

### Case

- 48 y.o. lawyer
- Lateral epicondyle w/ radiation into the forearm
- Onset 2 weeks ago after doing DIY using hammer
- Sharp, aching & burning
- 7/10 at worst, 2/10 at best
- Progressively getting worse
- **Timing:** elbow stiff in morning, aware of it most of the time but worse w/ certain activities
- **AF:** gripping & lifting (e.g. briefcase) or shaking hands
- **RF:** Rest & ibuprofen

### Physical Examination Findings

- Very loose handshake, R elbow appears slightly swollen compared to L w/ no obvious deformity

#### Reflexes

- 1+ biceps & triceps bilaterally
- 2+ brachioradialis bilaterally

#### ROM

- **AROM:** Cx pain & restriction on R rotation
- **PROM:** R resisted pronation + extension caused pain on R lateral epicondyle
- **Grip strength:** caused pain on R lateral epicondyle

#### Myofascial & joint findings

- Tight extensors
- Tender & containing trigger points on R
- Restricted radial head

### Discussion

#### Working Dx:

- Wrist extensor tendinopathy (aka lateral epicondylalgia / tennis elbow)

#### Hx:

- Acute onset associated with repetitive use
- Some signs that it could still be inflammatory (*tendonitis*)
- at 2 weeks duration it'll be moving towards a *tendinosis* (degenerative)

#### What suggests this isn't a wrist extensor strain / sprain?

- Relieved by ibuprofen

#### What suggests this isn't a radial nerve entrapment?

- Character of pain isn't neurological
- Mechanical aggravating & relieving factors
- PROM findings suggest complaint is muscular

#### What suggests this isn't RA?

- Clear mechanical onset
- No symmetrical synovitis of the small joints of the hands & feet

#### What suggests this isn't elbow arthropathy?

- Elbow OA most commonly affects the radiocapitellar joint
- Pain is at the lateral epicondyle
- Clear mechanical onset
- ROM findings which suggest muscular involvement

#### Risk factors for poor prognosis:

- Worsening pain
- Prevented from exercising & performance of activities of daily living (ADLs)
- Aggravated by simple use (grip)

## Learning outcomes

### Dx of elbow pain

- **Posterior:** [1] Olecranon bursitis - inflammation of the bursa sac [2] Triceps tendinitis - inflammation of the tendon [3] Radial head fracture [4] Osteoarthritis - DJD

- **Anterior:** [1] Biceps tendinitis - inflammation of the tendon [2] Elbow flexor tendinitis - inflammation of the tendons [3] Ulnar collateral ligament (UCL) injury - medial ligament injury (throwing athletes) [4] Osteochondritis dissecans (OCD) - piece of bone & cartilage within the elbow breaks loose

- **Lateral:** [1] Tendinopathy of wrist extensor origin (tennis elbow) - inflammation of the tendon [2] Radial tunnel syndrome - compression of radial nerve as it passes through the forearm muscle [3] Lateral ulnar collateral (LUC) ligament- lateral side ligament injury

- **Medial:** [1] Golfer's elbow (medial epicondylitis) - inflammation of the tendon [2] Ulnar nerve entrapment - ulnar nerve compression as it passes through cubital fossa [3] Medial collateral ligament (MCL) injury - medial side ligament injury

### Pathophysiology of tendinopathy

- **Overuse:** microscopic damage that the body is unable to repair quickly enough

- **Age-related changes:** tendons becoming less elastic & more prone to injury, degenerative changes

- **Mechanical stress:** e.g. repetitive motion throwing a ball can cause stress on tendon of the shoulder & lead to rotator cuff tendinopathy

- **Inflammatory response:** tendon tissue is damaged, triggering inflammatory response, aka pain & swelling in affected area

- **Genetic factors:** e.g. certain genes have been associated w/ increased risk of developing achilles tendinopathy

- **Other:** diabetes & rheumatoid arthritis



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### Learning outcomes (cont)

#### Difference between tendonitis and tendinosis

- **Tendonitis:** (tendinitis) acute condition that results from inflammation of the tendon; caused by overuse, repetitive motion, or injury; **symptoms:** pain, swelling, & tenderness in the affected area; **treatment:** rest, ice, compression, & elevation (RICE), as well anti-inflammatory medications, mechanical therapy, & sometimes corticosteroid injections

- **Tendinosis:** chronic condition that results from degeneration of the tendon tissue; caused by repetitive motion or overuse over long period of time, w/o adequate time for rest & recovery; doesn't involve significant inflammation; **symptoms:** pain, stiffness, & weakness in the affected area; **treatment:** manual therapy to strengthen the affected area & improve flexibility, shockwave therapy, platelet-rich plasma injections, or surgery (severe cases)

#### Management

##### 6 week plan:

- Heat/ice to relieve pain
- Rest the arm & avoid aggravating sports/work
- Consider using orthosis (wrist brace)
- Analgesia for symptom relief: paracetamol or topical NSAIDs (ibuprofen gel)

##### If no response to treatment after 6 weeks:

- Reassess pt & consider alternative Dx
- Manual therapy: stretching & strengthening exercises for the wrist & forearm extensors, eccentric muscle training, massage, & ultrasound therapy

#### What are clinical prediction rules?

- CPRs help guide clinical decision-making by providing standardised approach to pt assessment & management
- Based on research & statistical analysis of clinical data to identify patterns & factors that are associated w/ specific diagnoses, outcomes, or responses to treatment

#### Clinical prediction rule, success probability managing pts w/ lateral epicondylalgia using mobilisation w/ movement & exercise

- Score of 0-4 indicates low success probability
- Score of 5-7 indicates a moderate success probability
- Score 8-10 indicates high success probability

