September, 2025

TOUCH®
A SUMMARY OF PUBLICATIONS AND SCIENTIFIC WORK

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DUAL MOBILITY TRAPEZIOMETACARPAL PROSTHESIS: A PROSPECTIVE STUDY OF 107 CASES WITH A FOLLOW-UP OF MORE THAN 3 YEARS

Lussiez B, Falaise C, Ledoux P. Dual mobility trapeziometacarpal prosthesis: a prospective study of 107 cases with a follow-up of more than 3 years. J Hand Surg Eur Vol. 2021 Nov;46(9):961-967.

Abstract

We report the results of a prospective study using a dual mobility trapeziometacarpal prosthesis (TOUCH®) in 107 patients with a minimum follow-up of 3 years.

One-hundred and two patients (95%) were very satisfied or satisfied with the functional outcomes and the mean pain intensity in visual analogue scale decreased from 7.4 to 0.8 ($p<0.001$). Thumb opposition (Kapandji score) index increased from an average of 8.0 to 9.4, while the mean QuickDASH score improved from 38 preoperatively to 20 at follow-up ($p<0.01$). Key-pinch strength improved from 3.5 kg (range 0.5–9.5) to 5.5 kg (range 3.0–11.5). There was a 4.6% rate of complications, including cup loosening and wear of polyethylene, which required revision, but no cases of prosthetic dislocation were seen.

Applying the dual mobility principle to trapeziometacarpal arthroplasty may significatively improve the stability of these prostheses. Radiolucent zones around the components of the prostheses are not systematic predictors of future loosening.

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TOUCH® DOUBLE MOBILITY ARTHROPLASTY FOR TRAPEZIOMETACARPAL OSTEOARTHRITIS: OUTCOMES FOR 92 PROSTHESES

Gonzalez-Espino P, Pottier M, Detrembleur C, Goffin D. TOUCH® double mobility arthroplasty for trapeziometacarpal osteoarthritis: outcomes for 92 prostheses. Hand Surg Rehabil. 2021 Dec;40(6):760-764.

Abstract

Trapeziometacarpal prostheses have been used in the treatment of first carpometacarpal joint osteoarthritis for many years. No studies have demonstrated statistical superiority over gold-standard trapeziectomy, but they have been proved to enable shorter convalescence, better pain relief and faster functional recovery. The aims of the present study were to report functional results in a large cohort treated with the TOUCH® new-generation dual mobility trapeziometacarpal prosthesis, with comparison to results in the literature. A retrospective study included 92 TOUCH® prostheses. Assessment comprised pre- and post-operative pain, QuickDASH score and satisfaction rate.

Mean follow-up was 1.33 ± 0.4 years. Pain significantly improved after surgery. Functional QuickDASH scores did not significantly differ from those reported in the age-matched general population. Return to work was fast, at 2.6 months. Satisfaction scores were high. There were no major complications such as dislocation, fracture or loosening, but the rate of De Quervain's tenosynovitis was higher than in other studies.

The TOUCH® prosthesis appeared to be a safe and stable implant, providing good satisfaction and very good functional scores and fast return to work and leisure activity. Considering the high rate of postoperative De Quervain's tenosynovitis, we suggest opening the first sheath of the extensors tendons while positioning the prosthesis.

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TOUCH® PROSTHESIS FOR THUMB CARPOMETACARPAL JOINT OSTEOARTHRITIS: A PROSPECTIVE CASE SERIES

Froschauer SM, Holzbauer M, Mihalic JA, Kwasny O. TOUCH® Prosthesis for Thumb Carpometacarpal Joint Osteoarthritis: A Prospective Case Series. J Clin Med. 2021 Sep 10;10(18):4090.

Abstract

The dual mobility concept currently represents the newest generation of thumb carpometacarpal prostheses. The aim of this study was to evaluate the short-term outcomes of TOUCH® prosthesis. From September 2019 to July 2020, 40 prosthesis were implanted in 37 patients suffering from symptomatic stage III osteoarthritis.

All included patients with a median age of 57.7 (IQR: 13.6) finished the systematic follow-up regimen (4, 8, 16 weeks, 6, and 12 months postoperatively). All parameters significantly improved ($p < 0.0001$) compared to the preoperative status. At 1 year follow-up, median DASH Scores decreased from 54 (IQR 22) to 12 (IQR 28) and pain levels improved from 8 (IQR 2) to 1 (IQR 2). Moreover, key-pinch strength increased from 3.8 (2.0) to 5.8 (2.5), while palmar abduction, radial abduction, and opposition also significantly improved. 35/37 patients were satisfied with the functional outcomes. We observed 10 complications, of which 6 were tendon-related issues, and 2 were due to an inappropriate choice of neck size. We could detect one dislocation but no evidence of cup loosening, tilting or subsidence in any patient.

Despite the occurrence of some complications, we recommend implantation of this prosthesis type due to favorable clinical and radiological performance.

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EARLY RESULTS OF DOUBLE MOBILITY TRAPEZIOMETACARPAL TOTAL JOINT ARTHROPLASTY: PROSPECTIVE SERIES OF 82 TOUCH® PROSTHESIS

Van Melkebeke L, Caekebeke P, Duerinckx J. Early results of double mobility trapeziometacarpal to¬tal joint arthroplasty: prospective series of 82 TOUCH® prosthesis. Minerva Orthop 2022;73:241-6.

Abstract

Background
In trapeziometacarpal total joint arthroplasty, variable results have been described. Continuous ad¬vancements in implant design have improved outcome, but dislocation remains an important concern. For this reason, a new generation of prosthesis that is based on the concept of "double mobility" has been recently introduced. The goal of this study was to evaluate the short-term functional and radiological outcome of these new implants.

Methods
Eighty-two double mobility trapeziometacarpal prosthesis (Kerimedical TOUCH®, Geneva, Switzerland) were included. Follow-up averaged 11 months (3-22 months). Thumb range of motion, key pinch and grip strength were pro¬spectively evaluated before surgery and at 6 weeks, 3 months and 1 year postoperatively. Pain during rest, pain during ac¬tivity, hand function according to the Quick-DASH Score and patient satisfaction were assessed. Most recent radiographs of the implant of were evaluated. Patient charts were reviewed for complications related to the surgery.

Results
Thumb motion and strength improved quickly and significantly after surgery. No dislocations occurred. Survival rate was 100%. No radiological signs of loosening or subsidence were observed. One year or later after surgery, 51% of patients had complete pain relief, mean qDASH Score was 9.3 and 93% of patients would have the same surgery again.

Conclusions
Early postoperative results after TOUCH® double mobility (Kerimedical TOUCH®) trapeziometacarpal total joint arthroplasty are promising.

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METACARPOPHALANGEAL HYPEREXTENSION IN THUMB BASAL JOINT OSTEOARTHRITIS: RADIOLOGICAL STUDY AND IMPLICATIONS FOR TREATMENT

Ledoux P. Metacarpophalangeal hyperextension in thumb basal joint osteoarthritis: Radiological study and implications for treatment. Hand Surg Rehabil. 2023 Feb;42(1):56-60

Abstract

We report a series of 95 consecutive patients operated on for total trapeziometacarpal joint replacement, screening for radiological characteristics to differentiating patients with and without preoperative MCP hyperextension. Loss of thumb column length and metacarpal head circularity on lateral view were quantified. Statistically, a combination of reduced length and circular metacarpal head was a determining factor for MCP hyperextension. We therefore believe it is essential to restore thumb column length in surgery for trapeziometacarpal osteoarthritis and to avoid trapeziectomy in patients with a circular head on lateral view.

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DUAL MOBILITY PROSTHESIS FOR TRAPEZIOMETACARPAL OSTEOARTHRITIS: RESULTS FROM A PROSPECTIVE STUDY OF 55 PROSTHESES

Falkner F, Tümkaya AM, Thomas B, Panzram B, Bickert B, Harhaus L. Dual mobility prosthesis for trapeziometacarpal osteoarthritis: results from a prospective study of 55 prostheses. J Hand Surg Eur Vol. 2023 Feb 28. Epub ahead of print.

Abstract

This prospective study evaluated outcomes after trapeziometacarpal joint replacement with a dual mobility prosthesis (TOUCH®) in 55 thumbs (52 patients) with a mean follow-up of 25 months (range 12-36). Pre- and postoperative assessments included pain, range of motion, the Kapandji index, pinch- and grip strength, as well as functional scores and radiological parameters.

Mean preoperative metacarpophalangeal joint hyperextension of 19° (range 15°-28°) showed a significant correction after 1 year with a mean value of 2° (range 0°-5°). Mean Quick Disabilities of the Hand, Shoulder and Arm score was 14 (range 6-28), and Michigan Hand Questionnaire 82 (range 67-92).
No revisions due to infection, loosening, dislocation or material failure occurred during follow-up.

The dual mobility trapeziometacarpal joint prosthesis was a reliable treatment option to decrease pain, improve motion, strength and pre-existing metacarpophalangeal joint hyperextension at short-term follow-up.

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LOW COMPLICATION RATE AND HIGH IMPLANT SURVIVAL AT 2 YEARS AFTER TOUCH® TRAPEZIOMETACARPAL JOINT ARTHROPLASTY

Herren DB, Marks M, Neumeister S, Schindele S. Low complication rate and high implant survival at 2 years after TOUCH® trapeziometacarpal joint arthroplasty. J Hand Surg Eur Vol. 2023 Jun 13. Epub ahead of print.

Abstract

We analysed complications, revision surgeries, and patient-reported and clinical outcomes 2 years after trapeziometacarpal joint implant arthroplasty using the TOUCH® prosthesis.

Of 130 operated patients with trapeziometacarpal joint osteoarthritis, four had to be revised owing to implant dislocation, loosening or impingement, leading to an estimated 2-year survival rate of 96% (95% confidence interval: 90 to 99). Of 101 patients available for the 2-year follow-up, complications occurred in 17, with the most frequent being de Quervain stenosing vaginosis (n = 6) and trigger thumb (n = 5).

Pain at rest decreased significantly from a median value of 5 (interquartile range [IQR]: 4 to 7) before surgery to 0 (IQR: 0 to 1) at 2 years. Key pinch strength increased significantly from 4.5 kg (IQR: 3.0 to 6.5) to 7.0 kg (IQR: 6.0 to 8.0).

We recommend surgery with the TOUCH® prosthesis as the standard procedure for patients with isolated trapeziometacarpal joint osteoarthritis because of the high survival rate and promising outcomes at 2 years.

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TIME TO RETURN TO WORK AFTER TOTAL TRAPEZIOMETACARPAL PROSTHESIS

Tchurukdichian A, Delgove A, Essid L, Moris V, di Summa PG, Camuzard O, Ornetti P, Zwetyenga N, Guillier D. Time to return to work after total trapeziometacarpal prosthesis. Hand Surg Rehabil. 2023 Sep;42(4):347-353

Abstract

Objectives
This study assessed return to work and prosthesis survival after trapeziometacarpal prosthesis surgery.

Material and methods
A multicenter retrospective study was carried out on patients operated on between 2002 and 2020. All working patients who had undergone trapeziometacarpal prosthesis surgery were included. Return to work was defined as resuming the same full-time position. Postoperative events and their specific treatment and failure to return to work were reported.

Results
240 prostheses in 211 patients were included. The complications rate was 7.5%, with 97% prosthesis survival. 94.3% of patients returned to work, at a mean 48 days (range, 29-210 days; SD, 22.7 days), with no significant difference according to age. Twelve patients did not return to work, half of whom because of prosthetic complications.

Conclusion
Trapeziometacarpal arthroplasty enables most patients to return to work within 6 weeks. In this series, the prosthetic survival rate was 97%.

To be noted: prostheses used Ivory®, Moovis®, TOUCH®

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[SHORT-TERM OUTCOMES OF TOUCH® PROSTHESIS FOR THUMB CARPOMETACARPAL JOINT]

Filuś D, Pavličný R. [Short-term Outcomes of TOUCH® Prosthesis for Thumb Carpometacarpal Joint]. Acta Chirurgiae Orthopaedicae et Traumatologiae Cechoslovaca. 2023 ;90(4):277-282. Language: CZE

Abstract

Purpose of the study
Rhizarthrosis, a degenerative condition of the carpometacarpal joint of the thumb, affects mainly women. Surgical treatment is indicated once the non-operative treatment fails. Thumb carpometacarpal joint total arthroplasty constitutes one of the surgical treatment options. This study aims to evaluate the short-term functional and radiological outcomes of TOUCH® prosthesis with a minimum follow-up period, namely two years after surgery.

Material and methods
The study presents the outcomes of a group of 56 endoprostheses implanted in 48 patients. The dual mobility TOUCH® prosthesis is evaluated. The group consisted of 41 women and 7 men, with the median age of the patients being 62 years. The patients were indicated for surgery after the non-operative treatment had failed. All of them suffered from stage II - IV osteoarthritis according to the Eaton-Littler classification. The range of motion - the opposition was assessed using the Kapandji score. The function and the pain were evaluated with the DASH questionnaire preoperatively and at 3 months, 6 months, 1 year and 2 years postoperatively.

Results
After 24 months, 91.1% (51 patients) were satisfied with the surgical outcome. Altogether 8.9% of patients (5 patients) experienced postoperative exercise-induced pain, limitation of movement of the CMC joint or hand weakness. No dislocation or endoprosthetic loosening occurred in the evaluated group. Primary wound healing was reported in all patients and no superficial or deep infection was observed. The mean DASH score was 65.3 points preoperatively; at the 2-year follow-up, the mean score decreased to 10.8 points. The pain assessed in question 24 of the DASH questionnaire decreased from the mean value of 4.45 points to 1.2 points. After two years, the range of motion of all patients was 10/10 according to Kapandji.

Discussion
There are plenty of surgical techniques to manage rhizarthrosis. All types of surgery have their pros and cons. Most endoprostheses used nowadays show good short-term, mid-term, and some of them even long-term outcomes in terms of survival. The TOUCH® prosthesis, characterized by dual mobility, is the 3rd generation thumb CMC prosthesis and in our study achieves comparable short-term outcomes to those reported by international literature. The use of the dual mobility design appears to be effective in reducing the dislocation rate.

Conclusions
The TOUCH® thumb CMC prosthesis achieves very good short-term functional and radiological outcomes. We can recommend the prosthesis provided the patients are followed-up for more than two years after surgery.

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EXPERIENCE IN MAJOR COMPLICATIONS WITH TOTAL TRAPEZOMETACARPAL PROSTHESES

Sánchez-Crespo MR, Couceiro-Otero J, Del Canto-Alvarez FJ, Ayala-Gutiérrez H, Holgado-Fernández M. Experience in major complications with total trapezometacarpal prostheses. Rev Esp Cir Ortop Traumatol. 2023 Oct 31:S1888-4415(23)00225-4.

Abstract

Introduction
The treatment of rhizarthrosis using trapeziometacarpal prostheses (TMP) is increasing. Complications may lead to loss of the implant and result in salvage surgery. Our aim was to assess major complications with the use of some TMP models and their rescue.

Material and method
Retrospective study on TMP implanted between 2006 and 2021. Models studied: Arpe®, Elektra®, Ivory®, Maïa®, Isis® and TOUCH®. Demographic data were assessed, implant placement by radiographic study, technical data, complications, salvage surgeries and final survival.

Results
Review of 224 TMP, 45 Arpe® (95.5% survival, rate follow-up [R] 6-16 years), 5 Elektra® (80% survival, R 13-14), 14 Ivory® (92.8% survival, R 9-11), 7 Maïa® (100% survival, R 8-9), 115 Isis® (99.1% survival, R 1-8), 38 TOUCH® (100% survival, R 1-4). The medial angle of the dome with the proximal articular surface of the trapezium in the lateral plane, was: Arpe®: 8.85°, Elektra®: not assessable, Ivory®: 6.6°, Maïa®: 14.4°, Isis®: 3.8°, and TOUCH®: 5.95°. The Isis® was placed 100% with scopic guidance presenting a significantly lower angle respect to the medial angle of the dome with the proximal articular surface of the trapezium. As main complications, we observed 3.5% of dislocations and 4% of mobilisations, with the Elektra® being responsible for 47% of these. Nineteen salvage surgeries were performed, with 3% of the implants being lost.

Conclusions
Dislocation and mobilisation are the most observed complications, the Elektra® responsible for almost half of them. Correct placement and implant design appear to be crucial to avoid them in the short and long term.

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DOES TRAPEZIUM REMODELING CORRELATE WITH CUP SHAPE?

Van Hove B, Caekebeke P, Duerinckx J. Does trapezium remodeling correlate with cup shape? Hand Surg Rehabil. 2024 Feb;43(1):101618.

Abstract

We investigated whether trapezium bone reaction was different following implantation of a trapeziometacarpal total joint replacement with a hemispheric or a conical cup. Fifty-three Keri Medical TOUCH® implants with hemispheric cup and 53 with conical cup were prospectively followed up radiographically. We compared radiographs taken immediately and one year after surgery for cup subsidence, tilt, heterotopic ossification and loosening. Cup subsidence of at least 1 mm was detected in 4% of cases for both cup types. Additive bone reaction around the cup of more than 1 mm was present in 62% of conical cups and 47% of hemispheric cups. These were minor and there were no large ossifications with risk of impingement. Minor radiolucency was seen superficially at the implant-bone interface of 13% of the hemispheric cups and 9% of the conical cups. None of these bone reactions differed significantly according to cup design.

