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### Literature search results

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#### Search details

Conservative and surgical management of osteoarthritis of the hand and wrist

#### Resources searched

NHS Evidence; National Library for Health; Cochrane Library, TRIP database; CINAHL, AMED; MEDLINE; EMBASE

#### Summary

Some results for you on surgical or conservative management of osteoarthritis in the hand or wrist. You may find the following results particularly useful:

3; 13; 18; 22; 23; 24; 27; 30; 37; 41; 42

#### Guidelines

None

#### Evidence based reviews

None

#### Published research

1. [Arthrodesis of the carpometacarpal joint of the thumb using a cannulated...](#)

Author(s): Zdrahal M

Citation: Acta Chirurgiae Orthopaedicae et Traumatologiae Cechoslovaca, August 2009, vol./is. 76/4(326-8), 0001-5415

Publication Date: August 2009

Abstract: PURPOSE OF THE STUDY: To present the results of surgical treatment of carpometacarpal joint arthritis of the thumb, using cannulated screw fixation which is stable and, after bony union, allows the patient to do also harder manual work. MATERIAL: In the years 2000 to 2005, this method was used for 20 operations in 18 patients (16 women and two men); one man and one woman had bilateral surgery. The right hand was operated on in seven cases and the left one in 13 cases. The average age of the patients was 61 years. METHODS: The procedure was performed from the dorsoradial approach, access to the joint was gained between the extensor pollicis brevis and abductor pollicis longus tendons, and care was taken to protect the superficial branch of the radial nerve. The articular surface of the trapezium bone and the first metacarpal base including osteophytes were resected and arthrodesis was carried out by means of a 4.5 mm cannulated screw. The final position of the thumb axis was at 40 degrees to 45 degrees palmar abduction, 20 degrees to 25 degrees extension and 10 degrees to 15 degrees pronation. A plaster hand splint was applied for 6 to 8 weeks post-operatively. The patients were capable of full use of the hand at 3 months after surgery. RESULTS: Evaluation included a pain scale of 1 to 5 grades, range of motion, reduction of muscle strength and fine motor function. All operative wounds healed by first intention, no infection or neurological complications were recorded. Primary union was achieved in 18 cases, two developed pseudoarthrosis. The patients reported improvement on the pain scale by 2 grades on average. However, in thumb opposition tasks, the range between the tip of the thumb and the fifth metacarpophalangeal joint decreased on average by 20 mm. Fourteen patients reported deterioration of fine motor function. All patients were satisfied with improved muscle strength enabling them to do more demanding physical work. DISCUSSION: The results of carpometacarpal joint arthrodesis by means of a cannulated screw are comparable with those of arthrodesis using other implants. The final thumb position is discussed as well as the use of suitable fixation material in order to prevent pseudoarthrosis. Issues such as the use of interpositioned tissue, shortening of the radial column and the resultant limited muscle strength in resection arthroplasty, and the choice of a most suitable implant and possibility of its failure in alloplasty are also discussed. CONCLUSIONS: Arthrodesis with cannulated screw fixation is best for treatment of the carpometacarpal joint of the thumb with stage III rhizarthritis (Eaton classification). It results in an axis-stable thumb that is pain free and capable of physical activity and firm grip.

Source: MEDLINE

2. Ligament reconstruction with tendon interposition using an acellular dermal allograft for thumb carpometacarpal arthritis.

Author(s): Kokkalis ZT, Zanaros G, Sotereanos DG

Citation: Techniques in Hand & Upper Extremity Surgery, March 2009, vol./is. 13/1(41-6), 1531-6572

Publication Date: March 2009

Abstract: Ligament reconstruction tendon interposition arthroplasty is currently the preferred technique for carpometacarpal joint arthritis of the thumb by most surgeons. Despite its efficacy, morbidity has been associated with the harvest of the flexor carpi radialis tendon. Using an allograft as material for arthroplasty, donor site morbidity is avoided. In this report, we present our surgical technique to perform ligament reconstruction tendon interposition arthroplasty using an acellular dermal matrix allograft
GraftJacket) in patients with Eaton stages II, III, and IV symptomatic first carpometacarpal arthritis. One hundred thumbs with trapeziometacarpal osteoarthritis underwent surgical treatment using GraftJacket allograft instead of the flexor carpi radialis tendon autograft. Each patient was followed for a minimum of 12 months. The surgical procedure included trapezial excision and identification of the flexor carpi radialis. The allograft was cut to create a 15-cm strip. The ligament reconstruction was performed by passing the strip around the flexor carpi radialis tendon and suturing it to the base of the thumb metacarpal base through an intramedullary drill hole. The remaining portion of the allograft was fashioned as an interposition mass (anchovy) and interposed between the scaphoid and the base of the first metacarpal. All but 1 patient experienced significant improvement in his or her pain scale rating and grip and pinch strengths. Outcomes from this study compare very favorably with those of other series. No patients experienced a foreign body reaction or infection in this series. We believe that the use of an acellular dermal allograft for both ligament reconstruction and tendon interposition provides a safe and an effective alternative technique for the treatment of advanced first carpometacarpal arthritis.

Source: MEDLINE

3. An investigation into therapists' management of osteoarthritis of the carpometacarpal joint of the thumb in the UK.

Author(s): Davenport BJ

Citation: Hand Therapy, 01 March 2009, vol./is. 14/1(2-9), 17589983

Publication Date: 01 March 2009

Abstract: Objective. Osteoarthritis (OA) of the first carpometacarpal (CMC) joint is common and causes pain and loss of function. Conservative management is widely used to manage this condition and this study aimed to investigate the current conservative management employed by therapists in the UK. Methods. A survey design was selected using a self-completed questionnaire as the data collection tool. The questionnaire was designed by the author and distributed to therapists by post to a range of therapy departments and to delegates attending a hand therapy course. Results. A total of 115 out of 330 therapists (35%) responded with a completed questionnaire and the majority of the sample (97%) treated OA of the first CMC joint. Therapists used a variety of treatments for OA of the first CMC joint and the severity of the OA influenced the treatments used. Advice on activities of daily living, ergonomic advice, splints and exercise were the most commonly used treatment modalities. Therapists varied greatly in how effective they felt the different treatment modalities were in treating OA of the first CMC joint and how strong they felt the evidence base was to support their use. Most therapists used outcome measures, but many different ones were in use. Few therapists were aware of a classification system to grade the severity of OA of the first CMC joint. Conclusions. There is a need for further research into the conservative management of this condition in order to establish the most effective treatments for each stage of the disease process.

Source: CINAHL

4. Anatomically neutral silicone small joint arthroplasty for osteoarthritis.

Author(s): Namdari S, Weiss AP

Citation: Journal of Hand Surgery - American Volume, February 2009, vol./is. 34/2(292-300), 1531-6564

Publication Date: February 2009

Abstract: PURPOSE: Surgical treatment of osteoarthritis at the metacarpophalangeal (MCP) and proximal interphalangeal (PIP) joints includes arthrodesis and, more recently, arthroplasty. Silicone joint arthroplasty has been shown to relieve pain and restore function...
in damaged joints. The purpose of this study was to assess outcomes in patients who had MCP or PIP arthroplasty for osteoarthritis using the NeuFlex implant (DePuy, Warsaw, IN), a silicone implant with an anatomically neutral design. METHODS: A total of 13 MCP and 16 PIP joint replacements in 19 patients were performed with a mean follow-up period of 4 years (range, 1-8 years). Failed conservative management of osteoarthritis was the indication for surgery in all cases. There were 10 men and 9 women. The average age at the time of surgery was 66 years. Outcomes were assessed by questionnaire evaluation, physical examination, and radiographs. RESULTS: The mean flexion arc of motion was 65 degrees and 61 degrees, and the mean extension lag was 3 degrees and 0 degrees in the MCP and PIP groups, respectively. Pain relief was rated excellent or good in 84 percent. The overall patient satisfaction was 90 percent. The Michigan Hand Outcomes Questionnaire (MHQ) score at follow-up was 88 in the MCP group and 87 in the PIP group. There was 1 implant fracture in the PIP group. CONCLUSIONS: At mean 4-year follow-up evaluation, we report high rates of pain relief and patient satisfaction, a low rate of implant fracture, and highly satisfactory range of motion values compared to other implant designs. We show that treatment of MCP and PIP osteoarthritis with an anatomically neutral implant can provide reliable, long-term pain relief and maintenance of function. TYPE OF STUDY/LEVEL OF EVIDENCE: Therapeutic IV.

