

2022 NEHS Annual Meeting Abstract Submission

COMPLETE

NEHS Vice President, Daniel Mastella, M.D., is currently accepting abstract submissions for presentation at our Annual Meeting on December 2, 2022.

This meeting will be held at the Sturbridge Host Hotel in Sturbridge, MA.

Therapists, NPs, and PAs are also encouraged to submit.

THE DEADLINE FOR SUBMISSION IS OCTOBER 15, 2022

RESIDENTS AND FELLOWS ONLY. Please indicate if you want your paper to be considered for the prestigious H.Kirk Watson, M.D. Founder's Award. The abstracts for award consideration will be presented in the morning and the award will be presented in the afternoon.

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Oct 15th 2022, 3:22:07 pm



* ABSTRACT TITLE

Modified Volar Capsulodesis for Hyperextension Deformities of the Thumb Metacarpophalangeal Joint in Carpometacarpal Joint Arthroplasty: A Retrospective Review

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* Name of who will present abstract at NEHS meeting on December 2, 2022 Please note that the same person cannot present more than one abstract at the meeting.

Brian Ford

* Please indicate if the presenter is:

Resident

* List full names of abstract authors

Brian T Ford, Angela Cremins, Matthew Solomito, Andrew E Caputo

*** ABSTRACT - should include background information and a description of methods, programs, or practices.**

Purpose:

Thumb metacarpophalangeal (MCP) joint hyperextension deformity is a well-established sequela of carpometacarpal (CMC) joint arthritis that ultimately can result in decreased pinch strength and generalized hand function. Several bony and soft tissue procedures have been described to address MCP hyperextension in this patient population. Armbruster et al.1 recommends MCP fusion if MCP hyperextension exceeds 40 degrees, while several studies including Qadir et al.2 demonstrate good functional outcome with various volar capsulodesis techniques even when preoperative MCP hyperextension is above 40 degrees. To date there remains no consensus on optimal volar capsulodesis technique or postoperative protocol. The purpose of our study was a retrospective review to explore the results of our volar metacarpophalangeal (MCP) joint capsulodesis technique performed at the time of CMC tendon arthroplasty, and to compare the preoperative and postoperative MCP extension deformities of our cohort of patients.

Methods:

We conducted a retrospective chart review of all patients from a single institution who underwent volar capsulodesis in addition to their CMC tendon arthroplasty for CMC arthritis from September 2002 through January 2022. Exclusion criteria included patients undergoing revision CMC arthroplasty, concomitant EPL to APL extensor tendon transposition, as well as patients where degree of preoperative or postoperative MCP extension was not recorded. Ultimately 31 patients were identified, and preoperative MCP hyperextension deformity was compared to MCP hyperextension at their most recent follow up visit.

All patients underwent volar capsulodesis, starting with resection of the radial and ulnar sesamoids in a transverse manner. A blocking pin was placed dorsally into the metacarpal maintaining flexion of approximately 30-40 degrees. The soft tissue interval (volar plate) from the gap of the sesamoids was then closed with multiple 3-0 PDS sutures in a figure of eight technique.

Our postoperative protocol involved immobilization in a short arm cast for the first 4 weeks, followed by removal of the blocking pin at 4 weeks and transition to a removable thumb spica with an MCP extension block from weeks 5-8. During this second month active range of motion began, with the MCP being limited to flexion only. Weeks 9-12 involved full transition out of the splint and inclusion of strengthening exercises.

Results:

Mean MCP hyperextension preoperatively was found to be 63.6 ± 14.3 (range 30-90 °). At final follow up, mean MCP hyperextension was 7.3 ± 10.5 (range -10-40 °). Average final follow up was 171.7 ± 154.0 days.

There were 4 patients that postoperatively experienced a loss of correction with re-hyperextension of their MCP to >20 °. Regarding other complications, there were two instances of pin site infections, one that was treated with oral antibiotics alone, and another that progressed to the point of requiring an MCP arthrotomy and washout.

Conclusions:

We believe the utility of our purely soft tissue volar capsulodesis is the ease of surgical technique, and that it allows one to address MCP hyperextension at the time of CMC tendon arthroplasty with good functional outcomes. Furthermore, the exact overlap with immobilization and rehab of CMC tendon arthroplasty makes it well tolerated by patients in the acute postoperative period, with our observations further supporting the idea that these procedures do not need to be staged.

References:

1. Armbruster EJ, Tan V. Carpometacarpal Joint Disease: Addressing the Metacarpophalangeal Joint Deformity. *Hand Clin.* 2008. doi:10.1016/j.hcl.2008.03.013
2. Qadir R, Duncan SFM, Smith AA, Merritt M V., Ivy CC, Iba K. Volar capsulodesis of the thumb metacarpophalangeal joint at the time of basal joint arthroplasty: A surgical technique using suture anchors. *J Hand Surg Am.* 2014. doi:10.1016/j.jhssa.2014.07.045

Please attach files with diagrams and/or photos to support your abstract (10 MB limit)

volar_capsulodesis_nehs_abstract_images.docx

*** Please attach the abstract presenter's CV**

brian_fordcv_2022.pdf



Figure 1: Preoperative MCP hyperextension deformity.

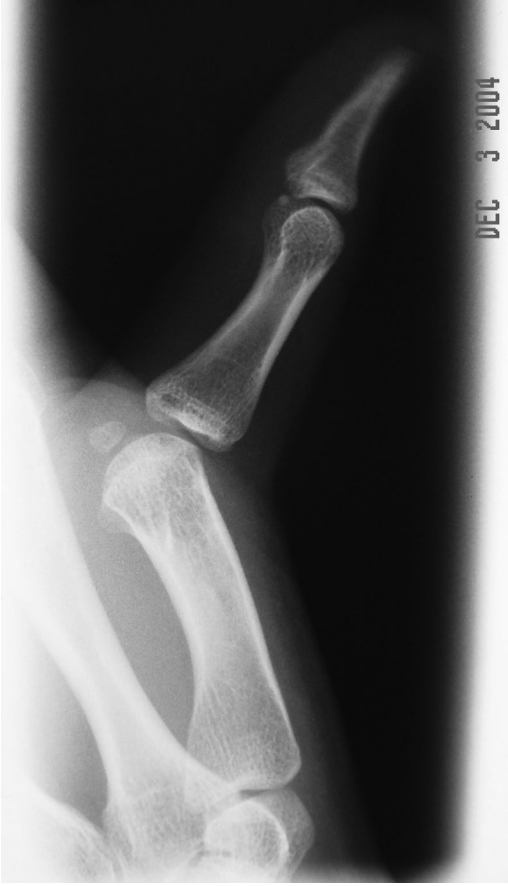


Figure 2: Intraoperative MCP hyperextension deformity prior to correction.



Figure 3: Correction of MCP hyperextension after placement of a blocking pin and volar capsulodesis.