COMMON ELBOW INJURIES
In The Athlete

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Common Elbow Injuries in the Athlete

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COMMON SPORTS INJURIES of the ELBOW

OUTLINE

- Muscles/tendons
- Ligaments
- Articulation

COMMON SPORTS INJURIES of the ELBOW

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

COMMON SPORTS INJURIES of the ELBOW

Muscles/Tendons

- Biceps
- Triceps
- Epicondylitis

BICEPS TENDON INJURY

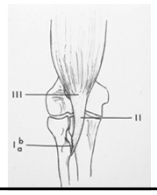
Partial Tear

- History - Presentation: acute/chronic
  - Pain with repetitive rotation
- Physical - Mild flexion weakness
  - Moderate supination weakness
  - Crepitus may be present

BICEPS TENDON INJURY

Classification

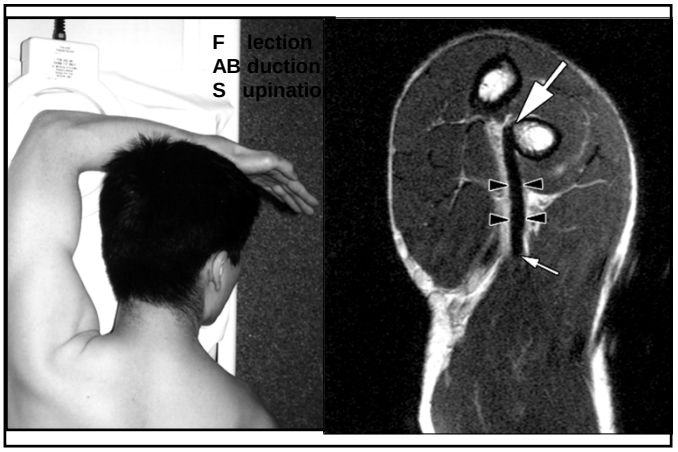
- Musculotendinous - Rare
- Intratendinous - Rare
- Detachment
  - partial - Uncommon
  - complete



DISTAL BICEPS TENDON RUPTURE

Diagnosis

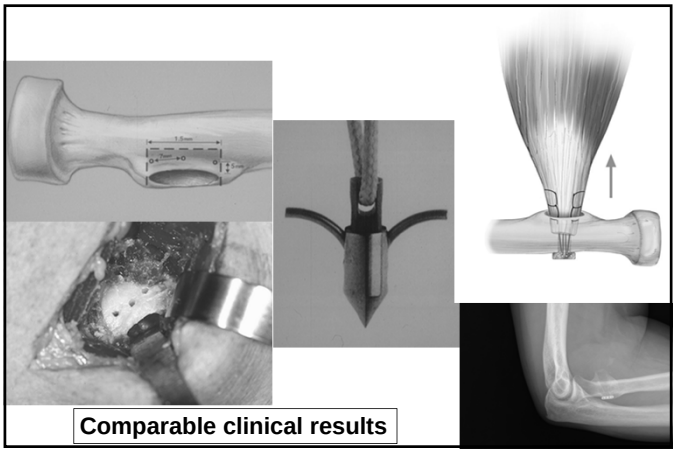
- Clinical
  - Weakness
    - Supination



DISTAL BICEPS TENDON RUPTURE

QUESTIONS

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



Comparable clinical results

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

DISTAL BICEPS TENDON RUPTURE

QUESTIONS

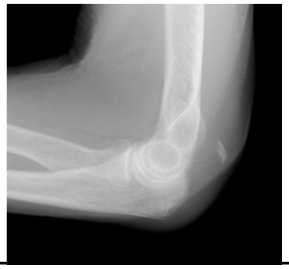
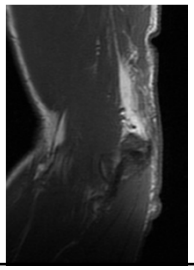
- Diagnosis – how hard is it
- Does it have to be fixed
- Does technique matter
- How long to protect/ rehab
- If fixed, what can pt expect

  > 90% are >90% normal

TRICEPS TENDON RUPTURE

QUESTIONS

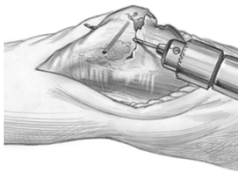
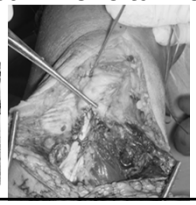
- Diagnosis – Central attachment:MRI

TRICEPS TENDON RUPTURE

QUESTIONS

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

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

COMMON SPORTS INJURIES of the ELBOW

Muscles/Tendons

- Biceps
- Triceps
- Epicondylitis

Epicondylitis: Where are we, really?

QUESTIONS

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

Epicondylitis: Where are we, really?

Rx Trends

Office or ASC

Less Invasive – Quick Recovery

Image Guidance - Ultrasound

Validated Effectiveness

Cost Effective

Safe

Epicondylitis: Where are we, really?

