Corrective Osteotomy of Malunited Intraarticular Fractures of the Distal Humerus

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OBJECTIVES

The precarious anatomy of the articular surface of the distal humerus, its meager subchondral bony support, and limited soft tissue attachments present enormous challenges for the operative correction of posttraumatic intraarticular deformities. This study presents an average follow-up of 10.6 years in 8 patients following articular osteotomy with emphasis on functional, patient rated, and radiographic outcomes.

METHODS

Eight patients, five women and three men with an average age at the time of osteotomy of 38.7 years (range 18-60 years) were followed for an average of 10.6 years. The original fracture was a Type C variant in 4, Type B unicondylar in 2, and Type B articular shearing fracture in 2 patients. The initial injury was treated operatively in 5 and nonoperatively in 3. The osteotomy was performed an average of 8 months post injury. The average preoperative elbow arc of motion was 45 degrees. Two patients had ulnar nerve dysfunction.

RESULTS

All the osteotomies healed after the index procedure without evidence of avascular necrosis. The average arc of elbow motion improved to 108 degrees (range 55 to 130 degrees) with an average flexion contracture of 37 degrees. The average DASH score was 9.2 (range 0-35) and average patient satisfaction on the Likert scale of 0-10 was 8.5. The average Mayo Performance scale was 85 points (range 70-100). Grade 2 osteoarthritic changes were seen in 3 patients, grade 1 in 3 patients, and grade 0 in 2 patients.

Figure 1. X-ray of distal radius malunion.

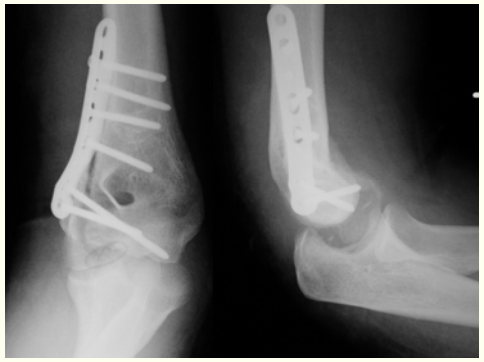


Figure 2. CT 3D reconstruction of malunion.

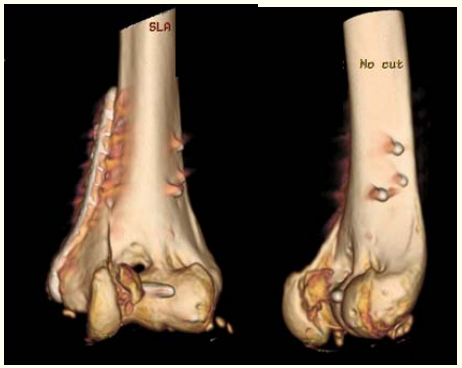
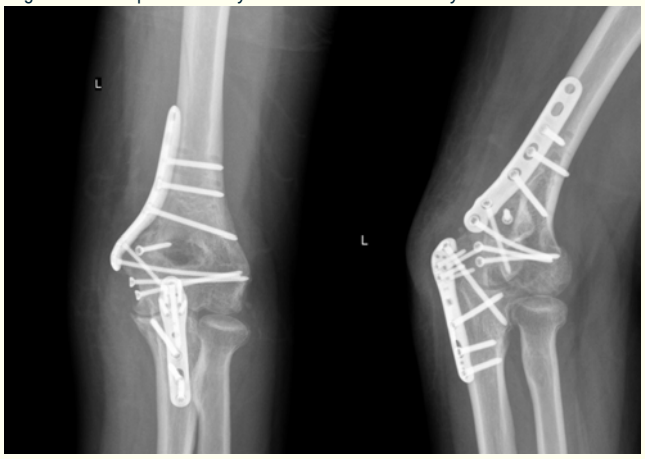


Figure 3. Post-operative x-ray after corrective osteotomy and fixation.



CONCLUSIONS

In very selected patients with a defined intraarticular malunion, the results of this experience would support the corrective osteotomy when indicated.

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