

Thumb CMC arthritis with Ligament Reconstruction and Tendon Interposition

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Thumb CMC arthroplasty



- Brody M, Bednar, MS. Osteoarthritis of the Hand and Wrist: Thumb. (Chapter 17) Osteoarthritis of Hand and Digits: Thumb, Textbook of Hand and Upper Extremity Surgery (Vol 1) Weiss APC (managing editor), Goldfarb CA, Hentz VR, Raven III RB, Slutsky DJ, Steinmann SP (editors) ASSH Chicago IL, 323-335, 2013.

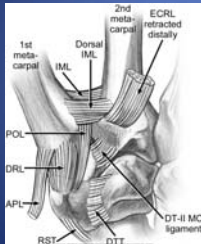
Thumb CMC arthritis

- Occurs in 33-36% of women \geq 50 years old
- Surgery considered for those who fail conservative care

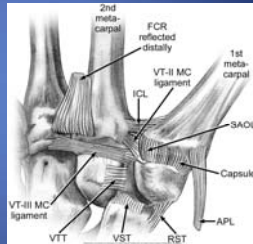


Ligamentous Support

Dorsal

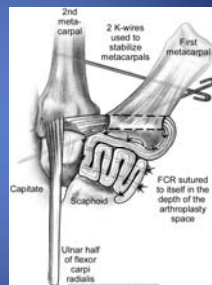


Palmar



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 in 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.

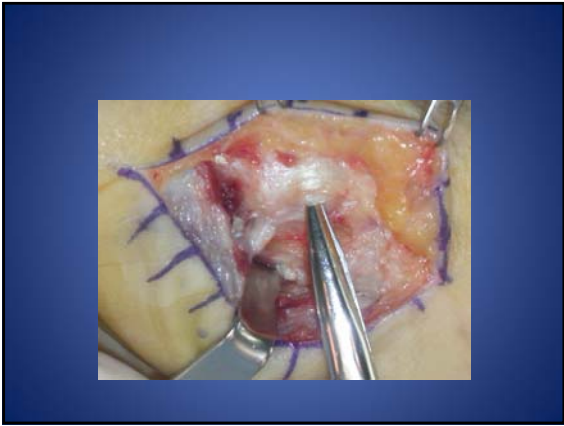


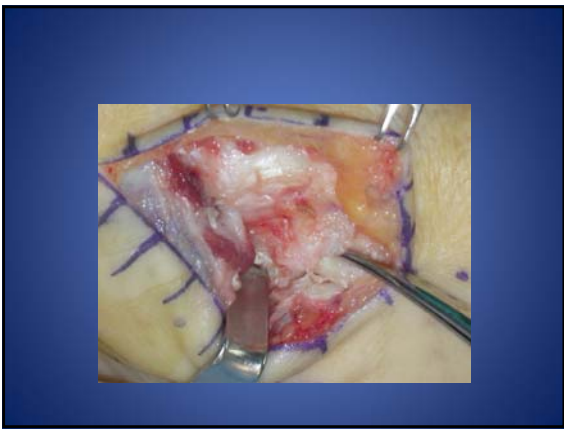
Ligament reconstruction with tendon interposition (LRTI) arthroplasty

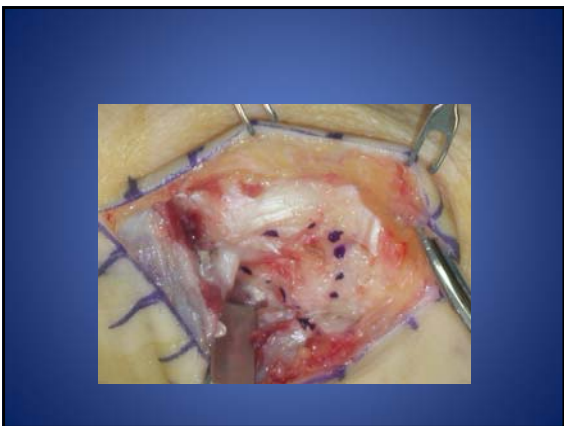
- Burton and Pelligrini followed their patients at 2-, 6-, and 9.4-year intervals
- Pinch and grip strengths were shown to improve between 2 and 6 years
- At 9.4 years, there was an overall 92.5% increase in grip and 50% increase in pinch compared to preoperative values
- Subjectively, at 9.4 years,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

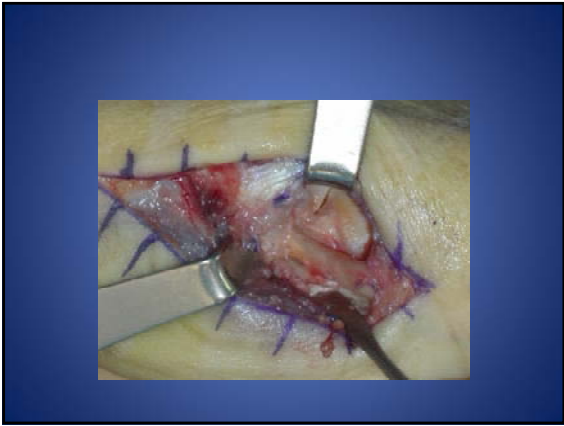




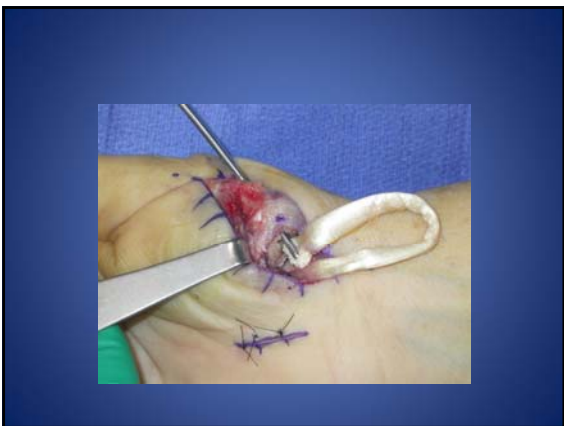






















Results of LRTI

- Alton OA, Gabelano LW. Thumb Basal Joint Arthritis. In Green's Operative Hand Surgery 6th ed.
- 90-95% good to excellent results
- Slow recovery
 - Complete pain relief and return of normal strength up to 1 year



Rehabilitation after LRTI

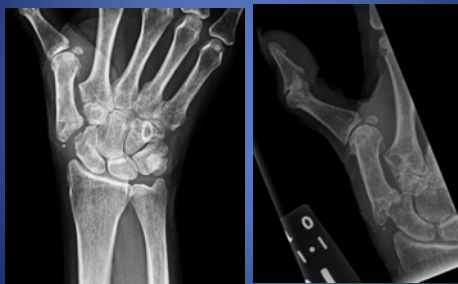
- Need to form scar at space where trapezium was (support the thumb metacarpal) whether thumb suspended by tendon or suture
- Protocols vary in literature
 - Short arm thumb spica splint versus cast
 - Immobilization of 2-6 weeks
 - Begin mobilizing 4-8 weeks
 - Begin strengthening 4-12 weeks
- Revisions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

Failed Thumb CMC surgery

- Papatheodorou LK, Winston JD, Bielicka DL, Rogozinski BJ, Lourie GM, Sotereanos DG. Revision of the Failed Thumb Carpometacarpal Arthroplasty. J Hand Surg 2017A: Article in Press
- $\leq 30\%$ of patients have continued thumb pain and instability owing to metacarpal subsidence
- Reason for Failure
 - Metacarpal subsidence
 - MCP joint hyperextension
 - Scaphotrapezoid joint arthritis

5/26/09

2/14/13





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