Source: MEDLINE

5. Total joint arthroplasty for the arthritic thumb carpometacarpal joint.

Author(s): Badia A

Citation: American Journal of Orthopedics (Chatham, Nj), August 2008, vol./is. 37/8 Suppl 1(4-7), 1934-3418

Publication Date: August 2008

Abstract: Thumb basal joint arthritis remains one of the most common and functionally limiting conditions that orthopedic and hand surgeons encounter in daily practice. Nevertheless, surgical treatment options have largely centered on ablative procedures in which the critical trapezial carpal bone is excised completely. Newer orthopedic techniques, such as arthroscopy and implant arthroplasty, have not gained widespread acceptance for this particular joint. Despite equivocal results for basal joint implant arthroplasty in early studies, improved implant design and refinement of surgical indications support adding this option to the surgeon's treatment armamentarium.

Source: MEDLINE


Author(s): Schibli-Beer S, Mark G, Canova M

Citation: Handchirurgie, Mikrochirurgie, Plastische Chirurgie, June 2008, vol./is. 40/3(169-74), 0722-1819

Publication Date: June 2008

Abstract: BACKGROUND: Resection arthroplasty of the carpometacarpal joint of the thumb is considered to be the most frequently used surgical treatment for osteoarthritis of the trapeziometacarpal joint. Although simple trapeziectomy and fixation of the capsular tissue have been found to be an easy, successful treatment, the ligament reconstruction and tendon interposition in different techniques is still widely used. We evaluate the results of our patients after simple trapeziectomy. PATIENTS AND METHODS: Thirty-four thumbs were treated by simple trapeziectomy and fixation of the dorsal capsular tissue. If the dorsal capsular tissue seemed to be weak, it was fixed with a mitek anchor (Minilok Quickanchor,
De Puy Mitek, Raynham, USA) to the distal scaphoid pole. Assessment included patient satisfaction, pain measurement, range of motion and tip, key and grip strength. RESULTS: After a mean follow-up of 26.9 (8–61) months, 91% were satisfied with the outcome, 94.1% would undergo the procedure again, 41% of the patients reported complete pain relief, 44% had pain only with large mechanical load. At follow-up, the mean DASH score was 29.2 (+/- 21.7). We noticed in 29% paraesthesia at the back of the thumb, suggesting damage to branches of the superficial radial nerve. Furthermore, we tried two easy functional tests: 91% of the patients could hold a cup of coffee without any pain, 76.4% could hold a one-litre bottle without pain. CONCLUSION: The collected data confirm that the simple trapeziectomy is a safe and relative simple procedure for treatment of carpometacarpal osteoarthritis of the thumb.

Source: MEDLINE

7. Thumb carpal metacarpal arthritis.

Author(s): Van Heest AE, Kallemeier P

Citation: Journal of the American Academy of Orthopaedic Surgeons, March 2008, vol./is. 16/3(140-51), 1067-151X

Publication Date: March 2008

Abstract: The thumb carpometacarpal (CMC) joint is the most common site of surgical reconstruction for osteoarthritis in the upper extremity. In patients older than age 75 years, thumb CMC osteoarthritis has a radiographic prevalence of 25% in men and 40% in women. The thumb CMC joint obtains its stability primarily through ligamentous support. A diagnosis of thumb CMC arthritis is based on symptoms of localized pain, tenderness and instability on physical examination, and radiographic evaluation. A reproducible radiographic classification for disease severity is based on the four-stage system described by Eaton. Nonsurgical treatment options include hand therapy, splinting, and injection. Surgical treatment is tailored to the extent of arthritic involvement and may include ligament reconstruction, metacarpal extension osteotomy, arthroscopic partial trapeziectomy, implant arthroplasty, and trapeziectomy with or without ligament reconstruction and tendon interposition.

Source: MEDLINE

Full Text: Available in print at Lincoln County Hospital Professional Library

Available in fulltext at Lincoln County Hospital Professional Library; Note: Access via ULHT computers only

8. Experience with transtrapezium approach for transverse carpal ligament release in patients with coexisted trapeziometacarpal joint osteoarthritis and carpal tunnel syndrome.

Author(s): Sless Y, Sampson SP

Citation: Hand, September 2007, vol./is. 2/3(151-4), 1558-9447

Publication Date: September 2007

Abstract: An experience with transtrapezium approach for carpal tunnel release is reported. This technique seems to be successful in cases when carpal tunnel syndrome and first carpometacarpal joint osteoarthritis coexist and surgical treatment is indicated for both conditions. The transtrapezium approach to carpal tunnel release allows for complete carpal tunnel release without increasing the risk of surgical complications.
9. Treatment of early basal joint arthritis using a combined arthroscopic debridement and metacarpal osteotomy.

Author(s): Badia A, Khanchandani P

Citation: Techniques in Hand & Upper Extremity Surgery, June 2007, vol./is. 11/2(168-73), 1089-3393

Publication Date: June 2007

Abstract: Osteoarthritis of the thumb basal joint is a common and disabling condition, and early stages of which are often seen in middle-aged women. Arthroscopic assessment of the first carpometacarpal joint allows easy identification and classification of joint pathology with minimal morbidity. This allows the condition to be managed either arthroscopically or converted to an open procedure as indicated. Different procedures have been described to treat different stages of this disease. The senior author has recently described an arthroscopic staging system to determine treatment for basal joint osteoarthritis. We now present our surgical technique and early clinical experience with arthroscopic synovectomy, debridement, and corrective osteotomy for arthroscopic stage II of thumb basal joint arthritis. Forty-three patients (38 women and 5 men) were arthroscopically diagnosed as having stage II basal joint osteoarthritis of the thumb between 1998 and 2001, and they were the focus of the present study. In all the patients, there was no improvement after a period of 6 to 12 weeks of conservative treatment. All the procedures were performed by the senior author. The surgical procedure included arthroscopic synovectomy, debridement, and occasional thermal capsulorraphy, followed by an extension-abduction closing wedge osteotomy in all the cases. A 0.045-in Kirschner wire provided stability to the osteotomy. By performing an osteotomy that redirects the axial loads in this joint, we have obtained satisfactory results in terms of pain relief, stability, and pinch strength. Arthroscopy allows us to not only determine the optimum indication for this osteotomy, but also to debride the joint and minimize the inflammatory response. Hence, we recommend arthroscopic synovectomy, debridement with or without a thermal capsulorraphy, and a dorsoradial closing wedge osteotomy for the treatment of arthroscopic stage II of thumb carpometacarpal joint osteoarthritis.

Source: MEDLINE

10. Osteoarthritis of the wrist.

Author(s): Weiss KE, Rodner CM

Citation: Journal of Hand Surgery - American Volume, May 2007, vol./is. 32/5(725-46), 0363-5023

Publication Date: May 2007

Abstract: Osteoarthritis of the wrist is one of the most common conditions encountered by hand surgeons. It may result from a nonunited or malunited fracture of the scaphoid or distal radius; disruption of the intercarpal, radiocarpal, radioulnar, or ulnocarpal ligaments; avascular necrosis of the carpus; or a developmental abnormality. Whatever the cause, subsequent abnormal joint loading produces a spectrum of symptoms, from mild swelling to considerable pain and limitations of motion as the involved joints degenerate. A meticulous clinical and radiographic evaluation is required so that the pain-generating articulation(s) can be identified and eliminated. This article reviews common causes of wrist osteoarthritis.
and their surgical treatment alternatives.