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FAILURE RATE AND EARLY COMPLICATIONS OF THUMB CARPPOMETACARPAL JOINT REPLACEMENT – A MULTICENTER RETROSPECTIVE STUDY OF TWO MODERN IMPLANT DESIGNS*

Farkash U, Sakhnini M, Dreyfuss D, Tordjman D, Rotem G, Luria S. Failure Rate and Early Complications of Thumb Carpometacarpal Joint Replacement-A Multicenter Retrospective Study of Two Modern Implant Designs. J Clin Med. 2023 Dec 25;13(1):121

Abstract

Joint replacement arthroplasty for the treatment of thumb osteoarthritis is gaining popularity as recent studies have demonstrated better pinch and grip strength and faster rehabilitation. Our aim was to identify early complications in modern implant designs using a multicenter study. A total of 381 patients who underwent thumb carpometacarpal replacement surgery in six participating hospitals were enrolled.

The complications included were fractures, dislocations, infections, tendon and nerve injuries, and complex regional pain syndrome. Major complications were defined as a failure to implant the prosthesis, revision surgery to remove the implant, and any other need for further surgical intervention. The secondary outcomes were any other complications treated non-surgically and the timing of the complications. Eleven procedures failed, and these patients were treated with trapeziectomies. Twelve other patients required repeat surgical interventions. Minor adverse events occurred in 25.4% of the cases, and transient irritation of the superficial radial nerve and De Quervain tendinopathy were the most prevalent complications.

Although this cohort depicted the learning curves of multiple surgeons, our study demonstrated low short-term failure rates. An inability to achieve primary stability of the cup in the trapezium was the leading cause of failure. Dislocations and other major complications with modern implants were very few.

**Two modern implants: TOUCH® and Maïa™*

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MANAGEMENT OF THE CAPSULE IN TRAPEZIOMETACARPAL JOINT IMPLANT ARTHROPLASTY: RESECTION VERSUS REPAIR

Reischenböck V, Marks M, Imhof J, Schindele S, Herren DB. Management of the capsule in trapeziometacarpal joint implant arthroplasty: resection versus repair. J Hand Surg Eur Vol. 2024 Jan 31:17531934241227788

Abstract

We compared the effects of capsule resection versus capsule suturing in patients treated with a dual-mobility trapeziometacarpal joint prosthesis. We included 131 patients with capsular resection and 57 patients with repair.

The mean scores for pain and the brief Michigan Hand Outcomes Questionnaire were similar between the groups preoperatively and at 6 weeks and 1 year postoperatively. Mean key pinch strength was also similar in both groups before surgery and at 1 year, but higher in the capsular resection than in the suture group at 6 weeks. The incidence of complications reported throughout the 1-year postoperative period was not significantly different between the groups. One implant in the capsular resection group was revised for reasons most likely unrelated to capsule management.

We conclude that the capsule can be safely resected during trapeziometacarpal joint implant arthroplasty.

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PROPOSED RADIOGRAPHIC PARAMETERS TO OPTIMIZE CLINICAL OUTCOMES IN TRAPEZIO-METACARPAL PROSTHESIS PLACEMENT USING CT IMAGING, WITH 1-YEAR FOLLOW-UP

Piccirilli E, Primavera M, Salvati C, Oliva F, Tarantino U. Proposed Radiographic Parameters to Optimize Clinical Outcomes in Trapezio-Metacarpal Prosthesis Placement Using CT Imaging, with 1-Year Follow-Up. J Pers Med. 2024 May 29;14(6):585.

Abstract

Purpose
Addressing trapezio-metacarpal (TMC) osteoarthritis often involves considering TMC joint replacement. Utilizing TMC prostheses offers advantages such as preserving the thumb length and more accurately replicating the thumb's range of motion (ROM). TMC prostheses have an intrinsic risk of dislocation and aseptic loosening. Analyzing pre- and postoperative imaging can mitigate complications and improve prosthetic placement, providing insights into both successes and potential challenges, refining overall clinical outcomes.

Materials and methods
We conducted a prospective analysis of 30 patients with severe TMC arthritis treated with a TOUCH® (Kerimedical, Geneva, Switzerland) prosthesis in 2021-2023: X-ray and CT protocols were developed to analyze A) the correct prosthesis placement and B) its correlation with clinical outcomes (VAS, Kapandji and QuickDASH scores) by performing Spearman correlation analysis.

Results
The average differences in trapezium height and M1-M2 ratio pre- and post-surgery were, respectively, 1.8 mm (SD ± 1.7; $p < 0.001$) and 0.04 mm (SD ± 0.04; $p = 0.017$). Pre-to-postoperative M1 axis length increased by an average of 2.98 mm (SD ± 3.84; $p = 0.017$). Trapezial cup sinking, indicated by the trapezium index, measured 4.6 mm (SD ± 1.2). The metacarpal index averaged at 11.3 mm (SD ± 3.3). The distance between the centers of the trapezium distal surface and the prosthesis cup was 2.23 mm (SD ± 1.4). The Spearman correlation analysis gave the following results: negative correlations were highlighted between postoperative VAS scores and the M1/M2 ratio and residual trapezium height (correlation coefficient: -0.7, $p = 0.03$ and -0.064, $p = 0.03$, respectively) at 6 months; a negative correlation was found at the 3-month mark between QuickDASH and the trapezium residual height (correlation coefficient: -0.07, $p = 0.01$); and a positive correlation was found for the trapezium index at 1 month (correlation coefficient: 0.07, $p = 0.03$) and 3 months ($p = 0.04$) using the Kapandji score. Similarly, we found a positive correlation between the distance between the prosthesis and trapezium centers and QuickDASH score at 1 and 3 months (correlation coefficient: 0.066, $p = 0.03$; correlation coefficient: 0.07, $p = 0.05$, respectively) and a positive correlation between prosthesis axis and the residual first metacarpal angle with QuickDASH score at 3 months (correlation coefficient: 0.07, $p = 0.02$).

Conclusions
Pre- and postoperative systematic imaging analysis should become a method for predicting complications and guiding recovery in TMC prosthesis: CT imaging could provide us with radiographical landmarks that are intrinsically linked to clinical outcomes. Further research is necessary to fuel a protocol for the correct intraoperative TMC prosthesis implantation.

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A SPECIFIC DUAL-MOBILITY PROSTHESIS DESIGN IN TRAPEZIOMETACARPAL JOINT OSTEOARTHRITIS

Giuseppe Rovere, Francesco Bosco, Alessio Cioffi, Fortunato Giustra, Francesco Liuzza, Lawrence Camarda, A specific dual-mobility prosthesis design in trapeziometacarpal joint osteoarthritis, Journal of Orthopaedic Reports, 2025, 100630, ISSN 2773-157X.

Abstract

Purpose
Many prosthetic designs have been developed for treated trapeziometacarpal joint (TMJ) osteoarthritis (OA). The aim of the study was to analyze the clinical, functional, and radiological outcomes and complications of a specific dual-mobility prosthesis for TMJ OA to support the correct hand surgeon decision.

Methods
Between January 2019 and January 2022, a retrospective study was conducted on a consecutive series of 14 patients affected by TMJ OA and treated with the implantation of TOUCH® dual mobility TMJ prosthesis (KeriMedical Switzerland-HQ, Geneve, Switzerland). The follow-up period was 12–36 months. Evaluation criteria included the trapeziometacarpal axis, the Visual Analogue Scale (VAS), the pulp-to-pulp modified pinch test, the Kapandji score, and the Michigan Hand Outcomes Questionnaire (MHQ).

Results
Clinical, functional, and radiological improvements were found in all outcomes analyzed. The postoperative values of VAS and pulp-to-pulp modified pinch test were statistically significant ($p < 0.05$). A non-statistically significant postoperative improvement was found in the Kapandji score ($p < 0.05$). Regarding complications, only one EPL injury was found, but no infection or prosthetic dislocation.

Conclusions
The use of a TOUCH® dual-mobility prosthesis for treating TMJ OA improved postoperative clinical, functional, and radiological outcomes with a lower rate of complications in a short-term follow-up.

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FIVE-TO-8-YEAR PROSPECTIVE FOLLOW-UP OF 61 TOUCH® TRAPEZIOMETACARPAL PROSTHESES

Falaise C, Boulat S. Five-to-8-year prospective follow-up of 61 Touch® trapeziometacarpal prostheses. Hand Surg Rehabil. 2025 Jun;44(3):102167

Abstract

Objective
The purpose of this study was to evaluate the clinical and radiologic outcomes of the first patients who received a dual-mobility trapeziometacarpal prosthesis in our centre, for first carpometacarpal joint osteoarthritis, with a minimum 5-year follow-up.

Patients and methods
Fifty-seven patients received a total trapeziometacarpal ball-and-socket arthroplasty with the Touch® prosthesis for severe arthritis and one for significant laxity. Four patients underwent bilateral surgery. One was lost of follow-up and three died during the study. Function was assessed before surgery and at one, 3, 5 and 10-years follow-up visits. Visual analog scale for pain, active thumb range of motion, including Kapandji's score, key-pinch grip strength and patients' satisfaction outcomes were recorded by an independent observer. Standardized radiographs were obtained to assess osteolysis, loosening, and subsidence.

Results
Patients were followed for an average of 6.5 years (5-8.8). Pain decreased from 7.3 to 0.4, range of motion increased, and key grip strength improved from 67% to 102% of the contralateral side. Metacarpophalangeal hyperextension was present in 26 thumbs (46%) before surgery (5 severe, more than 30°), and in 19 thumbs (33%) at follow-up. Z-deformity was reported in 13 cases (23%) preoperatively and in 2 cases (4%) postoperatively. At maximum follow-up, radiographs showed minor osteolysis in 4 cases (7%) around the trapezium component and in 7 cases (12%) around the metacarpal component. One revision (2%) was required for cup loosening 7 years after surgery. All patients were satisfied or very satisfied with the treatment.

Conclusions
This prospective study of 61 Touch® dual mobility prostheses confirms that this implant is a safe and effective treatment option for trapeziometacarpal osteoarthritis in the short and medium term. Continued follow-up is necessary to assess the long-term outcomes of this arthroplasty.

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TOUCH® DUO-MOBILE PROSTHESIS IN TMC OSTEOARTHRITIS: TWO-YEAR RESULTS AND PRACTICAL INSIGHTS REGARDING KEY SURGICAL STEPS AND COMPLICATION MANAGEMENT

Frey PE, Daeschler SC, Naseri Y, Franzen M, Sommer J, Harhaus L, Panzram B. TOUCH® duo-mobile prosthesis in TMC osteoarthritis: two-year results and practical insights regarding key surgical steps and complication management. Arch Orthop Trauma Surg. 2025 May 22;145(1):308.

Abstract

Introduction
The Touch® dual-mobility prosthesis is a well-established treatment for advanced trapeziometacarpal (TMC) joint osteoarthritis, offering an alternative to resection arthroplasty. Short-term studies suggest dual-mobility designs reduce dislocation and loosening compared to single-mobility prostheses. This retrospective study presents clinical outcomes after a mean follow-up of 24 months, focusing on revision surgery and providing insights about key surgical steps and the management of adverse events.

Materials and methods
A total of 78 patients (88 prostheses) with TMC osteoarthritis underwent surgery between August 2019 and December 2023, performed by a single surgeon in a monocentric setting. Preoperative assessments and follow-ups were conducted at 6 weeks, 6 months, 12 months, and annually. Outcome measures included radiographic analysis, range of motion, grip/pinch strength, pain (NRS 1-10), and functional scores (qDASH, briefMHQ). Complications and revisions were recorded.

Results
At a mean follow-up of 24 months (range 6-61 months), significant improvements in hand function, pain, and mobility were observed. Preoperative thumb MCP hyperextension (> 15° in 23 thumbs) was corrected to 6° on average, and thumb length was restored. Four patients (4.5%) required implant revision: two due to secondary cup dislocation after misplacement, two due to impingement. Seven secondary surgeries addressed wound healing disorders (n = 2) and secondary De Quervain tenosynovitis (n = 5). Kaplan-Meier analysis showed a 96% prosthesis survival rate at two years.

Conclusions
The Touch® dual-mobility prosthesis demonstrates high effectiveness in improving pain, function, and thumb stability, with low revision rates. Restoration of thumb length and correction of hyperextension support its use as a reliable surgical option. These findings are consistent with existing literature suggesting superior long-term stability compared to single mobility implants. Identified surgical challenges highlight factors contributing to complications and emphasize intraoperative strategies to prevent revision.

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BALL-AND-SOCKET REPLACEMENT FOR THUMB CARPOMETACARPAL OSTEOARTHRITIS: A COMPARISON BETWEEN THE SINGLE AND DUAL MOBILITY DESIGN

Geuskens, Willem; Papen, Matthias; De Fré, Maxime; Vuylsteke, Kristien; Van Haver, Annemieke; Verstreken, Frederik; Vanhees, Matthias. Ball-and-Socket Replacement for Thumb Carpometacarpal Osteoarthritis: A Comparison Between the Single and Dual Mobility Design. 2163-3916. 2163-3924. 2025. J Wrist Surg.

Abstract

Objectives
Total joint arthroplasty is a valid surgical option for end-stage CMC1 osteoarthritis (OA). Currently, there are two types of implants used: the conventional single mobility design, and the new generation dual mobility design. Promising results for the latter design have been reported but there is scant literature on comparing the two implants. The objectives of this study were to first, assess the safety of the implants regarding loosening, revision, and luxation and second, compare the clinical outcomes and patient satisfaction of the two CMC1 implant designs.

Study design
This retrospective study evaluated plain radiographs for complications. To compare the clinical outcomes, patients were matched based on follow-up, age, and gender. Clinical outcomes consisted of lateral pinch and Grip strength, Kapandji, VAS, QuickDASH, and Nelson scores.

Results
An overall complication rate of 5.4% was observed and were all associated with the single mobility design. In contrast, the clinical outcomes were slightly superior in the single mobility design.

Conclusions
This study demonstrates excellent clinical and radiographic outcomes following CMC1 arthroplasty, with a clear trend toward an increased dislocation risk in the single mobility design.

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LEARNING CURVE FOR TRAPEZIOMETACARPAL JOINT IMPLANT ARTHROPLASTY: CASE VOLUME NEEDED TO ACHIEVE PROFICIENCY

Herren DB, Mathis K, Schindele S, Marks M. Learning curve for trapeziometacarpal joint implant arthroplasty: case volume needed to achieve proficiency. J Hand Surg Eur Vol. 2025 Jun 9:17531934251346310

Abstract

This study analysed the learning curve of trapeziometacarpal joint implant arthroplasty using the cumulative sum (CUSUM) method. A total of 338 patients underwent trapeziometacarpal joint arthroplasty with the Touch® prosthesis, performed by two expert surgeons (A, B) and one less experienced specialist (C). Surgical proficiency was achieved at case 33 for surgeon A and B, and case 40 for surgeon C. Mean surgery times were 39 min (SD 9), 43 min (SD 6) and 59 min (SD 19), respectively. Two-year clinical and patient-reported outcomes and revision rates were not worse for patients who underwent surgery before achieving proficiency. These findings indicate a considerable learning curve for trapeziometacarpal joint implant arthroplasty, with experienced surgeons achieving proficiency more quickly. Although outcomes before reaching the learning curve did not differ from those operated on later, we recommend comprehensive training when introducing this procedure and a high case volume to improve surgical skills.

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THE EFFECT OF TRAPEZIOMETACARPAL JOINT ARTHROPLASTY ON DORSORADIAL OFFSET AND THUMB LENGTH

Holzbauer M, Mihalic JA, Froschauer SM. The effect of trapeziometacarpal joint arthroplasty on dorsoradial offset and thumb length. J Hand Surg Eur Vol. 2025 Apr 12:17531934251332129

Abstract

Trapeziometacarpal joint arthroplasty achieved a physiological correction of joint position with regards to dorsoradial offset and thumb length, when comparing a group before and after arthroplasty with a gender-adjusted control group with healthy trapeziometacarpal joints.

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[INFLUENCE OF THE SCAPHOTRAPEZIOTRAPEZOID JOINT ON THE RESULTS OF TOTAL TRAPEZIOMETACARPAL PROSTHESES]

M.R. Sánchez-Crespo, H. Ayala-Gutiérrez, F.J. del Canto-Alvarez, J. Couceiro-Otero, M. Holgado Fernández, M. Vázquez-Sánchez, A. Lamagrande-Obregón, E. Gallardo-Agromayord, R. Landeras-Alvaro,
Influencia de la articulación escafotrapeciotrapezoidea en los resultados de las prótesis totales trapeciometacarpianas, Revista Española de Cirugía Ortopédica y Traumatología, 2025, ISSN 1888-4415

Abstract

Introduction
Scaphotrapeziotrapezoid (STT) joint osteoarthritis may influence the outcome after trapeziometacarpal prosthesis (TMP) implantation. The literature regarding its clinical and radiological assessment is unclear. The aim of our study was to determine by means of a pre- and post-intervention CT study whether the degree of STT involvement influences the clinical-functional or radiological results after TMP implantation, and to establish whether or not STT osteoarthritis could be a contraindication for the use of these implants.

