

# Retrograde nailing for distal third femoral shaft fractures: a prospective study

Department of Orthopaedics, SDM College of Medical Sciences, Dharwad, Karnataka, India

Department of Orthopaedics, Jubilee Mission Hospital, Thrissur, Kerala, India

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## ABSTRACT

**Purpose.** To evaluate the postoperative knee function and results of unreamed retrograde nailing for distal third femoral shaft fractures.

**Methods.** Between January 2002 and 2003 inclusive, a consecutive series of 27 patients (with 28 fractures) who underwent retrograde nailing were prospectively evaluated. Outcome measures were union time, initiation of weight bearing, deformity and shortening, functional length of the nail, knee function assessed using a modified Knee Society Knee Score. Correlations between union time and other variables were also studied.

**Results.** In these patients 26 (93%) of the 28 fractures achieved union, of which 5 underwent dynamisation; the mean union time for the other 21 fractures was 4.4 months. Angular malalignment was present in 4 patients and shortening in 4 others. There was negligible correlation between union time and variables of nail-canal diameter mismatch, functional length of nail, fracture geometry, or initiation of partial weight

bearing ambulation. Knee flexion of more than 100 degrees was achieved in 26 patients. 19 patients had anterior knee pain and 10 had instability. By the end of one year, excellent or good scores for pain and function were recorded in 77% and 73% respectively, of the 26 patients.

**Conclusion.** In view of such favourable union rates but significant deterioration in overall knee joint function, at best retrograde nailing is a reliable alternative in the management of selected complicated fractures of the distal femoral shaft.

*femoral fractures; fracture fixation, intramedullary*

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## INTRODUCTION

The management of femoral diaphysis fractures was revolutionised by the development of the interlocking intramedullary nail, with antegrade insertion being the gold standard. Certain limitations of this technique have led to the development of retrograde nailing (RN) for femoral shaft fractures. RN has gained