

# COMMON ELBOW INJURIES

## In The Athlete

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# COMMON SPORTS INJURIES of the ELBOW

## Disclosure

### Potential conflicts

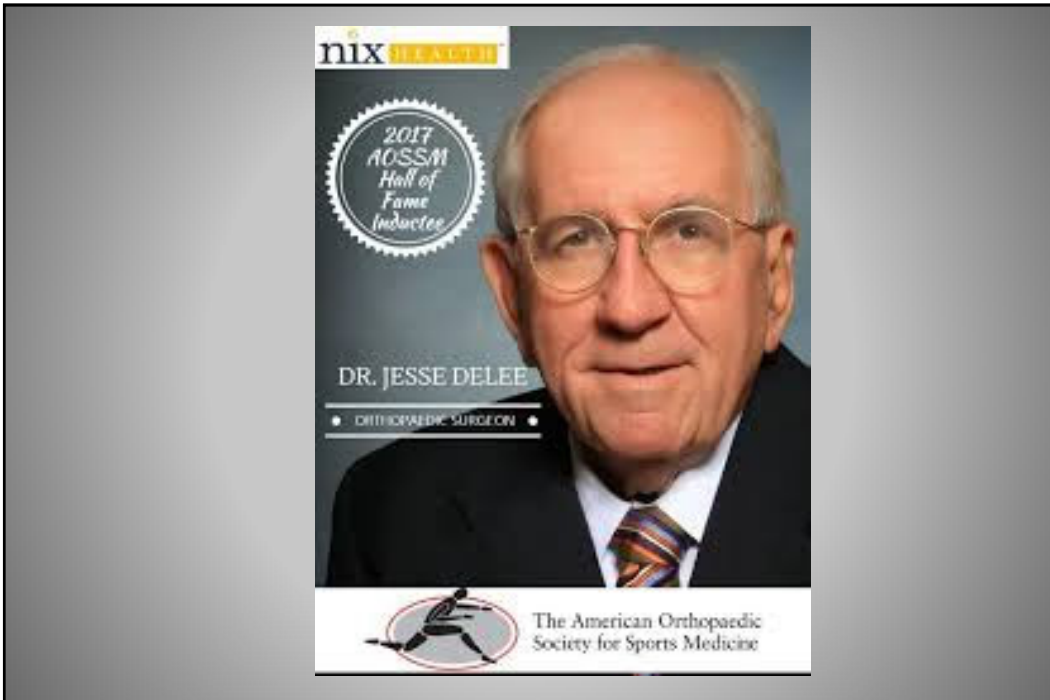
- Consultant – Tenex/Trice

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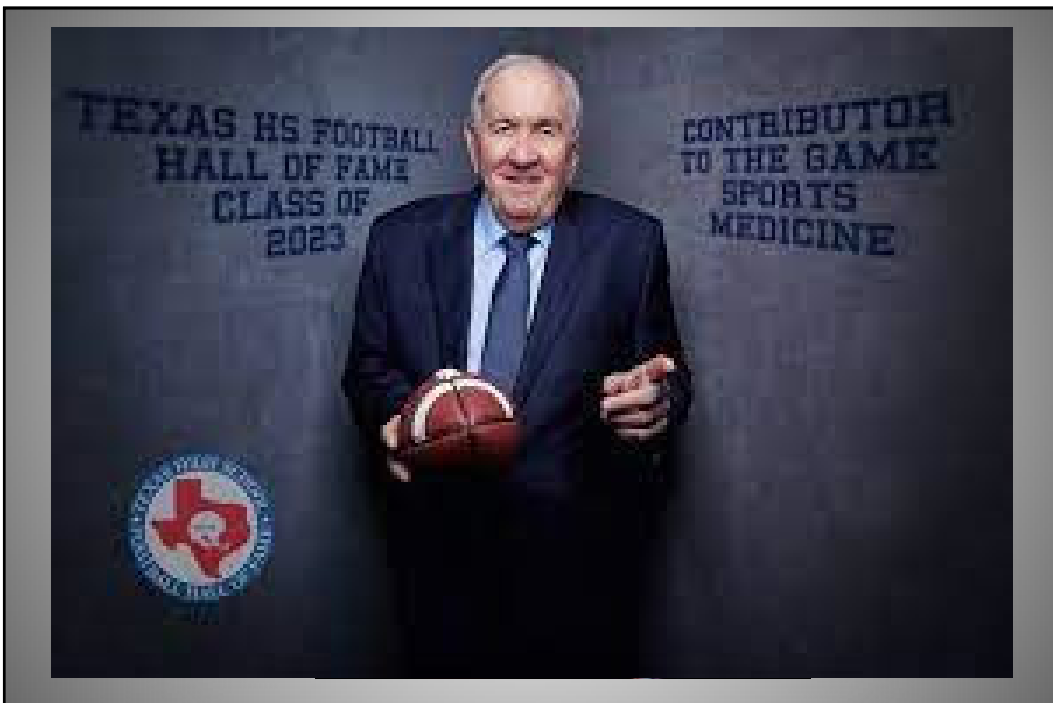