Options

- Physical therapy (or leave it alone)
  - Eccentric exercise (Stanish, 1986)

    The Gold standard
  - •Effective – multiple sites (achilles)
  - • Safe
  - • Prolonged
  - • Cost +/-

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

Epicondylitis: Where are we, really?

Platelet Rich Plasma (PRP)

- Current Concepts in Sports Med

  Popularity based on safety and attractiveness

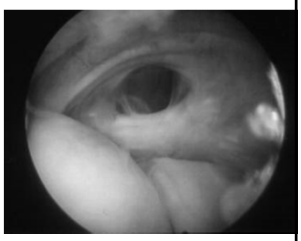
  Not on the scientific evidence of effectiveness

Hall, et et; JAAOS, 2010

Epicondylitis: Where are we, really?

Arthroscopy

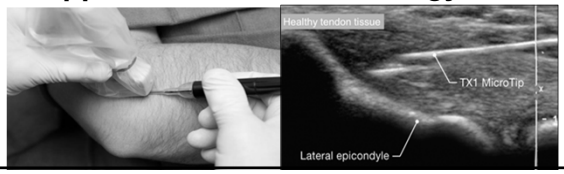
- Effective: 80 – 90%
  - Added value?
  - Cost effective?



Epicondylitis: Where are we, really?

Tx1

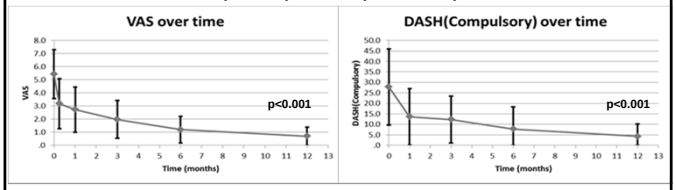
- Technique
  - Can be in office
  - Local anesthetic
  - Approx 40 – 60 sec of energy



Epicondylitis: Where are we, really?

Effectiveness

Koh, et al; AMJS, March , 2013



95% (19/20) patients satisfied
No device-related complications
No patient-related complications

Epicondylitis: Where are we, really?

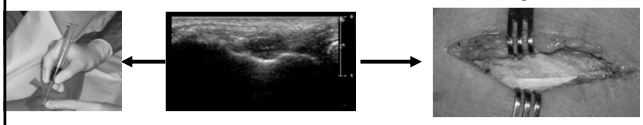
Tx1

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

Epicondylitis: Where are we, really?

Time to intervention

3 months → 1 year



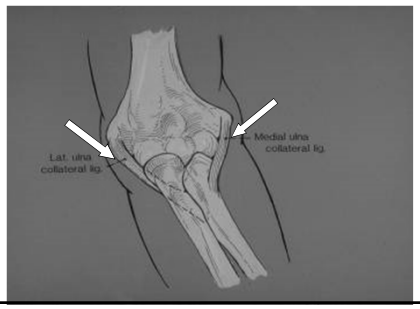
Office → ASC

Site of intervention

COMMON SPORTS INJURIES of the ELBOW

Ligaments

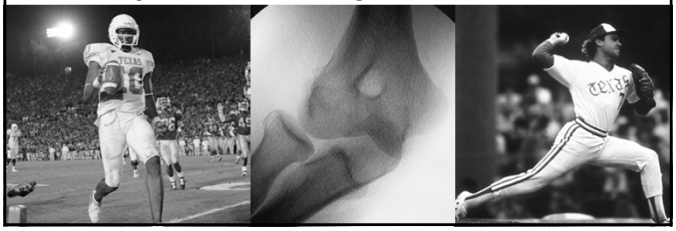
- MCL
- LCL



MCL Deficiency at the Elbow

QUESTIONS

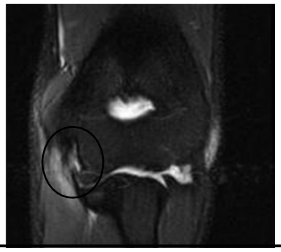
- Etiology? Spectrum
  - Single event; trauma
  - Repetitive; throwing



MCL Deficiency at the Elbow

QUESTIONS

- **Diagnosis – how hard is it**



MCL Deficiency at the Elbow

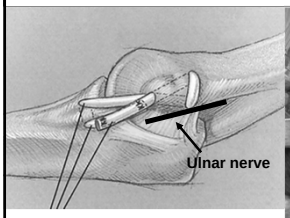
QUESTIONS

- **Does it have to be fixed**
  - **Only one study**
    - **45% heal without surgery**

Rettig, A; Am J Sp M: 2001

MCL Deficiency at the Elbow

Technique:MUCL **Docking concept preferred**



MCL Deficiency at the Elbow

QUESTIONS

- **When to operate**
- **How to fix it**
- **Has the rehabilitation program changed?**
  - **No, still 12 months (10 -12)**
- **Expected outcome**
  - **Athlete: 70%**
  - **Non – athlete: 90%**

