THERAPY Solutions

Physical Rehabilitation & Sports Medicine

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Dear Doctor,

Thank you for your continued support!

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Case Study

49 year old patient with a 3 year history of left lateral elbow pain

Subjective:
Patient reports chronic, episodic lateral elbow pain since 3 years. Her pain started for no apparent reason and is gradually worsening. Pain is provoked with activities that involve gripping and forearm pronation & supination. Pain eases with rest. She describes her pain as a deep ache; there is no burning quality to it. She denies any paresthesia into the left UE. There is no history of neck pain and there is no pain at night.
Interpretation: lateral elbow pain can be caused by lateral epicondylitis. However we have to consider the following differential diagnoses: cervical radiculopathy (C6 and/or C7), Dorsal interosseus nerve entrapment as it passes through the arcade of Frohse; humero-radial joint afflictions (DJD [primary >40 y.o, secondary < 40 y.o], Panner's (4-10 y.o), osteo chondrosis dissecans (15-25 y.o);symptomatic plica, chondromalacia, loose bodies (sudden sharp pain), etc…) and postero-lateral instability (post traumatic rupture of the lateral ulnar collateral ligament). Since patient doesn't have a history of neck pain and denies any paresthesia in the left UE a cervicogenic diagnosis is less likely.

Objective:

- ✓ Palpation before the function test: no swelling; skin temperature around the elbow joints is not elevated.

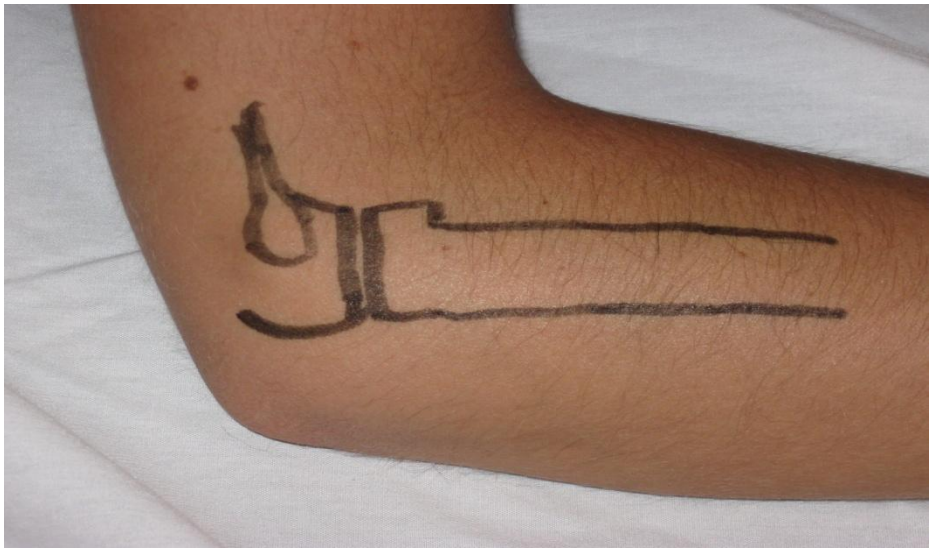

Fig 1: bony surface anatomy: lateral supracondylar ridge; lateral epicondyle; capitulum & radius

- ✓ C-spine screening: C-spine ROM is WNL and no elbow pain can be provoked with c-spine movements (not even when sustained at the end ranges); the quadrant tests are negative. The Upper Limb Neuro Tension Test via the radial nerve does not reproduce patient's symptoms. *Interpretation: Cervicogenic involvement and peripheral nerve entrapments are unlikely.*
- ✓ Shoulder screening: negative
- ✓ Elbow PROM: passive elbow flexion is WNL with a normal 'soft'; 'tissue approximation' end feel and provokes patient's lateral elbow pain; this test is repeated with the forearm in pronation and with the forearm in supination: patient reports more pain when the forearm is prepositioned in pronation; passive elbow extension is WNL with a normal 'firm' end feel and a normal carrying angle, but again patient reports that the pain intensity changes depending on prepositioning in pronation or supination. *Interpretation: in case the humero-ulnar joint is involved prepostionining in ponation or supination would not alter the pain. Involvement of the humero-radial joint is more likely in this case.* Passive pronation and supination are WNL with pain at end ROM (normal end feel). Again pain changes depending on prepositioning of the elbow in flexion or extension. The passive valgus test in 30˚ elbow flexion is stable and pain free, but after sustaining this valgus pressure for about 30 seconds pain is provoked in the lateral elbow.
- ✓ Wrist screening: negative
- ✓ Resistive tests: pain can be provoked with resistive wrist extension and resistive radial deviation as well as with resistive ulnar deviation. In addition, resistive finger extension 2 and 3 reproduces patient's pain. All these tests

