

**Changes in Classification and Surgical Approach After Identification of the Metaphyseal Fracture Exit in Tibial Plateau Fractures: Observational Cross-Sectional Study**

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**Purpose:** This study aims to evaluate the potential influence of identifying the metaphyseal fracture exit, including the concept of the principal fracture plane, on inter- and intraobserver agreement in the Schatzker-Kfuri classification and selection of surgical approach for tibial plateau fractures.

**Methods:** An observational study was conducted to assess inter- and intraobserver agreement in the Schatzker-Kfuri classification and surgical approach selection for tibial plateau fractures. Three different trauma surgeons evaluated the same set of radiographs and CT scans using 3 approaches: (1) radiograph images and axial CT cuts, commonly used by surgeons; (2) radiographs and axial, coronal, and sagittal CT cuts; and (3) radiographs, complete CT cuts, and 3D reconstruction. Identification of the metaphyseal fracture exit(s) was necessary for the latter 2 evaluations prior to classification and selection of the surgical approach.

**Results:** Improved intraobserver agreement was observed when comparing the second and third evaluations, both of which required identification of the metaphyseal fracture exit(s). Two evaluators showed good agreement, while the third evaluator showed very good agreement. Overall interobserver agreement in the classification was low to moderate across all 3 evaluations, consistent with existing literature. Agreement in the selection of the surgical approach was low to moderate in the first 2 evaluations but increased to moderate-to-good in the third evaluation.

**Conclusion:** The results suggest that identifying the metaphyseal fracture exit and considering the main fracture plane may enhance intraobserver agreement in the Schatzker-Kfuri classification for tibial plateau fractures, and it may also improve interobserver agreement in the selection of the surgical approach. However, additional factors such as the availability of more images, the utilization of 3D reconstruction, and surgeon experience may contribute to this improvement. Further studies are necessary to determine the influence of each of these factors.