

Arthrodesis for Primary Osteoarthritis of the Trapeziometacarpal Joint in Elderly Patients

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Disclosures for this Article

Editors

Jennifer Moriatis Wolf, MD, has no relevant conflicts of interest to disclose.

Authors

All authors of this journal-based CME activity have no relevant conflicts of interest to disclose. In the printed or PDF version of this article, author affiliations can be found at the bottom of the first page.

Planners

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Learning Objectives

Upon completion of this CME activity, the learner should achieve an understanding of:

- The options for treatment of osteoarthritis of the trapeziometacarpal (TMC) joint
- Traditional indications and the background literature for TMC joint arthrodesis
- The disadvantages of TMC joint arthrodesis in terms of motion and function, as well as impact on adjacent joints

Deadline: Each examination purchased in 2016 must be completed by January 31, 2017, to be eligible for CME. A certificate will be issued upon completion of the activity. Estimated time to complete each JHS CME activity is up to one hour.

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Purpose To investigate the outcomes of trapeziometacarpal (TMC) joint arthrodesis for primary osteoarthritis in elderly patients in comparison with a younger cohort.

Methods We performed a retrospective study of outcomes following TMC joint arthrodesis between patients older than 65 years (elderly group) and patients younger than 55 years (younger group). Thirty-eight hands in 29 patients were included in this study. There were 19

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hands in 16 elderly patients and 19 hands in 13 younger patients with average ages of 68 and 52 years, respectively. Postoperative follow-ups were 36 and 35 months, respectively. Patient-reported upper extremity disability was assessed using the Japanese Society for Surgery of the Hand version of Disabilities of the Arm, Shoulder, and Hand (DASH). Clinical evaluation of impairment measures included measurement of key pinch strength, grip power, range of motion, and Kapandji score.

Results In both groups, surgery was effective in relieving pain. The DASH score improved at the final follow-up in both groups. Improvements in the DASH score showed similar results in both groups. Preoperative key pinch strength was similar between the 2 groups. Although this improved for both groups, the younger group did have greater improvement. Grip strength also improved in both groups. The younger group had better pre- and postoperative grip strength; however, the extent of improvement was similar between the 2 groups. Postoperative range of motion and Kapandji scores were similar between the 2 groups.

Conclusions Outcomes of patients older than 65 years following TMC joint arthrodesis and those of patients younger than 55 years were similar except for improvement of key pinch strength. This procedure has a role in the surgical treatment of primary TMC joint osteoarthritis in the elderly as well as in younger patients. (*J Hand Surg Am.* 2016;41(7):753–759. Copyright © 2016 by the American Society for Surgery of the Hand. All rights reserved.)

Type of study/level of evidence Therapeutic IV.

Key words Trapeziometacarpal arthrodesis, trapeziometacarpal joint, elderly patients.

NUMEROUS PROCEDURES HAVE BEEN described for the treatment of osteoarthritis of the trapeziometacarpal (TMC) joint. These include ligament reconstruction,¹ metacarpal osteotomy,² total joint arthroplasty,^{3,4} TMC joint arthrodesis,^{5–16} and trapezium excision with ligament reconstruction and tendon interposition (LRTI).^{17–22} Trapeziometacarpal joint arthrodesis has been favored by some authors for younger, high-demand patients with posttraumatic arthritis,^{5,8} whereas LRTI has been reserved for older, lower-demand patients.^{8,9} Carroll⁸ advised against TMC joint arthrodesis in older patients owing to the risk of progression of pantrapezium arthritis. In contrast, Fulton and Stern¹⁵ reported favorable outcomes following TMC joint arthrodesis in patients older than 50 years of age. The indication for TMC joint arthrodesis for primary osteoarthritis in elderly patients remains controversial.

Although both TMC joint arthrodesis and LRTI are commonly performed procedures for the treatment of primary osteoarthritis with stage III disease, according to the radiographic classification described by Eaton and Glickel,²³ we have routinely used TMC joint arthrodesis regardless of patient age. The goal of this study was to compare the outcomes of TMC joint arthrodesis in elderly and younger patients. We hypothesized that patients older than 65 years who had TMC joint arthrodesis would have outcomes comparable with those younger than 55 years.

MATERIALS AND METHODS

Patients

This study was undertaken after approval of our institutional review board. Written informed consent was obtained from each patient.

We performed a retrospective study of outcomes following TMC joint arthrodesis comparing patients older than 65 years (range, 65–74 years; elderly group) and patients younger than 55 years (range, 43–55 years; younger group). The primary inclusion criterion was the presence of primary stage III TMC joint osteoarthritis according to the radiographic criteria of Eaton and Glickel.²³ The minimum postoperative follow-up period was 2 years. Exclusion criteria included cognitive difficulties that precluded the ability to complete a self-administered questionnaire, rheumatoid arthritis, previous wrist or hand fracture, and previous surgery on the wrist or hand. We treated 29 patients (38 hands) who met these criteria. There were 19 hands in 16 patients (1 man, 15 women) in the elderly group and 19 hands in 13 patients (1 man, 12 women) in the younger group. All patients failed to improve after nonsurgical treatment including orthosis fabrication, nonsteroidal anti-inflammatory drugs, or intra-articular steroids injection over a minimum duration of 6 months. Indications for surgery were severe pain, loss of strength, or motion causing marked disability during activities of daily living.

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