COMMON SPORTS INJURIES of the ELBOW

Articular

- **Plica**
- **Osteophyte**
- **Articular - OCD**

COMMON SPORTS INJURIES of the ELBOW

Plica

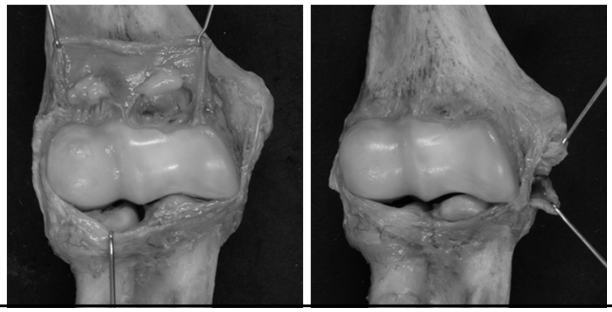
- **Snapping easy**
  - **Rolls over the head in flexion (60 deg)**
  - **Snaps back when going into extension**

BUT

- **May mimic epicondylitis !!!**

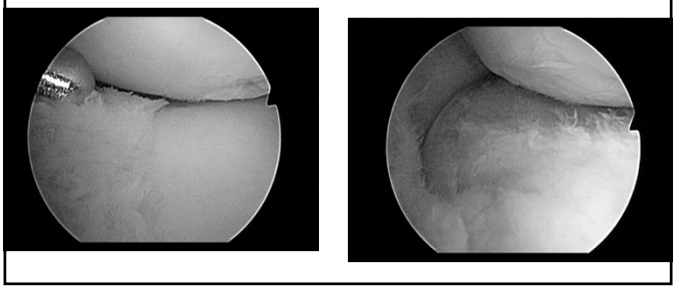
COMMON SPORTS INJURIES of the ELBOW

Plica



COMMON SPORTS INJURIES of the ELBOW

Plica



COMMON SPORTS INJURIES of the ELBOW

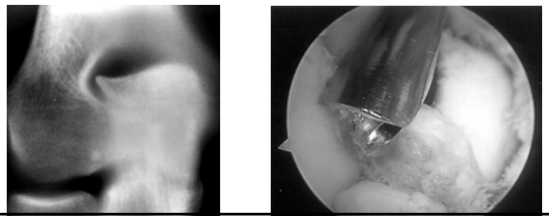
Articular

- **Plica**
- **Osteophyte - impingement**

COMMON SPORTS INJURIES of the ELBOW

Impingement

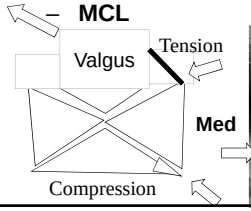
- **Symptoms – extension pain**
- **How much should be removed**



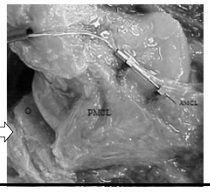
COMMON SPORTS INJURIES of the ELBOW

Rationale

- **Valgus**
  - **Olecranon**
  - **MCL**



Sensitivity
3 mm resection med corner increases lig strain!!



Kamineni,ElAttrache et al: JBJS, Am, 2005

COMMON SPORTS INJURIES of the ELBOW

Articular

- **Plica**
- **Osteophyte**
- **Articular - OCD**

Osteochondritis of the Elbow

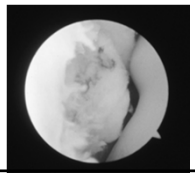
QUESTIONS

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

Osteochondritis of the Elbow

How to Rx

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



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

Osteochondritis of the Elbow

Beware!

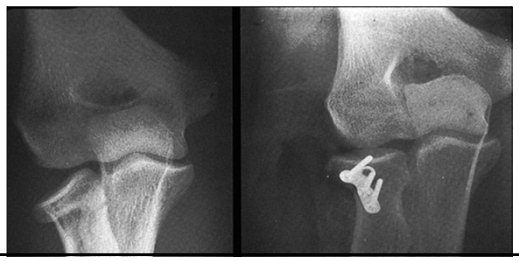
- Do NOT allow mechanical Sx to persist

Radial Head Fracture in the Athlete

- This is an unexplored question with an unknown answer

Radial Head Fracture in the Athlete

- What to do –
  Fix if you can



Radial Head Fracture in the Athlete

- What not to do?

  Excise if MCL deficient

Radial Head Fracture in the Athlete

- What not sure of?

  If cant fix, excise or replace

Fracture of the Radial Head

Resection

Author	Yr	No	FU/yr	Sat/%	Comment
Morrey	1976	34	20	88	all Type III
Wallenbeck	1997	27	17	81	III,IV- poorer
Janssen	1998	20	23	95	all Type III
Sanchez-Sotelo	2000	10	5	90	all type IV

Fracture of the Radial Head

Resection

- Madrid Study – 26 pt < 40 y/o
  - Mason II - 6
    III – 20

  F/U 25 yr (15 – 35)

  Pain: o, mild – 23/26

  Satisfactory – 91%

Antuna et al , JBJS, 2010

Radial Head Fracture in the Athlete

- Little direction from the literature when stratified by age and activity

Under investigation

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