Methods
Prospective study of 60 patients with trapeziometacarpal osteoarthritis grade III-IV operated between 2017 and 2022. The Van Cappelle functional test, pain, strength and mobility were evaluated. Simple radiology study and CT scan evaluating STT pre and post-surgery. The results were analyzed in relation to the joint space. Recording of complications and statistics.

Results
A total of 50 patients completed the study, mean age 59 years, mean follow-up 56 months, 36 Isis® and 14 Touch® were implanted. Significant improvement was observed in all variables. The STT joint space didn't change after the intervention, and no statistical association was found between the STT joint space and the different clinical-functional variables. Three cases (6%) suffered STT pain and none required surgical revision. No infections, dislocations or loosening. Four De Quervain's tenosynovitis and two per implant ossifications were observed. Survival of the implants was 100%.

Conclusions
The use of TMP in patients with trapeziometacarpal osteoarthritis has excellent short and medium-term results, regardless of STT involvement, so it should not be a contraindication for osteoarthritis at this level.

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CORRECTION OF METACARPOPHALANGEAL JOINT HYPEREXTENSION FOLLOWING TRAPEZIOMETACARPAL JOINT IMPLANT ARTHROPLASTY: A CASE-CONTROL STUDY

Schindele SF, Marks M, Beaud X, Reischenböck V, Herren DB. Correction of metacarpophalangeal joint hyperextension following trapeziometacarpal joint implant arthroplasty: a case-control study. J Hand Surg Eur Vol. 2025 Apr 11:17531934251330975.

Abstract

We hypothesized that metacarpophalangeal (MCP) joint hyperextension can be significantly reduced in patients with trapeziometacarpal joint (TMJ) osteoarthritis through TMJ dual mobility implant arthroplasty. Using registry data and propensity score matching, we compared 37 patients with preoperative MCP joint hyperextension >20° with 111 control patients with ≤20° extension. Before surgery, mean MCP joint extension was 34° (95% confidence interval 31-37) in the hyperextension group and 10° (95% CI 8-11) in the control group. Hyperextension was significantly reduced to 9° (95% CI 6-13) 6 weeks after surgery and was not significantly higher than the measured 5° (95% CI 4-7) in the control group. It remained stable for up to 2 years. Secondary outcomes including key pinch strength, pain, the brief Michigan Hand Outcomes Questionnaire and complications did not differ between groups at 2 years. Trapeziometacarpal joint implant arthroplasty can correct preoperative MCP joint hyperextension without additional procedures at the MCP joint.

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SWISS SGH CONGRESS 2022

Lessons learned after 80 TOUCH® trapeziometacarpal prosthesis

Elvira Bodmer1, Urs Hub1 (1 Luzern)

Introduction
Despite the satisfactory outcomes of RSI-Arthroplasty, the TOUCH® prosthesis has become an excellent alternative in recent years. Due to their double mobility concept, the third generation prostheses show significantly better 5-year results than the second generation prostheses. The aim of this study was to retrospectively analyse not our results but our complications in order to assess our learning curve and its consequences in a hand surgery teaching unit.

Methods
We are using TOUCH® prosthesis since 2019. To date (May 2022), 80 patients have been operated on by two surgeons. We have recorded our complications in a retrospective analysis. On the basis of clinician and patient reported outcomes, postoperative X-rays and the prosthesis components used, we have tried to identify technical challenges and to draw learning effects from them. We used the spherical cup in 76 % of cases.

Results
We analysed 80 TOUCH® prosthesis in 76 patients. Mean age was 62 years, 16 men and 60 women. A total of 6 complications (4.8%) were detected in 6 different patients: 2 cup dislocations, 2 instabilities of the metacarpo-phalangeal (MCP) joint, 1 ossification and 1 de Quervain's tenosynovitis. All 6 patients had to be reoperated: 2 re-positionings of the cup, 2 MCP fusions, 1 resection of the ossification and change to a bigger size of the neck and finally 1 synovectomy in the first extensor compartment.

Conclusion
Five out of 6 complications (83%) were among the first 19 patients (24%). The 2 cup dislocations were due to incorrect cup placement and/or insufficient resection of trapezium osteophytes. Periarticular ossification in 1 thumb caused stiffening of the prosthesis and was probably caused by insufficient resection of trapezial and metacarpal osteophytes. Persistent MCP joint instability after any procedure at the osteoarthritic trapeziometacarpal joint is a common problem in literature. It's debatable if this entity should be called "complication". In literature, de Quervain's tenosynovitis following TOUCH® prosthesis is well described. In our series it was only once a real problem, so we don't see the need to address first extensor compartment routinely.

In conclusion, our lessons learned are:
- Complete resection of hemicircular capsule and complete release of metacarpal base to get enough mobility for cup positioning
- Proper resection of osteophytes
- Invest enough time for optimal cup positioning
- Use of machine drill for conical cup if possible

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EUROPEAN FESSH CONGRESS 2022

CMC thumb replacement with TOUCH® implant, case series of first 65 cases, 2-4 years follow-up

Ajmal Ikram, Wikus De jager, Cameron Anley, Haroun Ahmed (University of Stellenbosch, Tygerberg Hospital, Cape Town – South Africa)

Aims of study
Assess the functional and radiological results of thumb CMC joint replacement done at Tygerberg Hospital and Private clinic, a case series of first 65 cases.

Method
Patients who had presented with CMC arthritis (Eaton Stage III disease) and failed conservative treatment (splint & LASI), with high demand were enrolled in this case series. CMC thumb replacement was done with dorsolateral approach between APL and EPB, capsular release was done L or T shaped and it was later repaired. Joint replacement was done with un-cemented stem to the metacarpal after preparation of the trapezium the cup was inserted, and bipolar head was used for articulation. Capsular repair was performed, and thumb Spica back slab was applied for two weeks. At follow-up short splint was given for another two weeks and mobilization was started. The patients were followed up at 6 weeks, 3 months, 6 months,1 year, 2 years and 4 years. The radiological parameters like implant position and height was checked and functional outcomes was assessed by means of DASH score.

Results
We currently have done 65 patients with CMC implant arthroplasty and at 2-4 years post-surgery radiological results show good position of components with one dislocation after 4 months of surgery. Functional results of CMC arthroplasty are good with better ROM and pinch grip strength was doubled the contra-lateral side.

Conclusion
CMC implant arthroplasty has better range of movements, earlier return to function and pinch strength almost same as normal side and double the excision arthroplasty side done on contra-lateral side previously.

What to expect from thumb carpometacarpal joint implant arthroplasty in younger patients?

Vanessa Reischenböck, Michael Oyewale, Miriam Marks, Stephan Schindele, Daniel B. Herren (Schulthess Klinik, Zurich, Switzerland)

Background
With higher functional demands, patients younger than 60 years of age are expected to achieve greater benefit from total joint arthroplasties, which are known to enhance range of motion (ROM) and thumb carpometacarpal (CMC I) joint strength. Nonetheless, it remains unknown whether total joint arthroplasties yield similar results in younger patients as they do in older patients.

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Objective
We compared the 1-year outcomes of CMC I joint arthroplasty using the TOUCH® (KeriMedical) prosthesis between younger and older patients.

Methods
Patients who were prospectively recorded in our registry completed the brief Michigan Hand Outcomes Questionnaire (brief MHQ; score 0-100), reported their pain levels during activities of daily living (Numeric Rating Scale; 0-10), and had their key pinch strength assessed. For this analysis, patients were allocated either into the younger (< 60 years) or older (≥ 60 years) aged patient group. Statistical analyses included the Mann-Whitney U test to compare between-group differences and the Wilcoxon signed-rank test to compare baseline with 1-year outcomes.

Results
86 patients (mean 63 [±8] years) with a follow-up of at least 1 year underwent an implant arthroplasty for CMC I osteoarthritis. 35 patients (42%) were younger than 60 years of age (56 [±4] years) at the time of surgery. The brief MHQ scores at baseline increased from mean 46 (±18) to 88 (±18) after 1 year in the younger patients ($p \leq 0.05$) and from 45 (±12) to 82 (±19) in the older patients ($p \leq 0.05$), which indicates significantly better hand function for the younger patients after 1 year ($p \leq 0.05$). Baseline pinch strength increased from 5.5 kg (±3.5) to 7.5 kg (±2.5) by 1 year in the younger patients ($p \leq 0.05$) and from 5 kg (±2.5) to 6.5 kg (±1.5) in the older patients ($p \leq 0.05$). Baseline pain levels decreased from 7.5 (±2.0) to 1.5 (±2.0; $p \leq 0.05$) after 1 year in both groups. There were no between-group differences after 1 year for pinch strength and pain. In the first year after surgery, we had to revise 1 implant in a 77-year-old man due to implant dislocation 2 weeks after the initial surgery. The prosthesis stem and neck were both changed to a larger size and the cup was cemented.

Conclusion
These findings confirm that, independent of age, patients recover well after TOUCH® CMC I total arthroplasty. Younger patients seem to have better overall hand function than older patients, although the levels of pain and pinch strength do not differ 1 year after surgery. Long-term results are necessary before conclusions can be drawn on the revision rate in both groups.

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EUROPEAN FESSH CONGRESS 2023

Total trapeziometacarpal arthroplasty with dual mobility prosthesis: preliminary results of long-term monitoring

Ferruccio Paganini, Federico Tamborini, Alessandro Fagetti, Andrea Minini, Francesco Locatelli, Anna Brandolini, Julien Teodori, Emanuele Mascherpa, Leonardo Garutti, Elisa Bascialla, Sara Matarazzo, Luigi Valdatta, Mario Cherubino (University of Insubria, Circolo Hospital and Macchi Fundation, Varese, Italy)

Background and objectives
Rhizarthrosis is one of the main chronic diseases affecting the hand and leading to long-term disability. Still under discussion is what is the best type of treatment. The aim of this study is to report the long-term results of total trapeziometacarpal arthroplasty by monitoring functional recovery and implant stability over time.

Materials and Methods
We performed 36 total trapeziometacarpal joint arthroplasties by implanting a dual mobility (TOUCH®) prosthesis in a total of 33 patients from 2019 to 2022. Grade 2 and 3 rhizarthrosis cases without STT involvement were treated. Pre- and post-operative changes in pain (VAS), function (Kapandji, radial abduction, Jamar test, key and 2-finger pinch test) and quality of life (QuickDASH) were assessed. Radiographic evaluation was performed pre-operatively, at 1 month and then annually.

Results
We had a statistically significant improvement (Wilcoxon test and Student t) of all investigated values, both functional and pain: VAS : z= -3.2958; p= 0.00096 (<0.05); Kapandji z= -3.2958; p-value 0.00096 (<0.05); radial abduction t-Score: 7.0124 p-Value: <0.00001 (<0.05); Jamar z= -2. 9701; p-value= 0.00298 (<0.05); key z= -3.1099; p-value 0.00188 (<0.05); 2 finger pinch z= -2.7954; p-value 0.00512 (<0.05); t-Score: 7.9853 p-Value: 0.00000219564 (<0.05). These improvements proved to be stable and did not present an involution in the currently available follow-up time. All patients stated that they would repeat the intervention and subjectively attested an improved hand function.

Conclusions
These preliminary results make the trapeziometacarpal dual mobility prosthesis a good therapeutic alternative in our opinion. It remains to be monitored over time for implant reliability, secondary non-decomposition, maintenance of results and best cost/benefit in the long term.

Mid-term results with double-mobility total thumb arthroplasty

Enrico Carità, Mara Laterza, Alberto Donadelli (San Francesco Clinic Verona, Italy)

Introduction
Osteoarthritis of basal thumb is a common condition seen in hand clinics which increases with age and is seen predominantly in postmenopausal women. The present retrospective study shows mid-term outcomes in patients with thumb carpometacarpal osteoarthritis treated with dual mobility prosthesis TOUCH® (Kerimedical, Route des Acacias, Les Acacias, Switzerland).

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Materials and Methods
We enrolled 75 patients (78 thumbs) treated at our centre for primary basal thumb osteoarthritis with dual mobility prosthesis TOUCH® between December 2018 and June 2022. Inclusion criteria were Eaton/Littler stage 3 osteoarthritis, no previous surgery, no concomitant rheumatic arthritis and no history of trauma.
We assessed patient demographics, pain (VAS), grip strength of the thumb using pinch dynamometer, range of motion using Kapandji and DASH score. Radiographs were taken pre operative, immediate post operative and at 1, 3, 6, 12 and 24 months after surgery. All occurring complications were recorded.

Results
Average follow-up period was 21 months (1,5 – 45 months). The mean VAS was 8,36 preoperatively and 0,9 postoperatively. The mean preoperative Kapandji opposition score was 7,7; postoperative the score was 9,2. The mean grip strength switched between 2,7 before surgery to 5,8 after surgery. The mean DASH was 47,9 preoperatively and 10,5 postoperatively. The overall complication rate was 2,6% (2 cases): one cup collapse and one aseptic cup loosening. No cases of infection or dislocation were reported.

Conclusions
Total joint arthroplasty with a dual mobility prosthesis TOUCH® appears to be a satisfactory solution in our series, giving the patients the opportunity to return quickly to work or manual hobby. Therefore, randomized studies with long-term follow-up are needed to verify sustainability of these prostheses.

Dual mobility prosthesis in treatment of trapeziometacarpal osteoarthritis: a prospective study of 97 patients

Matteo Guzzini, Leopoldo Arioli, Andrea Ferretti (Sant'Andrea University Hospital, Rome, Italy; Sapienza University of Rome, Italy)

The TOUCH® prosthesis is a dual mobility total implant used to treat carpometacarpal thumb osteoarthritis. This prospective study reports outcomes and the global assessment of 97 implanted prostheses with a mean follow-up of 2.2 years (range, 1.7-2.8 years).

There were 91 patients enrolled (17 male and 74 female), with an average age of 68.1 years (range, 58-79 years) and 65 dominant and 32 non-dominant operated hands. Patients were totally satisfied with surgery in 91 cases (93.8%), and the mean VAS scale decreased from 7.2 to 0.7. The mean DASH score improved from 49.8 to 13.2, and the mean Kapandji score from 7.9 to 9.6. Strength tests showed that the average Hand grip increased from 19.3 to 31.5 kg, the Key pinch from 3.8 to 6.6 kg and the Tip pinch from 1.8 to 4.2 kg. All the tests showed a statistically significant improvement ($p<0.05$) compared to the preoperative values.

There was no dislocation, postoperative fracture, implant loosening or infection. De Quervain's disease occurred in 4 cases (4.1%) and transient dorsal thumb paresthesia in 6 patients (6.2%). In only one case did an intraoperative fracture of the trapezium occur, and surgical conversion to suspension arthroplasty was necessary.

In conclusion, this study shows our preliminary results with dual mobility TOUCH® prosthesis, which allows rapid recovery of strength, range of motion and function, with no incidence of early prosthetic dislocations. In any case, the prosthesis avoids trapeziectomy, which can still be performed in case of implant failure.

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12 patients treated bilaterally with dual mobility prosthesis and trapeziectomy with suspension arthroplasty for trapeziometacarpal osteoarthritis: a multicenter study with 2-year follow-up

Matteo Guzzini 1, Leopoldo Arioli 1, Enrico Carità 2, Matilde Caracciolo 1, Alberto Donadelli 2, Andrea Ferretti 1 (1 Sant'Andrea University Hospital, Sapienza University of Rome, Italy; 2 San Francesco Clinic, Verona, Italy)

This study analyses and compares the outcomes and global evaluations at a 2-years follow-up of 12 patients with bilateral trapeziometacarpal osteoarthritis, treated on one hand with trapeziectomy and Altissimi tendon suspension arthroplasty, and on the contralateral hand with the implantation of the TOUCH® dual mobility prosthesis.

The patients, operated at the Sant'Andrea University Hospital of Rome or the San Francesco Clinic of Verona, were 2 males and 10 females with an average age of 61.5 years (range, 47 - 83 years). The operated hands were 24: 7 dominant and 5 non-dominant with the prosthesis and 5 dominant and 7 non-dominant with the suspension arthroplasty.

In the hands treated with trapeziectomy and suspension arthroplasty, the mean VAS scale improved from 7.6 to 1.8, the mean DASH from 52.0 to 10.4, the mean Kapandji from 7.6 to 9.3, and the mean Pinch test from 2.1 to 2.7 Kg. In the hands treated with TOUCH® prosthesis, the mean VAS scale reduced from 8.7 to 0.3, the mean DASH from 48.9 to 4.3, and the mean Kapandji increased from 7.3 to 9.5, and the mean Pinch test from 2.2 to 3.8 Kg. Both techniques demonstrated significant improvement ($p < 0.05$) over preoperative assessments in almost all tests, except for the Pinch test of the patients treated with arthroplasty. The comparison between the two techniques demonstrated better ($p < 0.05$) recovery of mean DASH and Pinch test in the hands treated with the prosthesis.

