Immediate Weightbearing After Surgical Fixation of Clavicle Fractures in Polytraumatized Patients: A Retrospective Cohort Study

Benjamin F. Watzig, MD*; Nicholas Frane, DO; Arjun Vohra, MD; Clayton Hui, BS; Sorka Deeyor, BS; Michael McKee, MD; Niloofar Dehghan, MD*

Purpose: Clavicular fractures are common in polytraumatized patients, and early upper extremity weightbearing allows for earlier mobilization (with the use of crutches or walker) to expedite rehabilitation. After surgical fixation of isolated clavicle fractures, patients are frequently treated non-weightbearing (NWB) for 6 weeks. The purpose of our study was to compare polytraumatized patients who were allowed to weight bear as tolerated (WBAT) immediately, with patients who had isolated clavicle fixation who were treated NWB for 6 weeks.

Methods: Patients with clavicular fractures were queried from 3 Level I trauma centers between January 1, 2014 and June 1, 2021. We identified patients with concomitant lower extremity fractures. At our institution, we allow these patients to use a walker or crutches immediately after clavicle fracture fixation. We included patients greater than 18 years of age, middle shaft clavicle fractures, and clinical / radiographic follow-up until fracture union. A one-to-one matched NWB cohort of patients was then created (with isolated clavicle fractures) based on age, sex, and temporality of fixation.

Results: 764 charts were reviewed; after exclusion and matching, we had a cohort of 39 WBAT and a matched 39 NWB. Demographics were balanced after matching. Mean age was 44 ± 17 years, and each group consisted of 28 males (72%). During the first 6 weeks, in the WBAT group, there was 1 hardware failure (HWF) requiring surgical intervention. In the NWB group, there was 1 HWF that required intervention and 1 that was treated without surgery and eventually went on to asymptomatic malunion. There was no significant difference between the 2 groups for HWF requiring surgical intervention ($P = 0.75$) or HWF overall ($P = 0.49$). Both groups had similar time to union (WBAT = 13.5 ± 6.2 weeks, NWB = 12.9 ± 3.8 weeks; $P = 0.756$).

Conclusion: Our data would support that allowing immediate weightbearing after clavicle open reduction and internal fixation, in the setting of concomitant lower extremity trauma, does not lead to an increase in hardware failure, refracture, or time to union. This would challenge the dogma of protracted postoperative weightbearing restrictions, and allow for earlier rehabilitation. Allowing patients to begin weightbearing immediately may lead to quicker return to function. However, further research would need to be performed to verify these conclusions.

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device they wish to use in clinical practice.