

The Clinical Benefit of Fibular Allograft Augmentation in Locked Plating of Proximal Humerus Fractures: A Retrospective Study

*Yeming Wang, MD; Jianhua Yang; Junyang Liu; Xu Tian; Jingming Dong; Jie Sun, MD, MS
Tianjin Hospital, Tianjin, China, People's Republic of*

Purpose: The purpose of this study was to evaluate the clinical benefit of fibular allograft augmentation for locked plating of unstable proximal humerus fractures.

Methods: We retrospectively assessed the functional outcome and complications in 23 patients with proximal humeral fractures with a disrupted medial column, treated with a locking plate and an endosteal fibular strut graft. The average patient age was 57.43 years. Postoperative assessments included radiographic imaging, range of motion, pain according to the visual analog scale (VAS), Constant-Murley score, and complications.

Results: No patients were lost to follow-up and no major complications were recorded. There was no osteonecrosis or screw penetration of the articular surface. All fractures healed clinically and radiographically. After an average follow-up of 28.17 months, the mean Constant score was 89.83 points. The median VAS pain level was 0.91 point. According to the Paavolainen method, 19 patients had good results with a neck-shaft angle of $130 \pm 10^\circ$, and 4 patients showed fair results with a neck-shaft angle of 100° to 120° . There was no significant difference in the initial postoperative ($126.73^\circ \pm 5.81^\circ$) and final ($124.62^\circ \pm 5.09^\circ$) neck-shaft angles. The average height loss of humerus head is 0.12 ± 0.09 cm.

Conclusion: For unstable proximal humerus fractures with medial comminution, locking plate fixation with fibular graft augmentation was a reliable technique to restore the integrity of the medial column and provided satisfactory clinical and radiological outcomes.