

Anterior Knee Pain After Tibial Nailing Is Associated With patella baja: A Multicenter Study Comparing Pain and Baja Between Infra- and Suprapatellar Nailing Techniques

Daniel R Schlatterer DO; Arish Amersi BS; Steven Montgomery Kane MD; Charles Moon MD; Christopher Rolf Johnson MD; John Garlich MD; Evan Nigh MD
Wellstar at Atlanta Medical Center, Atlanta, GA, United States

Purpose: Anterior knee pain (AKP) after tibial nailing (AKPATN) occurs in up to 56% of tibial nailing (TN) patients. Previous studies have moved the TN incision location to decrease AKP, without success. Anterior cruciate ligament (ACL) reconstruction, total knee arthroplasty (TKA), and high tibial osteotomies (HTOs) have also been associated with postoperative AKP. Previous investigators of AKP in these 3 procedures have found patella baja (PB) postoperatively. They suggested that the AKP was the result of altered patellofemoral biomechanics due to PB. We hypothesize AKP after TN is also the result of PB, which in turn causes AKP. The primary aim of this study was to determine the rate of PB after infrapatellar (IP) TN and examine the association of AKP with the presence of PB. The secondary aim was to compare IP TN to a control group of suprapatellar (SP) TN patients.

Methods: We consecutively compared and recorded postoperative patella tendon lengths to preoperative patellar tendon lengths at 2 trauma centers over 5 years. Inclusion criteria included SP or IP TN, age over 18 years, and radiographs until clinic discharge (minimum 3 months).

Results: 90 patients were identified, 45 in each group. The average age was 38 years (range, 19-64). AKP was reported in 14/45 (31.1%) of IP patients and 6/45 (13.3%) of the SP patients. Relative PB (minimum 10% tendon shortening) after the IP nailing technique was 42.2% (19/45) and 0% in the SP group. Patellar shortening averaged 13.4% (± 6.06) in the IP group of 19 patients. AKP was reported by 8/19 (42.1%) of the IP patients with relative PB.

Conclusion: The IP TN method results in patellar baja and SP TN does not. The association between PB and AKPATN merits further study. The SP TN method may avoid PB and its associated AKP. However, the long-term articular impact of SP TN is not yet known for us to advocate the SP method.