

# A Novel Use of Meniscus for Small Joint Reconstruction

Haig Yenikomshian, MD, Myles Cohen, MD, and David A. Kulber, MD.

Division of Plastic and Reconstructive Surgery, Keck School of Medicine of the University of Southern California, Los Angeles, CA  
Cedars Sinai Medical Center, Los Angeles, CA

**Objective:** Small joint arthroplasty of the hand has mixed outcomes and no ideal implant has been developed. We suggest a novel approach for small joint reconstruction: using cadaveric meniscus for joint reconstruction. Meniscus is advantageous as it is amenable to a synovial environment, can be revascularized, has a low metabolic demand, and is malleable.

**Methods:** The senior author reconstructed three metacarpophalangeal and one proximal interphalangeal joint in four patients using cadaveric meniscus from the Musculoskeletal Transplant Foundation. Patient demographic, pre and post operative pain and range of motion data was examined as well as operative technique.

**Results:** Three patients had monoarticular arthritis of the metacarpopharyngeal joint who had failed medical treatment. The MCP joint was burred and meniscus was used to fill the contour defect that remained on both proximal and distal aspects and sutured with 4-0 mersiline (Figure 1). One patient suffered arthritis to the PIP joint of the 5th digit with limited range of flexion. The patient was found to have a large volar lip of the middle phalanx that was removed and meniscus was then placed into the joint in a similar fashion as in the metacarpophalangeal joint (Figure 2). All patients underwent early hand therapy and had improvement of pain and range of motion of the affected joint. There were no complications and no revisions necessary.

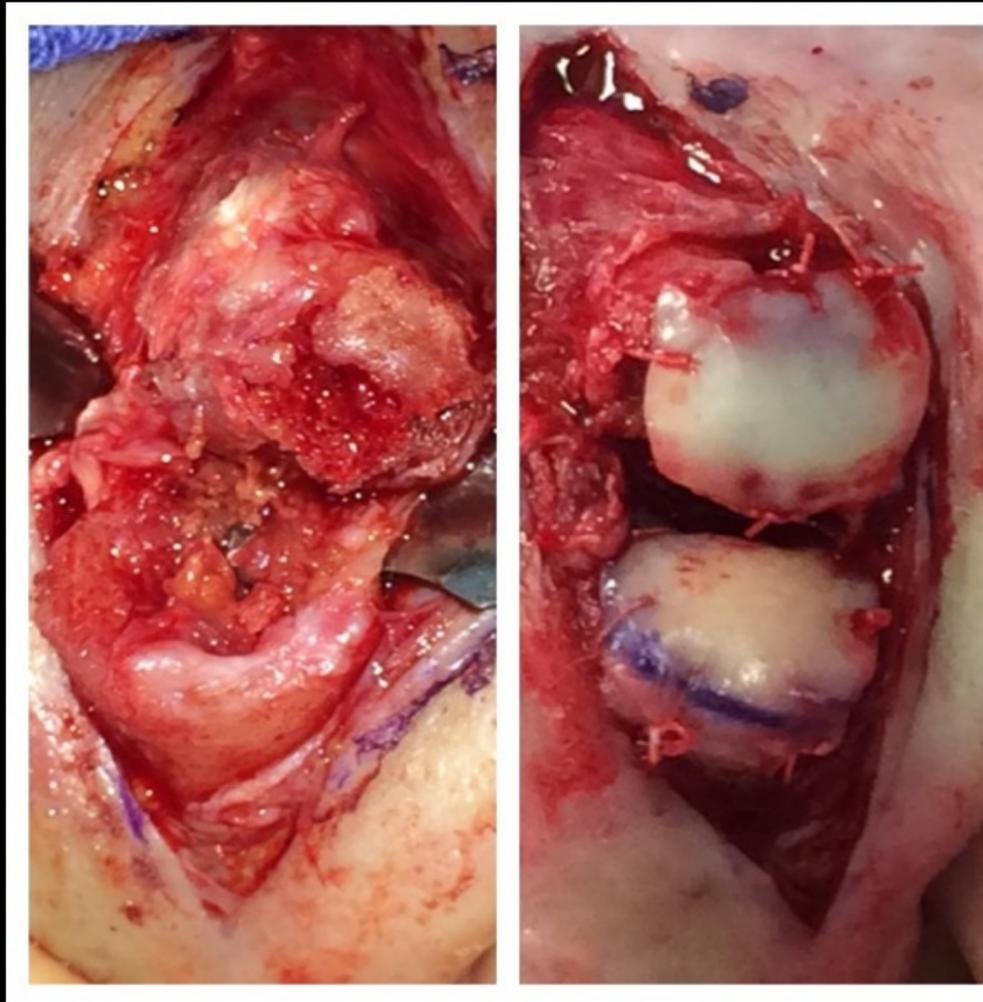


Figure 1: Articular surfaces of MCP joint debrided on left and with inset meniscus on right.



Figure 2: Insetting of meniscus of PIP joint.

**Conclusion:** Multiple modalities have been used to reconstruct the small joints of the hand with mixed results. We believe that meniscus is a viable option for reconstruction to help with motion and pain with the added benefit of malleability, potential for revascularization and resilience.