FIELD ORTHOPAEDICS

CASE REPORT

The Use of Griplasty™ System for the Treatment of Thumb Carpometacarpal Joint Osteoarthritis

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OVERVIEW

A 53 year old male presented with 6 month history of worsening pain to the base of the left thumb. He reported no injury or history of trauma. His symptoms were no longer relieved with over the counter non-steroidal anti-inflammatories, brace wear, and activity modification.

He underwent an intraarticular cortisone injection into the thumb basilar joint with temporary relief. The patient underwent left thumb trapeziectomy with thumb metacarpal suspension using the Griplasty™ System. At 6 weeks postoperative, patient was able to return to activity as tolerated with full range of motion of the thumb.

CASE INTRODUCTION

The patient is a 53 year old left hand dominant male who presented with worsening basilar thumb joint pain due to underlying thumb carpometacarpal (CMC) joint osteoarthritis. He felt he had exhausted non-operative treatment and his symptoms were interfering with his quality of life and hand function.

CASE PRESENTATION

On examination, the patient had significant tenderness to palpation at the left thumb CMC joint. He had pain and crepitus with grind test. He had no hyperextension or instability at the thumb metacarpophalangeal joint.

PRE-OPERATIVE PLAN

Radiographs revealed significant joint space collapse, subchondral sclerosis, osteophyte formation, and cysts. Surgical and non-surgical treatments were discussed. The patient elected to proceed with an intraarticular CMC cortisone injection which gave him significant relief of his symptoms for 6 weeks. Given the temporary relief and continued pain, the patient then elected to proceed with left thumb trapeziectomy with thumb metacarpal suspension. The Griplasty™ System was selected for thumb metacarpal suspension as this system allows for a single incision approach.

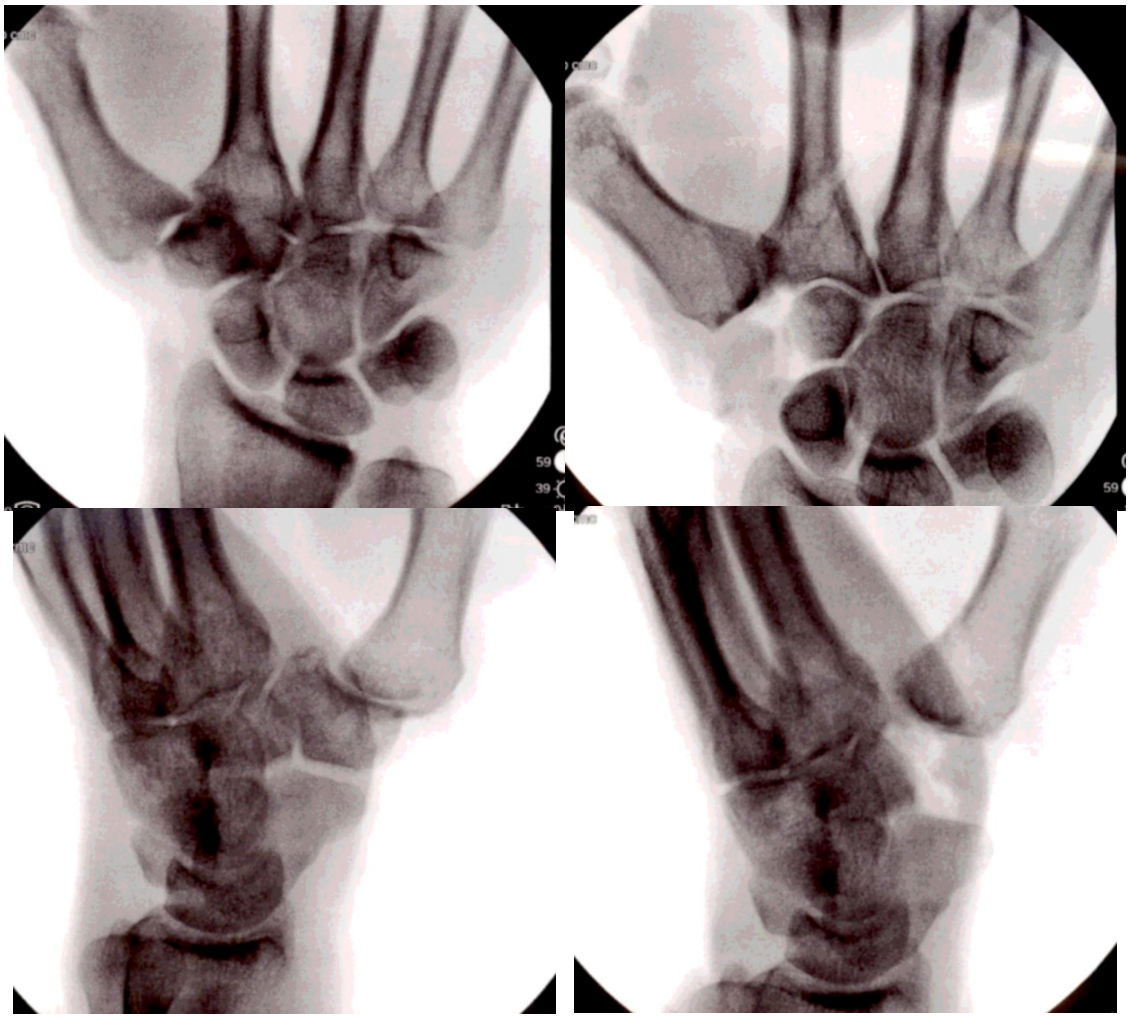
Furthermore, the implant is placed above the area of degenerative bone reducing the risk of implant failure and proximal subsidence of the thumb metacarpal. The design of the construct allows for early post operative range of motion and quicker return to activity.

