extensor digitorum. Also there exist other muscles in the epicondylear region that attach to the lateral supracondylar ridge and the lateral intermuscular septa and therefore they can contribute to tension generation about the epicondyle. Diagnosis is usually clinical, and it courses with a typical pattern of painful points upon palpation, that in some cases evoke neuropathic pain upon compression. Our aim is to analyze if typical painful points found in a clinical setting correlate with the lateral intermuscular septa and other fascial elements, and their relation to neural structures.

**METHODS** painful points on the lateral aspect of the arm and elbow where examined in 10 patients with lateral chronic epicondylopathies. Distance between the lateral epicondyle and these painful points were measured. After, these measures where used to mark the points on 10 cadaveric upper extremities. These points where analyzed by ultrasound, and injected with dye using ultrasound guidance, and then processed by stratigraphic gross anatomy dissection. Relation between anatomical structures and fascial elements where analyzed.

**RESULTS** 3 painful points where commonly found in patients with lateral epicondylopathies. In cadaveric specimens they correspond to points where the radial nerve and its sensory divisions are in contact with fascial structures. In the first point the radial nerve crosses the lateral intermuscular septa and also the inferior lateral brachial cutaneous nerve divides off the radial nerve and crosses the deep fascia. In the second point the posterior antebrachial cutaneous nerve crosses the deep fascia. The third point correlates with the course of the radial nerve within the fascial plane between the brachioradialis and brachialis muscle.

**CONCLUSION:** 3 of the painful points commonly found during palpation in patients with lateral epicondylopathies correspond to points where the radial nerve and its sensory divisions are in direct relation with specific fascial elements. We believe that when muscles act on these fascial elements, tension could be also generated against the neural structures described.