**Source:** MEDLINE


**Author(s):** Koff MF, Zhao KD, Mierisch CM, Chen MY, An KN, Cooney WP 3rd

**Citation:** Journal of Hand Surgery - American Volume, May 2007, vol./is. 32/5(688-96), 0363-5023

**Publication Date:** May 2007

**Abstract:** PURPOSE: Osteoarthritis (OA) of the thumb carpometacarpal (CMC) joint causes pain and limits thumb motion. Different surgical procedures exist to treat thumb CMC OA; however, kinematic analyses of thumb reconstructions are limited. The purpose of this study was to evaluate kinematic changes of the thumb CMC joint as the result of different thumb reconstruction procedures. METHODS: Fifteen cadaveric forearms were prepared and instrumented with an electromagnetic tracking device to measure the motion of the thumb metacarpal with respect to the trapezium (thumb trapeziometacarpal joint). Kinematics of the intact thumb and the thumb after trapeziectomy under passive motion were recorded. Specimens then had joint reconstruction consisting of either a ligament reconstruction with tendon interposition (LRTI), Weilby arthroplasty, or Thompson arthroplasty. The kinematic data collection analysis was repeated. The radius of joint motion and 3-dimensional (3D) work area were calculated for each surgery and were used for statistical analysis. RESULTS: The type of surgical treatment significantly affected the joint radius of motion and the 3D work area. The Thompson and LRTI techniques produced a larger joint radius of motion than the other techniques (Weilby technique and total trapezial resection) and was similar to that of the intact joint. The Weilby and LRTI techniques produced a 3D work area similar to those of the intact joint and trapeziectomy and was also larger than that of the Thompson reconstruction. CONCLUSIONS: Kinematic analysis of the thumb CMC joint is effective in differentiating surgical treatments used for end-stage of OA. Only the LRTI reconstruction produced a joint radius of motion and a 3D work area similar to the those of an intact thumb. Additional research is needed to define the optimal surgical techniques to treat the end-stage OA thumb CMC joint.

**Source:** MEDLINE


**Author(s):** Goubau JF, Kerckhove D, Berghs B

**Citation:** Chirurgie de la Main, February 2007, vol./is. 26/1(26-30), 1297-3203

**Publication Date:** February 2007

**Abstract:** INTRODUCTION: Trapezometacarpal instability with trapezial dysplasia is an incapacitating condition long before radiological changes appear. Most of the patients are young and demanding. Treatment is often conservative. Surgical treatment options are relatively classic, starting with a ligamentoplasty of the base of the first metacarpal or a tenotomy of the transarticular accessory slip of the abductor pollicis longus. Other options such as arthrodesis and arthroplasty have not been so successful in this situation. METHOD: The idea arose to combine two techniques described previously. In 1973 Wilson published his technique of abduction osteotomy of the first metacarpal as a treatment for basal osteoarthritis of the thumb. In 2002, Kapandji and Heim published their opening wedge osteotomy of the trapezium in order to correct the slope of a dysplastic trapezium.
The combination of both of these techniques avoids closing of the first web by utilising the abduction osteotomy of the first metacarpal. Moreover, the opening wedge osteotomy corrects the dysplastic lateral rim of the trapezium by correcting its slope. RESULTS: We have been performing this technique since 2001 and 2005 in six patients. The preliminary results are encouraging, 5 of them were able to resume their work. A fair result was achieved in a young patient. DISCUSSION: The described technique is relatively easy and has the advantage of preserving the trapezometacarpal joint. In addition, it leaves the door open for other techniques if it eventually should fail in the long term.

Source: MEDLINE

13. Hematoma and distraction arthroplasty for thumb basal joint osteoarthritis: minimum 6.5-year follow-up evaluation.

Author(s): Gray KV, Meals RA

Citation: Journal of Hand Surgery - American Volume, January 2007, vol./is. 32/1(23-9), 0363-5023

Publication Date: January 2007

Abstract: PURPOSE: Although hematoma and distraction arthroplasty has been found to be successful in the treatment of thumb basal joint arthritis in the short term, questions about its efficacy in the long term have been raised. The goal of the present study was to evaluate the results of this procedure in patients at least 6.5 years after surgery. METHODS: Twenty-two thumbs from 22 patients from a single surgeon's practice were entered into a prospective single-arm study for surgical treatment of basal thumb arthritis. Treatment consisted of piecemeal excision of the entire trapezium and 5 weeks of K-wire immobilization of the thumb metacarpal in opposition and slight distraction. No ligament reconstruction or tendon interposition was used. Motion, strength, standardized dexterity tests, stress radiographs, and outcome questionnaires including the Arthritis Impact Measurement Scales 2 were evaluated before surgery and at 6, 24, and at least 79 months after surgery. RESULTS: At 6 months after surgery, 17 of 22 patients reported complete pain relief, and at the most recent follow-up evaluation (average, 88 months after surgery) 18 patients were entirely pain free. Range-of-motion evaluation at the most recent follow-up evaluation showed 21 of 22 thumbs adducted fully into the plane of the palm, and 21 of 22 opposed to the small finger metacarpal head. Comparisons between preoperative and the recent postoperative strength measurements showed an average of 21% increase in grip strength and tip pinch strength, and an 11% increase in key pinch strength over preoperative values. Although the radiographically determined scaphoid-thumb metacarpal distance decreased with time from surgery, no correlation with strength or functional outcome measurements was found. The Arthritis Impact Measurement Scales 2 data showed postoperative improvement in the hand and finger function and arthritis pain scales. CONCLUSIONS: After trapezial excision, K-wire immobilization in a slightly overcorrected position without formal interposition or ligament reconstruction allows for restoration and maintenance of a stable, pain-free thumb that has comparable strength and motion with published reports of more complicated interventions over comparable time periods. TYPE OF STUDY/LEVEL OF EVIDENCE: Therapeutic, Level IV.

Source: MEDLINE


Author(s): Sirotakova M, Figus A, Elliot D

Citation: Journal of Hand Surgery - American Volume, January 2007, vol./is. 32/1(12-22), 0363-5023

Publication Date: January 2007
Abstract: PURPOSE: Surgical treatment of osteoarthritis of the first carpometacarpal joint aims to achieve complete pain relief with restoration of thumb strength and stability. The aim of this study was to introduce a variation of the abductor pollicis longus (APL) sling arthroplasty and to determine its efficacy in comparison with other tendon sling arthroplasty procedures. METHODS: Between January 1999 and December 2003, 104 trapeziectomies in 74 consecutive patients (30 bilateral cases) were performed using a new APL sling arthroplasty. Patients were evaluated at 6 and 12 months after surgery. The outcomes were analyzed subjectively by questionnaire and objectively by clinical and radiographic evaluation. RESULTS: After 6 months, excellent results in terms of pain relief were achieved in 95 thumbs (91%) of 65 patients. The remaining 9 thumbs had ongoing pain and had a secondary surgery performed between 6 and 12 months after the initial surgery. Pain relief was achieved in 1 thumb by scaphotrapezoid arthrodesis and in the other 8 thumbs by excision of the osteophyte on the ulnar-volar surface of the base of the first metacarpal, which was impinging on the base of the second metacarpal or the trapezoid. The gap was filled with a palmaris tendon anchovy. After 12 months, the 65 patients with successful trapeziectomies and APL sling remained pain-free. In these patients tip pinch, key pinch, and power grip strength increased by 46%, 19%, and 41%, respectively, from the preoperative values. In the 35 unilateral cases, tip pinch, key pinch, and power grip strength increased from 53%, 77%, and 65% of the contralateral hand strength before surgery to 82%, 89%, and 90%, respectively. CONCLUSIONS: This modified APL sling arthroplasty is a new and effective way of creating a suspension sling with the APL tendon after trapeziectomy, with results comparable or better than other published methods, for the treatment of osteoarthritis of the first carpometacarpal joint. TYPE OF STUDY/LEVEL OF EVIDENCE: Therapeutic, Level IV.

