

MetroHealth Medical Center

RESEARCH DAY 2023

Abstract Submission Form

Poster Title: Immediate Plate Fixation of Open Tibial Plafond Fractures Does Not Elevate Risk of Infection

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Location of Laboratory: MetroHealth Medical Center – Main Campus

Category: Clinical Research

Objective: To determine if immediate plate fixation of open tibial plafond fractures has a negative effect on soft tissue complications and increases the risk of deep infection.

Design: This was a single institution retrospective cohort study performed Level 1 trauma center. All patients with open OTA/AO 43C plafond fractures treated over 20-year period with follow-up until fracture union or development of deep infection. Ninety-nine of 333 identified patents met inclusion criteria. The intervention was operative treatment of open tibial plafond fractures. The main outcome measurements were return to operating room for deep infection, nonunion, and below knee amputation.

Results: The overall rate of complications was 52%. Gender, body mass index, tobacco use, diabetes, ASA classification, time to OR from injury, wound location, and associated fibula fracture were not associated with deep infection. There was a significant difference in Gustilo-Anderson fracture grade among infected versus noninfected ($P = 0.04$). There was no significant difference in postoperative infection rates between patients treated with external fixation, external fixation and limited plate fixation, and plate fixation alone during initial surgery ($P = 0.64$)

Conclusion: It is well established that open pilon fractures have a high incidence for postoperative infection and development of complications such as nonunion. As these injuries have poor clinical outcomes, any additional measures to prevent infection and soft tissue complications should be utilized. In appropriately selected cases, both immediate plate fixation and immediate limited plate fixation with external fixation at the time of I&D do not appear to elevate risk of deep infection.