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## COMMON SPORTS INJURIES of the ELBOW

### OUTLINE

- Muscles/tendons
- Ligaments
- Articulation

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## COMMON SPORTS INJURIES of the ELBOW

### Diagnosis

- Lumify (Philips)



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## **COMMON SPORTS INJURIES of the ELBOW**

### **Muscles/Tendons**

- **Biceps**
- **Triceps**
- **Epicondylitis**

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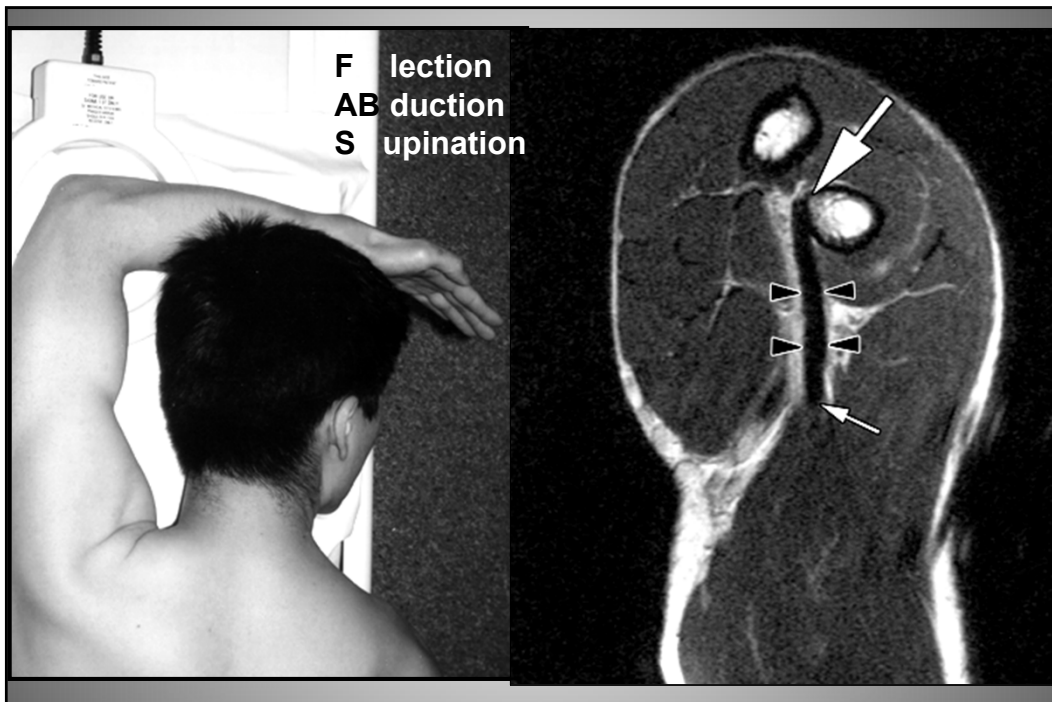
## **DISTAL BICEPS TENDON RUPTURE**