Source: MEDLINE

15. Newest advances in the operative treatment of basal joint arthritis.

Author(s): Croog AS, Rettig ME

Citation: Bulletin of the NYU Hospital for Joint Diseases, 2007, vol./is. 65/1(78-86), 1936-9719

Publication Date: 2007

Abstract: Osteoarthritis of the basal joint of the thumb is common, particularly in postmenopausal females, and can cause considerable pain and disability. Incompetence of the volar beak ligament is thought to be the inciting event that eventually leads to joint degeneration in a predictable pattern. The clinical history and examination can reliably lead to the diagnosis. Radiographs are used to stage the severity of the arthritis. Conservative treatment can be effective in early disease. Operative treatment has been shown to be successful in relieving pain and restoring thumb function in advanced disease. The majority of reconstructive procedures include partial or complete trapeziectomy with beak ligament reconstruction and tendon interposition. Secondary metacarpophalangeal joint hyperextension and associated carpal tunnel syndrome must be diagnosed and addressed to prevent poor outcomes.

Source: MEDLINE

Full Text:
Available in fulltext at EBSCO Host


Author(s): Badia A, Sambandam SN

Citation: Journal of Hand Surgery - American Volume, December 2006, vol./is.
Abstract: PURPOSE: Osteoarthritis of the thumb basal joint is a very common and disabling condition that frequently affects middle-aged women. Many different surgical techniques have been proposed for extensive degenerative arthritis of the first carpometacarpal (CMC) joint. Joint replacement has been an effective treatment of this condition. The purpose of this article is to present the outcome of a total cemented trapeziometacarpal implant in the treatment of more advanced stages of this disease.

METHODS: Total joint arthroplasty of the trapeziometacarpal joint was performed on 26 thumbs in 25 patients to treat advanced osteoarthritis (Eaton and Littler stages III and IV) between 1998 and 2003. Indications for surgery after failure of conservative treatment were severe pain, loss of pinch strength, and diminished thumb motion that limited activities of daily living. A trapeziometacarpal joint prosthesis was the implant used in this series. The average follow-up time was 59 months. RESULTS: At the final follow-up evaluation, thumb abduction averaged 60 degrees and thumb opposition to the base of the small finger was present. The average pinch strength was 5.5 kg (85% of nonaffected side). One patient had posttraumatic loosening, which was revised with satisfactory results. Radiographic studies at the final follow-up evaluations did not show signs of atraumatic implant loosening. One patient complained of minimal pain, and the remaining 24 patients were pain free.

CONCLUSIONS: In our series, total joint arthroplasty of the thumb CMC joint has proven to be efficacious with improved motion, strength, and pain relief. We currently recommend this technique for the treatment of stage III and early stage IV osteoarthritis of the CMC joint in older patients with low activity demands.

TYPE OF STUDY/LEVEL OF EVIDENCE: Therapeutic IV.

Source: MEDLINE

17. Salvage procedures for degenerative osteoarthritis of the wrist due to advanced carpal collapse.

Author(s): De Smet L, Degroef I, Robijns F, Truyen J, Deprez P

Citation: Acta Orthopaedica Belgica, October 2006, vol./is. 72/5(535-40), 0001-6462

Publication Date: October 2006

Abstract: Arthrodesis of the wrist has been considered as the gold standard for osteoarthritis of the wrist. In 1984 Watson and Ballet identified a specific pattern of carpal collapse (scapholunate advanced collapse = SLAC) with progressive osteoarthritis. In order to preserve some motion, other alternative procedures have been proposed: proximal row carpectomy (PRC) and scaphoidectomy combined with a four-corner arthrodesis (4CA). In this cohort of 63 patients, three types of surgical treatment were performed (arthrodesis in 19, PRC in 26 and scaphoidectomy with 4CA in 18). The DASH questionnaire was used to evaluate the residual disability. PRC had a significantly better outcome (DASH=16), while there were no significant differences between full arthrodesis (DASH=45) and four corner arthrodesis (DASH=39). In PRC and in four corner arthrodesis a functional range of motion could be preserved (respectively 44 degrees and 52 degrees flexion/extension arc). Gripping force remained inferior to the non operated side. There was a significant increase in gripping force in the PRC group, but not in the others. The final gripping force was not significantly different in the three treatment regimes.

Source: MEDLINE


Author(s): Ghavami A, Oishi SN
LEARNING OBJECTIVES: After studying this article, the participant should be able to: 1. Understand the pathomechanical and biochemical basis for thumb trapeziometacarpal joint degeneration. 2. Diagnose and grade trapeziometacarpal joint disease based on presentation, physical examination (including provocative testing), and radiographic evidence. 3. Understand the principles of ligament reconstruction and tendon arthroplasty procedures. 4. Describe the surgical technique for ligament reconstruction tendon interposition arthroplasty and its variants. BACKGROUND: Osteoarthritis of the trapeziometacarpal joint is the second most common site of degenerative joint disease in the hand, and mostly affects postmenopausal women. Degenerative arthritis of the thumb trapeziometacarpal joint is associated with a lack of bony constraints and laxity of the supporting ligaments, particularly the anterior oblique (“beak”) ligament, which is consistently implicated in disease progression. Resultant increases in joint stress loads leads eventually to metacarpal and trapezial articular destruction, thumb instability, and pain. METHODS: In this article, the authors review the diagnosis and treatment modalities available to the surgeon in the treatment of patients with trapeziometacarpal osteoarthritis. The technique of ligament reconstruction tendon interposition arthroplasty is discussed in detail. RESULTS: Ligament reconstruction tendon interposition arthroplasty procedures center on three common principles: (1) excision of the diseased trapezium; (2) reconstruction of the beak ligament; and (3) interposition of a tissue substance to maintain metacarpal position. CONCLUSIONS: Both conservative and surgical management can be effective in the treatment of trapeziometacarpal arthritis, when properly selected. The success of ligament reconstruction tendon interposition arthroplasty in treating trapeziometacarpal arthritis has withstood the test of time.
Abstract: Objective: To compare the effectiveness and complications of various surgical techniques in the treatment of the osteoarthritis of the trapeziometacarpal joint. Methods: We searched MEDLINE (1966 to 2005), Cochrane Controlled Trials Register (Issue 3, 2005) and CBM (1978 to 2005), and handsearched the references of relevant studies. Only randomized controlled trials were included. We assessed the methodological quality of the included studies, extracted data, and performed quantitative and qualitative analyses. Results: Seven studies were included, and all had some methodological shortcomings. There was strong evidence that in the short term, ligamentous reconstruction, tendon interposition (LRTI) and trapeziectomy alone provide similar results with regard to pain relief, grip and pinch strength, range of thumb motion, hand function and overall satisfaction of patients, but more complications occur with LRTI than with trapeziectomy alone. Conflicting evidence was found about whether LRTI resulted in less subsidence of the first metacarpal bone than trapeziectomy alone. There was moderate evidence that LRTI and ligament reconstruction without tendon interposition (LR) did not have significant differences in thumb strength, patient satisfaction and subsidence of the first metacarpal bone. Limited evidence showed that LR produced better functional scores than LRTI and similar results in pain relief to LRTI. Conflicting evidence supported that LR resulted in greater motion range of thumb than LRTI. Only limited evidence showed that effectiveness was similar between LRTI and Swanson implant. We did not find randomized controlled trials about other surgical techniques. Conclusion: Not enough evidence supports superiority of one technique over another. More high quality randomized controlled trials and long term follow-up are necessary.

