

Relationship Between Clinical Results and Reduction in Femoral Trochanteric Fractures Treated With Proximal Femoral Nail Antirotation (PFNA)-II

Etsuo Shoda MD; Shimpei Kitada MD; Takahiro Niikura MD; Keisuke Oe MD; Atsushi Sakurai MD; Takeharu Sasaki MD

Hyogo Prefectural Nishinomiya Hospital, Nishinomiya, Japan

Purpose: Reduction is one of the important factors in surgical treatment of femoral trochanteric fractures. This study aims to identify the relationship between clinical results and reduction in femoral trochanteric fractures.

Methods: 136 cases of femoral trochanteric fractures over 65 years treated with PFNA-II were included in this study (23 male, 113 women; average age, 83.5 years). Reduction was evaluated in AP and lateral radiographic views. In the AP view, reduction of medial cortex was examined. Anatomical reduction means the medial cortex is reduced anatomically (med-Ana:mA). Intramedullary reduction means the medial cortex of the proximal fragment is inside the shaft (med-Int:mI). Extramedullary reduction means the medial cortex of the proximal fragment is placed outside of the shaft (med-Ext:mE). In the lateral view, reduction of the anterior cortex was evaluated the same way (ant-Ana:aA, ant-Int:aI, ant-Ext:aE). Reduction was classified into 9 groups (Fig. 1). The relationship between clinical results (fracture healing and excessive sliding over 10 mm) and reduction type was investigated.

Results: The numbers of each group are: mI-aI, 6 cases; mI-aA, 5 cases; mI-aE, 0 cases; mA-aI, 14 cases; mA-aA, 46 cases; mA-aE, 4 cases; mE-aI, 17 cases; mE-aA, 31 cases; and mE-aE, 12 cases. Nonunited cases until 6 months were 29 cases (Fig. 1). Reduction status of nonunited cases was: mI-aI, 2 cases; mI-aA, 3 cases; mA-aI, 4 cases; mA-aA, 6 cases; mE-aI, 8 cases; and mE-aA, 6 cases. There was no case of extramedullary reduction of the anterior cortex (mI-aE, mA-aE, mE-aE). Excessive sliding of the blade over 10 mm was seen in 11 cases (2 cases were cut-out). There was also no case of extramedullary reduction of the anterior cortex in these 11 cases.

Conclusion: Our results show there are no nonunited cases and excessive sliding cases in extramedullary reduction of the anterior cortex. This means extramedullary reduction of the anterior cortex is important to reduce unsatisfactory results in surgical treatment of femoral trochanteric fractures.







| | Intramedullary (mI) | Anatomical (mA) | Extramedullary (mE) |
|---------------------|---|---|---|
| AP view |  |  |  |
| Lat view |  |  |  |
| Intramedullary (aI) | 2 | 4 | 8 |
| Anatomical (aA) | 3 | 6 | 6 |
| Extramedullary (aE) | 0 | 0 | 0 |

Fig 1. Reduction status of non-united cases until 6 months (29cases)