

Retrograde Femoral Nailing in the Elderly Population: Role and Possible Complications

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Purpose: Distal femoral fractures in the elderly population are still a challenge in terms of restoration of the knee joint function, postoperative complications and the resulting disability impact. The treatment should be targeted at early patient mobilization. Retrograde femoral nailing is taking place as an alternative to the conventional distal locking plating, due to the respect of fracture vascularization, the construct stability, and the minimally invasive execution technique. Nevertheless, despite the several advantages, postoperative complications cannot be excluded.

Methods: We retrospectively reviewed the elderly patients we treated with retrograde femoral nailing for distal femoral fractures in the last 5 years. The study population included 23 patients. The average age at the time of the surgery was 83 years (range, 70-91); patients who had less than 6 months radiographic follow-up were excluded. Four of the study population patients suffered a supracondylar periprosthetic knee fracture.

Results: Major complications, which required second surgery, occurred in 5 patients, obtaining a reoperation rate of 23.8%: a case of distal screw breakage associated to varus malalignment, 2 cases of distal locking loosening associated to shortening of the fracture and nail distal tip articular protrusion, and 2 cases of diaphyseal refracture above the proximal tip of the nail in patients treated using a short retrograde nail. We report the emblematic case of a 78-year-old woman with a supracondylar periprosthetic knee fracture (Lewis and Rorabeck type 2) that, as regards the treatment, can be assimilated to a supracondylar femoral fracture. It was assumed the knee prosthesis was well fixed according to the absence of radiolucent lines at the radiographs and the patient history of no pain around the knee before the trauma. The fracture was fixed using a short retrograde femoral nail. A 50% weight-bearing was allowed 2 weeks after the surgery. At the 45th postoperative day, the patient returned to us with a diaphyseal femoral fracture just upon the tip of the nail: a new fall or a femur yielding? The short nail was removed and new fixation using a longer retrograde nail was performed. Two years later, as a consequence of a new fall, the patient sustained a subcapital fracture that required nail removal and hip hemiarthroplasty. A conus modular stem was considered to control the potential malrotation due to the previous fractures.

Conclusion: Retrograde nailing for the treatment of supracondylar femoral fractures in the elderly is an effective procedure, but the surgeon should be aware of every kind of possible complication and promptly solve it to ensure a good functional and overall outcome to this population.