Scaphoid Trapezium Pyrocarbon Implant (STPI)

- A long term solution for the treatment of
caphotrapeziotrapezoid (STT) joint osteoarthritis (OA)

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Background: The traditional surgical option for patients with isolated STT OA, who fail conservative treatment, is STT fusion. This treatment is effective in reducing pain, but concerns can arise about the complication rate and the potential progression of radioscaphoid or trapeziometacarpal joint OA. Other operative alternatives with lower complication rates would be preferable.

Purpose: This lecture is based on my bachelor thesis and evaluates preliminary results of an interposition arthroplasty, using a scaphoid trapezium pyrocarbon implant (STPI), after partial resection of the distal pole of the scaphoid, for isolated scaphotrapeziotrapezoid (STT) joint osteoarthritis (OA).

Methods: The procedure was performed in fifteen hands in eleven patients. Mean age of the patients were 60 years (44-77 years). Patients were pre- and post-operatively evaluated by a modified Mayo Wrist Score and by measurement of pain, flexion-extension wrist movement, grip, and pinch strength. Furthermore pre- and post-operative radiographs were obtained in all patients, and pre-operative CT-scans were obtained in all except for the first two patients.

Results: Following surgery all the patients except two, expressed satisfaction with the outcome post-operatively, and ten out of eleven patients returned to daily activities and/or work if still in employment. VAS Pain Scores improved, and most patients had minimal restrictions with a mean Modified Mayo Wrist Score of 87 corresponding to “good”. Mean post-operative radiocarpal flexion-extension was 126°. Mean post-operative grip strength of the operated hand was 34 kg force. Mean post-operative pinch strength of the operated hand was 7 kg force. One of the fifteen (7%) STPI’s dislocated after three and a half months, and one of the fifteen (7%) patients was reoperated after twelve months.

Conclusion: The results of the study suggest that an interposition arthroplasty, using a pyrocarbon implant, may be a good alternative to other surgical treatment options for isolated STT joint OA without OA in the trapeziotrapezoid joint.