

## **Femur Pseudoarthrosis Treatment with Reaming Intramedullary Nail**

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**Purpose:** We value in our service patients with femoral fractures treated with plate who developed a pseudoarthrosis and that according to our protocol would be treated with plate removal with minimal incision, immediate closure of the fascia and skin, and intramedullary femur nail insertion with reaming. Taking into account the biological osteosynthesis and the importance of vascularity and soft-tissue care, we started this treatment thinking that the centromedular reaming would give us enough graft input and reactivation of the consolidation process, without having to make a substitute contribution bone or other type of graft. The purpose of this method of treatment is to achieve fracture consolidation and patients with pseudoarthrosis initially treated with plate

**Methods:** 11 cases of femoral diaphyseal fractures treated with open reduction and plate osteosynthesis were incubated, that after 8 months had no evidence of fracture healing and presented an atrophic callus at the level of the fracture site. The average age of the patients was 36 years (range, 21-58); the patients were operated in different institutions and were referred to our institution for the respective treatment. Preoperative planning was performed in each of the patients that consisted of removal of osteosynthesis material with minimal incision technique, immediate closure of the fascia and skin, and we began the treatment with the technique for intramedullary nailing to a closed focus. We performed the opening of the femur canal and did a sufficient intramedullary reaming without causing an internal cortical necrosis and then we did the osteosynthesis with a locking intramedullary nail. In the postoperative period, we started with knee and hip joint mobility, but we differed patient support for 4 weeks.

**Results:** Osteosynthesis was performed with intramedullary nail in 11 patients, whose smaller diameter was 13 mm and larger diameter 15 mm; all nails were blocked. Support was started after 4 weeks of surgery. There was no alteration in the mobility of the hip or knee. The healing of the fracture was achieved between 8 and 20 weeks. There were no deformities such as rotation or limb shortening. There were no cases of infection. The 11 patients showed good and excellent satisfaction with the results.

**Conclusions:** Taking into account that centromedular reaming stimulates bone consolidation of fractures, we perform these procedures in atrophic pseudoarthrosis without any other bone contribution or bone substitute through this procedure; we achieved the cure of pseudoarthrosis in the 11 patients that we have operated so far. We consider that if meticulous surgery is performed by removing the material with minimal incision technique, with the fascia and immediate skin closure and careful intramedullary reaming, fracture consolidation can be obtained without any additional treatment. The fracture consolidation period on average was obtained between 8 and 16 weeks. There were no cases of infection and the degree of patient satisfaction was good and excellent. Therefore, we recommend this method of treatment for pseudoarthrosis of femur fractures initially treated with plates.