Source: EMBASE

21. Basal joint arthritis: Diagnosis and treatment

Author(s): Polatsch D.B., Paksima N.

Citation: Bulletin: Hospital for Joint Diseases, 2006, vol./is. 64/3-4(178-184), 0018-5647

Publication Date: 2006

Abstract: Osteoarthritis of the TM joint is a common cause of pain and disability in several large populations each year, particularly females of either older or younger age groups. The staging of basal joint disease is most often based on plain radiographs; however, the severity of symptoms does not always correlate with radiographs. Nonoperative treatment is very effective in the management of basal joint disease. Operative intervention is indicated when conservative treatment fails to alleviate the symptoms in a compliant patient (Fig. 2). The most common procedure for stage I disease is volar ligament reconstruction. For more advanced cases, ligament reconstruction with tendon interposition has proven to be very effective with regard to pain relief and a return to function. Alternatively, arthroplasty, osteotomy, or arthrodesis can be done. Careful evaluation of the MP joint is mandatory to minimize poor results. With the numerous surgical options available, good to excellent results in greater than 90% of patients can be achieved.

Source: EMBASE

22. Trapeziometacarpal joint osteoarthritis: A retrospective study comparing arthrodesis to tendon interposition arthroplasty

Author(s): Rossi C., Cellocco P., Bizzarri F., Margaritondo E., Costanzo G.

Citation: Journal of Orthopaedics and Traumatology, October 2005, vol./is. 6/3(145-149), 1590-9921

Publication Date: October 2005
Abstract: Surgical management of trapeziometacarpal joint osteoarthritis (OA) is still controversial. The aim of this study was to evaluate and compare results of trapeziometacarpal arthrodesis and of tendon interposition arthroplasty. One hundred twenty-six patients suffering from trapeziometacarpal OA underwent surgery between 1996 and 2001. Of these patients, 62 (78 thumbs) treated with joint arthrodesis and 33 (41 thumbs) treated with tendon interposition arthroplasty with abductor pollicis longus (APL) have been evaluated at follow-up and therefore entered this study. Mean age was 53 years, while the mean follow-up was 36 months. Overall results were satisfactory in 84 patients with good pain improvement. Patients treated with arthrodesis showed better functional ability in bi-digital pinch and grip strength. First finger opposition motion, however, was better conserved in patients treated with interposition arthroplasty. Fusions had an 11.5% complication rate (9 thumbs) with nonunions, whereas 14.8% (6 thumbs) of patients treated with interposition arthroplasty developed 1 first metacarpal base collapse, resulting in 1 first ray length reduction. Despite complications, however, patients did not report unsatisfactory results and generally experienced marked pain reduction. This study shows that arthrodesis can be considered the treatment of choice in patients suffering from trapeziometacarpal OA at Eaton stage III or less, whatever the age and when a good pinch strength is needed.
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Source: EMBASE

23. Basal joint arthritis of the thumb: State-of-the-art and personal experience

Author(s): De Smet L.

Citation: Tijdschrift voor Geneeskunde, May 2005, vol./is. 61/9(663-674), 0371-683X

Publication Date: May 2005

Abstract: Basal joint osteoarthritis of the thumb occurs frequently in perimenopausal women. The saddle shape of the carpometacarpal joint requires a solid ligamentous apparatus to ensure stability and motion possibility into 3 planes. After the menopause these ligaments weaken causing a premature arthritic degeneration. Conservative treatment has been questioned and seems not to be as efficient as previously thought. Several surgical procedures have been reported. The satisfactory results obtained by a simple trapeziectomy can be improved by filling up the resection gap with a tendon strip and with ligament augmentation. A controversy exists about implant prosthetics for the carpometacarpal joint. The outcomes are not better and the risks higher. In early stages one can propose either a ligamentous reconstruction for establishing stability or a metacarpal osteotomy to decrease the loads on the joint surfaces. For men and for those requiring a strong grip, an arthrodesis is to be preferred but the high incidence of non-union constitutes a major drawback.

Source: EMBASE

24. Resection arthroplasty of the carpometacarpal joint of the thumb - Results of 132 cases

Author(s): Meyer J., Kretschmer F., Brocks M., Wannske M.

Citation: Handchirurgie Mikrochirurgie Plastische Chirurgie, April 2005, vol./is. 37/2(137-144), 0722-1819

Publication Date: April 2005

Abstract: Background: Resection arthroplasty of the carpometacarpal joint of the thumb is considered to be the most frequently used surgical treatment for arthrosis of the trapeziometacarpal joint. To avoid proximalisation and to improve stability of the first metacarpal, tendon-sling resectional arthroplasties have gained general approval. To further simplify surgery, we have used a surgical technique since 1995, that consists in a
fixation of the first metacarpal with local capsular tissue. Method and Clinical Material: From 2000 to 2001, 152 resections of the trapezium were performed in 147 patients with arthrosis of the first carpometacarpal joint. 48 surgical procedures included a tendon-sling arthroplasty; in 104 cases stabilisations of the first metacarpal were achieved by fixing local radiopalmar capsular tissue to the flexor-carpi-radialis tendon. After a mean follow-up of 30 months (18 to 41 months), patients were asked to complete a questionnaire concerning pain, physical strength, practical skills, maximal physical capacity and aesthetic result. The general surgical result had to be scored and the recovery time until the thumb could be used for activities of daily living had to be recorded. Results: 132 of 152 questionnaires, 43 of the patients with tendon-sling arthroplasty and 89 of the patients with arthroplasty with local radiopalmar capsular tissue, were returned. After tendon-sling arthroplasty, 69.8% of the patients judged their results to be good or very good, after stabilisation with radiopalmar capsular tissue 69.7% of the patients valued their surgical results good or very good. Unsatisfactory results were found in 18.6% of the patients after tendon-sling arthroplasty and in 19.1% of the patients after stabilisation with radiopalmar capsular tissue. The thumb could be used for everyday life after a mean time of 6.7 months. There was no significant difference between the operative procedures. Conclusion: The collected data implies that resection-arthroplasty of the carpometacarpal joint of the thumb with stabilisation by radiopalmar capsular tissue yields similar results compared to tendon-sling arthroplasty.

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Source: EMBASE

25. Treatment of idiopathic postmenopausal osteoarthrosis of the trapeziometacarpal joint with the Epping resection arthroplasty technique.

Author(s): Demir E, Wittemann M, Germann G, Sauerbier M

Citation: Annals of Plastic Surgery, February 2005, vol./is. 54/2(147-52), 0148-7043

Publication Date: February 2005

Abstract: Surgical treatment of idiopathic postmenopausal osteoarthrosis of the trapeziometacarpal joint with the Epping resection arthroplasty was performed in 57 cases in 49 women. Data show good pain relief (between 58% and 76%), very good subjective results with 89% patient satisfaction and Disability of Arm, Shoulder, Hand (DASH) scores in the lower third of the scale after 35 months' follow-up. Good functional results with respect to radial abduction (51 degrees) and palmar flexion (45 degrees), as well as improvement in strength measurements, could be achieved. Some patients (13%) reported remaining problems with occasional pain during performance of activities of daily life and work. A significant proximal metacarpal migration (31%) without correlation to objective or subjective outcome was found. The Epping procedure has proven to be a valuable alternative procedure to treat idiopathic postmenopausal trapeziometacarpal arthritis after a midterm follow-up period. Still, careful patient selection is important and sufficient preoperative information necessary.