### **QUESTIONS**

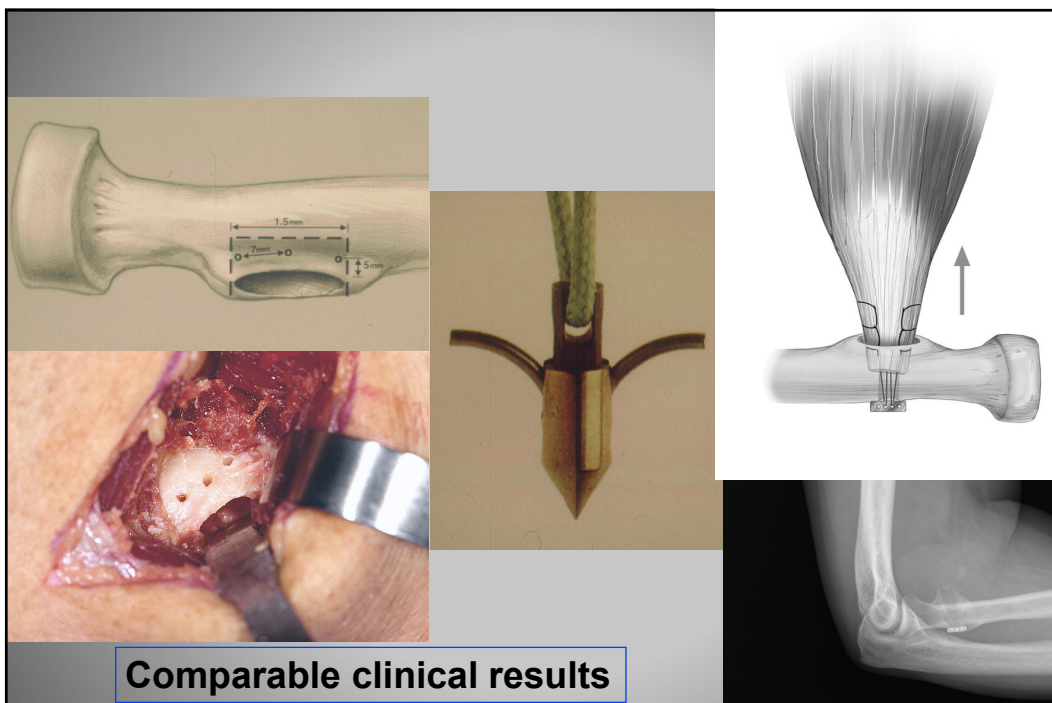
- **Diagnosis – how hard is it**
- **Does it have to be fixed**
- **Does technique matter**
- **How long to protect/ rehab**
- **If fixed, what can pt expect**

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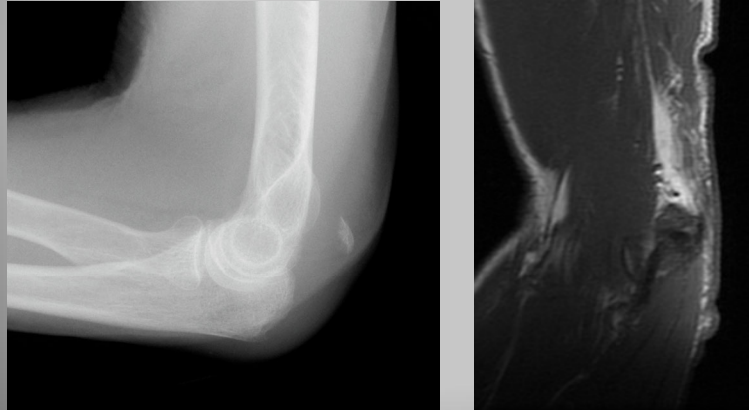
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# TRICEPS TENDON RUPTURE

## QUESTIONS

- **Diagnosis – Central attachment: MRI**

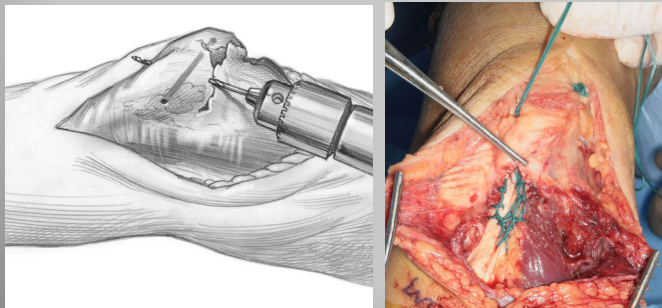


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# TRICEPS TENDON RUPTURE

## QUESTIONS

- **Diagnosis – Central attachment: MRI**
- **Does it have to be fixed - Yes**
- **How should it be fixed – Bone tunnels**



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## COMMON SPORTS INJURIES of the ELBOW

### Muscles/Tendons

- Biceps
- Triceps
- Epicondylitis

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## Epicondylitis: Where are we, really?

### Options

- Cortisone

Lateral epicondylitis: RCT, 165 pt ; FU = 1yr

- Eccentric exercises

VS

- Steroid injection

At one year the cortisone group statistically **inferior**

Coombes, et al JAMA, 2013

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## Epicondylitis: Where are we, really?

