

Research

Excision of the trapezium for carpometacarpal osteoarthritis of the base of the thumb

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The original work and extracts from them have been quoted (From 1982 till to date-over the last 35 years) from various Orthopaedic Centres in Australia, Europe, U.K. and the U.S., in various journals, Year Book and Reputed text books as follows:- It has around Excision of the Trapezium for Carpometacarpal Osteoarthritis of the base of the Thumb 30 References and 20 Citations as seen on my website at kmohaniyer.com The Results of Excision of the Trapezium-Iyer, K.M. (1981) *The Hand* 13:246-250 My original research work on The Results of Excision of the Trapezium Referred to in Wheelless' Textbook of Orthopaedics wheellessonline.com Osteoarthritis-CMC Arthritis-Excision of the Trapezium.

It is particularly common in women past the menopause. The right side is often affected than the left, but both sides are frequently involved. Numerous aetiological factors have been suggested for rapid wear in this joint including trauma, developmental anomalies of the trapezium and occupations involving repeated grasping and wringing movements. Rheumatoid arthritis of the carpometacarpal joint of the thumb is rare as compared to the commonly seen degenerative osteoarthritis affecting the joint. The presenting complaints are mainly pain centered over the thumb which is aggravated by movements, swelling over the base of the thumb and stiffness of the thumb. Treatment for this condition has included physiotherapy and radiotherapy with no satisfactory evidence of consistent improvement. Spintage of the joint in a light plastic splint has been suggested for relief of pain. Intra-articular steroid injections do help in relief of pain temporarily. Operative procedures advocated for this condition have included forage, intra-articular tenodesis, excision of the trapezium, arthrodesis of the carpometacarpal joint of the thumb, silicone rubber sponge interpositional arthroplasty and prosthetic replacement of the trapezium. The gold standard operation is the excision of the trapezium associated with a tendon interposition and ligamentoplasty. This operation preserves basal thumb mobility and provide long standing results.¹

Excision of the trapezium is more likely to be satisfactory when the condition is monoarticular and degenerative in nature rather than in inflammatory conditions. The main aim of excision is to achieve relief of pain along with maximum mobility and increased hand function while sacrificing a certain degree of stability. Gervis^{2,3} in 1949, reported 15 patients with 18 trapezia excised with uniformly good results in 16 wrists and slightly inferior results in 2 cases due to general arthritic changes. In 1973, he reported on his experience of excision of trapezium for osteoarthritis of the carpometacarpal joint of the thumb after twenty-five years and was so pleased with the results that he has his own trapezium excised.

A Clinical and Arthrographic evaluation of review of twenty-six wrists in eighteen patients who underwent excision of the trapezium for carpometacarpal arthritis of the thumb was carried out. The purpose of arthrography was to demonstrate the residual joint space between the base of the first metacarpal and scaphoid following excision of the trapezium, and in particular was intended to assess the configuration of this space and relate the appearances with respect to the clinical result (Figures 1 and 2).



Figure 1 and 2: Arthrogram being performed.

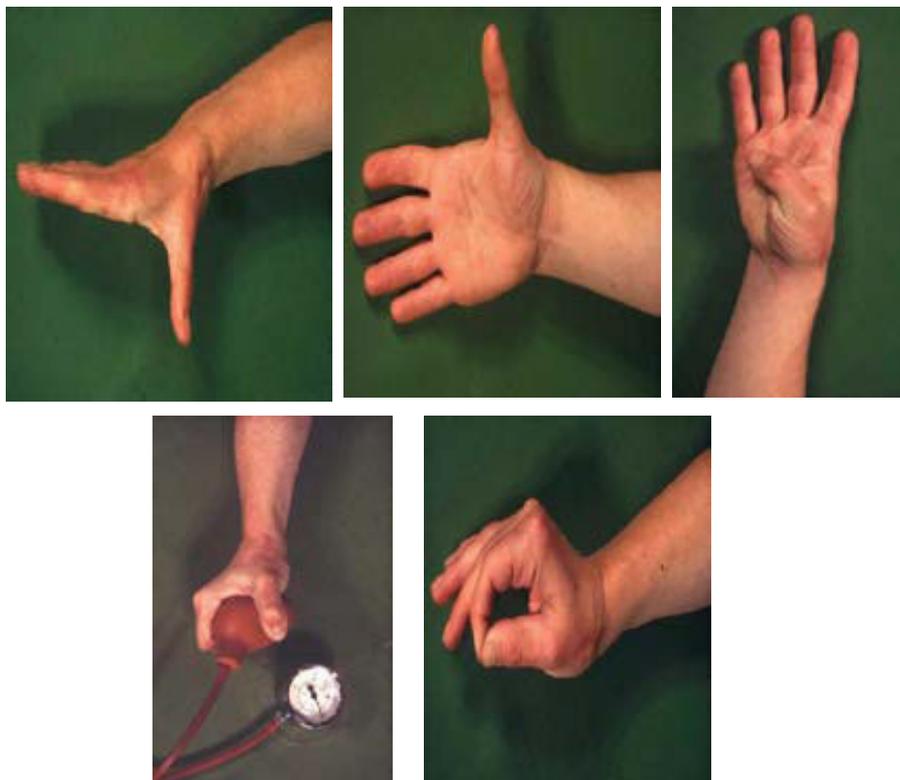
There after radiographs of the wrist were repeated immediately in the antero-posterior and lateral projections and also the antero-posterior projection in stress views with the wrist in full radial and ulnar deviation.

In order to correlate the configuration of this pseudojoint a per-operative arthrogram was also carried out on one patient immediately after excision of the trapezium.

Clinical examination for function of the hand showed the movements of Abduction, Extension, Opposition, grip strength and pinch grip (Figures 3, 4 , 5, 6 and 7).

Patient's opinion with respect to relief of pain and improvement in hand function indicated that all were pleased following the operative procedure.

Little or no mention has been made in literature of the form of the pseudo joint which results between the base of the first metacarpal and the distal scaphoid. After the operation, granulation and fibroblastic tissue must fill the cavity of the trapezium and leave only an irregular small capacity joint space. In time, the capacity of the joint increases and extends between the opposing surfaces and the contour changes into a fairly regular pattern. Arthrogram of the wrist joint has been used in the evaluation of



Figures 3, 4 , 5, 6 and 7: The function of the hand following excision of the trapezium.



Figure 8 and 9: Joint Space after 3 months and within 3 months.

trauma by Ranawat et al⁴ and after excision of the trapezium.^{5,6} Arthrography of the metacarpo-scaphoid joint proves with certainty the success of the arthroplasty procedure by presence of a distinct joint space (Figure 8 and 9).

I have been following it till today as seen in the thesis submitted by Guus at the University of Erasmus MC, Netherlands⁷ whose findings have been widely quoted in literature till today (Figure 8 and 9).

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