

Oblique closing wedge osteotomy and lateral plate fixation for cubitus varus deformity in adults

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Background

Healing of the corrective osteotomy for elbow deformity can be frequently delayed in adult patients, resulting in a longer period of immobilization and rehabilitation. The purpose of this study was to review the outcome of oblique closing wedge osteotomy and lateral plate fixation followed by early motion exercise for cubitus varus deformity in adult patients.

Methods

From 2004 to 2006, we treated seven adult patients with cubitus varus with an oblique closing wedge osteotomy and fixation with a lateral pre-contoured plate and lag screw. There were 4 male and 3 female patients and the average age at the operation was 40 (31 to 48) years. The interval from the injury to the osteotomy averaged 32 (21 to 40) years. Intermittent active range of motion exercise was started one or two weeks after the operation when the wound stabilized. We evaluated pre and postoperative humerus-elbow-wrist angles, ranges of motion, and lateral prominence indices. The follow-up length averaged 16 (12 to 27) months.

Results

The humerus-elbow-wrist angle improved by average 30(19-43) degrees. The mean postoperative lateral prominence index was -8.1%. All osteotomies healed at the latest follow-up and the patients obtained the preoperative range of motion within 3 months of the operation. According to the modified criteria of Oppenheim et al, 5 patients had excellent and two patients had good results.

Conclusions

The oblique osteotomy and lateral plating was found to have the following advantages for correction of cubitus varus in adult patients. The oblique osteotomy provided a larger contact surface of cancellous bone and the lag screw could compress the osteotomy. Lateral plating avoided dividing of the triceps muscle which may be associated with the muscle tightness and adhesion, and the pre-contoured plate enabled adequate medial translation to prevent lateral prominence.