Instability of the Thumb
Wessex Hand Course
Chilworth June 2013

Professor David Warwick
MD FRCS(Orth) EDHS
Consultant Hand Surgeon
University Hospital Southampton, UK

Summary
- MCP
  - Anatomy
  - Acute
  - Chronic
- CMCJ
  - Anatomy
  - Acute
  - Chronic

Thumb Anatomy

Summary
- MCP
  - Anatomy
  - Acute
  - Chronic
- CMCJ
  - Anatomy
  - Acute
  - Chronic

Acute Injuries
- Ulnar collateral tear
- Skier’s thumb
- Radial collateral tear
- Volar plate tear

Skier’s thumb Anatomy

30/06/2013
Skier’s Thumb

- Fall on the slopes
  - The thumb jams into the ground and arrests the fall
  - Like an Ice pick
- Presentation
  - Painful thumb
  - Tender over ulnar collateral ligament
  - Usually too painful to stress test
- Advice
  - Immediate referral to hand surgeon
  - Best results are surgery within 2 weeks.

Patterns of injury

- Avulsion fracture
- Diffuse tear
- Distal avulsion
  - Undisplaced
  - Minimally displaced
  - Stener lesion

Adductor Pollicis

Avulsion UCL Stener
Diagnosis

- History
- Examination
  - LOOK
    - Swelling
    - Bruising
  - FEEL
    - Tenderness
  - MOVE
    - Instability
    - Flex to 30 degrees
    - Lidocaine anaesthesia

Imaging

- Plain X-ray
- Fluoroscopy
- Ultrasound
- MRI

Stener reattached with Mitek

Bone anchor

Rehabilitation

- Do not put in plaster
- Removable splint
- UCL is isometric
  - Early flexion extension
  - Avoid intrinsic tightness
- Protection in splint
  - 6 weeks constant
  - 6 weeks at risk

Complications

- CRPS
- Beware small dorsal nerve
- Infection
- Stiffness

*
Acute Injuries

- Ulnar collateral tear
- Skier’s thumb
- Radial collateral tear
- Volar plate tear

Radial Collateral ligament

- Assessment
- Bone avulsion (rare)
  - POP if undisplaced
  - Fix if displaced
- Sprain
  - Analgesia
  - Splint 6 weeks until settled
- Unstable tear
  - ? Splint 6 weeks
  - ? Repair

Unstable MCP volar plate

- History
  - Forced hyperextension
  - May feel snap
- Assessment
  - Examine
  - Xray
  - 

Summary

- MCP
  - Anatomy
  - Acute
  - Chronic
- CMCJ
  - Anatomy
  - Acute
  - Chronic
Chronic instability- UCL

- Ulnar collateral ligament
- Cause
  - Missed acute trauma
  - Gamekeeper's thumb

Treatment

Chronic UCL instability

- Fusion
  - Rigid plate
  - Early mobilisation
  - Reliable stability and pain relief
  - Minimal loss of function
- Reconstruction
  - Tendon graft
    - Drill holes
    - Interference screw

Drill holes
Chronic MCP Volar plate instability

- Causes
  - Generalised laxity
  - Past trauma
  - Rheumatoid
    - Nailbuff
  - Adducted thumb CMCJ (OA)

MCP hyperextension
CMC adduction from OA

Treatment
Chronic volar plate instability

- Fusion
  - Rigid plate
  - Early mobilisation
  - Reliable stability and pain relief
  - Minimal loss of function

- Reconstruction
  - Sesamoid arthrodesis
    - Bone suture
    - K wire 5 weeks
    - Dorsal blocking splint 8 weeks
    - Interference screws

Sesamoid Arthrodesis

Sesamoid arthrodesis

Volar plate seam repaired
Summary

- MCP
  - Anatomy
  - Acute
  - Chronic
- CMCJ
  - Anatomy
  - Acute
  - Chronic

Trapezium-metacarpal joint

- Saddle shaped joint
- Very mobile
- Therefore potentially unstable
- Relies on ligaments
- Large moment arm

CMC Anatomy
Acute CMC dislocation

- History
  - Fall on outstretched thumb
  - Painful
- Examination
  - Bruising
  - Swelling
  - Tenderness
  - Lidocaine stress
  - Often missed
- Investigation
  - Plain x-ray
  - Management
    - Reduce
    - Hold in place
      - POP 6 weeks
      - Kwire

X-Ray - fracture (Bennet’s)

Summary

- MCP
  - Anatomy
  - Acute
  - Chronic
- CMCJ
  - Anatomy
  - Acute
  - Chronic

Causes

CMC instability

- Constitutional
  - Generalised laxity
  - May predispose to early OA in females
- Previous Trauma
  - Treated well
  - Or missed……

Assessment

Chronic CMC instability

- History
  - Generalised laxity
  - Trauma
  - Rheumatoid
- Examination
  - Stress joint

Investigation

- X-Rays
  - Plain
    - Unstable
    - Secondary OA
  - Stress
    - Lidocaine
- MRI Scan
**Treatment**

Chronic CMC instability

- Hand Therapy
- Splint
- Proprioception
- Surgery
  - Osteotomy
  - Fusion
  - Ligament reconstruction

**Osteotomy**

Mild instability with pain

- Mechanical re-alignment
- Offsets volar forces
- Options
  - Wires
  - Plate
- Good Outcomes
  - Wilson and Bailey 1983: JBJS(Br): 65B: 479-81
  - Pellegyn 1993
  - 80% good to excellent

**Fusion**

- Technically difficult
- Complication rate
- Pain
- Non-union
- metalwork
- Position of function vs loss of opposition
- Only option
- Ehlers Danlos
- Failed soft tissue surgery

**Ligament Reconstruction**

- Various tendons
  - FCR (Littler & Eaton)
  - APL (Brunelli)
  - ECRL
  - PL

**FCR and Thumb CMCJ**

**Wagner Approach CMCJ**
Stabilisation (FCR)


Eaton Littler CMC reconstruction

Trapeziun
Abductor pollicis longus
Flexor carpi radialis

Summary

- MCP
  - Anatomy
  - Acute
  - Chronic
- CMCJ
  - Anatomy
  - Acute
  - Chronic

www.handsurgery.co.uk

Instability of the Thumb
Wessex Hand Course
Chilworth June 2013

Professor David Warwick MD FRCS(Orth) EDHS
Consultant Hand Surgeon
University Hospital Southampton, UK