Source: MEDLINE


Author(s): Martou G, Veltri K, Thoma A

Citation: Plastic & Reconstructive Surgery, August 2004, vol./is. 114/2(421-32), 0032-1052

Publication Date: August 2004

Abstract: In most cases of basal joint osteoarthritis, surgery becomes an option at stages II, III, and IV, as classified by Eaton. Controversy exists regarding which technique achieves the best outcome. This systematic review was undertaken to address the question
of which technique, if any, offers the best outcome to patients with osteoarthritis of the first carpremetacarpal joint greater than stage II. A thorough search of the electronic databases Cochrane, Cinahl, Healthstar, and MEDLINE/PubMed was undertaken to identify reviews and articles on primary comparative studies of the different surgical options. The methodological quality of the retrieved articles was assessed on the basis of specific criteria. Inclusion criteria were applied to 44 of 254 possibly relevant articles. Eight reviews and 18 comparative studies met the criteria and were reviewed. Each of the techniques, arthrodesis, trapeziectomy with or without biological/synthetic interposition, osteotomy, and joint replacement, was associated with unique benefits and risks. There was great variability in outcome measurements. The majority of retrieved review articles claim that ligamentous reconstruction and tendon interposition may represent the best option; however, validity assessment of these studies revealed methodological flaws. Furthermore, results from the articles on comparative studies indicate that ligamentous reconstruction and tendon interposition may provide no additional benefit when compared with arthrodesis and trapeziectomy alone or with tendon interposition. There is no consensus as to which clinical outcomes are most important in thumb basal joint surgery and how these should be measured. This renders the appraisal and comparison of such studies a challenging task. Until large randomized controlled trials that compare techniques in similar populations with respect to staging and prognostic factors are undertaken and the clinical outcomes are clearly defined, surgeons will continue to claim superiority of one technique over another without supporting evidence.

Source: MEDLINE

Full Text:

Available in fulltext at Ovid

27. [Results of a five-year series of 44 trapeziectomies associated with ligamentoplasty and interposition arthroplasty]. [French] Resultats a plus de cinq ans d'une serie consecutive de 44 trapezectomies avec ligamentoplastie et interposition.

Author(s): Le Du C, Guery J, Laulan J

Citation: Chirurgie de la Main, June 2004, vol./is. 23/3(149-52), 1297-3203

Publication Date: June 2004

Abstract: BACKGROUND: Surgical management of trapeziometacarpal joint osteoarthritis remains controversial. There have been few long term studies of trapeziectomy combined with ligamentoplasty and interposition arthroplasty (TLIA). Our results are based on a five year minimum follow-up study. METHODS: We carried out a study of 44 TLIA in 39 consecutive patients. A physical and radiological assessment was undertaken after an average of 6.9 years by an independent observer. RESULTS: A durable physical improvement was obtained in 18 cases in less than six months and in five cases after more than one year. Thereafter there was no secondary deterioration. A standard pain measurement gave an average result of 1.4 on a ten point scale. Pain was independent of displacement of the first metacarpal bone but had a tendency to be greater where associated with scaphotrapezoidal joint osteoarthritis. Strength was improved in 36 cases. The patients were satisfied and considered their grip to be normal in 41 cases. These variables did not change over time. DISCUSSION: TLIA give an excellent result in more than 90% of cases. This remains unchanged seven years after surgery. As opposed to prostheses, there is no secondary deterioration once healing is achieved. Algodystrophy is the main drawback. CONCLUSION: In our opinion, TLIA remains the best available surgical treatment of trapeziometacarpal joint osteoarthritis.

Source: MEDLINE
28. Thumb carpometacarpal arthrosis

Author(s): Young S.D., Mikola E.A.

Citation: Journal of the American Society for Surgery of the Hand, May 2004, vol./is. 4/2(73-93), 1531-0914

Publication Date: May 2004

Abstract: Arthrosis of the thumb carpometacarpal joint is a very common, and often debilitating, affliction of postmenopausal women. Coexistent pathologic conditions are frequent. A thorough history and physical examination should lead the physician to an accurate diagnosis. Radiographs support the clinical suspicion and guide the treatment plan. Most patients, regardless of the severity of degeneration, will benefit from a conservative approach. However, when conservative management fails to relieve the patient's symptoms adequately, surgical intervention is indicated. A plethora of surgical options are available, and controversy exists regarding the most effective surgical approach. Regardless of the technique used, one can usually expect pain relief, improved strength, and an overall increase in function. Therefore, satisfaction rates are high when surgery is performed on properly selected patients and associated conditions are addressed. copyright 2004 American Society for Surgery of the Hand.

Source: EMBASE

29. Basal joint osteoarthritis of the thumb: a prospective trial of steroid injection and splinting

Author(s): Day CS, Gelberman R, Patel AA, Vogt MT, Ditsios K, Boyer MI

Citation: Journal of Hand Surgery - American Volume, March 2004, vol./is. 29/2(247-51), 0363-5023

Publication Date: March 2004

Abstract: PURPOSE: There have been few prospective studies evaluating the results of nonsurgical treatment of a well-defined patient cohort with symptomatic basal joint osteoarthritis of the thumb. This prospective study uses a validated outcome instrument to examine the effectiveness of a single steroid injection and 3 weeks of splinting in patients with osteoarthritis in Eaton stages 1 to 4 with a minimum of 18 months of follow-up evaluation. METHODS: Thirty consecutive patients (30 thumbs) were studied prospectively to evaluate the efficacy of a single injection of corticosteroid into the trapeziometacarpal joint, followed by immobilization in a thumb spica splint for 3 weeks. All patients answered an outcome-based questionnaire (Disabilities of the Arm, Shoulder, and Hand) and were examined before injection, 6 weeks after injection, and at final follow-up examination (minimum, 18 months). Eaton radiographic stage was recorded by 3 independent observers. RESULTS: At 6 weeks 13 patients had improvement in pain intensity and 17 patients reported no symptomatic improvement. Twelve of those with relief at 6 weeks continued to have relief at long term follow-up evaluation (mean, 25 months). Of patients with long-term relief average grip strength of the affected thumb was 95% of contralateral side, whereas those without relief had grip strength values that were 60% of contralateral side. For those patients without relief at 6 weeks there was no improvement seen at later follow-up evaluation. Five patients with Eaton stage 1 disease had an average of 23 months of relief with nonsurgical treatment. In stage 2 and stage 3 disease 7 thumbs improved at 6 weeks after injection and 6 thumbs had long-term relief. In stage 4 disease, 6 thumbs had neither short-term nor long-term relief with the injection. Disease side, handedness, and smoking did not affect outcomes. At final follow-up evaluation 12 thumbs had had surgical treatment. CONCLUSIONS: Steroid injection with splinting for the treatment of basal joint arthritis of the thumb provided reliable long-term relief in thumbs with Eaton stage 1 disease but provided long-term relief in only 7 of 17 thumbs with Eaton
stage 2 and stage 3 basal joint arthritis.

Source: MEDLINE


Author(s): Hausman M

Citation: Instructional Course Lectures, 2004, vol./is. 53/(23-30), 0065-6895

Publication Date: 2004

Abstract: The diagnosis and treatment of intermediate stage wrist arthritis remains a challenge. In the earliest stages, the goal of treating prearthritic conditions, such as carpal instability caused by ligament injuries or carpal or distal radius fractures, is clear: anatomic reduction and healing of the fracture and correction of the instability to forestall degeneration of the wrist. Similarly, in established arthritis with severe pain and limitation of motion caused by advanced destruction of the articular surface, treatment usually involves some form of arthroplasty or arthrodesis. However, the patient with wrist pain and established but mild, moderate, or localized degenerative changes and good motion remains a treatment dilemma.

Source: MEDLINE

31. Arthrotenoplasty of the trapeziometacarpal joint with lengthening and repositioning of the long abductor tendon according to Ghezzi

Author(s): Ghezzi M., Lucaccini L., Ongaro D., Gentili C.M., Pozzoni L., Gobbato G.P.