In conclusion, the dual mobility prosthesis demonstrated faster pain relief, the gain of function and range of motion, and better recovery of strength and function than tendon suspension arthroplasty with trapeziectomy. In addition, the prosthesis spares the trapezius, reserving trapeziectomy in case of implant failure.

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EUROPEAN FESSH CONGRESS 2024

3D analysis of the thumb after trapeziometacarpal joint surgery

Sophie Brackertz, Gabriella Fischer, Maurizio Calcagni, Lisa Reissner (Balgrist University Hospital Zurich, Switzerland)

Introduction
Osteoarthritis of the trapeziometacarpal (TMC) joint can effectively be treated surgically with first metacarpal osteotomy (WO), trapeziectomy with ligament reconstruction and tendon interposition (LRTI) and implant arthroplasty (TP).

Aim
The aim of the study was to compare the thumb motion during basic motion tasks and activities of daily living (ADL) in patients following WO, LRTI or TP.

Material & Methods
Thirty-one patients (max. age 60 years) who had been treated with Wilson osteotomy (WO, n=11), implant arthroplasty with TOUCH® prosthesis (TP; n=10) and LRTI (n=10) were recorded with a motion capture system during the performance of basic motion tasks as well as three ADLs: opening a jar, bottle and turning a key. Median follow-up was 20 months (range 12 - 71). The patients subjective hand function was evaluated using the Michigan Hand Questionnaire (MHQ). TMC range of motion (ROM) were calculated for each movement trial. Additionally, forces during each ADL were measured using a torque measurement device. results are reported as median [range] and compared between groups using the Kruskal-Wallis test (α=0.05).

Results
During isolated movements in the standard anatomical planes TMC flexion-extension ROM after WO (44°, [30-62°]) was not significantly different compared to healthy control subjects (53°, [42-63°]). However, ROM in TP (39°, [24-53°]) and LRTI (29°, [19-34°]) was significantly worse. During thumb opposition, TMC ROM was significantly reduced ($p<0.005$) in all patient's groups (TP 48°, [28-58°]; WO 47, [33-58°]; LRTI 17, [8-28°]) compare the healthy subjects. There were no retropulsion in the LRTI group and retropulsion was significantly reduced ($p=0.037$) compared to the WO. When turning a key clockwise, patients after WO reached a median of 96% (85-107) of strength compared to the contralateral side, 54% (42-103) after LRTI and statistically significant 122% (79-128) after TP compared to the former group. Median MHQ was similar after all treatments of TMC osteoarthritis (WO 78, TP 91, LRTI 84).

Conclusions
Looking at the ROM in the standard anatomic plane we found no significant difference of the WO group compared to the healthy subjects. TP and LRTI were significantly worse when moving in flexion/extension. However, one has to critically assess if this can correlate to the functional results and is not represented in the subjective assessment of the patient. In the combined motion of opposition/retropulsion, we found a significant difference in favor of the WO compared to the LRTIs. Looking at ADLs like key turning we found a similar range of motion of the TMC joint in all groups, but different compensation movements in the connecting joints, markedly a hyperextension of the MCP in the LRTI group. Finally looking at the subjective hand function all groups showed satisfying results. With regard to the evaluated kinematic and kinetic parameters, patients after LRTI had the poorest outcome, while Osteotomy and TOUCH® prosthesis groups showed advantages depending on the considered outcome measure.

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Cruising towards De Quervain tendinitis-free TMC joint replacement: respecting the first metacarpal arch: a retrospective study

Lynn Decroix1,2, Bert Vanmierlo2 , Arne Decramer2 , Kjell Van Royen3 , Ilse Degreef1 (1 KU Leuven, Belgium 2 AZ Delta, Roeselare, Belgium, 3 OLV Aalst, Belgium)

Introduction
Trapeziometacarpal joint replacement is an effective treatment for managing thumb base osteoarthritis. A significant knowledge gap persists in our understanding of achieving precise ligamentous and muscular tension around the prosthesis. Lengthening the thumb during joint replacement has been associated with postoperative complications, including De Quervain tendinitis. This causes a delay in functional recovery.

Purpose
This retrospective study has three primary objectives. First, examining the association between the incidence of De Quervain tendinitis and the degree of thumb lengthening, starting from the first metacarpal arch. Second, proving the first metacarpal arch is a practical radiographic parameter for assessing the optimal physiological tension around the joint perioperatively. Third, examining the possibility of using a unilateral Eaton view to find the arch instead of a hand AP view.

Methods
In a retrospective study, we analyzed 53 cases (49 patients; 4 bilateral) of primary implanted TOUCH® prosthesis, and their postoperative unilateral Eaton and hand AP views to determine whether the first metacarpal arch was respected, or the thumb was lengthened. We noted the incidence of de Quervain disease during the first year following surgery and its treatment. A point-biserial correlation analysis was used to correlate a binary variable (the occurrence of postoperative De Quervain tendinitis) with a continuous variable (the degree of shortening/lengthening of M1). The correlation was tested for significance using a student's t-test.

Results
De Quervain tendinitis was diagnosed in 14 cases, of which 6 patients needed operative release. Correlation testing revealed a significant association between the degree of M1 lengthening and the occurrence of De Quervain tendinitis, for both radiographic views.

Conclusion
Lengthening of the thumb column leads to more DQ tendinitis post TMC arthroplasty. Surgeons can use the first metacarpal arch perioperatively as a practical tool to respect the normal anatomy and decrease risk of DQ tendinitis. Both unilateral Eaton views and hand AP views are useful. If needed, a cut off of 2 mm lengthening can be advised.

Can we correct hyperextension of the MCP joint with thumb CMC implant arthroplasty?

Vanessa Reischenböck, Jenny Imhof, Miriam Marks, Stephan Schindele, Daniel B. Herren (Schulthess Klinik, Zurich, Switzerland)

Aim
The primary objective was to examine whether thumb carpometacarpal (CMC) implant arthroplasty can correct hyperextension in the thumb metacarpophalangeal (MCP) joint. As a secondary outcome, clinical outcomes one-year post-surgery were compared between patients with and without MCP hyperextension.

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Material & Methods
Patients treated with a thumb CMC implant arthroplasty (TOUCH®, KeriMedical, Switzerland) who were prospectively documented in a registry and had complete baseline and 1-year follow-up data were included. Hand function was assessed with the brief Michigan Hand Outcomes Questionnaire (brief MHQ, score 0-100). Key pinch strength was assessed with a pinch gauge and range of motion of the MCP joint with a goniometer. Differences between baseline and follow-up were analysed with the Wilcoxon signed-rank test. The outcomes of patients with a preoperative MCP extension of > 20° (hyperextension group) were compared to the outcomes of patients with ≤ 20° using the Wilcoxon rank-sum test.

Results
We included 172 patients of whom 41 had a preoperative MCP hyperextension of > 20°. In the hyperextension group, MCP extension was corrected from preoperative mean 33° (95% confidence interval CI: 31-35) to 10° (CI: 6-13) at 1 year (p≤ 0.001). Patients in the control group had a preoperative MCP extension of 10° (CI: 9-12) which was reduced to 5° (CI: 4-7) at 1 year (p≤ 0.001). Patients with preoperative MCP hyperextension had lower key pinch strength at 1 year compared to the control group (5.9 kg (CI: 5.3-6.6) vs. 7.0 kg (CI: 6.7-7.5), p≤ 0.01). The brief MHQ did not differ between the groups (85 (CI: 82-88) vs. 87 (CI: 82-92), p=0.7). Complications appeared in 29 patients of whom 7 had preoperative MCP hyperextension. No significant association between hyperextension and complications was observed (p=1.0). In our registry, there are 8 patients who dropped out of the data collection, because they underwent revision surgery. Only one of them had a preoperative MCP hyperextension, indicating that there is no association between preoperative MCP hyperextension and revision surgery.

Conclusions
Thumb CMC implant arthroplasty can correct preoperative MCP hyperextension, and preoperative MCP hyperextension does not appear to increase complications. Therefore, we recommend using implant arthroplasty also in patients with hyperextension of the MCP joint.

Complications after thumb CMC implant arthroplasty: our 5-year experience

Vanessa Reischenböck, Miriam Marks, Stephan Schindele, Daniel B. Herren (Schulthess Klinik, Zurich, Switzerland)

Aim
The aim was to provide a comprehensive assessment of complications and revision surgeries up to 5 years after thumb carpometacarpal (CMC) dual-mobility implant arthroplasty.

Material & Methods
All patients with osteoarthritis of the thumb CMC joint who underwent primary implant arthroplasty (TOUCH®, KeriMedical) between June 2018 and April 2023 were prospectively documented in a registry and included in this analysis. Intra- and postoperative complications and its treatment strategies were documented. Clinical (key pinch, grip strength) and patient-reported outcomes (pain, brief Michigan Hand Outcomes Questionnaire) before surgery and at 2-year follow-up were compared between patients with and without complications using an independent t-test. Implant survival up to 5 years was estimated using the Kaplan-Meier method.

Results
A total of 281 patients with a mean age of 64 (±9) years were included. Thirty-three complications (12%) occurred and 8 implants (2.8%) required revision, resulting in an estimated 5-year survival rate of 96% (95% confidence interval: 92%-98%). Reasons for revision were symptomatic implant loosening, dislocation, or

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migration. In 4 cases the components were changed and in the other 4 cases a resection arthroplasty was performed. The most frequent other complications were de Quervain tenosynovitis (n=12) and trigger thumb (n=6), which were treated with either steroid injections or soft tissue surgery. There were also 3 cases of intraoperative trapezium fractures that were successfully fixed with a suture cerclage. There were no differences in the 2-year outcomes between patients with and without complications (p>1).

Conclusions
Thumb CMC dual-mobility implant arthroplasty shows high implant survival and soft-tissue complications can usually be resolved with an injection or minor surgery. The reasons for revision were mainly iatrogenic, i.e. implant placement was not optimal in our first cases or we tried to implant a prosthesis despite a small or insufficient trapezium. Therefore, we recommend good training of the surgeon and careful indication.

Results of a dual-mobile trapeziometacarpal joint prosthesis with a mean follow-up of 1.5 years

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Introduction
The implantation of a TMC joint prosthesis with a dual-mobility design is a proven therapeutic option for the treatment of advanced arthritis with very good clinical results in the short-term follow-up and significantly reduced dislocation and loosening rates.

Aim
The aim of this study is to report on the clinical-functional results of the TOUCH® dual-mobility prosthesis with a mean follow-up of 1.5 years.

Methods
This prospective, monocentric study included 58 patients with 68 prostheses who were operated by 1 surgeon between 08/2019 and 03/2023. Patients with primary TMC joint arthritis Eaton/Littler stages II+III were eligible. Complications, radiological results (thumb length according to M1/M2 ratio (see Ledoux 2017), hyperextension >15°, signs of loosening), range of motion (ROM, Kapandji), grip strength (JAMAR dynamometer), pain (VAS 1-10) and functional scores (qDASH, MHQ) were recorded.

Results
The mean follow-up was 19 months (range 5-49 months). 44 women and 14 men underwent surgery, the mean age at surgery was 58.8 years (range 46-77 years). 89 % of the patients were right-handed. One patient underwent secondary trapeziectomy due to cup dislocation after 2 years. One wound revision was performed after a healing disorder in a diabetic patient (2 weeks postop.). In one case the first extensor compartment was split due to a de Quervain's tenosynovitis (11 months postop.). No further complications such as infection, dislocation or material failure were observed, resulting in a survival rate according to Kaplan-Meier (with the endpoint of revision surgery) of 94.1% after the mean follow-up period of 19 months. The functional scores showed a significant improvement in hand function after 12 months from pre- to postoperative (mean qDASH 48 vs. 18, $p < 0.05$; mean MHQ 57 vs. 78; $p < 0.05$), as well as a significant improvement in pain (VAS 7 vs. 2; $p < 0.01$) and a tendency towards improvement in the Kapandji score (8.6 vs. 9.5; $p < 0,01$). The mean postop.

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metacarpal I trapezium length (M1) improved significantly from 55 mm to 62 mm ($p < 0.05$) and the M1/M2 ratio showed a restoration of thumb length (0.70 vs. 0.78; $p < 0.05$). A relevant preop. hyperextension >15° was present in 23 thumbs (22°, range 15°-38°) and showed correction to a mean of 5.9° post-surgery (range 0-20, $p < 0.0001$). The measurement of grip strength was comparable (15.7 kg vs 17.3 kg; p = ns).

Conclusions
The short-term results with a mean follow-up of 1.5 years after implantation of the TOUCH® dual-mobility prosthesis for TMC joint arthritis show a significant improvement in hand function and pain as well as correction of thumb length and hyperextension in the metacarpophalangeal joint of the thumb. With a very low complication and revision rate, arthroplasty appears to be a reliable and safe treatment method.

Dual mobility thumb carpometacarpal arthroplasty. Functional and radiological results of 1 year follow-up

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Introduction
Dual mobility is the main distinctive feature of the newer generation arthroplasties of the carpometacarpal joint of the thumb, such as TOUCH by KeriMedical.

Aim
The purpose of this study is to evaluate the short-term clinical and radiological results of this prosthesis.

Material & Methods
Twenty symptomatic patients with radiological findings of at least stage II arthritis, who underwent this procedure from June 2022 to May 2023, were prospectively studied. Their mean age is 71 years (51-78). The patients were evaluated radiologically and clinically at 0, 6, 12 weeks, and 6, 12 months postoperatively through questionnaires (VAS score, QuickDASH, Nelson score) and functional tests (thumb range of motion, Grip strength, Key and Tip pinch strength as well as Kapandji score).

Results
Mobilization of the thumb begins 7-10 days postoperatively without significant difficulty for the patient. At 6 weeks postoperatively, excellent functional results and significant pain relief were observed. At six months postoperatively, the VAS score decreased from 7.8 to 0.33 mm ($p<0.001$) and the Kapandji opposition score increased from 7.6 to 9.14 ($p=0.02$). QuickDASH and Nelson scores improved from 67.73 and 30.06 to 5.68 ($p<0.001$) and 96 ($p<0.001$), respectively. Grip strength increased from 22.66 to 50.5 pounds ($p=0.02$), key pinch strength from 7.26 to 13.5 pounds ($p<0.001$), and Tip pinch strength from 4 to 9 pounds ($p<0.001$). Thumb range of motion improved. A total of 4 complications were observed (2 trigger thumb, and 2 de Quervain syndrome cases), while no dislocation or loosening of the prosthesis materials has been recorded so far.

Conclusions
This specific prosthesis allows rapid recovery and pain relief. The functional outcome is excellent, and the arthroplasty appears stable 1 year post-operatively. However, a longer follow-up is required to assess its sustainability.

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Total trapeziometacarpal arthroplasty with Dual mobility prosthesis. Results and complications at 5 years of follow-up

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Introduction
rhizarthrosis is a high frequency pathology associated with significant functional impairment. Among their treatment alternatives, the latest generation prostheses have shown excellent results, offering good functional recovery and early return to work on the European continent. However, no results have been published from its use outside of it.

Aim
to describe the functional results and complications of patients with trapezio metacarpal osteoarthritis surgically treated by total arthroplasty with dual TOUCH® mobility prosthesis, in the largest clinical series reported in South America.

Materials and methods
The design of this study was a prospective case report. The sample consisted of patients with rhizarthrosis with a poor response to conservative treatment surgically resolved in the period between October 2018 and November 2023. All patients with grade II or III rhizarthrosis according to the Eaton/Littler classification were included. All patients with involvement of the STT joint and those who presented a trapezius with a height of less than 8 mm on the trapeziometacarpal radiographs were excluded. The total arthroplasty was performed using the TOUCH® dual mobility prosthesis with spherical cup. Functional evaluation was performed using the VAS pain analogue scale and the QuickDash questionnaire. In addition, the comparative strength with Jamar test, key and 2 finger pinch test was assessed and a serial radiological control was achieved.

Results
74 prostheses were placed in 66 patients (11% bilateral). The average age was 64 years (range 52 to 86 years). 81% were female. The preoperative staging was 13 (18%) with grade 2 and 61 (82%) with grade 3. The average postoperative pain was VAS 0 at rest and 1.5 during activity. The Quick Dash was 3.1 points. The grip force was 23kg, the opposition clamp was 4.7kg and the lateral clamp was 6.4kg. There were 7 complications (rate 9.4%), 6 required surgical reintervention (rate 8.1%). The problems reported were: 1 impingement (with loosening of the stem); 1 cup loosening that required replacement, 1 cup loosening that required trapeziectomy and tight rope suspension and 3 Quervain's tenosynovitis (4%). One patient presented a fracture of the trapezius during the installation of the cup, which was resolved by preserving the implant and enclosing the trapezius with a wire loop. The evolution of this last incident was favorable, showing adequate bone consolidation and good subsequent functionality. No cases of dislocations or surgical wound infections were recorded.

Conclusions
Total trapeziometacarpal arthroplasty with dual mobility prosthesis has proven to be a satisfactory solution for our patients, allowing an early return to their work and manual activities. The rate of complications and reoperations is consistent with the reported literature.

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Efficacy of Dual Mobility prosthesis in the management of thumb trapeziometacarpal joint osteoarthritis: a long-term follow-up study

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Introduction
Trapeziometacarpal osteoarthritis stands as one of the prevailing chronic pathologies affecting the hand, leading to the onset of long-term disability. Notwithstanding the elevated prevalence of this pathology within the population, a consensus regarding the optimal treatment modality remains elusive at present.

