

**Improving Visualization of the Articular Surface in Posterolateral Tibial Plateau Fractures**

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**Purpose:** Tibial plateau fractures constitute roughly 1% to 2% of fractures. The position of the patient's knee, direction of the force at the time of injury, and overall energy of the trauma determine the fracture pattern. Fractures may involve the medial and/or lateral tibial plateau, with a subset of these injuries involving the posterolateral tibial plateau. Using a standard anterolateral approach for treatment of these injuries does not allow for adequate visualization of the reduction of this posterolateral fragment. This study aimed to compare the visualization of the posterolateral tibial plateau articular surface using a standard anterolateral proximal tibia exposure versus a modified anterolateral proximal tibia exposure. We hypothesize that the modified anterolateral proximal tibia exposure will allow increased visualization of the lateral tibial plateau articular surface.

**Methods:** Seven adult cadaveric lower extremity specimens with no previous surgery were used for the study. The specimens were positioned with the knee flexed to 25°, and a standard anterolateral exposure to the proximal tibia was performed with a submeniscal arthrotomy. Standardized distraction was applied, and a probe digitizer was used to map the visible articular surface. After collection, all hardware was removed, and the knee was placed in 90° of flexion as per the "modified anterolateral approach." Distraction and mapping were done similarly as previously described. The mapped data points were used to calculate the area of visualization of the articular surface in the standard and modified anterolateral exposure.

**Results:** Our study demonstrated that the modified anterolateral approach increased visualization of the articular surface by 54% ( $p < 0.05$ ) compared to the standard anterolateral exposure.

**Conclusion:** The modified anterolateral proximal tibia approach increases visualization of the articular surface in a safe and effective manner. The approach can serve as an alternative technique to address posterolateral tibial plateau fractures.