

## Early Posteromedial Incision Does Not Increase Wound Complications or Total Operative Time in AO/OTA 41 Type C Tibial Plateau Fractures

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**Background/Purpose:** The current recommendation for definitive treatment of bicondylar tibial plateau fractures (AO/OTA 41C) is open reduction and internal fixation (ORIF) of both medial and lateral columns with dual-plate fixation through two incisions. Use of a two-incision technique has been shown to reduce soft-tissue complications associated with dual plating through a single anterior incision. We currently use a modified technique for initial stabilization wherein bicondylar tibial plateau fractures are treated with early posteromedial fixation at the time of provisional stabilization through a posteromedial incision. Our technique facilitates medial column reduction and converts an AO/OTA type 41C fracture to a 41B fracture. This report describes a retrospective comparison of surgical times and wound complications associated with patients treated with early “41C to 41B” technique and staged definitive fixation of the lateral column, and those treated with dual-incision, dual-plate fixation (DIDP) at the time of definitive fixation. Our hypothesis is that the 41C to 41B technique does not increase overall surgical time, or result in increased wound complications.

**Methods:** Bicondylar AO/OTA 41C-type fractures presenting to a Level I trauma center in a 7-year period were included for review. All patients were treated by two trauma fellowship-trained surgeons with either the 41C to 41B technique as described below, or through a DIDP fixation as previously described. Patient records were reviewed for total surgical time (provisional fixation plus definitive fixation) and wound complications. Both techniques involved ORIF with dual plating through a posteromedial incision and an anterolateral incision. After initial evaluation, patients requiring provisional stabilization were brought to the operating room and placed in spanning external fixation. Patients undergoing DIDP had no further fracture treatment at that time. Patients undergoing stage 41C to 41B technique had the medial plateau segment stabilized with a unicortical posteromedial antishear plate construct. Following appropriate soft-tissue maturation, the patients were returned to the operative suite for definitive ORIF.

**Results:** 50 bicondylar tibial plateau fractures in 50 patients met inclusion criteria and were included in the study. 33 patients were treated with DIDP fixation and 17 patients were treated with 41C to 41B protocol. Average follow-up for the 41C to 41B group was 11.3 months. Average surgical time was  $178 \pm 37$  minutes with two wound complications, with one wound requiring surgical debridement. Average follow-up for the DIDP group was 17.6 months. Average surgical time was  $172 \pm 55$  minutes with two wound complications, with one wound requiring surgical debridement. There was no significant difference in operative times ( $P = 0.52$ ) or wound complications ( $P = 0.59$ ).

**Conclusion:** Early posteromedial fixation does not result in increased wound complications in our limited series, and does not increase the overall surgical time. Early posteromedial fixation may be useful in obtaining early control of the medial column in these types of injuries.