Aim
This study aims to evaluate the efficacy of dual mobility prostheses in the treatment of rhizarthrosis, assessing postoperative outcomes, recovery of strength, mobility, pain reduction and implant stability over a four-year follow-up period.

Material & Methods
Between 2019 and 2023, a total of 87 dual mobility prostheses (TOUCH®, KeriMedical, Les Acacias, Switzerland) were implanted in patients diagnosed with rhizarthrosis (Grade 2 and 3 rhizarthrosis cases without STT involvement). Pre- and postoperative assessments were conducted to analyze strength recovery (Jamar test, key and 2-finger pinch test), resumption of mobility (Kapandji, radial abduction), changes in pain (VAS) and quality of life (QuickDASH). Radiographic evaluation was performed pre-operatively, at 1 month, 6 months and then annually.

Results
We have recorded a statistically significant improvement (Wilcoxon test and Student t, p-Value <0.05) in all the analyzed domains. Patients demonstrated a substantial enhancement, with hand movement recovery observed as early as one week after surgery. The reduction of pain was also a prominent outcome, highlighting the efficacy of the dual mobility prosthesis in providing swift relief. The results have demonstrated stability and durability, without signs of involution throughout the designated follow-up period. Each patient has expressed the intention to undergo the procedure anew should the need arise.

Conclusions
The use of dual mobility prostheses in the treatment of rhizarthrosis has shown remarkable success in promoting fast recovery of strength and mobility, accompanied by a significant reduction in pain. The observed outcomes remained durable throughout the four-year follow-up period, suggesting the long-term effectiveness of this intervention. Further research and larger-scale studies may be warranted to corroborate these findings and explore additional aspects of the dual mobility prosthesis in the context of rhizarthrosis treatment.

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SWISS SGH CONGRESS 2024

Best and worst thumb CMC implant patients: Do they differ regarding their baseline characteristics?

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Aim
The aim was to investigate whether patients with good outcomes after thumb carpometacarpal (CMC) joint arthroplasty differ in their baseline characteristics from patients with poor outcomes.

Methods
Of 442 thumb CMC implant arthroplasties (TOUCH®, Keri Medical) documented in a prospective registry, 20 patients with the best and 20 patients with the worst 1-year outcome, measured by pain during daily activities, were selected. Baseline characteristics, i.e. age, sex, affected hand, Eaton stage of osteoarthritis, pain during daily activities (0-10, 0=best), brief Michigan Hand Outcomes (MHQ) questionnaire scores (0-100, 100=best) and key pinch strength of both groups were compared using the Mann-Whitney-U test. Median values with interquartile ranges (IQR) were calculated.

Results
Patients in the best group had a 1-year pain score of 0 (IQR: 0) and patients in the worst group had a 1-year pain score of 7 (2). The baseline brief MHQ score was significantly higher in the best group (47 (21)) than in the worst group (36 (9), $p \leq 0.01$). Similar results were found for key pinch strength where the best group had a baseline strength of 4kg (2) while the worst group had 3kg (2) ($p \leq 0.01$). No differences were found between the groups in the other variables ($p > 0.05$).

Conclusion
Patients with better hand function before surgery have a higher chance to have less pain one year after thumb CMC implant arthroplasty. These findings underscore the importance of a thorough indication for surgery. It is important to consider that delaying surgery until symptoms worsen may result in poorer outcomes.

Does the cup shape matter for TOUCH® thumb CMC implants? Comparison of conical versus spherical cups

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Background
The cup of the TOUCH® implant (Keri Medical) for the thumb carpometacarpal (CMC) joint is available in two shapes: A conical and a spherical cup.

Aim
The aim was to investigate whether complications differed up to 1 year after implantation of the conical or spherical cup. Furthermore, we analysed 1-year clinical, radiological and patient-reported outcomes.

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Methods
Data from our registry, which prospectively documents all patients with a TOUCH® implant, were used. For the first 3 years, we only implanted spherical cups, as the conical was introduced later. Now, we routinely use the conical cup, as we believe it provides more intraoperative stability. For this analysis, each patient with a conical cup was matched based on their baseline characteristics with 3 patients with a spherical cup using propensity score matching. Data are shown as mean and standard deviations. Complication rates were compared using Fisher's Exact test. One-year outcomes of pain during daily activities (0-10, 0=best), brief Michigan Hand Outcomes (MHQ) questionnaire (0-100, 100=best) and key pinch strength between the 2 groups were compared using the Mann-Whitney U test.

Results
Of 304 patients operated between May 2018 and March 2023, 72 had a conical and 232 a spherical cup. Revision surgery was done in 1 patient with a conical (1.4%) and 4 patients with a spherical cup (1.7 %, p=1.0). Intraoperative trapezium fracture did not occur during conical cup implantation but in 3 spherical cup implantations (1.3%, p=1.0). All fractures were successfully treated with a suture cerclage.
266 patients were available for the 1-year follow-up and 55 patients with a conical cup were matched to 165 patients with a spherical cup. Implant migration rates were 1.8% for both conical and spherical cups (p=1.0) and de Quervain's tenosynovitis rates were 3.6% and 4.8% for patients with conical and spherical cups, respectively (p=1.0). There were no differences in the 1-year outcomes of pain during activities (2.0±2.6 vs. 1.6±2.0), brief MHQ (84±20 vs. 85±17) and key pinch (6.2kg±1.8 vs. 6.4kg±2.0) for the conical and spherical cups, respectively (all p>0.3).

Conclusion
Complications, radiological and patient-reported outcomes at 1 year did not differ between patients with a conical or spherical cup. Therefore, we recommend use of either cup, depending on the surgeon's preference.

The early complication rate of single versus dual mobility joint replacement of the thumb TMC joint

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Trapezometacarpal (TMC) joint arthroplasty is becoming increasingly popular as a treatment option for thumb base osteoarthritis. Since its introduction by De la Caffinière in 1974, the design has evolved significantly, with a cementless, modular, ball-in-socket prosthesis now considered the gold standard. Good long-term survival rates have been reported with a single mobility, metal-on-polyethylene design, but the procedure is complicated by a relatively high complication rate, attributed to the learning curve and the high risk of dislocation. To address this issue, a newer dual-mobility design has been proposed, theoretically reducing the risk of dislocation. This study aimed to evaluate and compare the early (1-year) complication rates and outcomes of single-mobility (Arpe) versus dual-mobility (TOUCH®) TMC joint prostheses.

We conducted a retrospective review of patients who underwent TMC joint arthroplasty at our hospital between January 2018 and December 2022, including 336 procedures (168 Arpe and 168 TOUCH®), all performed by a single surgeon. We recorded age, gender, occupation, and hand dominance. Patient satisfaction was investigated, as well as all complications that occurred in the first postoperative year. Preliminary data show that patient satisfaction is very high and similar in both groups. The most common complications in the Arpe group were instability with seven dislocations (4.2%), two trapezial fractures (1.2%), one cup loosening (0.6%),

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and one revision due to heterotopic ossification (0.6%). Five dislocations were reduced (one closed and four open); the other two required revision (head, and head and stem). All dislocations occurred within three months post-surgery. A much lower complication rate was found in the TOUCH® group, with one dislocation (0.6%), successfully treated by closed reduction, one case of De Quervain tenosynovitis (0.6%), and one case of sensory radial nerve entrapment (0.6%).

These results confirm the high early satisfaction rate of TMC joint replacement and the significantly decreased risk of early complications with the dual mobility design. Longer-term outcome studies will be necessary to confirm the long-term survival of these dual mobility design arthroplasties.

Thumb CMC implant saves CHF 7'000 in lost productivity costs compared to RSI arthroplasty.

K. Mathis1, D. B. Herren1, S. Schindele1, M. Marks1 (1Schulthess Klinik, Zürich)

Background
Productivity loss measures the degree of work impairment due to health conditions, with its score ranging from 0% (no loss) to 100% (maximum loss).
Aim: The aim was to investigate if patients treated with thumb carpometacarpal (CMC) implant arthroplasty have lower costs due to loss of productivity after surgery compared to patients with resection-suspension-interposition (RSI) arthroplasty.

Methods
We used data from two prospective clinical trials and included employed patients who were treated with thumb CMC implant arthroplasty (TOUCH®, KeriMedical) or with RSI arthroplasty. Patients completed the Work Productivity and Activity Impairment Questionnaire to assess loss of productivity at baseline, and after 3, 6, and 12 months. Costs due to productivity loss were calculated by multiplying the productivity loss score by the monthly wage. Outcomes were compared between groups using an independent t-test and results are reported with mean and 95% CI (Confidence Interval).

Results
69 patients with implant arthroplasty and 46 patients with RSI arthroplasty were included. After implant arthroplasty, patients returned to work significantly faster, with a mean time of 51 days (43-59) compared to 84 days (50-117) for RSI arthroplasty patients ($p<0.05$). Productivity loss at baseline was 54% (48-60) and 47% (36-57) for implant and RSI patients, respectively and decreased to 10% (6-15) and 25% (15-35) one year after surgery ($p<0.01$, figure 1). The costs associated with lost productivity were significantly lower for implant arthroplasty patients over a one-year period, with CHF 15'781 (12'897-18'665) compared to CHF 22'707 (15'382-30'032) for RSI arthroplasty patients ($p<0.05$).

Conclusion
Patients after thumb CMC implant arthroplasty returned faster to work and therefore, costs due to loss of productivity were significantly lower than after RSI arthroplasty. These findings are important in demonstrating that implant arthroplasty not only provides good treatment outcomes, but also has lower costs for the society. In negotiations with health insurers, these data can support the reimbursement of the cost of the implant.

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FRENCH GEM CONGRESS 2024

TOUCH® CMC1 arthroplasty: good outcomes and high survival rate at 6,5 years

Sandrine BOULAT (Saint-Etienne, FR), Cyril FALAISE

Trapeziometacarpal arthroplasty for osteoarthritis has shown promising short-term outcomes using the last generation of implants. The aim of this prospective study was to assess the clinical outcomes of a dual mobility trapeziometacarpal prosthesis (TOUCH®) with a medium-term follow-up.

In total, 57 patients were included. Clinical outcomes were reported before surgery and at last follow-up. We investigated pain, thumb opposition, range of motion (radial abduction, antepulsion and retropulsion) as well as key-pinch strength. M1/M2 index was measured to assess thumb length recovery, and any Z-deformation or metacarpophalangeal (MCP) hyperextension was reported. Radiological evaluation was performed, and any complications were recorded.

Mean follow-up was 6.5 years (5 – 8.8). VAS dropped from 7.3 to 0.4. Range of motion significantly increased and key-pinch force improved from 67 % to 102% compared to the opposite side. MCP hyperextension was present in 26 (46%) thumbs before surgery and in 19 (33%) thumbs at follow-up. Z-deformation was reported in 13 (23%) cases before surgery and 2 (4%) cases after. At last follow-up, radiographs presented minor osteolysis in 11 cases (4 around the trapezium and 7 around the 1st metacarpal). Only one (2%) surgical revision was required due to cup loosening 7 years after surgery. No dislocations were reported. All patients were satisfied or very satisfied with the treatment.

After 6.5 years of implantation of the TOUCH® prosthesis, all clinical outcomes improved while complication rate was very low. Radiographic osteolysis were not related to clinical outcomes . We previously studied and reported promising outcomes of the same prosthesis after more than 3 years of follow-up.

Our prospective study confirms that TMC arthroplasty using TOUCH® dual mobility prosthesis is a safe and effective option for TMC osteoarthritis in short and medium terms. A similar study must be pursued to provide long term outcomes of this arthroplasty.

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BRITISH CONGRESS BSSH 2025

Outcomes of dual-mobility versus single-mobility prosthesis in total trapeziometacarpal arthroplasty

Ms Esperanza Marin Garcia-Cabrera, Ms Cristina Wert Martin, Ms Fatima Bebea Zamorano, Mr Jorge Enrique Ruiz zafra, Ms Beatriz Garcia Marques and Mr Homid Fahandezh-Saddi Diaz

Aims
To compare clinical and functional outcomes of total trapeziometacarpal arthroplasty using noncemented dual-mobility prostheses (TOUCH®) versus single-mobility prostheses (ARPE®) in patients with trapeziometacarpal osteoarthritis.

Methods
A retrospective observational study conducted on 145 trapeziometacarpal prostheses implanted for rhizarthrosis between 2013 and 2024, including 65 ARPE® (44.8%) and 80 TOUCH® (55.2%), with a mean follow-up of 50 months.
Both groups comprised 86% women and a mean age of 60 years. Right-hand procedures accounted for 53.8% ARPE® and 47.5% of TOUCH® prostheses, with dominant-hand surgeries performed in 52.3% and 47.5% of cases, respectively. Bilateral prostheses were implanted in 30 patients. 9 patients required sesamoid-metacarpal arthrodesis for metacarpophalangeal instability.
Parameters evaluated included risk factors, implant components, radiographic assessment (Eaton classification, trapezium size, scaphotrapeziotrapezoid arthrosis, implant positioning), complications, reoperations and functional outcomes.

Results
The overall complication rate was higher in the ARPE® group (10.45%) compared to the TOUCH® group (2.5%). ARPE® cases exhibited more frequent instability and implant-related issues, including five dislocations (three of which required revision surgeries—two acetabular replacements and one neck length adjustment) and one intraoperative trapezium fracture treated with interposition arthroplasty. A single TOUCH® case of residual metacarpophalangeal instability was successfully managed with radial sesamoid-metacarpal arthrodesis. One case of transient radial hypoesthesia occurred in each group. No cases of implant loosening, component migration or infections were observed. Both groups achieved similar functional outcomes as measured by the Kapandji score, Q-DASH, grip and pinch strength. Postoperative pain (VAS) decreased from 9.38 to 1.06, with high patient satisfaction (9.63 for ARPE® and 9.67 for TOUCH®).

Conclusions
Total trapeziometacarpal arthroplasty yields excellent outcomes with both prostheses, though dual-mobility prostheses are associated with significantly lower complication rates. Despite higher complications with ARPE® prostheses, revision surgeries resulted in satisfactory long-term results. Further larger prospective studies are warranted to validate these findings and optimise prosthesis selection.

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SHORT-TERM RECOVERY AFTER IMPLANT VERSUS RESECTION ARTHROPLASTY IN TRAPEZIOMETACARPAL JOINT OSTEOARTHRITIS

Herren DB, Marks M, Neumeister S, Schindele S. Short-term recovery after implant versus resection arthroplasty in trapeziometacarpal joint osteoarthritis. J Hand Surg Eur Vol. 2023 Jul 21. Epub ahead of print.

Abstract

We compared the short-term recovery of patients treated with trapeziometacarpal joint (TMJ) implant arthroplasty versus resection-suspension-interposition (RSI) arthroplasty.

Implant patients (n=147) had a better 3-month postoperative brief Michigan Hand Outcomes Questionnaire (MHQ) score (mean 82) compared to RSI patients (n=127), who had a mean score of 69. Key pinch strength at 3 months was also higher in the implant group compared to the RSI group (6.8 kg vs. 3.1 kg). At 1 year, both groups had similar brief MHQ scores, but key pinch remained higher in the implant group (7.0 kg vs. 3.9 kg [RSI]). After implant arthroplasty, employed patients returned to work after a mean of 44 days, which was significantly faster than the 84 days for RSI patients.

Patients after TMJ implant arthroplasty recover significantly faster in the first 3 postoperative months compared to RSI patients. However, 1-year postoperative outcomes are similar for both cohorts, with key pinch strength remaining higher for patients with TMJ implant arthroplasty.

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INTERPOSITION ARTHROPLASTY VERSUS DUAL CUP MOBILITY PROSTHESIS IN TREATMENT OF TRAPEZIOMETACARPAL JOINT OSTEOARTHRITIS: A PROSPECTIVE RANDOMIZED STUDY

Guzzini M, Arioli L, Annibaldi A, Pecchia S, Latini F, Ferretti A. Interposition Arthroplasty versus Dual Cup Mobility Prosthesis in Treatment of Trapeziometacarpal Joint Osteoarthritis: A Prospective Randomized Study. Hand (N Y). 2023 Jul 23. Epub ahead of print

Abstract

Background
Osteoarthritis (OA) of the trapeziometacarpal (TMC) joint is a common cause of pain and functional disability of the hand and is the second most frequent site in the hand of OA. This prospective randomized study analyses and compares the outcomes and global assessment of 2 different surgical techniques for rhizarthrosis treatment: trapeziectomy with tendon interposition arthroplasty and total joint replacement with TOUCH® (KeriMedical; Geneva, Switzerland) TMC prosthesis.

Methods
The enrolled patients were randomly divided into 2 groups: group A included 71 patients (75 hands) treated with tendon interposition arthroplasty, while group B included 65 patients (72 hands) treated with total joint replacement. Clinical and radiological outcomes were collected before surgery and at 1, 3, 6, 12, and 24 months of follow-up.