### Platelet Rich Plasma (PRP)

- **Current Concepts in Sports Med**

Popularity based on safety and attractiveness

Not on the scientific evidence of effectiveness



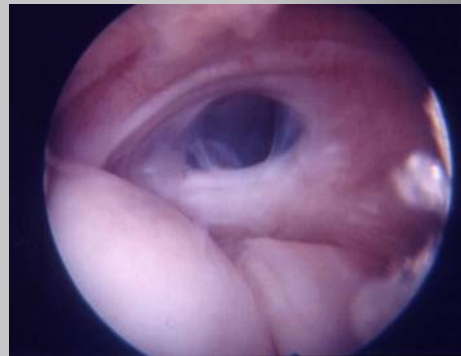
Hall, et al; JAAOS, 2010

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## Epicondylitis: Where are we, really?

### Arthroscopy

- **Effective: 80 – 90%**
  - Added value?
  - Cost effective?

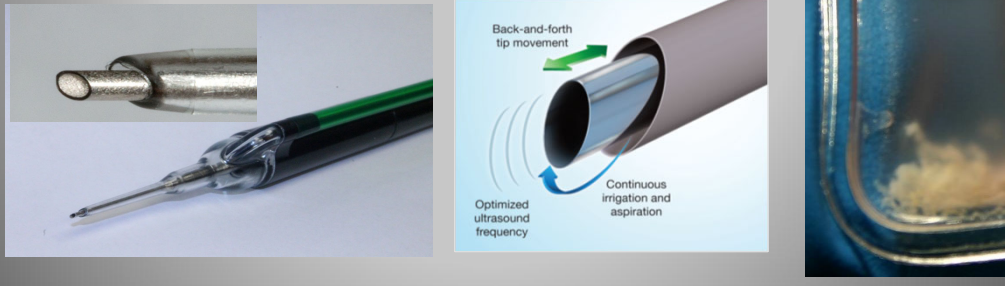


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## COMMON SPORTS INJURIES of the ELBOW

### Treatment • Ultrasound !

It removes the degenerative tissue  
Lessens the impact of the 'stage' of disease

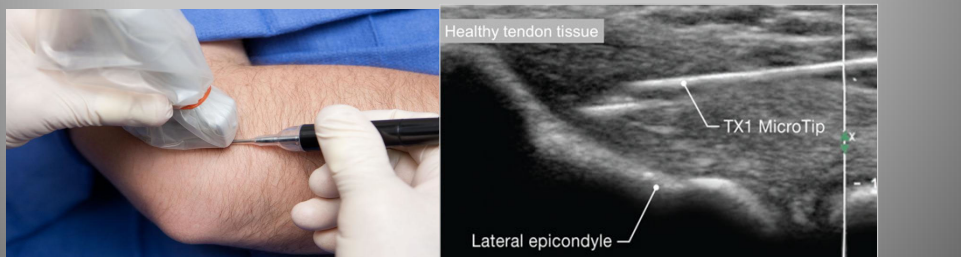


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## Epicondylitis: Where are we, really?

### Tx1

- **Technique**
  - Can be in office
  - Local anesthetic
  - Approx 40 – 60 sec of energy

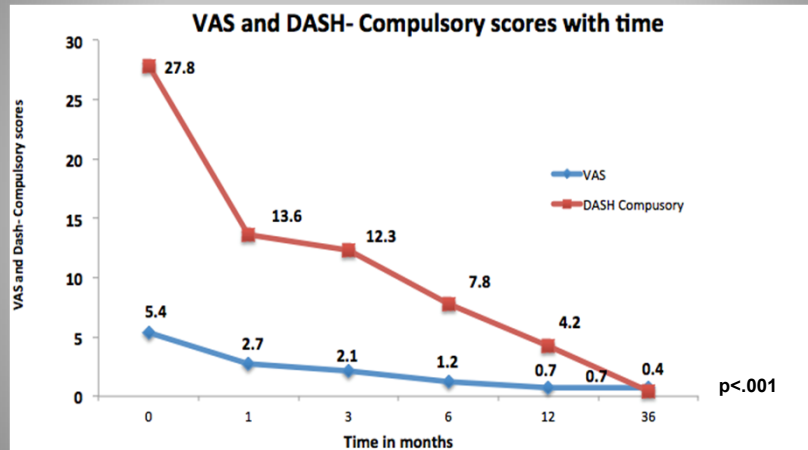


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# Ultrasound As a Treatment for Tendinopathy

