

Does Time to Surgery Impact Nerve Recovery in Supracondylar Humerus Fractures with Nerve Injury?

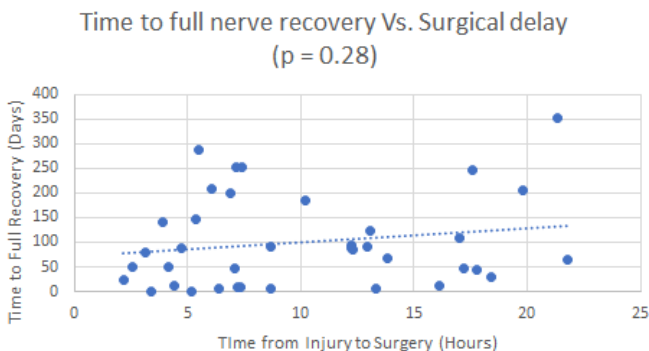
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Purpose: Our objective was to identify if earlier surgical intervention impacts time to partial and complete nerve recovery for any isolated nerve injury associated with supracondylar humerus (SCH) fractures.

Methods: A retrospective review of 103 patients with surgically managed SCH fractures and concomitant nerve deficit on presentation was conducted at a single Level I pediatric trauma hospital from 1997 to 2022. Information on presenting nerve injury, time from injury to surgery, surgical intervention, and nerve outcome was recorded. Exclusion criteria included concomitant vascular injury, ipsilateral forearm/wrist fracture, inadequate documentation, open fracture, unknown time of initial injury, preexisting nerve deficit, and compartment syndrome.

Results: 67 patients with an average age of 7 ± 2 years and average time to surgery of 10 ± 6 h were included for analysis. Fractures were classified as Gartland Type II ($n = 3$ [4%]), Type III ($n = 57$ [85%]), Type IV ($n = 3$ [4%]), and flexion-type ($n = 4$ [6%]). 65 patients (97%) were followed to partial nerve recovery and 39 (58%) were followed to full nerve recovery. Nerve deficits included median ($n = 41$ [61%]), radial ($n = 24$ [36%]), and ulnar ($n = 17$ [25%]). Ten patients (15%) had isolated anterior interosseous nerve injury. Average time to partial nerve recovery was 21 ± 24 days and time to full recovery was 100 ± 92 days. There was a statistically significant relationship between time to partial nerve recovery and time to surgical intervention ($P = 0.004$). There was no relationship between time to full nerve recovery and time to surgery ($P = 0.3$). For patients treated within 13 h of injury, there was a statistically shorter time to partial recovery (17 days vs 32 days, $P = 0.04$) but not full recovery (96 days vs 109 days, $P = 0.8$).

Conclusion: Shorter time to fixation of pediatric SCH fractures with isolated nerve injury was associated with slightly earlier partial recovery but not full nerve recovery. Prioritizing urgent surgery in these patients does not benefit their ultimate nerve recovery.



See the meeting website for complete listing of authors' disclosure information. Schedule and presenters subject to change.