

Comparison of Patellofemoral Chondromalacia Between the Suprapatellar and Infrapatellar Techniques of Tibial Nailing

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Purpose: Tibial shaft fractures are common injuries seen particularly because of high-velocity trauma. Suprapatellar and infrapatellar approaches are used to perform intramedullary nailing of tibial fractures. Considerable debate exists over which of these is the optimal approach for nailing of tibial shaft fractures. Suprapatellar nailing is an encouraging method of fixation of tibial shaft fractures and now is being employed for proximal and distal third fractures due to easier technique. Studies have been undertaken to compare clinical and functional outcomes but little literature exists to compare status of the knee cartilage following the 2 techniques.

Methods: After Institutional Ethics Committee approval, patients aged 18-45 years who presented to our Level I trauma center with AO/OTA type 42 fractures were divided into suprapatellar and infrapatellar groups after taking informed consent. MRI of the knee and diagnostic knee arthroscopy was done at 6 months of follow-up to look for patellofemoral chondromalacia.

Results: 60 patients were enrolled in our study. 30 patients underwent nailing by suprapatellar approach and 30 by infrapatellar approach. There was no difference in the grade of chondromalacia observed on MRI; however, on diagnostic knee arthroscopy there was a significantly higher incidence of chondromalacia following suprapatellar nailing. The functional outcome in both groups at 6 months, however, was statistically similar.

Conclusion: Suprapatellar nailing is an encouraging method of fixation of tibial shaft fractures and now is being employed for proximal and distal third fractures due to easier technique. However, suprapatellar nailing may be associated with a risk of damage to patellofemoral articular cartilage that may result in knee pain and functional limitations over long-term follow-up. Effects have been found in diagnostic arthroscopy at 6 months.