

**Internal Fixation of Posterolateral Tibial Plateau Fractures**

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**Purpose:** Our objective was to evaluate the long-term outcomes of fractures involving the posterolateral tibial plateau in patients managed with internal fixation using conventional surgical exposures.

**Methods:** We reviewed a consecutive series of 746 tibial plateau fractures to assess the outcomes of patients who had joint surface depression involving the posterolateral aspect of the plateau. Radiographs and CT scans were used to classify the fractures and assess reduction. Outcomes included the early and late complications, prevalence of posttraumatic osteoarthritis, and requirement for further surgery. A national radiographic database with long-term follow-up was used to determine accurately how many patients required joint replacement.

**Results:** Of the original cohort, there were 93 (12%) patients who had articular depression involving the posterolateral plateau. Of these, 55 (59%) were AO type B fractures of which the most common pattern was split-depression (39 cases). The remaining 38 fractures were type C bicondylar plateau fractures and 34 of these were type C3. This compared to a distribution of 84% type B fractures and 16% type C in the whole cohort. Surgical approaches were lateral in 57 cases, combined medial and lateral in 26 cases (89% of the cohort). The remaining cases were fixed through a posteromedial approach in 9 cases and a posterolateral approach was only used in 1 patient. Overall, 23% of patients with type C and 11% of type B fractures developed complications. Infection occurred in 7% of type B fractures and 11% of type C fractures. Postoperative reductions were classified as perfect in 69 cases (74%), imperfect in 21 cases (23%), and poor in 3 cases. At follow-up, there was posttraumatic osteoarthritis in 18 cases (19%). However, total knee arthroplasty was only performed in 3 cases. There was a higher requirement for further surgery in patients with type C fractures compared to type B, which was statistically significant ( $P = 0.006$ ).

**Conclusion:** Posterolateral tibial plateau fractures exhibit higher-than-average prevalence of type C fractures. Due to their more complex nature, there is an increased risk of complications and requirement for further surgery. However, the majority can be treated with conventional surgical exposures with the expectation of a satisfactory result in the majority of patients.