## Effectiveness

Results: 3 years



20/20 patients satisfied

No device-related complications

No patient-related complications

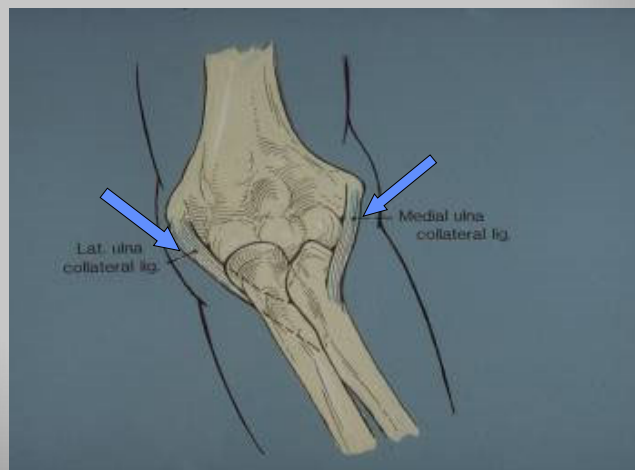
Koh, et al; AJSp Med, 2013,  
3 Year AJSM, 2015

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## COMMON SPORTS INJURIES of the ELBOW

### Ligaments

- MCL
- LCL

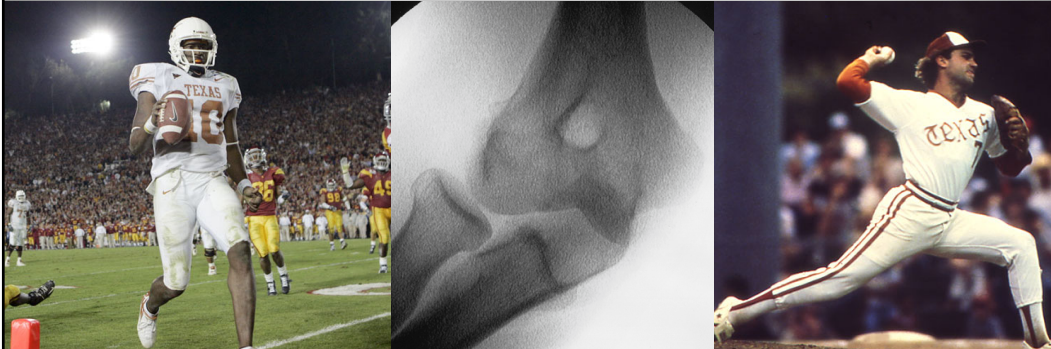


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## MCL Deficiency at the Elbow

### QUESTIONS

- Etiology? Spectrum
  - Single event; trauma
  - Repetitive; throwing

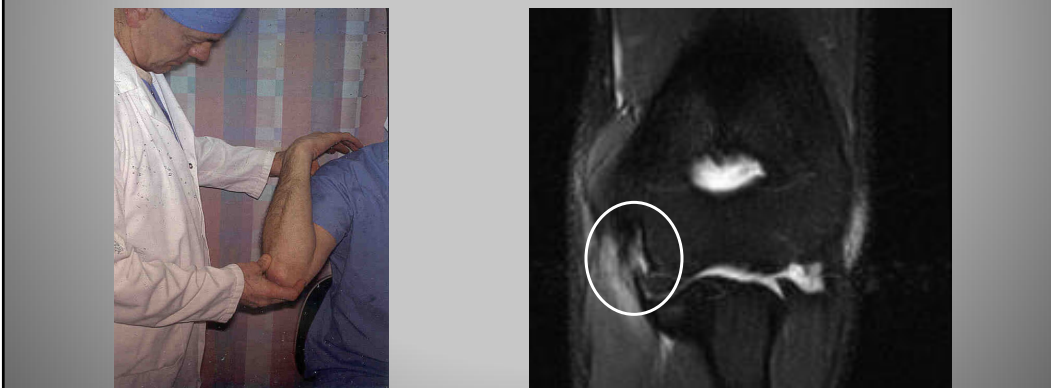


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## MCL Deficiency at the Elbow

### QUESTIONS

- Diagnosis – how hard is it



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## MCL Deficiency at the Elbow



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## MCL Deficiency at the Elbow

### QUESTIONS

- Does it have to be fixed
  - Trend to repair in the young
  - Limited information on non op rx
    - 45% heal without surgery
  - 75% non-throwers heal