Citation: Rivista Italiana di Chirurgia Plastica, 2004, vol./is. 36/4(199-205), 0391-2221

Publication Date: 2004

Abstract: With the surgical technique developed at our Reconstructive Hand Surgery Center the initial stages of arthrosis of the trapeziometacarpal joint, characterized by painful symptomatology and decreased prehensile strength, can be treated effectively. Symptomatology is classified as the initial stages according to Eaton. This innovative surgical technique was born from the conviction that at the beginning of arthrosis of the trapeziometacarpal joint there is a strong subluxation action produced by long abductor tendon on the articulation. Consequently lengthening becomes a fundamental gesture that is executed after having performed curettage of the joint and obtaining a good degree of reduction of trapeziometacarpal joint subluxation, stabilizing it with a plastic “overcoat” of the articular capsule previously carved. Sixty-three cases were treated in our center with a follow-up of six years. The results obtained are encouraging and have allowed us to verify the effectiveness of this surgical treatment in nearly all the operated patients; regression of painful symptomatology of even if accompanied by a slight lessening of grip strength, but nonetheless without compromising good functionality of the thumb was observed. This type of surgical treatment is not meant to contrast with those still existing, but rather to be a valid alternative. This surgical technique produces only minimal structural modifications of the trapeziometacarpal joint and in cases of possible surgical failure or aggravation of the symptomatology patients can undergo a new surgical procedure.

Source: EMBASE

32. Diagnosing and managing first carpometacarpal joint arthritis.

Author(s): Ferrarone C

Citation: JAAPA: Journal of the American Academy of Physician Assistants, 01 November 2003, vol./is. 16/11(44-49), 15471896
Abstract: Although CMC arthritis may require referral to an orthopedic surgeon, many patients respond to conservative treatment by their primary care practitioner.

Source: CINAHL

33. Surgical management of osteoarthritis of the hand and wrist

Author(s): von Schroeder H.P.

Citation: Geriatrics and Aging, September 2003, vol./is. 6/8(16-19), 1488-8408

Abstract: Osteoarthritis is a highly prevalent and disabling condition of the hand in the geriatric population. It is commonly and effectively managed by surgical means. The interphalangeal joints and base of the thumb are most frequently involved, particularly in women, whereas posttraumatic osteoarthritis of the wrist is more common in men. Surgical procedures include simple debridement, soft tissue stabilization or osteotomies for milder cases. Joint arthroplasty, including excision procedures, and joint arthrodesis (fusion) are indicated for more severe arthritis. The type of procedure used depends on the location of the affected joint, patient age and physical demands placed on the hand. Surgery can effectively alleviate pain and improve hand function to improve an individual's quality of life.

Source: EMBASE


Author(s): Stahl S, Shapira D

Citation: Journal of Hand Surgery - British Volume, June 2003, vol./is. 28/3(246-50), 0266-7681

Abstract: A new approach for the concomitant surgical treatment of trapeziometacarpal joint osteoarthritis and carpal tunnel syndrome through the same incision is described. The technique was used in 25 patients (20 women, five men; mean age, 56 years). At a mean follow-up of 27 months, there was complete disappearance of the symptoms of carpal tunnel syndrome in 20 of the 25 patients, incomplete but substantial relief in four patients, and no improvement in one patient. One patient had scar tenderness and another had a superficial wound infection. The surgical technique is simple, safe and cost-effective as it avoids separate operations for both pathologies. The procedure is not suitable for severe carpal tunnel syndrome or when direct visualization of the median nerve and the carpal tunnel is necessary.

Source: MEDLINE

Full Text:

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35. Excision of the trapezium and interposition arthroplasty with gelfoam for the treatment of trapeziometacarpal osteoarthritis.
Excision of the trapezium with Gelfoam interposition was performed in 35 thumbs, 34 of which were evaluated after an average 5 years. Twenty-four patients had unilateral procedures. The follow-up examination included a standardized questionnaire and clinical and radiological examinations. Pain relief was achieved in all cases. The patients considered that 32 of their operated hands had improved function, while two had not improved. All patients were satisfied with the final postoperative result. Adduction of the thumb to the index finger, and opposition to the tip of the little finger was possible in all cases. Weakness, in comparison to the other thumb, of lateral pinch (71%; \( P=0.0001 \)), tip pinch (74%; \( P=0.007 \)), and grip strength (85%; \( P=0.006 \)) were observed. The first web span was preserved in all hands. Calculation of the trapezial space ratio demonstrated only slight, insignificant shortening (7%; \( P=0.06 \)) of the thumb ray. No significant correlations between the postoperative trapezial space ratio and lateral pinch strength, tip pinch strength, and grip strength were observed. We conclude that excision of the trapezium and Gelfoam interposition has no specific complications and is a reliable surgical treatment for osteoarthritis of the trapeziometacarpal joint.

36. The Epping resection-suspension arthroplasty procedure. A standard procedure in the operative treatment of trapeziometacarpal osteoarthrosis?

Author(s): Wittemann M., Demir E., Sauerbier M., Germann G.

Citation: Handchirurgie Mikrochirurgie Plastische Chirurgie, 2002, vol./is. 34/1(49-58), 0722-1819

Abstract: Background: The surgical treatment of painful osteoarthrosis of the trapeziometacarpal joint with the Epping technique consists of excision of the trapezium and reconstruction of the first intermetacarpal ligament by using the distally based half of the flexor carpi radialis tendon. This ligament reconstruction procedure aims to prevent proximal migration of the first metacarpal, restore function and stability of the neoarthrosis. This retrospective study presents operative outcome results after using the Epping arthroplasty technique. Methods and Clinical Material: The Epping technique has been performed in seventy cases and could be evaluated after a mean follow-up of 34.6 months in 92.4% of all operated patients. Subjective were evaluated using patient-based questionnaires such as the Buck-Gramcko-Score and the German Version of the DASH V2.0 questionnaire. Objective and functional outcome analysis including range of motion, strength measurements with the computer-based JAMAR dynamometer and various X-ray views, have been used as further methods of evaluation. Results: Excellent pain relief and very good subjective results with 86% patient satisfaction have been reported by our patients. The objective outcome analysis demonstrated good functional results with respect to radial abduction (51 degrees) and palmar flexion (45 degrees), and improvement in grip strength, key pinch and pulp pinch. Some patients reported remaining problems with pain during performance of activities of daily life and professional activities. A significant proximal metacarpal migration without correlation to the objective or subjective outcome
was found in follow-up X-ray controls. Conclusion: The Epping ligament reconstruction procedure has proven to be a valuable standard procedure after a mid-term follow-up period. Good functional outcome and high patient satisfaction could be achieved, but some patients still remain with problems in different activities. Long-term results still need to be evaluated.

**Source:** EMBASE

37. **Reduction in the need for operation after conservative treatment of osteoarthritis of the first carpometacarpal joint: a seven year prospective study.**

**Author(s):** Berggren M, Joost-Davidsson A, Lindstrand J, Nylander G, Povlsen B

**Citation:** Scandinavian Journal of Plastic & Reconstructive Surgery & Hand Surgery, December 2001, vol./is. 35/4(415-7), 0284-4311

**Publication Date:** December 2001

**Abstract:** The effect of occupational therapy for patients awaiting surgery for isolated osteoarthritis of the carpometacarpal joint of the thumb was assessed. Thirty-three patients awaiting joint replacement because of pain were randomised into three groups. One group was treated with technical accessories, two other groups had in addition one of two types of splints, and all patients received extensive advice on how to accommodate activities of daily living. They all had an initial seven months' trial on this regimen at which time 23/33 (70%) no longer required an operation. During the following seven years four patients died, but only two of the remaining 19 patients wanted an operation. We therefore recommend that patients with osteoarthritis of the carpometacarpal joint of the thumb are offered a similar programme in addition to access to accessories and splints preoperatively.