Below: Pre-Operative Imaging

SURGICAL APPROACH

The patient underwent surgery utilizing general and regional anesthesia. A dorsal approach was performed. Trapeziectomy was performed and confirmed on fluoroscopy. The Griplasty™ System was then utilized. The first anchor was placed bicortically through the base of the index finger metacarpal. The guide wire position and implant deployment was confirmed with fluoroscopy. Through the dorsal approach, the thumb metacarpal guide wire and implant was then placed bicortically across the thumb metacarpal, again with fluoroscopic guidance. We then obtained preliminary tension of the device by tying the white sutures with the thumb held in traction and full adduction. Tension was then tested and felt to be appropriate. The white sutures were then tied fully. The two blue sutures were then passed through the abductor pollicis longus at the insertion site of tendon on the thumb metacarpal and tied. This provided excellent coverage of the base of the thumb metacarpal with the V-sling. The broad surface area of support allowed excellent stability and suspension of the metacarpal.

Below: Intra-Operative Imaging



POSTOPERATIVE PROTOCOL

The patient was placed in a splint leaving the operating room. This was removed at his first therapy appointment at 1 week postoperative. He was transitioned into a light stockinette to protect the wound. He then began immediate thumb active range of motion. Passive range of motion was started at 2 weeks postoperative.

At 4 weeks, the patient began pinch and grip strengthening. At 6 weeks, the patient was released to full activity with no restrictions.

FOLLOW UP

At 6 weeks, the patient had full range of motion of the thumb and had returned to activity as tolerated (see video below). Radiographs at 6 weeks, confirmed excellent suspension of the thumb metacarpal with no sign of subsidence or proximal migration of the thumb metacarpal.

He reported minimal pain and complete resolution of his preoperative pain with pinch and grip.

Below: 6-week Post Operative

Below: 6 week Post-Operative

CONCLUSION

This case report details a 53-year-old male with advanced left thumb carpometacarpal (CMC) osteoarthritis who underwent trapeziectomy and metacarpal suspension using the Griplasty™ System. Preoperative imaging revealed joint space collapse, osteophytes, and subchondral cysts. Surgical intervention via a single dorsal approach featured bicortical anchor placement in the index and thumb metacarpals, fluoroscopically guided implant deployment, and V-sling stabilization reinforced by the abductor pollicis longus tendon. The construct's broad support surface and anchor positioning above degenerative bone facilitated immediate postoperative active motion (initiated at 1 week) and progressive strengthening. At 6-week follow-up, radiographs confirmed maintained metacarpal height without subsidence, alongside full pain-free thumb mobility and unrestricted functional recovery.

Product Resources

Field Orthopaedics. (2024). Griplasty™ Surgical Technique. Brisbane, Australia: Field Orthopaedics.