Rettig, A; Am J Sp M: 2001

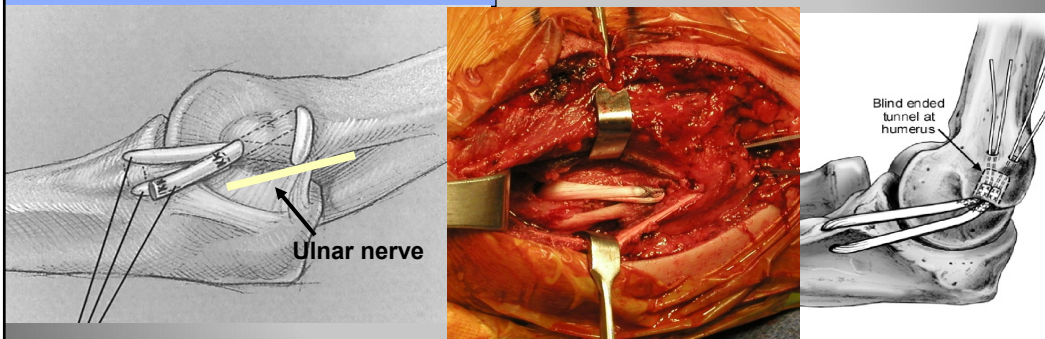
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## MCL Deficiency at the Elbow

Technique: **MUCL**

Docking concept preferred



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## MCL Deficiency at the Elbow

### QUESTIONS

- When to operate
- How to fix it
- Has the rehabilitation
  - No, still 12 months
- Expected outcome
  - Athlete: 70%
  - Non – athlete: 90%



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## COMMON SPORTS INJURIES of the ELBOW

### Articular

- Plica
- Osteophyte
- Articular – OCD
  - Radial head

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## COMMON SPORTS INJURIES of the ELBOW

### Plica

- Snapping easy
  - Rolls over the head in flexion (60 deg)
  - Snaps back when going into extension

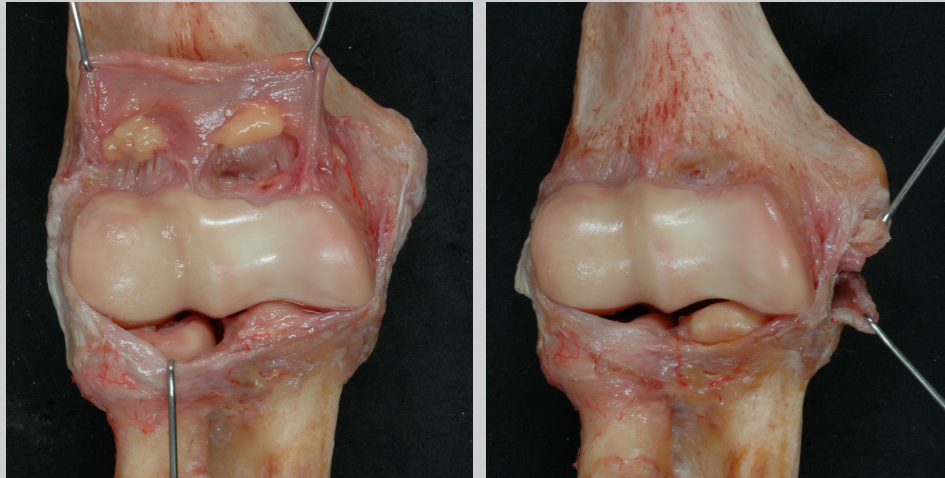
**BUT**

- May mimic epicondylitis !!!

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## COMMON SPORTS INJURIES of the ELBOW

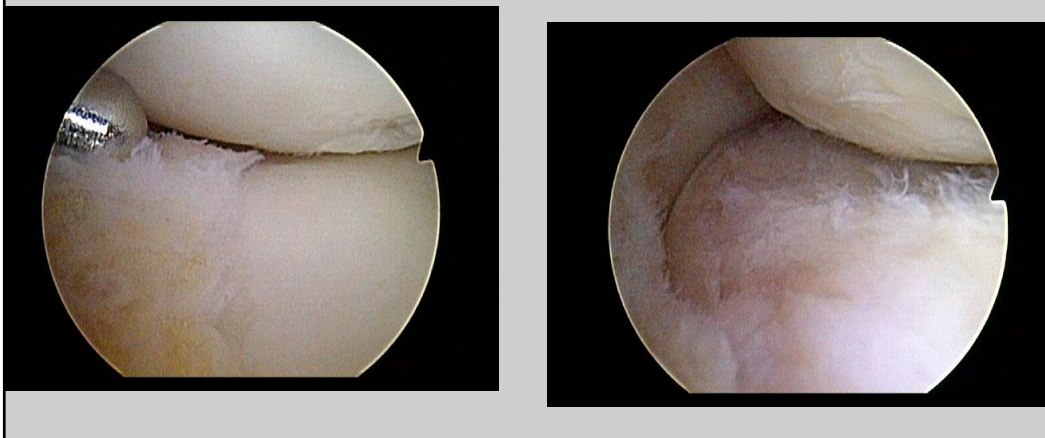
### Plica



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## COMMON SPORTS INJURIES of the ELBOW

