

Long-term Follow-up of Osteochondral Autologous Transplantation in the Metacarpophalangeal Joints

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OBJECTIVE

To report long-term follow-up outcomes on 4 patients who underwent Osteochondral Autologous Transplantation (OAT) for isolated cartilage defects of the metacarpal (MP) head.

METHODS

IRB approval was obtained. Six to 8mm grafts obtained from the knee were used to replace the metacarpal defect. Ten-year minimum clinical follow-up was obtained for 3 cases and 4-year follow-up from chart review for 1 patient who died of unrelated causes. Measurements obtained by an occupational hand therapist included NRS pain scores (0 - 10), goniometer ROMs, and grip strength. DASH scores were obtained at final follow-up in the 3 surviving patients.



Full-thickness chondral lesion of MP joint



Graft being placed during the OAT procedure



Metacarpal head after implantation of autologous osteochondral graft

DEMOGRAPHICS

Mean age was 37 years (range 31 - 47) including 3 males and 1 female. Traumatic cartilage defects involving the thumb metacarpal head (n = 2) and metacarpal head of the index finger (n = 2) ranged from 5 to 10mm.

RESULTS

Preoperative, 1-year, and 10-year postoperative mean pain was 5.7, 1.8, and 0.3 respectively. One patient had a 10-degree extension lag at 1 year which resolved at the 10-year visit; all others had full extension. Mean flexion was 65, 66, and 58 at the aforementioned intervals. Ten-year DASH scores of the three surviving patients were 20, 15, and 0. Ten-year postoperative radiographic changes showed mild degenerative changes without progression compared to earlier postoperative radiographs. There were no known complications nor long-term donor-site morbidity.

Preoperative x-ray of metacarpal lesion



Ten-year postoperative x-ray following OAT of the MP joint



CONCLUSION

Long-term results suggest that OAT may be a viable surgical option for treatment of cartilage defects of the metacarpal head.