Results
Although the values of all clinical tests performed during follow-up demonstrated statistically significant improvement over preoperative ones in both groups, patients treated with prosthesis showed faster improvement, especially in tests of strength and range of motion, which showed better results than patients treated with trapeziectomy and tendon interposition arthroplasty throughout the follow-up.

Conclusions
Our study suggests that joint replacement should be preferred to interposition arthroplasty as the treatment of rhizarthrosis, choosing the latter in case of prosthetic replacement complications or scaphoid-trapezium-trapezoid OA.

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COMPARATIVE ANALYSIS OF PROSTHETIC (TOUCH®) AND ARTHROPLASTIC SURGERIES FOR TRAPEZIOMETACARPAL ARTHROSIS: FUNCTIONAL OUTCOMES AND PATIENT SATISFACTION WITH A 2-YEAR FOLLOW-UP

Eleonora Piccirilli, Priscilla di Sette, Michele Rampoldi, Matteo Primavera, Chiara Salvati, Umberto Tarantino, Comparative Analysis of Prosthetic (TOUCH®) and Arthroplastic Surgeries for Trapeziometacarpal Arthrosis: Functional Outcomes and Patient Satisfaction With a 2-Year Follow-Up, Journal of Hand Surgery Global Online, 2024.

Abstract

Purpose
Trapeziometacarpal (TMC) joint prosthesis poses its own challenges for the treatment of TMC arthrosis, especially when compared with the present gold standard, arthroplasty. The aim of this study was to highlight possible outcome differences and patients' satisfaction regarding the treatment of TMC arthrosis.

Methods
We evaluated 100 patients with TMC arthrosis treated in two centers and divided into two groups: group A received TMC prosthesis (TOUCH®), whereas group B was treated with arthroplasty, with a 2-year follow-up period.

Results
In a comparative analysis, findings revealed group A's superiority in the shortened disabilities of the arm, shoulder and hand questionnaire scores at 1 and 6 months, with significant differences: 34.6% vs 67.1% and 2% vs 9.1%, respectively ($P < .0001$). Although group A also showed lower the shortened disabilities of the arm, shoulder and hand questionnaire scores at 3 months, this was not statistically significant. Notably, at 1 and 2 years, group A demonstrated better scores without statistical significance. The Kapandji score differed significantly at 6 months: 9.8 vs 9.1 ($P = .029$). Although the visual analog scale showed generally lower values for the prosthesis group, no statistical differences emerged. Additionally, the M1/M2 ratio became significant postoperatively, favoring group A ($P < .05$).

Conclusions
Trapeziometacarpal prosthesis shows promise for TMC arthrosis, enhancing function, thumb length, and patient recovery, warranting further research and x-ray guidance.

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RESECTION ARTHROPLASTY VERSUS DUAL MOBILITY PROSTHESIS IN THE TREATMENT OF TRAPEZIOMETACARPAL JOINT OSTEOARTHRITIS: A 3 YEAR NON-RANDOMIZED PROSPECTIVE STUDY

Falkner F, Tümkaya AM, Thomas B, Böcker A, Aman M, Bickert B, Harhaus L, Panzram B. Resection arthroplasty versus dual mobility prosthesis in the treatment of trapeziometacarpal joint osteoarthritis: A 3 year non-randomized prospective study. J Orthop. 2024 Jun 10;57:72-78.

Abstract

Purpose
Resection arthroplasty (RA) is still the most common surgical intervention for the treatment of symptomatic trapeziometacarpal (TMC) joint osteoarthritis. The implantation of a dual mobility prosthesis may represent a joint function preserving alternative. The aim of the presented study is to prospectively compare the outcomes of RA with dual mobility prosthesis.

Methods
In this 2-center non-randomized prospective study, we compared results of RA (n = 22) with implantation of a dual mobility prosthesis (n = 49) (TOUCH®) at a minimum of 3-year follow-up. The patients underwent preoperative assessments and postoperative follow-up at 6 weeks, 3, 6, 12, 24, and 36 months. Comparisons were conducted, covering pain assessment via the visual analogue scale (VAS), thumb range of motion (ROM), pinch and grip strength, as well as functional scores and radiological examinations.

Results
The time intervals from surgery until absence of pain on the VAS (3 months: 3 vs 1, p = 0.0001), recovery of ROM in radial (3 months: 33˚ vs 42˚, p = 0.0001), and palmar abduction (3 months: 33˚ vs 48˚, p = 0.0001), were significantly longer for the RA group compared with the prosthesis group. At 3-year follow-up there was no significant difference in absence of pain, ROM and grip strength between both groups. Key pinch strength was significantly weaker in the RA group compared to prosthesis group at 3 months (2.6 kg vs 4.6 kg, p = 0.001), to 3-year follow-up (3.1 kg vs 5.7 kg, p = 0.0001). The final mean DASH (15.5 vs 13.2, p = 0.01) and MHQ scores (78 vs 82, p = 0.01) were significantly better in the prosthesis group.

Conclusion
Both techniques show high patient satisfaction in mid-term follow-up. Dual mobility TMC joint arthroplasty seems to be associated with a superior pinch strength and shorter time of recovery as compared to patients after RA.

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WHICH WOULD YOU CHOOSE AGAIN? COMPARISON OF TRAPEZIOMETACARPAL IMPLANT VERSUS RESECTION ARTHROPLASTY IN THE SAME PATIENT

Nietlispach V, Marks M, Imhof J, Pudic T, Herren DB. Which would you choose again? Comparison of trapeziometacarpal implant versus resection arthroplasty in the same patient. J Hand Surg Eur Vol. 2024 Aug 22:17531934241265809

Abstract

We invited 14 women who had undergone implant arthroplasty in one thumb and resection-suspension interposition arthroplasty (RSIA) in the other to a follow-up visit at a median time of 2.2 and 6.2 years after implant and RSIA, respectively.

In total, 12 patients were satisfied or very satisfied with the outcome after implant arthroplasty, while eight patients reported this level of satisfaction for RSIA. Of the patients, 10 would choose an implant again, one would choose RSIA and three patients were undecided. The brief Michigan Hand Outcomes Questionnaire score and key pinch and grip strengths were significantly higher at follow-up for the thumb with the implant arthroplasty. Two revision operations were done 1.5 years after RSIA.

Patients were satisfied with both procedures, but if they had to choose again, they would prefer implant arthroplasty.

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COMPARATIVE STUDY OF TRAPEZIECTOMY WITH WEILBY SUSPENSIONPLASTY VERSUS IMPLANT ARTHROPLASTY FOR THUMB CARPOMETACARPAL JOINT ARTHRITIS IN AN ASIAN POPULATION

Tan TH, Kang HYG. Comparative Study of Trapeziectomy with Weilby Suspensionplasty versus Implant Arthroplasty for Thumb Carpometacarpal Joint Arthritis in an Asian Population. J Hand Surg Asian Pac Vol. 2024 Oct;29(5):429-440.

Abstract

Background
This retrospective study compares the outcomes of trapeziectomy and Weilby suspensionplasty procedure versus implant arthroplasty using the TOUCH® prosthesis for basilar thumb arthritis in an Asian population.

Methods
A total of 15 consecutive thumbs in 13 patients were included in this study. Six patients (2 male, 4 female, mean age of 62 years old) underwent trapeziectomy and Weilby suspensionplasty procedure. Seven patients (4 male, 3 female, mean age 63 years old) underwent implant CMCJ arthroplasty using the TOUCH® prosthesis. Data collected include demographics, severity of arthritis on plain radiographs of the thumb basilar joint, length of follow-up, pre- and postoperative pain levels, Kapandji thumb opposition score, grip and pinch strength and the time taken to return to work.

Results
Patients in the trapeziectomy and Weilby suspensionplasty group had a mean follow-up of 4.5 months, while those in the TOUCH® implant arthroplasty group had a mean follow-up of 14 months. TOUCH® implant arthroplasty patients showed significantly higher grip strengths at 3 months post-surgery and a shorter return to work. There were no differences in pinch strength at 3 months, pinch or grip strength at 6 months or pain scores. Complications included prolonged scar hypersensitivity in two patients who underwent the Weilby suspensionplasty and a dislocated TOUCH® implant cup in one patient.

Conclusions
Our study suggests that in the short term, CMCJ implant arthroplasty with the TOUCH® prosthesis produces results comparable to trapeziectomy and Weilby suspensionplasty. Level of Evidence: Level III (Therapeutic).

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INTRA PATIENT COMPARISON OF TRAPEZIECTOMY WITH LRTI AND DUAL MOBILITY PROSTHESIS FOR TRAPEZIOMETACARPAL OSTEOARTHRITIS: A MULTICENTER OBSERVATIONAL STUDY

Smeraglia F, Carità E, Frittella G, Tamborini F, Diaz L, Donadelli A, Guzzini M. Intra-patient comparison of trapeziectomy with LRTI and dual mobility prosthesis for trapeziometacarpal osteoarthritis: a multicenter observational study. Eur J Orthop Surg Traumatol. 2025 Jul 29;35(1):329.

Abstract

Purpose
Thumb osteoarthritis is a debilitating condition that affects a large portion of the elderly population. Conservative treatments for this condition often fail, and a surgical solution is required. Many different surgical techniques have been described, but the current literature has not yet demonstrated the superiority of one over the others. In this study, we analyzed the clinical and radiological findings of a population of 26 patients who were operated on both hands but with different techniques.

Methods
One hand underwent trapeziectomy with suspension arthroplasty, while the other hand was operated on with a double mobility trapeziometacarpal prosthesis.*

Results
Our findings show that, while on the long-term follow-up the two techniques are equally valid, in the short term, the hands that were operated on with the prosthesis had a faster recovery of strength and pain.

Conclusion
Therefore, we reckon that double mobility trapeziometacarpal prostheses are a better choice of treatment, especially for patients who require a faster recovery for work or leisure activities.

**12 Touch and 14 Maïa*

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COMPARATIVE STUDY OF TRAPEZIECTOMY WITH WEILBY SUSPENSIONPLASTY VERSUS IMPLANT ARTHROPLASTY FOR THUMB CARPOMETACARPAL JOINT ARTHRITIS IN AN ASIAN POPULATION

Tan TH, Kang HYG. Comparative Study of Trapeziectomy with Weilby Suspensionplasty versus Implant Arthroplasty for Thumb Carpometacarpal Joint Arthritis in an Asian Population. J Hand Surg Asian Pac Vol. 2024 Oct;29(5):429-440.

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Methods
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Results: Patients in the trapeziectomy and Weilby suspensionplasty group had a mean follow-up of 4.5 months, while those in the TOUCH® implant arthroplasty group had a mean follow-up of 14 months. TOUCH® implant arthroplasty patients showed significantly higher grip strengths at 3 months post-surgery and a shorter return to work. There were no differences in pinch strength at 3 months, pinch or grip strength at 6 months or pain scores. Complications included prolonged scar hypersensitivity in two patients who underwent the Weilby suspensionplasty and a dislocated TOUCH® implant cup in one patient.

Conclusion
Our study suggests that in the short term, CMCJ implant arthroplasty with the TOUCH® prosthesis produces results comparable to trapeziectomy and Weilby suspensionplasty. Level of Evidence: Level III (Therapeutic).

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ASSESSMENT OF TRAPEZIAL PROSTHETIC CUP MIGRATION: A BIOMECHANICAL STUDY

Athlani L, Motte D, Bergere M, Mottet J, Beaulieu JY, Moissenet F. Assessment of trapezial prosthetic cup migration: A biomechanical study. Hand Surg Rehabil. 2021 Dec;40(6):754-759

Abstract

We performed a biomechanical study using 60 Sawbones® rigid foam blocks of two simulated densities (osteoporotic, n = 30 and non-osteoporotic, n = 30) and 10 cadaveric trapezium bones from fresh-frozen, unembalmed adult cadaver hands to assess the trapezial prosthetic cup migration with progressively greater compression loads (10-40 kg). Two cups from the TOUCH® prosthesis were compared: 9-mm conical cup and 9-mm spherical cup. Uniaxial compression tests were carried out using an MTS Criterion® Series 40 Electromechanical Testing System. Cup migration was measured in millimeters (mm) at 10, 20, and 40 kg of compression load. Median cup migration values were similar in the cadaveric trapezium bones and Sawbones® non-osteoporotic blocks, and higher in the Sawbones® osteoporotic blocks.

In the cadaveric trapezium bones and the Sawbones® non-osteoporotic blocks, migration values were less than or equal to 0.1 mm for 10 and 20 kg loads; it was 0.2 mm for 40 kg load. In the Sawbones® osteoporotic blocks, migration values were less than or equal to 0.3 mm for 10 and 20 kg loads; it was 0.4-0.5 mm for 40 kg load. There was no significant difference between the two cup shapes in both cadaveric trapezium bones and Sawbones® non-osteoporotic blocks. In Sawbones® osteoporotic blocks, the largest difference between the two cup shapes was 0.1 mm for loads up to 40 kg, which corresponded to our measurement accuracy.

Our findings indicate that the trapezial component of total trapeziometacarpal joint arthroplasty undergoes very weak migration for axial compression loads up to 40 kg, presumably below the threshold of clinical relevance. The cup shape did not have an obvious influence; however, low bone mineral density may result in greater cup migration.

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COMPARISON OF SIMULATED KEY PINCH AFTER THREE SURGICAL PROCEDURES FOR TRAPEZIOMETACARPAL OSTEOARTHRITIS: A CADAVER STUDY

Athlani L, Motte D, Martel M, Moissenet F, Mottet J, Beaulieu JY. Comparison of simulated key pinch after three surgical procedures for trapeziometacarpal osteoarthritis: a cadaver study. J Hand Surg Eur Vol. 2021 Dec;46(10):1088-1095.

Abstract

We performed a cadaver study using 18 fresh-frozen adult forearms and hands to compare the tendon loads required to generate progressively greater key pinch (0.5 kg to 2 kg) after three different surgical procedures to treat trapeziometacarpal osteoarthritis: isolated trapeziectomy, trapeziectomy followed by ligament reconstruction with tendon interposition and total joint arthroplasty using a TOUCH® implant. Thumb pinch was simulated by loading the main actuator tendons involved in the key pinch. Six specimens were randomly assigned to each of the three surgical procedure groups. Measurements were made before and after the joint surgery.

Specimens that underwent trapeziectomy with or without ligament reconstruction with tendon interposition required significantly higher tendon loads than those with the implant to achieve the same pinch force. There was no significant difference between the isolated trapeziectomy and ligament reconstruction groups. Using the implant resulted in similar median tendon loads compared with those of the intact sample.

Total joint arthroplasty with a TOUCH® prosthesis may yield a superior biomechanical profile in which the tendon loads needed to achieve a certain key pinch force are lower and better distributed between the actuator muscles compared with trapeziectomy with or without ligament reconstruction.

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SCAPHOTRAPEZIOTRAPEZOID JOINT LOADING DURING KEY PINCH GRIP BEFORE AND AFTER TRAPEZIOMETACARPAL ARTHROPLASTY: A CADAVER STUDY

Athlani L, Motte D, Bergere M, Mottet J, Prandi B. Scaphotrapeziotrapezoid joint loading during key pinch grip before and after trapeziometacarpal arthroplasty: a cadaver study. Hand Surg Rehabil. 2023 Feb;42(1):45-50

Abstract

In a previous cadaver study, we directly measured the load acting on the trapeziometacarpal joint for increasingly greater key pinch forces. We noted that the joint load ranges from 2 kg to 4 kg during progressively greater key pinch from 0.5 kg to 1.5 kg. Using the same experimental approach, the aim of the current study was to measure and compare the load acting on the scaphotrapeziotrapezoid joint for the same levels of isometric key pinch force, and how it changes after trapeziometacarpal arthroplasty. We performed a cadaver study using 7 fresh-frozen, unembalmed adult forearms and hands (2 right and 5 left). Thumb pinch was simulated by loading the main actuator tendons involved in the key pinch grip (i.e., adductor pollicis, flexor pollicis longus, extensor pollicis longus, extensor pollicis brevis and abductor pollicis longus tendons). Measurements were made inside the joint using a force-sensing resistor sensor (Tekscan® FlexiForce™ force sensor).

Before the trapeziometacarpal joint surgery, median load values recorded in the scaphotrapeziotrapezoid joint were 1.2 kg (IQR, 1.0-1.4), 1.6 kg (IQR, 1.6-2.5) and 2.4 kg (IQR, 2.3-3.4) during 0.5 kg, 1 kg and 1.5 kg key pinch, respectively. After the trapeziometacarpal arthroplasty, median joint contact forces did not change significantly relative to the original configuration.

Our findings indicate that the loads measured in the scaphotrapeziotrapezoid joint during a simple key pinch are in fact lower than those measured inside the trapeziometacarpal joint. After trapeziometacarpal arthroplasty, the values are similar with no increase in load, suggesting that clinically asymptomatic scaphotrapeziotrapezoid radiographic involvement may not be a contraindication to arthroplasty.

