

## **Is A One-Week X-Ray Follow-Up Necessary For Acute Proximal Humeral Fractures Treated Conservatively? A Prospective Multicenter Randomized Study**

Trauma / Shoulder & Upper Arm Trauma / Conservative Treatment & Rehabilitation

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### **Background**

In the management of conservatively treated proximal humeral fractures (PHF), it is common practice to conduct a one-week X-ray follow-up to identify potential fracture displacements that may necessitate surgical intervention.

### **Objectives**

The objective of this study was to assess the necessity of a one-week X-ray evaluation for conservatively treated PHF.

### **Study Design & Methods**

Prospective randomized multicentric study involving 4 medical centers. Inclusion criteria encompassed patients over 18 and under 85 years of age, a fracture duration of less than 3 weeks, and an absence of previous shoulder pathology. Exclusion criteria included dementia and limitations in participating in a rehabilitation program. Patients were randomly assigned to either Group I (with a one-week X-Ray assessment) or Group II (without X-ray assessment). Pain levels were assessed using the Visual Analog Scale (VAS) at 1 and 3 weeks, as well as at 3 and 6 months. The Constant Score and Simple Shoulder Test (SST) were recorded at 6 and 12 months. Complications were documented in both groups, including cases in Group II where a one-week examination was deemed necessary for any reason. The power of the study was set for 90 patients, and data analysis was carried out on an intention-to-treat basis.

### **Results**

A total of 142 patients were included in the study. There were no statistically significant differences between the two groups regarding age, gender, hand dominance, and the type of fracture as classified by Neer. Additionally, there were no significant differences in terms of VAS scores at 1 and 3 weeks, and at 3 and 6 months (6.04 in Group I vs 6.09 in Group II, p.914; 4.49 in Group I vs 4.07 in Group II, p.351; 2.69 in Group I vs 2.16 in Group II, p.229; 2.11 in Group I vs 1.7 in Group II, p.353). The Constant Score results at 6 and 12 months also revealed no statistically significant differences (63.6 in

Group I vs 64.2 in Group I, p.871; 70.7 in Group I vs 70.8 in Group II, p.892). Similarly, there were no significant variations in SST scores at 6 and 12 months (8.4 in Group I vs 8.3 in Group II, p.864; 11.4 in Group I vs 9.3 in Group II, p.319). Notably, one patient in Group I required surgery at the 10-months follow-up due to avascular necrosis, while no other patients in either group necessitated further surgical interventions or alterations in their treatment regimen. A total of 10 complications were reported (5 in each group), predominantly associated with stiffness and avascular necrosis.

### **Conclusions**

Based on the findings of this study, it can be concluded that a one-week X-Ray follow-up is not essential for conservatively treated proximal humeral fractures.