

**Single Versus Dual Incision Approach for Dual Plating of Bicondylar Tibial Plateau Fractures: No Difference in Deep Infection or Need for Revision Surgery**

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**Purpose:** Unstable bicondylar tibial plateau (BTP) fractures may require bicondylar plating. Controversy exists over the use of 1 midline incision versus individual medial and lateral incisions, with historical studies demonstrating higher infection rates with a single anterior approach. The purpose of this study was to compare rates of infection and secondary surgery in patients treated with dual plating for a BTP fracture using 1 versus 2 incisions.

**Methods:** This was a retrospective cohort study of consecutive patients >18 years of age undergoing open reduction and internal fixation (ORIF) of an OTA/AO 41-C (Schatzker 6) BTP fracture at 2 Level-I trauma centers between 2001 and 2016. Exclusion criteria were: (1) open fracture, (2) posterior approach, and (3) definitive treatment in external fixation (ex-fix) or brace. Included patients had a minimum of 6 months of clinical follow-up or experienced an outcome within the first 6 months. Rates of deep infection and reoperation were compared between groups with  $\chi^2$  analysis.

**Results:** 425 OTA/AO 41C BTP fractures were identified in 420 patients. 339 fractures (79.8%) met inclusion criteria (mean follow-up  $3 \pm 3.5$  years). 72 closed fractures (21.2%) underwent dual plating (lateral plate plus medial or posteromedial plate): 27 patients via a single anterior midline incision, and 45 patients through medial and lateral incisions. An additional 217 patients had single plating through a single approach. For fractures with dual plating, there was no significant difference in the rate of deep infection (18.5% vs 17.8%) or reoperation (25.9% vs 24.4%) between the single and dual incision groups. The rates of deep infection (11.1%) and reoperation (12.9%) for single plating through a single incision were lower but this difference was not significant. There was no significant difference in the distribution of AO fracture subtypes between the groups.

**Conclusion:** The use of a single midline incision for dual plating of BTP fractures has fallen out of favor due to high reported complication rates. However, in this cohort the rates of deep infection and reoperation were no different comparing single versus dual incisions for dual plating, and they compare favorably with the published literature on dual plating through 2 incisions. There may be advantages to a single anterior incision for dual plating in certain patients or fracture types, including those with a separate tibial tubercle fragment. One senior surgeon performed 93% of the single-incision/dual-plating surgeries, so the study is subject to surgeon bias. These results suggest that dual plating of OTA/AO 41-C BTP fractures through a single anterior incision is safe when performed by experienced orthopaedic trauma surgeons.