Comparison of in Situ Fixation versus Fixation with Reduction for Treating Impacted Valgus Femoral Neck Fractures (OTA Classification 31-B1.1) in Young Patients: A Case-Control Study

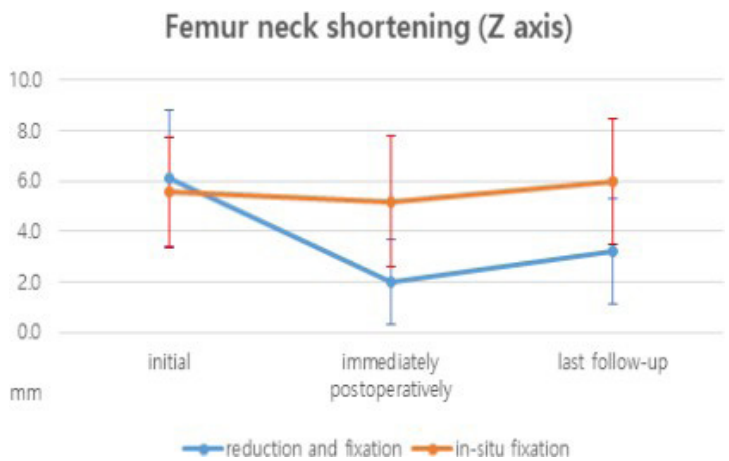
Kyuhyun Yang Prof; ***Kyusub Um, MD****; Young-Chang Park*
Yonsei University, Gangnam Severance Hospital, Seoul, Korea, Republic of

Purpose: Disimpaction of valgus-impacted fracture has been avoided due to fear of instability and fixation failure after internal fixation. This study aimed to compare in situ fixation versus fixation with reduction for treating valgus-impacted femoral neck fracture in young patients.

Methods: 33 femoral neck fractures with valgus deformity of 15° or more (AO-OTA classification 31-B1.1) in patients younger than 65 years were treated with internal fixation. 16 patients were treated with in situ fixation (in situ fixation group) and 17 were treated with internal fixation after disimpaction (reduction group). The resultant femoral neck shortening vector at the angle of the femoral neck (z) was calculated using θ as the corresponding angle to the neck-shaft angle. Femoral neck length of the fractured side was measured and compared with the intact side.

Results: Demographic findings showed no statistically significant difference between the groups. The average follow-up period was 33 months, and bony union occurred in all cases. Femoral neck shortening at the last follow-up was lesser in the reduction group (x-axis abductor lever arm/z-axis-neck length, 3.4 mm/3.2 mm) than in the in situ fixation group (x-axis/z-axis, 5.6 mm/6.0 mm) ($P = 0.024$ and $P = 0.002$, respectively). Reduction loss was minimal during the follow-up (Fig. 1). The mean Harris hip scores were 85.8 and 90.8 for the in situ fixation and reduction groups, respectively ($P = 0.038$).

Conclusion: Disimpaction and internal fixation of valgus-impacted femoral neck fractures in patients younger than 65 years can decrease femoral neck shortening without reduction loss and improve the clinical outcome.



See the meeting app for complete listing of authors' disclosure information.