**Source:** MEDLINE

38. **The surgical treatment of scaphotrapeziotrapezoid osteoarthritis.**

**Author(s):** Kozin SH

**Citation:** Hand Clinics, May 2001, vol./is. 17/2(303-14, x), 0749-0712

**Publication Date:** May 2001

**Abstract:** The incidence of scaphotrapeziotrapezoid osteoarthritis increases during the aging process. This article discusses the surgical options available to treat this condition.

**Source:** MEDLINE

39. **Osteoarthritis of the base of the thumb**

**Author(s):** Downing N.D., Davis T.R.C.

**Citation:** Current Orthopaedics, 2001, vol./is. 15/4(305-313), 0268-0890

**Publication Date:** 2001

**Abstract:** Osteoarthritis of the base of the thumb is a very common condition, particularly in post-menopausal women. Although about 30% of post-menopausal women have radiological changes of arthritis, the majority have no or only minor symptoms. Symptomatic osteoarthritis is confirmed by careful physical examination and radiological assessment. The radiological appearance enables classification into four stages of increasing severity and this classification serves as a guide to treatment. Initial treatment consists of non-operative measures, surgery being reserved for disabling symptoms resistant to these measures. The surgical options range from ligament reconstruction or
ostectomy for early stage disease (painful laxity), through to trapeziectomy, arthrodesis and arthroplasty for more severe osteoarthritis. There is controversy regarding the optimum surgical treatment option for severe osteoarthritis, and debate as to whether the results of trapeziectomy can be improved by the addition of ligament reconstruction procedures. Satisfactory results can be achieved by a variety of different surgical treatments. copyright 2001 Elsevier Science Ltd.

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40. Problems with M.P. Joint about surgical treatment of trapeziometacarpal osteo-arthritis and insertion of ARPE implant

Author(s): Teissier J., Gaudin T., Marc T.

Citation: Chirurgie de la Main, 2001, vol./is. 20/1(68-70), 1297-3203

Publication Date: 2001

Abstract: Progressive ankylosis of the trapeziometacarpal joint in flexion-adduction with closure of the first web in advanced trapeziometacarpal osteoarthritis gradually leads to compensatory dislocation of the metacarpophalangeal joint with hyperextension in the sagittal plane and abduction in the frontal plane. This deformity of the MP joint, initially reducible, but subsequently irreducible, results in the classical 'Z' deformity of the thumb in the sagittal plane. A less well known 'Z' deformity can also occur in the frontal plane due to distension of the medial collateral ligament. Surgical treatment of trapeziometacarpal osteoarthritis by arthroplasty must correct this secondary deformity of the MP joint to obtain an optimal result. The classical sagittal 'Z' deformity of the thumb can be easily corrected while this deformity is still reducible by releasing the fist metacarpal by tightening the abductor pollicis longus. When it is irreducible, this deformity can only be treated by MP arthrodesis, which contraindicates insertion of the ARPE trapeziometacarpal implant. Correction of the frontal 'Z' deformity of the thumb requires repair of the medial collateral ligament of the MP joint by ligamentorraphy (relightening) or ligamentoplasty. copyright 2001 Editions scientifiques et medicales Elsevier SAS.

Source: EMBASE

41. Surgical treatment of osteoarthritis of the carpometacarpal joint of the thumb - Our experience with interposition arthroplasty

Author(s): Smid L., Janecka T.

Citation: Acta Chirurgiae Orthopaedicae et Traumatologiae Cechoslovaca, 2001, vol./is. 68/1(50-54), 0001-5415

Publication Date: 2001

Abstract: Purpose of the study: The authors deal with surgical treatment of osteoarthritis of carpometacarpal joint of the thumb. They present results of three different techniques of interposition arthroplasty. Material: Thirteen operations were carried out in the period of 1997-1999 in 12 patients (9 women and 3 men). In seven cases the dominant right hand
was affected, in 4 cases the left hand was involved. The average age was 56 years (range, 48-91 years). In none of the patients any extreme activity of the operated on hand is expected in future. Methods: The surgical treatment consists in resection of damaged articular surface and interposition of soft tissue. In Nalebuff-Millender operation the graft is taken from the tendon of m. palmaris longus (PL). In the operation after Burton and Pellegrini the graft is formed by the longitudinal half of the tendon of m. flexor carpi radialis (FCR). The tendon is fixed to the 1st metacarpal by its pulling through a channel drilled in the base of the metacarpal. In Wulle operation the interposition tissue is harvested from the longitudinal half of tendon of m. abductor pollicis longus (APL) wound around FCR tendon. During the operation after Nalebuff-Millender we performed in the first 3 patients partial resection of trapezium, in all other cases total resection of trapezium. The thumb was fixed for three weeks with a subsequent physiotherapy. The results were evaluated according to a three-grade classification-excellent, good, poor (fully functional, partially functional and non-functional hand) according to tenderness, strength of grip and abduction range of the thumb. Results: In 7 patients after Nalebuff-Millender operation the result was twice excellent and five good. Among 5 good results were three patients with partial resection of trapezium. The condition was stabilized after 4-9 months. In patients after Burton and Pellegrini operation we achieved an excellent result in 4 cases and in 2 cases a good result. Recovery lasted for 3-6 months. In the female patient after Wulle operation the result is good, stabilized after 4 months. Discussion: The authors make a mutual comparison of the results of individual applied procedures. Burton and Pellegrini procedure provides good results which are certainly enhanced by stabilization of base I by MT tendon pulled through the channel. Better results were achieved by using total resection of trapezium. The authors compare the interposition arthroplasty with other surgical procedures which they present in a short overview (arthrodesis, arthroplasty, osteotomy). Conclusion: Interposition arthroplasty is a suitable solution of osteoarthritis of carpometacarpal joint after the failure of conservative treatment in patients in whom no extreme activity of the affected hand is expected. Burton-Pellegrini procedure is technically more demanding, however, it provides the best results and the fastest recovery. Total resection of trapezium proved efficient as it contributes to a better orientation during operation and to good results.

Source: EMBASE

42. Conservative treatment of CMC-1 osteoarthritis


Citation: European Journal of Plastic Surgery, 2001, vol./is. 24/1(33-37), 0930-343X

Publication Date: 2001

Abstract: Initially, osteoarthritis of the carpometacarpal joint of the thumb (CMC-1) should be conservatively treated. However, literature concerning this topic is absent. Therefore, 39 patients (71 hands) with conservatively treated osteoarthritis of the carpometacarpal joint of the thumb were reviewed. The minimum follow-up period was 1 year; the average follow-up period was 8.8 years. Thirty-two women had bilateral CMC-1 osteoarthritis; the remaining seven patients had unilateral CMC-1 osteoarthritis. Although suggested by others, long-term pain relief was not observed in this study. Moreover, patient satisfaction, thumb strength, and mobility were not influenced by the duration of the CMC-1 osteoarthritis. In conservatively treated patients, worse results are achieved than in operated patients, especially concerning their subjective experiences. The authors therefore advise surgery, especially in the case of pain which hampers the activities of daily life.

Source: EMBASE


Author(s): Davey PA, Belcher HJ
Abstract: Nowhere in the body is the inter-relationship between articulating surfaces of bones, supporting ligaments and muscles better exploited than in the wrist. The link between the proximal and distal rows of carpal bones is focused at the scapho-trapezio-trapezoidal (STT) joint. Despite this, this complex of joints has received relatively little attention in the literature. In this article, the anatomy and kinematics of the joint are described. STT joint arthrosis is seen in 10% of post-menopausal women and it may therefore be a significant cause of wrist pain. STT fusion is the most common surgical treatment for osteoarthrosis at this site. An understanding of the surgical principles that need to be applied in this technique is essential to ensure best outcome. The complications that can arise from surgery on this joint need to be appreciated so that patients are carefully selected for operative treatment.