COMMON SPORTS INJURIES of the ELBOW
Injuries to the Throwing Athlete

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Professor of Orthopedic Surgery, UTHSCSA

Financial Disclosure

Dr. Bernard Morrey has disclosed that he is the Medical director of Tenex Health.

OUTLINE

- Muscles/tendons
- Ligaments
- Articulation
### COMMON SPORTS INJURIES of the ELBOW
Injuries to the Throwing Athlete

<table>
<thead>
<tr>
<th>Muscles/Tendons</th>
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<tbody>
<tr>
<td>• Biceps</td>
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<td>• Triceps</td>
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<tr>
<td>• Epicondylitis</td>
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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
DISTAL BICEPS TENDON RUPTURE

QUESTIONS

• Diagnosis – how hard is it
• Does it have to be fixed
  – Lose ~ 10-15% flexion strength
  – Lose > 50% supination strength

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
Injuries to the Throwing Athlete

Muscles/Tendons
- Biceps
- Triceps
- Epicondylitis

QUESTIONS
- What is the pathology
- Does everything work
- Does anything work
- Anything new?

Epicondylitis: Where are we, really?

QUESTIONS
- What is the pathology
- Does everything work
- Does anything work
- Anything new?
Epicondylitis: Where are we, really?

Patho/anatomy
- Non inflammatory
- Degenerative
- ECRB
  Well accepted

TENNIS ELBOW
What Works: Anything – Everything?

Treatment Trends
Today
- Less invasive/ percutaneous
  - Scope?
    - Acupuncture
    - Botox
    - Shock Wave
    - PRP
    - Ultrasound

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?

CONCLUSION

- PRP
  - Appears to be effective
  - Safe
  - Improves with time
  - Alters natural history?
  - Unpredictable
  - Painful/expensive

Epicondylitis: Where are we, really?

Arthroscopy

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

Epicondylitis: Where are we, really?

Ultrasound: Dx / Rx

Safety characteristics

- Visualize/localize the pathology
- Energy only effective with diseased tissue

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**Epicondylitis: Where are we, really?**

**Technique - Treatment**
- Local anesthetic
- Prep = cortisone
- 4mm stab wound
- Insert probe (#16)

**Epicondylitis: Where are we, really?**

**Clinical Experience**

**Subjective satisfaction - 19/20** AJSM, March 2013

![Graph showing improvement over time with a scale ranging from 0 to 10]
Epicondylitis: Where are we, really?

<table>
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<th>Time to intervention</th>
<th>1 year</th>
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<td>3 months</td>
<td></td>
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Site of intervention

- Office
- ASC

COMMON SPORTS INJURIES of the ELBOW
Injuries to the Throwing Athlete

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

- 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

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%
- CONCERN: being done frequently in the young

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**COMMON SPORTS INJURIES of the ELBOW**

**Injuries to the Throwing Athlete**

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<td>Osteophyte</td>
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<td>Articular - OCD</td>
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**COMMON SPORTS INJURIES of the ELBOW**

**Injuries to the Throwing Athlete**

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<td>Snapping easy</td>
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<tr>
<td>- Rolls over the head in flexion (60 deg)</td>
</tr>
<tr>
<td>- Snaps back when going into extension</td>
</tr>
<tr>
<td>BUT</td>
</tr>
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<td>May mimic epicondylitis !!!</td>
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### COMMON SPORTS INJURIES of the ELBOW

#### Injuries to the Throwing Athlete

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### COMMON SPORTS INJURIES of the ELBOW

#### Injuries to the Throwing Athlete

| Plica |

### COMMON SPORTS INJURIES of the ELBOW

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Impingement at the Elbow

QUESTIONS

- How much should be removed

Collateral Ligaments & Elbow Instability

Rationale

- Valgus
  - Olecranon
  - MCL

Sensitivity

3 mm resection med corner increases lig strain!!

COMMON SPORTS INJURIES of the ELBOW

Injuries to the Throwing Athlete

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

TREATMENT LOGIC

OCD Lesion

Stable

YES

No

Can Reattach

NO

Stable Rim

NO

Remove

YES

Catrige Transplnt

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

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

COMMON SPORTS INJURIES of the ELBOW
Injuries to the Throwing Athlete

Summary

- Spectrum of pathology
- Reliable rx options
- Requires expertise
- Recognize the time critical conditions
Thank You

Thank You

ARTHROSCOPY of the ELBOW
Osterchondritis Dissecans

SUMMARY
Collateral Ligaments and Elbow Instability

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

THANK YOU

ARTHROSCOPY of the ELBOW
Osterchondritis Dissecans

TREATMENT
• Type I: stable = Rest
• Type II -
  – Loose body, smooth bed: excise
  – Detached, rough bed: debride
TENDONOPATHY at the ELBOW
Rationale for this Treatment/Study

<table>
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<td>• Accurate diagnosis, localization</td>
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<td>– Improves with experience</td>
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<tr>
<td>• Intervention - Indications</td>
</tr>
<tr>
<td>– Alternate to steroid injection</td>
</tr>
<tr>
<td>– Alternate to surgical intervention</td>
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<tr>
<td>• Unique attribute</td>
</tr>
<tr>
<td>– Removal of diseased tissue</td>
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<td>Major advance – if safe and cost effective</td>
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