

Upper Extremity Wood Saw Injuries: Experience at a Single Level I Trauma Center*Alexander J. Benedick, MD; Matthew T. Hoffa, BA; Natasha Simske, BS;**Heather A. Vallier, MD**MetroHealth System, Cleveland, OH, United States*

Purpose: Saw injuries are common, with over 30,000 injuries occurring annually from table saw use alone. The degree of injury often dictates subsequent management, although management strategies are not universally agreed upon and subsequent outcomes are not well described. The purpose of this study was to identify injury patterns, management strategies, and complications following upper extremity saw injury at our institution.

Methods: 10,721 patients treated for an upper extremity laceration, crush, or amputation at a single Level I trauma center from 2012 to 2019 were reviewed to identify those injured using a wood saw. Mechanism of injury, injury level and severity, primary management, and complications (infection, wound healing issue, neuroma) were subsequently collected.

Results: 283 adult patients with an upper extremity wood saw injury were identified. Mean age was 50.1 years, and most injuries occurred in males (97.5%) and were predominately of White race (78.7%). Only 7.8% of injuries involved a Workers' Compensation claim. Nearly 90% of patients were right-hand dominant, although the nondominant hand was usually injured (70.8%). Nearly half (48.1%) of injuries involved a table saw, and 22.3% involved a circular saw, while miter saws, reciprocating saws, band saws, and hand saws were less commonly involved, with <5% of overall injuries occurring from each saw type. The majority of injuries were to fingers (92.2%), followed by hand (6.4%), wrist (2.5%), and forearm (0.7%). Multiple fingers were involved in 26.1%, and nearly 20% resulted in partial or complete amputation of a digit. No amputations occurred proximal to the finger. The index finger was most often injured (43.8%), followed by the thumb (32.5%), and long finger (31.8%). Bone involvement at the finger level was common, occurring in 41.7%, while vascular and nerve injuries occurred less frequently (10.6% and 14.5%, respectively). 230 cases (81.3%) were managed nonoperatively, with bedside debridement (69.6%), laceration repair (63.6%), and home oral antibiotics (51.6%), while 18.7% were managed operatively, with debridement (12.0%), tendon repair (10.6%), osseous fixation (9.2%), revision amputation (7.8%), and nerve repair (7.1%). Overall complication rates were low (2.5%), with 5 patients developing infection and 2 developing neuroma.

Conclusion: Wood saw injuries are common and may be a source of morbidity, with 20% resulting in amputation of a digit; however, subsequent complications are surprisingly rare, and the majority of these injuries can be managed nonoperatively with local wound care and oral antibiotics.