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DE QUERVAIN TENDINITIS AFTER TOTAL TRAPEZIOMETACARPAL JOINT ARTHROPLASTY: BIOMECHANICAL EVALUATION OF TENDON EXCURSION IN THE FIRST EXTENSOR TENDON COMPARTMENT

Philips T, Van Melkebeke L, Popleu L, Van Hove B, Caekebeke P, Duerinckx J. De Quervain tendinitis after total trapeziometacarpal joint arthroplasty: Biomechanical evaluation of tendon excursion in the first extensor tendon compartment. Hand Surg Rehabil. 2024 Apr 5:101686

Abstract

De Quervain's tenosynovitis is the most common complication after total trapeziometacarpal joint replacement. Etiology is unclear. Implantation of a ball-in-socket implant changes the biomechanics of the normal trapeziometacarpal saddle joint and increases its range of motion. The present study demonstrates that this procedure also significantly increases excursion of the abductor pollicis longus and extensor pollicis brevis tendons during thumb flexion-extension, and not during thumb abduction-adduction.

Increased tendon gliding under the retinaculum of the first extensor tendon compartment could predispose to the development frictional tenosynovitis and play a role in the development of de Quervain's syndrome after total trapeziometacarpal joint replacement.

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COMPLICATIONS OF PROSTHESIS VERSUS TRAPEZIECTOMY IN TRAPEZIOMETACARPAL JOINT ARTHRITIS: A SYSTEMATIC REVIEW

Latelise B, Ben Brahim E, Prasil L, Freslon M. Complications of prosthesis versus trapeziectomy in trapeziometacarpal joint arthritis: A systematic review. Hand Surg Rehabil. 2024 Apr;43(2):101672

Abstract

Objective
Thumb osteoarthritis is a frequent pathology, mainly affecting the elderly. The surgical treatment initially described and having proved its worth is total trapeziectomy. Since the advent of trapeziometacarpal prostheses, several studies showed the non-inferiority of this technique on clinical criteria, with superiority in bone sparing, although neither technique demonstrated overall superiority. We therefore examined the specific complications of each surgical technique by analyzing their nature and prevalence through a review of the literature to compare them on these new parameters.

Methods
Seventy-four of the 320 articles reviewed were included, 38 of which concerned trapeziectomy, and 36 concerned prostheses, for a total of 4,865 patients. They were original studies, involving adults undergoing trapeziometacarpal arthroplasty or trapeziectomy, published after 2015, reporting at least one well-described complication.

Results
6.13% of trapeziectomies presented severe complications (in particular thumb collapse and metacarpophalangeal hyperextension), 3.31% moderate complications and 1.90% minor complications, leading to a 2.0% revision rate. 23.88% of prostheses had severe complications (loosening, dislocation and wear), 5.06% moderate complications and 1.36% minor complications, leading to a 12.8% revision rate. In addition, we analyzed more recent prosthesis designs separately, and found lower prevalence of severe complications (16.56%) and revision surgery (4.3%).

Conclusion
Revision surgery for trapeziometacarpal prostheses is usually only a standard trapeziectomy with the same follow-up as first-line trapeziectomy, whereas revision surgery for trapeziectomies is much more complex and the results are uncertain. For this reason, we would reserve total trapeziectomy for revision surgeries and patients with low functional demand for whom a second surgery is not desirable. Further studies could confirm this attitude, especially focusing on the latest generation of dual mobility implants.

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PROSTHETIC REPLACEMENT HAS A CLINICAL OUTCOME SUPERIOR TO THAT OF TRAPEZIECTOMY WITH LIGAMENT RECONSTRUCTION AND TENDON INTERPOSITION: A META-ANALYSIS

Lee JK, Yoon BH, Lee HI, Kim C, Choi S, Han SH. Prosthetic Replacement Has a Clinical Outcome Superior to That of Trapeziectomy With Ligament Reconstruction and Tendon Interposition: A Meta-Analysis. Orthopedics. 2021 Mar-Apr;44(2):e151-e157

Abstract

A meta-analysis was performed to compare trapeziectomy with ligament reconstruction and tendon interposition (LRTI) vs prosthetic replacement for first carpometacarpal joint osteoarthritis. Seven prospective and retrospective comparison trials were retrieved. A total of 459 patients receiving trapeziectomy with LRTI and 374 patients receiving prosthesis replacement with a follow-up of 12 to 69 months were identified.
There were no differences in visual analog scale scores or complications. However, the mean Disabilities of the Arm, Shoulder and Hand score was 3.73 points lower and the mean pinch power was 1.16 points higher in the prosthesis replacement group, and this was significant. Prosthetic replacement led to a superior clinical outcome compared with trapeziectomy with LRTI, with no difference in complications.

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PROSPECTIVE 1-YEAR FOLLOW-UP STUDY COMPARING JOINT PROSTHESIS WITH TENDON INTERPOSITION ARTHROPLASTY IN TREATMENT OF TRAPEZIOMETACARPAL OSTEOARTHRITIS

Ulrich-Vinther M, Puggaard H, Lange B. Prospective 1-year follow-up study comparing joint prosthesis with tendon interposition arthroplasty in treatment of trapeziometacarpal osteoarthritis. J Hand Surg Am. 2008 Oct;33(8):1369-77

Abstract

Purpose
Osteoarthritis of the thumb basal joint is a common and disabling condition. This clinical follow-up study compares the efficacy of total basal joint replacement surgery with that of tendon interposition arthroplasty.

Methods
Ninety-eight patients (mean age, 60 years +/- 1) with severe trapeziometacarpal joint osteoarthritis (Eaton-Littler stage 2.4 +/- 0.1) were included in this prospective follow-up study. Based on written and verbal information, the patients could choose either a cementless, unconstrained, hydroxyapatite-coated trapeziometacarpal joint prosthesis or abductor pollicis longus tendon interposition arthroplasty. Clinical outcome parameters were determined preoperatively and at 3, 6, and 12 months postoperatively. Furthermore, osteo-integration and osteo-fixation of the implants were radiologically analyzed after 12 months.

Results
Joint replacement surgery resulted in faster and better pain relief, stronger grip functions, improved range of motion, and faster convalescence than did tendon interposition arthroplasty. After 12 months, patients with joint prostheses had regained the same strength and range of motion as in the asymptomatic contralateral thumb. After 12 months, osteolysis had developed in the vicinity of 2 cups, but there were no signs of implant loosening. The prosthesis surgery was not associated with more complications than occurred with tendon interposition arthroplasty.

Conclusions
This study demonstrates that patients with joint prostheses achieve faster convalescence with better patient comfort and improved strength and range of motion without any increased risk of complications than do patients treated with tendon interposition arthroplasty at 1-year follow up. However, a randomized clinical trial with long-term follow-up is required.

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[EVALUATION OF POSTOPERATIVE PAIN AND EARLY FUNCTIONAL RESULTS IN THE TREATMENT OF CARPOMETACARPAL JOINT ARTHRITIS. COMPARATIVE PROSPECTIVE STUDY OF TRAPEZIECTOMY VS. MAIA(®) PROSTHESIS IN 74 FEMALE PATIENTS]

Jager T, Barbary S, Dap F, Dautel G. Analyse de la douleur postopératoire et des résultats fonctionnels précoces dans le traitement de la rhizarthrose. Étude prospective comparative de 74 patientes trapézectomie-interposition vs prothèse MAIA(®) [Evaluation of postoperative pain and early functional results in the treatment of carpometacarpal joint arthritis. Comparative prospective study of trapeziectomy vs. MAIA(®) prosthesis in 74 female patients]. Chir Main. 2013 Apr;32(2):55-62. Language: French.

Abstract

Trapeziectomy has been the basis of basal thumb arthritis surgical treatment since the 1950s. This resection arthroplasty has been continuously refined (soft-tissue interposition, ligament reconstruction, spacer implantation, etc.) without leading to a dramatic outcome improvement. Pain decrease is often satisfying in the long-term, but comfort during the early postoperative period may vary. Those disadvantages of trapeziectomy led to the emergence of total trapeziometacarpal prostheses in the 1970s, with a constant improvement of implant design. Few series have compared those two surgical techniques side by side, and prospective ones are even rarer.

We compared total trapeziometacarpal prosthesis and trapeziectomy-interposition in the very short term in two similar groups of female patients, to determine whether prosthesis led to faster recovery or not. We compared a total trapeziometacarpal prosthesis (MAIA(®)) and trapeziectomy-interposition in the immediate and short-term (6 months), for objective, subjective, functional criteria, as well as short-term comfort or discomfort. We prospectively followed two comparable cohorts of 47 and 27 female patients above 50 years of age, treated for basal joint arthritis with a constrained trapeziometacarpal joint prosthesis or trapeziectomy-interposition, respectively, between April 2009 and February 2010. The patients were followed postoperatively for 6 months. Mobility, pain reduction, satisfaction, strength and functional scores were better in the prosthesis group. The pinch strength improved by 30%, the length of the thumb column was maintained, and better correction of the subluxation was obtained in this group. There were six cases of De Quervain's tenosynovitis and one case of loosening due to trauma. In the short-term, the MAIA(®) trapeziometacarpal prosthesis gives better outcome than trapeziectomy with interposition. This has to be confirmed in the long-term and after revision surgery that will be likely to occur.

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EARLY RESULTS OF THE ARPE ARTHROPLASTY VERSUS TRAPEZIECTOMY FOR THE TREATMENT OF THUMB CARPOMETACARPAL JOINT OSTEOARTHRITIS

Craik JD, Glasgow S, Andren J, Sims M, Mansouri R, Sharma R, Ellahee N. Early Results of the ARPE Arthroplasty Versus Trapeziectomy for the Treatment of Thumb Carpometacarpal Joint Osteoarthritis. J Hand Surg Asian Pac Vol. 2017 Dec;22(4):472-478

Abstract

Background
Thumb carpometacarpal joint arthroplasty for osteoarthritis may hold advantages over trapeziectomy by preserving range of motion, whilst providing stability and preventing thumb shortening.

Methods
We compare functional and satisfaction outcomes scores, radiological shortening and complication rates between patients treated with trapeziectomy and those receiving the ARPE thumb CMCJ arthroplasty.

Results
Seventy-five trapeziectomies and one hundred and ten ARPE arthroplasties were performed over the study period. Both treatments resulted in significant improvements in functional scores. When matching patients according to pre-operative function, patients receiving the ARPE arthroplasty had better post-operative function (Quick DASH: trapeziectomy = 25.1, ARPE = 16.8). More patients receiving the ARPE arthroplasty were satisfied with their treatment (trapeziectomy = 7.8/10, ARPE = 8.7/10) and would have the same treatment again (trapeziectomy = 76%, ARPE = 89%). The ARPE also resulted in less thumb shortening. However the ARPE arthroplasty is associated with a higher complication rate, with 14% of patients requiring further surgery at a mean of 2 years follow up (95% implant survival).

Conclusions
Both trapeziectomy and the ARPE CMCJ arthroplasty are effective treatment options for thumb CMCJ osteoarthritis. Arthroplasty may offer potential advantages in terms of post-operative function and patient satisfaction. However the risk of complications and requirement for further surgery is greater and must be carefully considered during patient selection and pre-operative counselling.

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DO TRAPEZIOMETACARPAL PROSTHESIS PROVIDE BETTER METACARPOPHALANGEAL STABILITY THAN TRAPEZIECTOMY AND LIGAMENTOPLASTY?

Degeorge B, Dagneaux L, Andrin J, Lazerges C, Coulet B, Chammas M. Do trapeziometacarpal prosthesis provide better metacarpophalangeal stability than trapeziectomy and ligamentoplasty? Orthop Traumatol Surg Res. 2018 Nov;104(7):1095-1100.

Abstract

Background
No surgical management is better than another regarding functional recovery for trapeziometacarpal joint osteoarthritis. Metacarpophalangeal (MCP) hyperextension, directly due to the shortening of thumb height, appears to be a factor of poor prognosis.

Hypothesis
MCP hyperextension can be corrected by implantation of a trapeziometacarpal prosthesis (TMP), as opposed to trapeziectomy and ligamentoplasty (TL), and pinch strength is greater with TMP in this indication.

Material and methods
Sixty-nine patients (41 TMP and 28 TL) were retrospectively evaluated. The following were evaluated: pain, mobility of the metacarpophalangeal joints, palmar grip and pinch strength. Thumb height was measured on radiographs as a post/preoperative ratio.

Results
The mean follow-up was 20 months (6-38). The TMP group showed greater reduction of the metacarpophalangeal hyperextension in all hyperextension groups, especially hypertension >30°, compared with TL. The TMP group provided significant greater pinch strength in all the subgroups with preoperative MCP hyperextension. Patient with postoperative MCP hyperextension had a significant lower grip and pinch strength compared with patient without MCP hyperextension. Radiographic analysis showed that thumb height changes were related to the degree of preoperative hyperextension. Postoperatively, patients with postoperative MCP hyperextension had a significant lower thumb height than patient without MCP hyperextension.

Discussion
Metacarpophalangeal hyperextension appears to be a factor of poor prognosis for surgical treatment of trapeziometacarpal osteoarthritis when it is not managed. TMP provides better metacarpophalangeal stabilization by restoring thumb length and would avoid surgery on the metacarpophalangeal joint. TMP may be recommended in patients having symptomatic trapeziometacarpal joint osteoarthritis and MCP joint hyperextension.

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OUTCOMES OF CEMENTLESS JOINT PROSTHESIS VERSUS TENDON INTERPOSITION FOR TRAPEZIOMETACARPAL OSTEOARTHRITIS: A PROSPECTIVE STUDY

Cebrian-Gomez R, Lizaur-Utrilla A, Sebastia-Forcada E, Lopez-Prats FA. Outcomes of cementless joint prosthesis versus tendon interposition for trapeziometacarpal osteoarthritis: a prospective study. J Hand Surg Eur Vol. 2019 Feb;44(2):151-158

Abstract

We compared 84 patients with the Ivory trapeziometacarpal prosthesis versus 62 with ligament reconstruction and tendon interposition arthroplasty performed for osteoarthritis. There were 134 women and 12 men with a mean age of 60 years. Prospective clinical assessment was made using the Quick Disability of the Arm, Shoulder and Hand (DASH) questionnaire, visual analogue scale for pain, range of motion, and grip and pinch strength. The mean follow-up was 4 years (range 2-5). Prosthetic replacement provided significantly better thumb abduction, adduction, pinch strength, QuickDASH, pain relief, satisfaction and a faster return to daily activities and previous work. Revision surgery was required for two patients in the prosthesis group, two for dislocation and one cup loosening, while in the ligament reconstruction group there were no revisions. We conclude that trapeziometacarpal prosthesis provides better mid-term results in terms of function compared with ligament reconstruction and tendon interposition for patients with Stages 2 and 3 osteoarthritis of the trapeziometacarpal joint. Level of evidence: II.

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TOTAL JOINT ARTHROPLASTY VERSUS TRAPEZIECTOMY IN THE TREATMENT OF TRAPEZIOMETACARPAL JOINT ARTHRITIS: A RANDOMIZED CONTROLLED TRIAL

de Jong TR, Bonhof-Jansen EEDJ, Brink SM, de Wildt RP, van Uchelen JH, Werker PMN. Total joint arthroplasty versus trapeziectomy in the treatment of trapeziometacarpal joint arthritis: a randomized controlled trial. J Hand Surg Eur Vol. 2023 Oct;48(9):884-894

Abstract

The aim of this double anonymized, randomized controlled trial was to determine whether total joint arthroplasty has superior outcomes than trapeziectomy 1 year after surgery for trapeziometacarpal osteoarthritis. A total of 62 women aged 40 years and older, scheduled for surgery for stage II or III osteoarthritis of the trapeziometacarpal joint, were included and randomized to trapeziectomy or total joint arthroplasty. The primary outcome was the total score of the Michigan Hand Outcomes Questionnaire. Secondary outcomes were the Michigan Hand Outcomes Questionnaire subscale scores, Disability of the Arm, Shoulder and Hand Questionnaire, active range of motion, strength, return to work, patient satisfaction and complications. Data were collected at baseline and at 3 and 12 months. At 1 year, we found no superiority of total joint arthroplasty over trapeziectomy regarding the total score of the Michigan Hand Outcomes Questionnaire. The total joint arthroplasty did show a significant advantage in strength and range of motion. Level of evidence: I.

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COMPUTER-SIMULATED TOUCH® PROSTHESIS CUP MALPOSITION AND SOLUTIONS

Knappe K, Schonhoff M, Jaeger S, Bickert B, Harhaus L, Panzram B. Computer-simulated TOUCH prosthesis cup malposition and solutions. Hand Surg Rehabil. 2024 May 1:101712

Abstract

Introduction
Total joint replacement has become significantly more common as a treatment for advanced trapeziometacarpal joint osteoarthritis in recent years. The latest generation of prostheses with dual-mobility designs leads to very good functional results and low rates of loosening and dislocation in the short and medium term. Biomechanical studies showed that central placement and parallel alignment of the cup with respect to the proximal articular surface of the trapezium are crucial for both cup stability and prevention of dislocation. Despite correct positioning of the guidewire, incorrect placement or tilting of the inserted cup may occur, requiring immediate intraoperative revision.

Methods
The existing spherical and conical cup models in sizes 9 mm and 10 mm were transferred to a computer-aided design dataset. Depending on the intraoperative complication (tilting or incorrect placement), the revision options resulting from the various combinations of cup type and size were simulated and analyzed according to the resulting defect area and bony contact area.

