Does Indomethacin Cause Nonunion When Used for HO Prophylaxis After ORIF of Distal Humerus Fractures?

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Purpose: Open reduction and internal fixation (ORIF) are the standard of care for displaced distal humerus fractures in adults. One of the common problems associated with distal humerus fractures is heterotopic ossification (HO), and it is reported to occur in up to 49% of patients. HO is commonly associated with decreased range of motion (ROM). Indomethacin can be used after surgical treatment of distal humerus fractures; however, as a nonsteroidal anti-inflammatory medication, it may complicate fracture healing and may cause nonunion of the fracture. The effect of indomethacin on fracture union in distal humerus fractures has not been reported previously. The purpose of the study was to report the radiographic and clinical outcomes of patients with distal humerus fractures treated with ORIF and indomethacin postoperatively.

Methods: Patients older than age 18 years treated for distal humerus fracture with ORIF with a minimum follow up of 6 months were included in the study. All patients were placed on 75 mg of indomethacin PO once a day postoperatively for 6 weeks. The arm was placed in a sling for comfort postoperatively. Full active and active- assisted ROM was started on postoperative day 1. Weightbearing was started after fracture union. All patients were followed at 2, 6, and 12 weeks, 6 months, 1 year, and annually afterward. A retrospective review was performed and the following data were collected: age, gender, history of HO, associated injuries, fracture type per OTA classification, type of surgical exposure, union at 3 and 6 months, time to union, loss of reduction, failure of fixation, wound healing problems, infection, and ROM of elbow and forearm.

Results: The study included 87 patients (mean age: 48 years [range: 24–74 years]). Most fractures were intraarticular (OTA classification: six patients, Type 13A; 15 patients, Type 13B; and 44 patients, Type 13C). Mean follow up was 19 months (range 12–56 months). A posterior paratricipital approach with olecranon osteotomy was used in 42 patients, a posterior paratricipital approach (without osteotomy) in 36 patients, and a lateral approach in nine patients. There was no nonunion of the distal humerus or osteotomy site. Type I HO occurred in nine patients and Type II HO in 6 patients. Osteotomy fixation failed in one patient in 2 weeks, requiring revision. There were no infection or wound-healing problems. The mean elbow extension was 8°; mean elbow flexion was 132°. Mean forearm supination was 69° and mean forearm pronation 77°.

Conclusion: Nonunion did not occur when indomethacin was used for prophylaxis against HO after ORIF of distal humerus fractures. Good to excellent ROM of elbow and forearm was also achieved using a standard aggressive protocol.