

Poor Outcomes of Lateral Tibial Plateau Fractures in Women Aged 50 and Over: A Case Series

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INTRODUCTION: Tibial plateau fractures are routinely managed with open reduction and internal fixation (ORIF), but their intra-articular nature and associated soft tissue damage can make operative management particularly challenging. This is especially true in older patients where comorbid conditions can further complicate adequate restoration of articular congruity and joint stability. This study's objective was to assess the long-term clinical outcomes of women (≥ 50 years of age) who undergo operative management of lateral tibial plateau fractures.

METHODS: A retrospective review was conducted of all women 50 years or older who were treated with ORIF for lateral tibial plateau fractures between January 2003 and December 2023 at a single academic Level 1 trauma center. The primary outcome measure was conversion to total knee arthroplasty (TKA). Secondary outcome measures included lateral joint subsidence, arthrosis progression, surgical complications, and reoperations for any reason.

RESULTS: Forty-one women underwent ORIF of lateral tibial plateau fractures during the study period with an average age of 63.5 ± 9.0 years. The mechanism of injury for most patients was a ground-level fall ($n=24$, 58.5%). No patient had a surgical site or hardware infection, and no patients sustained nonunion of their fracture. A total of 7 women (17.1%) underwent conversion to TKA at a mean of 4.0 years after ORIF. At final follow-up, lateral joint subsidence was present in 22 women (53.7%) and patients had progressed an average of 1.0 Kellgren-Lawrence grade in terms of arthrosis.

DISCUSSION AND CONCLUSION: Women 50 years and older demonstrated a 17.1% rate of conversion to TKA following operative management of laterally impacted tibial plateau fractures, more than 2 times higher than rates seen in the general population affected by these fractures. Appropriate counseling should be offered preoperatively for these patients.