IOTA Poster #IOTA 3

Results of retrograde intramedullary osteosynthesis in femur fractures: an analysis of 196 consecutive cases

Authors: Horacio Tabares Neyra, MD, Horacio Tabares Sáez, MD, Roberto Morales Seife, MD

Purpose: The annual incidence of femoral shaft fractures remains high throughout Cuba. Factors that determine surgical management include fracture location, degree of comminution, concomitant injuries, and preoperative functional status. Retrograde femoral nailing has been shown to be a safe alternative to antegrade nailing, particularly with bilateral or distal femur fractures, ipsilateral femoral neck or tibia fractures, obese patients, and patients with abdominal and pelvic trauma. The purpose of this study is to evaluate the results and related complications following retrograde intramedullary nailing of femoral shaft fractures.

Method: All patients undergoing retrograde intramedullary nailing for femoral shaft fractures between June 2017 and August 2023 at a level 1 trauma center in Havana, Cuba were reviewed. Six months of follow-up or documented fracture healing were required. Records were reviewed for documentation of complications, including septic arthritis of the ipsilateral knee during the follow-up period.

Results: The fractures were classified according to AO/OTA classification as: 80 as 32A (42 – 32A1, 20 – 32A2 and 18 – 32A3); 33 as 32B2; 27 as 32B3; 29 as 32AC2; and 27 as 32AC3. 190 patients achieved bone union (97%). The average time to union was 74 days. There was one case of delayed union. The average knee range of motion was 130º of flexion (minimum 100º and maximum 150º). Six patients (17.6%) reported knee pain.

Conclusions: The retrograde nail for the treatment of femur diaphyseal fractures achieved consolidation results in this study population similar to those reported in the literature for the antegrade femur nail. In light of these findings, retrograde femoral nailing should be considered for its technique simplicity, decreased surgical time, and execution without the need for a traction table.

Keywords: Femural shaft fracture, retrograde nailing