Thumb CMC arthritis with Ligament Reconstruction and Tendon Interposition

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Thumb CMC arthroplasty


Thumb CMC arthritis

- Occurs in 33-36% of women ≥ 50 years old
- Surgery considered for those who fail conservative care
Ligamentous Support

Dorsal

Palmar

Ligament reconstruction with tendon interposition (LRTI) arthroplasty

• Described by Burton and Pellegrini in 1986.
• FCR tendon is passed through a drill hole in the thumb metacarpal to reconstruct the beak ligament
• Remaining FCR tendon is placed into the space left by the trapeziectomy to act as a fascial arthroplasty
• Complete trapeziectomy is performed in all stages to simplify the procedure.
Ligament reconstruction with tendon interposition (LRTI) arthroplasty

- Burton and Pelligrini followed their patients at 2-, 6-, and 9.4-year intervals
- Pinch and grip strengths were shown to improve between 2 and 6 years
- At 9.4 years, there was an overall 92.5% increase in grip and 50% increase in pinch compared to preoperative values
- Subjectively, at 9.4 years, 95% of patients reported excellent pain relief
- At 9.4 years, loss of arthroplasty space was 11% to 13% of immediate postoperative values.
Results of LRTI

- 90-95% good to excellent results
- Slow recovery
  - Complete pain relief and return of normal strength up to 1 year
Rehabilitation after LRTI

• Need to form scar at space where trapezium was (support the thumb metacarpal) whether thumb suspended by tendon or suture
• Protocols vary in literature
  – Short arm thumb spica splint versus cast
  – Immobilization of 2-6 weeks
  – Begin mobilizing 4-8 weeks
  – Begin strengthening 4-12 weeks
• Revisions are difficult to treat

Failed Thumb CMC surgery


• <30% of patients have continued thumb pain and instability owing to metacarpal subsidence
• Reason for Failure
  – Metacarpal subsidence
  – MCP joint hyperextension
  – Scaphotrapezoid joint arthritis

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LRTI

- Why?
  - 30 Year Track Record
  - Use living tissue rather than foreign material
  - Remember
    - Silicone implants
    - Gortex interposition (Artelon)
  - Suspensory ligament rather than single point fixation thru which metacarpal can rotate

THANK YOU