Results
In well centered cups, a size 9 conical cup could be replaced by a size 9 spherical cup and still be fixed by press-fit. Conversely, a size 9 spherical cup could not be replaced by a size 9 conical cup, but only by a size 10 cup, of whatever shape. When a size 9 conical cup was tilted up to 20 °, the best revision option was to resect the sclerotic margin and insert a size 10 conical cup deeper into the cancellous bone, to achieve the largest contact area with the surrounding bone. When a size 9 cup of whatever shape was poorly centered (misplaced with respect to the dorsopalmar or radioulnar line of the trapezium), placement should be corrected using a size 10 cup, combined with autologous bone grafting of the defect. Again, the size 10 conical cup showed the largest bony contact area.

Conclusion
Our computer-based measurements suggested options for intraoperative cup revision depending on cup shape and size and on type of misalignment with resulting bone defects. These suggestions, however, need to be confirmed in anatomic specimens before introducing them into clinical practice.

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TRAPEZIOMETACARPAL JOINT LOADING DURING KEY PINCH GRIP: A CADAVER STUDY

Athlani L, Bergere M, Motte D, Prandi B, Beaulieu JY, Moissenet F. Trapeziometacarpal joint loading during key pinch grip: A cadaver study. Hand Surg Rehabil. 2022 Apr;41(2):204-209

Abstract

To our knowledge, no study has directly measured the loads in the trapeziometacarpal joint during an isometric key pinch. The aim of this study was to measure the load acting on the trapeziometacarpal joint for increasingly greater key pinch forces (0.5 kg-1.5 kg).

We performed a cadaver study using 10 fresh-frozen, unembalmed adult forearms and hands (5 right and 5 left). Thumb pinch was simulated by loading the main actuator tendons involved in the key pinch grip (i.e., adductor pollicis, flexor pollicis longus, extensor pollicis longus, extensor pollicis brevis and abductor pollicis longus tendons). Measurements were made inside the joint using a force-sensing resistor sensor (Tekscan® FlexiForce™ force sensor). All specimens were tested twice in a row in the same condition. The median load values recorded in the trapeziometacarpal joint were 1.9 kg (IQR 2.2-1.5), 3 kg (IQR 3.4-2.7) and 4.1 kg (IQR 4.4-3.9) during 0.5 kg, 1 kg, and 1.5 kg key pinch, respectively. For each specimen, similar load values were observed during both loading trials.

Our findings indicate that the loads measured directly in the trapeziometacarpal joint during a simple key pinch are materially lower than those estimated in biomechanical models of the thumb (generally greater than 10 kg for 1 kg of applied force) probably due to intersubject variability. This pilot study will serve as a basis for further studies, for example, comparing biomechanical thumb models and experimental measurements under the same set-up conditions.

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THE CONCEPT OF FIRST METACARPAL M1-M2 ARCH. NEW INTEREST IN TRAPEZIO-METACARPAL PROSTHESES

Duché R, Trabelsi A. The concept of first metacarpal M1-M2 arch. New interest in trapeziometacarpal prostheses. Hand Surg Rehabil. 2022 Apr;41(2):163-170.

Abstract

Analysis of the M1-M2 arch, otherwise known as the M1-M2 metacarpal hanger, objectively helps all surgeons treating basal thumb osteoarthritis to fit a trapeziometacarpal prosthesis that respects the physiological length of the thumb column and thus the physiological tensions of the APL, EPL, and EPB tendons as well as the interossei and thenar muscles. Kapandji X-ray views are a gold-standard in the radiological study of basal thumb osteoarthritis, to classify progression, measure trapezium height, and assess the deformity. Ledoux's M1/M2 ratio is the only method for assessing the normal length of the thumb column but cannot be easily used during surgery.

We describe the first metacarpal arch, obtained by a radiological anteroposterior X-ray of the hand and wrist with the thumb in 45° abduction. It may be broken or conserved, depending on the form of osteoarthritis. It can objectively predict whether a prosthesis must be placed iso-long or so as to lengthen the thumb column. This overcomes the subjectivity of the notion of "intraoperative piston" and avoids excessive tensioning of the prosthesis, which would increase stress on the prosthetic components and thus the risk of wear and complications. We applied this technical principle to 148 dual mobility prostheses fitted between January 2019 and May 2021.

By respecting the arch, the right trade-off is found between intraoperative stability and mobility while protecting the long-term performance of the prosthesis

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THE EFFECT OF CUP ORIENTATION ON STABILITY OF TRAPEZIOMETACARPAL TOTAL JOINT ARTHROPLASTY: A BIOMECHANICAL CADAVER STUDY

Brauns A, Caekebeke P, Duerinckx J. The effect of cup orientation on stability of trapeziometacarpal total joint arthroplasty: a biomechanical cadaver study. J Hand Surg Eur Vol. 2019 Sep;44(7):708-713

Abstract

It has been suggested that the cup of a trapeziometacarpal total joint replacement should be positioned parallel with the proximal articular surface of the trapezium to align it with the centre of motion. This would diminish the chance of dislocation. The goal of this study was to test this idea biomechanically. A linked trapeziometacarpal prosthesis was implanted in seven cadaver hands and combined with three-dimensional printed trapezium cups in 17 different orientations. For every combination, stability of the prosthesis was assessed through its entire passive range of motion.

Dorsal inclination of the cup relative to the proximal articular surface increased the risk of dislocation with thumb flexion and opposition. The risk of dislocation was also increased with lateral or medial inclination of the cup exceeding 20°. Our results demonstrate that cup orientation is an important factor in prosthetic joint stability. Cup placement parallel to the proximal articular surface is ideal.

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ANALYSIS OF TRAPEZIOMETACARPAL PROSTHESIS CUP POSITION WITH RESPECT TO THE TRAPEZIAL ANATOMY

Van Royen K, Bogaert S, Goorens CK, Vanmierlo B, Duerinckx J, Goubau J. Analysis of trapeziometacarpal prosthesis cup position with respect to the trapezial anatomy. J Hand Surg Eur Vol. 2024 Aug 22:17531934241274117

Abstract

The purpose of this study was to analyse the anatomy of the trapezium with regard to cup position in trapeziometacarpal replacement and identify those trapeziums that are at risk of cup perforation through the trapezoid articular surface. The width of the proximal and distal articular surface and the height of the trapezium and second metacarpal facet were measured on 96 peritrapezial views reconstructed from computed tomography scans. The trapezoid articular surface of the trapezium (TRAST) angle was calculated, and four different cup designs were virtually positioned centrally in the trapezium and parallel to the proximal articular surface.

Risk of perforation was defined as a cup that exceeds the ulnar border of the proximal articular surface. The mean TRAST angle in our study was 33°. Risk of perforation is higher when the second metacarpal facet is smaller than 5 mm and when the TRAST angle is 35° or more. In these cases, the position of the cup should be more radial or more distal.

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FUNCTIONAL OUTCOME OF TRAPEZIOMETACARPAL PROSTHESES IN PAN-TRAPEZIAL OSTEOARTHRITIS

Caignol H, Delgove A, Abi-Chahla ML, Strugarek C, Delesque A, Pelet H. Functional outcome of trapeziometacarpal prostheses in pan-trapezial osteoarthritis. Hand Surg Rehabil. 2024 Nov 28:102025

Abstract

Trapeziometacarpal osteoarthritis is frequently associated with scaphotrapeziotrapezoid osteoarthritis. Long-term outcomes have not been reported for trapeziometacarpal protheses in patients with radiological pan-trapezial osteoarthritis that is symptomatic only in the trapeziometacarpal compartment. The primary objective of this retrospective multicenter multi-operator study was to evaluate the effectiveness of trapeziometacarpal arthroplasty for pain relief in patients with radiographic pan-trapezial osteoarthritis without symptomatic scaphotrapeziotrapezoid involvement. A total of 70 thumbs in 67 patients were evaluated by a single independent operator at a mean follow-up of 58 months. Scaphotrapeziotrapezoid osteoarthritis severity on Crosby score was stage II in 84% of patients and stage III in 16%. Mean pain score on visual analog scale decreased from 7.7 preoperatively to 1.3 at last follow-up. There were no reoperations at last follow up.

These results suggest that, in patients with radiological pan-trapezial osteoarthritis without symptomatic involvement of the scaphotrapeziotrapezoid joint, a trapeziometacarpal prothesis yields good medium-term clinical outcomes. LEVEL OF EVIDENCE: III.

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DUAL-MOBILITY THUMB CARPOMETACARPAL JOINT ARTHROPLASTY. KEYPOINTS OF SURGICAL PROCEDURE FOR A SATISFYING OUTCOME

Efstratios D. Athanaselis, Filippos Zigras, Theofilos Karachalios, Sokratis Varitimidis. Dual-mobility thumb carpometacarpal joint arthroplasty. Keypoints of surgical procedure for a satisfying outcome. Journal of Hand and Microsurgery, Volume 17, Issue 1, 2025, 100195, ISSN 0974-3227

Abstract

Thumb carpometacarpal (CMC) arthritis is a prevalent pathology, particularly among elderly women, with a significant impact on patients' quality of daily life. Total joint replacement can provide a shorter rehabilitation period and satisfying function, at least in the short term with encouraging findings according to recent studies concerning its complications (e.g., dislocation, loosening) and longevity.
TOUCH® is a second-generation, dual mobility prosthesis with promising results. Step-by-step surgical technique and keypoints for successful implantation and satisfying thumb function are presented in this article.

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FUNCTIONAL OUTCOME OF TRAPEZIOMETACARPAL PROSTHESES IN PAN-TRAPEZIAL OSTEOARTHRITIS

Caignol H, Delgove A, Abi-Chahla ML, Strugarek C, Delesque A, Pelet H. Functional outcome of trapeziometacarpal prostheses in pan-trapezial osteoarthritis. Hand Surg Rehabil. 2025 Feb;44(1):102025.

Abstract

Trapeziometacarpal osteoarthritis is frequently associated with scaphotrapeziotrapezoid osteoarthritis. Long-term outcomes have not been reported for trapeziometacarpal protheses in patients with radiological pan-trapezial osteoarthritis that is symptomatic only in the trapeziometacarpal compartment. The primary objective of this retrospective multicenter multi-operator study was to evaluate the effectiveness of trapeziometacarpal arthroplasty for pain relief in patients with radiographic pan-trapezial osteoarthritis without symptomatic scaphotrapeziotrapezoid involvement. A total of 70 thumbs in 67 patients were evaluated by a single independent operator at a mean follow-up of 58 months. Scaphotrapeziotrapezoid osteoarthritis severity on Crosby score was stage II in 84% of patients and stage III in 16%. Mean pain score on visual analog scale decreased from 7.7 preoperatively to 1.3 at last follow-up. There were no reoperations at last follow up. These results suggest that, in patients with radiological pan-trapezial osteoarthritis without symptomatic involvement of the scaphotrapeziotrapezoid joint, a trapeziometacarpal prothesis yields good medium-term clinical outcomes.

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RADIOGRAPHIC EVALUATION OF TRAPEZIOMETACARPAL TOTAL JOINT ARTHROPLASTY: WHY AND HOW?

Duerinckx J, Van Royen K. Radiographic evaluation of trapeziometacarpal total joint arthroplasty: Why and how? Hand Surg Rehabil. 2025 Feb;44(1):102067.

Abstract

Total joint arthroplasty is a promising surgical treatment for painful thumb trapeziometacarpal osteoarthritis. Strict surgical technique is essential to achieve a reliably good outcome. Preoperative radiographic evaluation before surgery and intraoperative fluoroscopy during surgery are valuable means of optimizing implant positioning. This article provides an overview of how to perform proper radiographic evaluation for trapeziometacarpal arthroplasty, and discusses radiographic guidelines for correct implant placement and how to use them during surgery.

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OUTCOME COMPARISON OF PRIMARY TRAPEZIECTOMY VERSUS SECONDARY TRAPEZIECTOMY FOLLOWING FAILED TOTAL TRAPEZIOMETACARPAL JOINT REPLACEMENT

Kaszap B, Daecke W, Jung M. Outcome comparison of primary trapeziectomy versus secondary trapeziectomy following failed total trapeziometacarpal joint replacement. J Hand Surg Am. 2013 May;38(5):863-871.e3.

Abstract

Purpose
To compare the clinical outcome between secondary trapezial excision after failed total trapeziometacarpal joint replacement and primary trapeziectomy.

Methods
Between October 2003 and July 2008, we performed 16 revision procedures in our institution because of failed trapeziometacarpal joint replacements. Of these patients, 15 were followed up. We compared clinical outcomes between this group and 15 patients treated with primary trapeziectomy in a matched-pair analysis. The matching criteria were sex, age, and time from surgery. The mean follow-up period was 48 months. We evaluated mobility (radial and palmar abduction, opposition, and Kapandji score), grip strength, and patient self-assessment (pain; satisfaction; Disabilities of the Arm, Shoulder, and Hand score; and activity restriction).

Results
According to most of the clinical evaluation methods (range of motion and Kapandji score) and subjective assessments (pain; Disabilities of the Arm, Shoulder, and Hand), outcome did not differ considerably between the 2 study groups. In particular, the results of strength testing were not significantly different between groups.

Conclusion
The present study showed that the outcomes of secondary trapeziectomy after failed trapeziometacarpal joint replacement arthroplasty generally do not differ from the primary trapeziectomy results. Although it shows high revision rates in the literature, trapeziometacarpal total joint arthroplasty might be a treatment option. In the case of failure, the outcome of secondary trapeziectomy is comparable to that of primary trapeziectomy.

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PERI-PROSTHETIC HETEROTOPIC OSSIFICATIONS AFTER TRAPEZO-METACARPAL ARTHROPLASTY

Justine Dufour1, Michaël Papaloïzos1, Svetlana Bogaert1 (1Genève), Swiss congress SGH-SGHR 2022 360° Quality | Congrès SSCM/SSRM 2022

Abstract

First carpometacarpal joint (CMCJ) prosthetic arthroplasty has become a common treatment of first CMCJ arthritis, with high patient satisfaction and good 10-year survival rate. The ball and socket design is common to total hip prostheses. Heterotopic ossifications (HO) are a well-known complication in the hip, but they have been rarely reported after 1st CMCJ prosthesis. They might be underestimated and could play a role in post-toperative CMCJ stiffness.

Our purpose was to assess the incidence of peri-prosthetic HO and to quantify them. A secondary objective was to evaluate potential risk factors - gender, age, trapezial partial resection, implant type (single or dual mobility), arthritis stage and post-operative time.

All patients operated between 2010 and 2020 were included. The pre-operative radiographs were analyzed for the Eaton stage of arthritis and the post-operative radiographs for peri-prosthetic HO after a minimal follow-up of 6 months.
HO was defined as new bone formation of more than 2mm around the implants on the trapezium and the 1st metacarpal. Below this threshold it was considered as normal bone remodeling after surgery.
HO measurements are made on standardized axial views of the first CMCJ. The surface of the cup serves as a bottom line from which exceeding bone is perpendicularly measured. In case of several HO, their heights are added. As X-rays are not routinely scaled, the known cup diameter was used as the scaling mark, its diameter being the same on all views.
The work is still in progress. Our first results show that 16% present HO, most of them on the trapezium, less at the base of the 1st metacarpal. They appear to be more frequent in men than in women, contrasting with the female to male ratio in the series. Our FU ranges from 6 to 36 months. It is too early to say if time plays a role so far.

These preliminary results show that HO after first CMCJ prosthesis are more frequent than reported. The clinical correlation with the occurrence of postoperative stiffness will also be investigated.

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BASAL THUMB ARTHRITIS SURGERY: COMPLICATIONS AND ITS MANAGEMENT

Herren DB. Basal thumb arthritis surgery: complications and its management. J Hand Surg Eur Vol. 2024 Feb;49(2):188-200.

Abstract

The management of complications after surgery for basal thumb arthritis is sometimes challenging, and there are no clear recommendations on how to evaluate and manage patients with residual symptoms. The aim of the present article was to review the most common complications after surgery for basal thumb arthritis, with an emphasis on resection arthroplasty, joint replacement and joint fusion. In addition, possible management strategies for the different types of complications will be highlighted.

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BIOMECHANICAL CAUSES OF TRAPEZIOMETACARPAL ARTHROPLASTY FAILURE

Spartacus V, Mayoly A, Gay A, Le Corroller T, Némoz-Gaillard M, Roffino S, Chabrand P. Biomechanical causes of trapeziometacarpal arthroplasty failure. Comput Methods Biomech Biomed Engin. 2017 Aug;20(11):1233-1235

Abstract

Trapeziometacarpal joint prosthesis revision has been widely reported, mainly due to loosening of the trapezium cup. Our hypothesis is that current prostheses do not sufficiently respect the kinematics of this joint. CT scan acquisitions enabled us to determine the position of the first metacarpal relative to the trapezium in three different characteristic postures, in subjects in different stages of arthrosis. A CAD model of a current prosthesis was inserted into the numerical 3D model of the joint under the different postures. In the numerical model, we observe penetration of the cup by the head of the prosthesis. This virtual penetration could, in vivo, amount to overstressing the prosthetic elements, which would lead to loosening of the cup or of the metacarpal stem and luxation of the prosthesis.