

Radial Head Prosthesis Removal: a Retrospective Case Series of 14 Patients



Valentin Neuhaus, MD; Dimitrios C. Christoforou, MD; Jesse B. Jupiter, MD; David C. Ring, MD, PhD; Chaitanya S. Mudgal, MD



Hand & Upper Extremity Service, Department of Orthopaedic Surgery,
Massachusetts General Hospital, Boston, MA

Objective

- The purpose of this study was to analyze patients that had removal of radial head prosthesis and their outcome.

Methods

- This is a retrospective review of 14 adult (6 women and 8 men) patients from 2007 to 2011, who underwent radial head prosthesis removal by 3 surgeons.
- Nine prostheses had been implanted acutely and 5 for the treatment of injury-related sequelae.
- The average time between implantation and removal was 23 months (range 2 weeks to 12 years, median 11.6 months).
- The mean age was 48 years (range 28 to 65) at the time of radial head prosthesis removal.



ossification

ossification

Results

Before removal:

- Restricted mobility of the elbow (active range of motion of less than 100 degrees) in 6, pain in 4, and pain as well as restricted mobility also in 4 patients were the leading reported complaints.
- Capitellar cartilage wear and loose implants were each present in 57% (8/14) based on radiographs. All patients with pain had wear of the capitellar cartilage on radiographs ($p = 0.005$). Radiographic loosening and pain had no statistically significant association ($p = 0.59$).
- Heterotopic ossification was seen in 57% (8/14) and 7 of these were defined as having stiffness.
- Mild arthritic changes were seen in 50% (7/14) of patients, and moderate changes were noted in 14% (2/14) based on the Broberg and Morrey classification.
- Concomitant factors leading to implant removal were subluxation of the radio-capitellar joint as well as malpositioning of the stem in 5 cases and chronic infection in 2 cases.

After removal, mean follow-up of 11 months:

- Four patients underwent a subsequent operation for postoperative ulnar nerve symptoms 5 to 21 months after removal.
- Four patients complained about persistent pain at last follow-up.
- All except 2 patients improved their total range of motion 34 degrees on \emptyset .

Conclusions

- Removal of radial head prosthesis improved function and lessened pain in our case series.
- The reoperation rate was yet nearly 30% due to heterotopic ossification and ulnar neuritis.
- Selective ulnar nerve decompression at the time of removal must be evaluated, especially in patients with expected large gain in range of motion after removal.