become pain free when performed under radial traction (creating space between the radial head and the capitulum) (see fig 2 &3).

✓

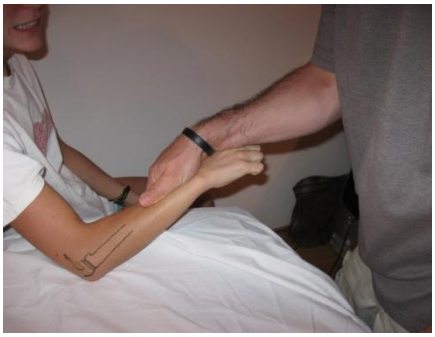

Fig 2: patient performs resisted wrist extension and radial deviation up to the pain against the clinician's forearm.

Fig 3: same test under traction (via radius): does the pain change?

- ✓ *Interpretation: resistive wrist extension as well as resistive ulnar and radial deviation increases the pressure in the humero-radial joint, thus possibly causing pain. When the same tests are performed under radial traction the pressure is kept neutral while the wrist extensors contract. In case patient would reports pain to be unchanged under radial traction we would suspect lateral epicondylitis. Conversely, in case the patient reports less pain or no pain under traction we would suspect humero-radial joint involvement.* Resistive pronation, supination, elbow flexion and extension are pain free and strong.
- ✓ Special tests: accessory joint play testing demonstrated hypo mobility with radial traction and postero-lateral glides at the humero-radial joint and the proximal radio-ulnar joint as compared to the right. The plica test (Walls test) was negative.

Lateral elbow pain caused by Humero-radial joint hypo-mobility

Treatment: patient is treated with manual therapy for the humero-radial and proximal radio-ulnar joints:

- ✓ Traction mobilization for the humero-radial joint (in the maximal loose packed position*and pre-prositioned in extension/ pronation)
- ✓ Traction mobilization for the proximal radio-ulnar joint(in the maximal loose packed position and pre-prositioned in extension/ pronation)

- ✓ Postero-lateral glides and slides for the humero-radial joint and the proximal radio-ulnar joint prepositioned in extension and pronation (coupled movements). (Fig 4)

Fig 4: postero-lateral glide for the proximal radio-Ulnar joint : ulna is stabilized with one hand via the Olecranon. (To mobilize the humero-radial joint the humerus is stabilized using a sand bag).

- ✓ Antero-medial glides and slides for the -radial joint and the proximal radio-ulnar joint prepositioned in flexion and supination (coupled movements).

Fig 5: antero-medial glide for the proximal radio-Ulnar joint : ulna is stabilized on the table (via the olecranon. (To mobilize the humero-radial joint the humerus is stabilized using a sand bag.)

By testing resistive wrist extension – performing a mobilization and re-testing resistive wrist extension we found that this patient responded better to traction mobilizations (less pain and more strength) and less well to postero-lateral glide techniques. So during treatment and HEP we favored traction techniques.

- ✓ Ergonomics: we advised patient to pick up and lift objects with the forearm in supination (palm upwards) instead of in pronation. This will activate biceps and wrist flexors as opposed to brachio radialis and wrist extensors.
- ✓ Gradual strengthening elbow and wrist musculature (low load, high repetition below pain level) at the clinic and as a HEP.
- ✓ Patient is also instructed to perform self-mobilization of the elbow joints for about 2 minutes every two hours of the day

After 8 visits patient reports 80% decreased pain as compared to initially after which she was discharged from physical therapy with a HEP.

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Erik De Proost

*the Maximal Loose Packed Position is the position of the joint in which: joint surfaces have the least contact and joint capsule and ligaments are the most relaxed.