

FUNCTIONAL OUTCOMES OF THE KNEE AFTER INTRAMEDULLARY  
NAILING FOR FEMORAL SHAFT FRACTURES AT MOI TEACHING AND  
REFERRAL HOSPITAL, KENYA.

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A THESIS SUBMITTED TO THE SCHOOL OF MEDICINE, COLLEGE OF  
HEALTH SCIENCES IN PART FULFILLMENT OF THE REQUIREMENTS  
FOR THE AWARD OF THE DEGREE OF MASTERS OF MEDICINE  
(ORTHOPAEDIC SURGERY)

MOI UNIVERSITY.

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MAY, 2012



## ABSTRACT

**Background:** Antegrade intramedullary nailing is currently considered the gold standard for treatment of femur shaft fractures although retrograde technique is gaining acceptance. Introducing the nail through the knee has potential to damage the intra articular structures and the long term knee functional outcomes are controversial. The SIGN<sup>®</sup> nail is currently being used in MTRH and is inserted antegrade or retrograde after open reduction of the fracture. There lacks a standard knee rehabilitation protocol in MTRH and the functional outcomes of knee especially after retrograde nailing are unknown in MTRH and similar settings.

**Objective:** The purpose of this study was to document and compare the functional outcome of the knee joint after retrograde and antegrade intramedullary nailing of femoral shaft fractures using the SIGN<sup>®</sup> nail at MTRH.

**Study site:** Moi teaching and referral Hospital, Eldoret, Kenya.

**Study design:** Hospital based cross sectional cohort study.

**Subjects:** Patients aged 16 years and above who were treated with retrograde and antegrade intramedullary nailing for femoral shaft fractures between January 2007 and December 2009.

**Study methods:** Subjects were contacted through the phone contacts in their files. Those who could be contacted and agreed to participate were given appointments and were recruited consecutively as they presented. Oral based interview, review of medical records and clinical examination were used to collect data.

**Results:** A total of 124 patients participated in the study. The average age was  $38.8 \pm 15.4$  years. Majority of the fractures occurred in the middle 1/3 of the shaft (54.8%). Type 32B (AO/OTA classification) was the commonest type (44.7%). All the fractures were reduced by open means. Retrograde technique was used in 51.6% of the cases. Based on the H.S.S knee scoring system, functional results were rated as excellent in 71.8%, good in 23.4% and poor in 3.2%.

The retrograde group had significantly poor results than Antegrade group ( $p < 0.001$ ). Overall there was a negative correlation between age and the functional outcome ( $p < .001$ ). The negative relationship was significant in the retrograde group ( $p < 0.001$ ) but not the antegrade group ( $p = 0.519$ ). Gender, fracture level and fracture type did not have any significant association with outcome score in either group.

The prevalence of knee pain was higher in the retrograde group (37.5%) as compared to 10% in the antegrade group ( $p < 0.001$ ). The prevalence of knee stiffness was higher in the retrograde group (40.6%) compared to the antegrade group (3%) ( $p < 0.001$ ).

**Conclusion:** Retrograde nailing is associated with poorer knee scores in our patient population when compared to antegrade nailing. Increasing age is a factor associated with poorer scores especially after retrograde nailing.