

RADIOLOGICAL AND FUNCTIONAL OUTCOME POST FIXATION IN UNSTABLE PROXIMAL FEMUR FRACTURE: COMPARISON BETWEEN PROXIMAL FEMORAL NAIL ANTIROTATION (PFNA) AND PROXIMAL FEMORAL LOCKING COMPRESSION PLATE (PFLCP)

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ABSTRACT

Incidence of unstable proximal femoral fracture is increasing in trend, and the treatment is challenging. Operative treatment offers various selection of implant including plate and intramedullary nail. The purpose of this study is to compare the radiological and functional outcome between both implants: PFNA and PFLCP. This is a single centre observational cohort study involving all patients with an unstable proximal femur fracture, who was admitted from January 2012 till December 2017 in Hospital Sultanah Nur Zahirah (HSNZ), Kuala Terengganu. Radiological outcome evaluated the prevalence of varus malalignment and quality of fracture reduction. Varus malalignment (when neck-shaft angle (NSA) measured less than 130 degree) is evaluated from the pelvic and hip plain radiographs of affected side that were taken at immediate, six months and one-year post-operation. Meanwhile, quality of fracture reduction is measured by the difference of NSA between affected and normal contralateral side at immediate post-operation, which was graded as good, satisfactory and poor reduction if the NSA difference is less than 5 degree, 5.1 to 10 degree or more than 10 degree respectively. The functional outcome is evaluated by Lower Extremity Functional Scale (LEFS) score that is ranged between 0-80 since each question carried maximum of 4 marks. There were 91 patients involved in this study, 44 patients in PFNA group (28 males, 16 females) meanwhile 47 patients in PFLCP group (33 males, 14 females). The mean age of patients in PFNA group was 57.45 years while in PFLCP was 50.23 years. The unstable proximal femur fractures were grouped into intertrochanteric fracture OTA/AO type 31.A2 (34 patients), AO type 31.A3 (35 patients), subtrochanteric fracture Seinsheimer type 3a (15 patients) and type 5 (7 patients). PFLCP group yielded higher numbers of varus malalignment at immediate, six months and one-year post-operation compared to PFNA but the p-value in this three interval time was statistically insignificant. For quality of fracture reduction, PFNA group shows good quality of reduction with 93.2% (41 patients) while in PFLCP 87.2% (41 patients) with insignificant p-value. None had shown poor quality reduction that required revision. In addition, we also evaluated the union time between both groups. PFLCP had shown significant shorter union time (p-value <0.001) compared to PFNA, which is 4.15 months while PFNA group in 5.04 months. In term of functional outcome, both groups revealed comparable mean LEFS scores with 64.19 in PFNA and 68.50 in PFLCP group, but the result was statistically insignificant. Overall, both PFNA and PFLCP revealed good and comparable outcome. PFLCP is superior to PFNA only in term of shorter union time. In conclusion, both implants were effective in treating unstable proximal femur fracture.

Keywords: PFNA, PFLCP, NSA, LEFS, Union Time