### Plica



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## COMMON SPORTS INJURIES of the ELBOW

### Articular

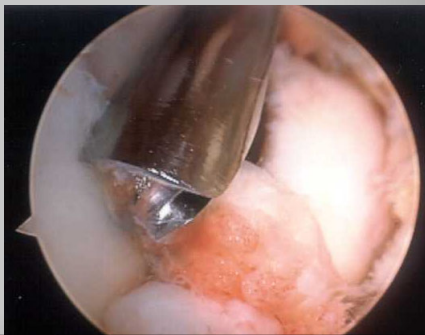
- Plica
- Osteophyte - impingement

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## COMMON SPORTS INJURIES of the ELBOW

### Impingement

- Symptoms – extension pain
- How much should be removed



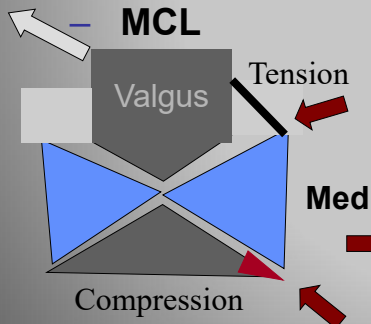
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## COMMON SPORTS INJURIES of the ELBOW

### Rationale

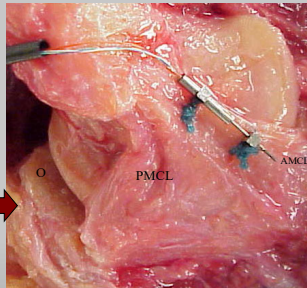
- **Valgus**

- Olecranon
- MCL



### Sensitivity

3 mm resection med corner increases lig strain!!



Kamineni, ElAttrache et al:  
JBJS, Am, 2005

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## COMMON SPORTS INJURIES of the ELBOW

### Articular

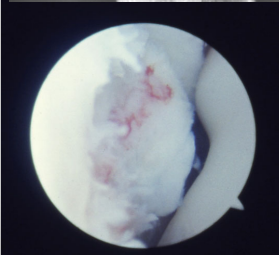
- Plica
- Osteophyte
- Articular - OCD

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# Osteochondritis of the Elbow

## How to Rx

- Intact cartilage – drill
- Flap – sew back down
- Detached – graft/ micro fx



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# Osteochondritis of the Elbow

## Beware!

- Do NOT allow mechanical sx to persist



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## COMMON SPORTS INJURIES of the ELBOW

### Articular

#### • Radial Head Fractures



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## COMMON SPORTS INJURIES of the ELBOW

### Articular

#### • Radial Head Fractures

**Prosthesis: 50% return to sport  
70 % same sport**



Jung, et al, JSES 2019

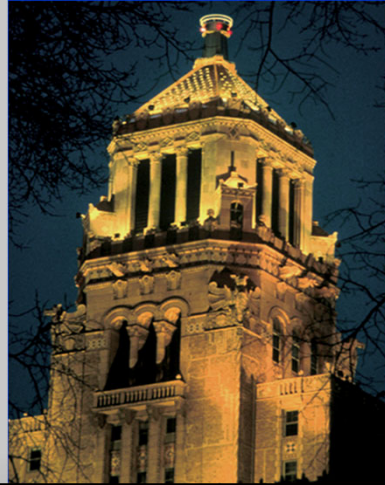
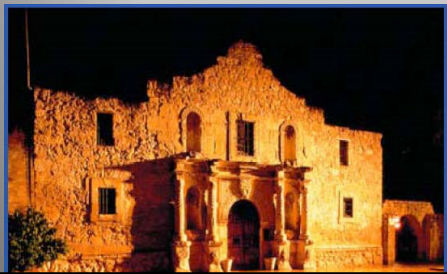
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## COMMON SPORTS INJURIES of the ELBOW

