

Original Paper

Comparison of close and open interlocking intramedullary nailing treatment of femoral shaft fractures

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Abstract

Background and Objective: Femoral shaft traumatic fracture is one of the major causes of mortality and morbidity. Nowadays, the standard treatment method in adult is reduction with femoral interlocking intramedullary nailing. This study was performed to compare the open and closed methods femoral interlocking intramedullary nailing in femoral shaft fractures treatment.

Materials and Methods: This clinical trial study was done on 40 18-50 year old patients (33 men and 7 women with mean age of 26.3 years) with femoral shaft closed fracture who were referred to the Shahid Kamyab hospital of Mashhad, Iran during 2007-08. Patients were divided into two 20 membered groups of open and close femoral interlocking intramedullary nailing treatment. Subjects were followed for one year and the union time, infection and non-union level were measured. Clinical and radiological findings were analyzed using SPSS-13, Student's t-test and Fisher's exact test.

Results: 97.5% of union was obtained within six months in both groups. Full weight bearing was determined 6-12 weeks (mean of 9.3 weeks) in close and 12-16 weeks (mean of 13.25 weeks) in open reduction. Complications included non-union in open (one patient, 5%), infection in open (one patient, 5%), shortening in both (one patient, 5%), limited range of movement in both (one patient, 5%) and malrotation in close (one patient, 5%) groups. Close reduction group showed higher rate of radiologic callus formation and earlier full weight bearing than open reduction group ($P < 0.005$), but union rate was not significant.

Conclusion: This study showed that there is no difference between final union rate of open and close reduction by interlocking intramedullary nailing in femoral shaft fractures.

Keywords: Reamed Interlocking Intramedullary Nailing, Union Time, Infection, Non-union, Open Reduction, Close Reduction, Femoral Shaft Fracture

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