Common Hand and Upper Extremity Problems

Peter J. Evans, MD, PhD, FRCSC
Director
Upper Extremity Center
Peripheral Nerve Center
Cleveland Combined Hand Fellowship
Cleveland Clinic
What I Will Cover

• Hand
  – Nerve
  – Fractures

• Wrist
  – Tendonitis
  – Fractures

• Elbow
  – Nerve
  – Tendonitis
Carpal Tunnel Syndrome

• Compression of the median nerve
• Numbness
• Tingling
• Pain
• Weakness
Carpal Tunnel Syndrome

• Numbness/tingling median distribution - yellow
  — Whole hand in some

• Night symptoms predominate

• Overhead activities
Carpal Tunnel Syndrome

- Weakness of Abduction
- Thenar atrophy
Carpal Tunnel Syndrome

Examination

• Sensation
  – Thumb, Index, Middle, ½ Ring

• Flexion/compression test
  – Durkan’s test

• Phalen’s Sign
Carpal Tunnel Syndrome

• Tinel’s Sign
Carpal Tunnel Syndrome

Nonoperative Treatment

- Splints
- NSAID’s
- Median Nerve Glides
- Activity Modification
- 6-8 weeks
Carpal Tunnel Syndrome

- Splints
- NSAID’s
- Median Nerve Glides
- Activity Modification
- 6-8 weeks
- EMG/NCV
- Injection
Carpal Tunnel Syndrome - Surgery

- Carpal Tunnel Release
- Incise Transverse Carpal Ligament
Carpal Tunnel Syndrome

- Carpal Tunnel Release
- Incise Transverse Carpal Ligament
Cubital Tunnel Syndrome

• Ulnar Nerve Compression
• “Cell phone elbow”
• Night Sx
• Activities with flexed elbow
• Vibration
• Medial Epicondylitis in some
Cubital Tunnel Syndrome

• Pain
• Numbness Small and ½ Ring
• Weakness…
Cubital Tunnel Syndrome

• Weakness…
• Intrinsic Atrophy
Cubital Tunnel Syndrome

- NSAID’s
- Ulnar Nerve Glides
- Hyper-flexion block
  - Soft elbow splint
  - Thermoplastic
- Activity / Worksite mods
Cubital Tunnel Syndrome

• EMG / NCV
• Surgery
  – Ulnar Nerve Decompression
  – Epicondylectomy – partial
  – Transposition
Lateral / Medial Epicondylitis

- Pain
- Inflammation @ Origin
  - Extensor
  - Flexor
- Chronic >> Degeneration
- Aggravated with gripping
Epicondylitis

- Pain with resisted wrist extension / flexion
- Point tenderness
Epicondylitis

• Point Tenderness

• Resisted Wrist Extension
Epicondylitis

- Lateral - Tennis Elbow
- Medial - Golfer’s Elbow
- Counterforce brace - day
- Wrist splint – nightly

- 80% resolve sometime over the course of a year
Epicondylitis

- Counterforce brace
- Wrist Splint - nightly
- Stretching / Strengthening
- Icing
- Rest
Epicondylitis

- Counterforce brace
- Wrist Splint - nightly
- Stretching / Strengthening
- 8+ weeks
- Injection – steroid
- Shock Wave
Epicondylitis

- Counterforce Brace
- Wrist Splint
- Stretching/strengthening
- Modalities
- Injection

- Surgical Debridement
DeQuervain’s Tenosynovitis

- First dorsal compartment tendonitis
- Tenderness
DeQuervain’s Tendonitis

- Tenderness / cyst at radial styloid
- Nursing / new mothers
DeQuervain’s Tendonitis

• Finkelstein’s Maneuver
DeQuervain’s Tendonitis

- Thumb spica splint
- NSAID’s
- Ice
- Iontophoresis
- 6-8 weeks

- Injection: cortisone
DeQuervain’s Tendonitis

- Release Compartment
- Radial Nerve
- Tendon Instability
Wrist Tendonitis

- Diffuse pain about wrist
- Activity related
- Gripping
- Holding

- Unless patient can localize radial or ulnar side then likelihood that pain is surgical is minimal
Wrist Tendonitis

- Wrist Splint
- Icing
- NSAID’s
- Stretching >> Strengthening
- Rest / Activity Mod
- 6-8 weeks

- Injection – intra articular or 4th extensor compartment
Trigger Fingers

• Locking…usually in flexion

• Pain

• Limited ROM

• Often wake up with it locked

• “It used to lock…”

• Early stages are just pain and tenderness
Trigger Digit

• Tenosynovitis / Swelling
• Flexor tendon nodule
• @ A1 pulley

• NSAID’s / Splint nightly

• Injection
  – 75% with single injection
  – 85% with two
  – Operate after that fails
Trigger Ring Finger
Trigger Digit

- Flexor Tendon @ A1 pulley
- Release A1
- Tenosynovectomy
Thumb CMC Arthritis

- Pain at base of thumb – thenar cone
- Prominence of CMC
- Middle aged + women
- Opening jars…doorknobs…car keys
Thumb CMC Arthritis

- Progressive degenerative arthritis
- Secondary MP joint hyperextension
Pathology

• Progressive Degenerative Arthritis
Conservative Treatment

• Forearm-based thumb spica splint
• Hand-based neoprene thumb sleeve
• NSAID’s
• Joint protection techniques
• Adaptive devices
Treatment

• Nonoperative management
  – Steroid Injection

• Variety of surgical techniques
  – CMC fusion
  – Implant arthroplasty
  – Interposition arthroplasty
    +/- ligament reconstruction
Ganglions

- Dorsal
- Volar
- Pain from underlying wrist synovitis
- Occasional pain from cutaneous nerve irritation
Ganglions

- Splint
- NSAID’s

- Aspiration / steroid injection
  - Dorsal … not volar wrist (radial artery)

- Excision
Finger Injuries

- “Jammed Finger”
- X-ray
- Avulsion
- Dislocation
- Collateral Injuries
PIP/DIP Dislocations

• PIP Dislocation
  – most common athletic injury

• Simple typically
  – DIP – mallet splint
  – PIP – reduce and buddy tape
**PIP/DIP Dislocations**

- **PIP Dislocation**
  - most common athletic injury
- **Simple**
  - Reduce / Splint
  - Buddy tape
- **Edema control**
- **ROM**
- **Dynamic Splinting**
Proximal/Middle Phalanx Fractures

• Intra-articular
Proximal/Middle Phalanx Fractures

• “Jammed Finger” - missed
Proximal/Middle Phalanx Fractures

• Intra-articular – NEED ORTHOGONAL VIEWS
Proximal/Middle Phalanx Fractures

• Intra-articular - ORIF
Mallet Fingers

- Extensor Lag @ DIP
- X-ray
- Disruption of terminal tendon
Mallet Finger

- Lack of DIP Extension
- Tendinous
  - Terminal Tendon Rupture
- Bony
  - Distal Phalanx fracture
Mallet Finger

• Bony Mallet
  – Internal fixation - displaced

• Tendinuous Mallet
  – Extension splinting
    – 8 weeks FULL TIME
    – 4 weeks part time

• Swan-Neck Deformity
Mallet Finger

• Swan-Neck Deformity
  – Missed treatment
Splinting Position

Position of function

• Thumb in functional position
• MPJ 30 degrees, IPJs at 0 degrees
• Wrist and forearm usually neutral
• Elbow @ 90
Cleveland Clinic

Every life deserves world class care.