### Summary

- Spectrum of pathology
- Reliable rx options
- Know when to refer
- Know what to refer
- Know to whom to refer



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**Thank You**

*Elbow Bend Ranch, La Grange, Texas*

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# DISTAL BICEPS TENDON RUPTURE

## QUESTIONS

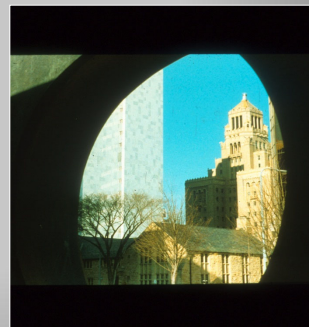
- **Diagnosis – how hard is it**
- **Does it have to be fixed**
- **Does technique matter**
- **How long to protect/ rehab**
  - Depends on security of repair
    - Immobilize: 3-4 days
    - Active assisted motion: 5-10 days
    - Against gravity: 10 -21 days
    - Progress to full activity 1-4 months

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## COMMON SPORTS INJURIES of the ELBOW Injuries to the Throwing Athlete

### Summary

- **Spectrum of pathology**
- **Reliable rx options**
- **Requires expertise**



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# Osteochondritis of the Elbow

## QUESTIONS

- When to treat
- How to treat
- When can pt return to sport



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## COMMON ELBOW INJURIES

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## TRICEPS TENDON RUPTURE

### QUESTIONS

- Diagnosis – Central attachment: MRI
- Does it have to be fixed - Yes
- How should it be fixed – Bone tunnels
- How long is the rehab period - **1 year!!!**
- What can pt expect - >90/90, if acute

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## DISTAL BICEPS TENDON RUPTURE

### QUESTIONS

- Diagnosis – how hard is it
- Does it have to be fixed
- Does technique matter
- How long to protect/ rehab
- If fixed, what can pt expect
  - > 90% are >90% normal

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## DISTAL BICEPS TENDON RUPTURE

### QUESTIONS

- Diagnosis – how hard is it
- Does it have to be fixed? No and Yes (Politics?)
  - Lose ~ 10 -15% flexion strength
  - Lose > 50% supination strength
  - Fatigue pain

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# Osteochondritis of the Elbow

## QUESTIONS

- When to treat
- How to treat
- **When can pt return to sport**
  - When healed
  - When asymptomatic with progressive sports related activity

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# DISTAL BICEPS TENDON RUPTURE

## QUESTIONS

- Diagnosis – how hard is it
- Does it have to be fixed
- Does technique matter
- How long to protect/ rehab
- **If fixed, what can pt expect**
  - > 90% are >90% normal

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# DISTAL BICEPS TENDON RUPTURE

## QUESTIONS

- Diagnosis – how hard is it
- Does it have to be fixed
- Does technique matter
- How long to protect/ rehab
- If fixed, what can pt expect
  - > 90% are >90% normal

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# ARTHROSCOPY of the ELBOW

## Osteochondritis Dissecans

## SUMMARY



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## Epicondylitis: Where are we, really?

### QUESTIONS

- What are the trends
- What works?
- Anything new?

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## Epicondylitis: Where are we, really?

### Tx1

- Results – cost effectiveness ?
  - Worker's compensation analysis
    - Tx1 vs Surgery
      - Earlier return to work
      - Less expensive than surgery
    - Saving for definitive surgery ~ \$16,000

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# MCL Deficiency at the Elbow

## QUESTIONS



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## Collateral Ligaments and Elbow Instability

### Considerations

- **Repair vs reconstruction:**  
If tissue adequate – repair  
Use #5 non-absorbable suture

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# THANK YOU



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## ARTHROSCOPY of the ELBOW **Osteochondritis Dissecans**

### TREATMENT

- **Type I: stable = Rest**
- **Type II -**
  - **Loose body, smooth bed: excise**
  - **Detached, rough bed: debride**

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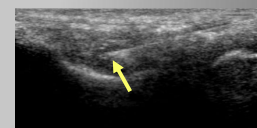
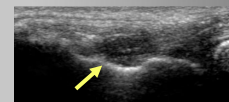
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## TENDONOPATHY at the ELBOW

### Rationale for this Treatment/Study

#### Ultra sound Dx/Rx

- **Accurate diagnosis, localization**
  - Improves with experience
- **Intervention - Indications**
  - Alternate to steroid injection
  - Alternate to surgical intervention
- **Unique attribute**
  - Removal of diseased tissue



**Major advance – if safe and cost effective**

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