



Concurrent Endoscopic Carpal Tunnel Release and Distal Radius Fracture Fixation Using the Flexor Carpi Radialis Approach: A Case Series with Short-term Outcomes

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Introduction

- Multiple prior studies have assessed the results of open approaches for concurrent carpal tunnel release with distal radius fracture fixation
- Less is known regarding the feasibility of endoscopic techniques, especially in the setting of high-energy trauma.
- In this study, we assessed the feasibility and results of concurrent endoscopic carpal tunnel release (eCTR) and distal radius fracture fixation using the flexor carpi radialis approach after high- and low-energy trauma.

Methods

- Retrospective single-surgeon study of 17 consecutive adult patients (>18 years old) who underwent open reduction internal fixation of an acute distal radius fracture with concurrent endoscopic carpal tunnel release
- Setting: Level 1 Trauma Center between April 2017 to October 2020
- Recovery from median nerve dysfunction was assessed from patient charts at routinely scheduled post-operative follow-up visits (2-weeks, 4-weeks, 6-weeks, and 12-weeks)

Surgical Technique

- Standard incision for the FCR approach (Figure 1)
- Dissection is performed above the level of the antebrachial fascia using loupe magnification (to avoid injury to the palmar cutaneous branch of the median nerve) until the ulnar border of the palmaris longus tendon (PL) is identified (Figure 2)
- The antebrachial fascia ulnar to the PL is then incised longitudinally to gain access to the undersurface of the antebrachial fascia
- Synovial elevator is introduced to bluntly peel off all soft tissue attachment on the undersurface of the antebrachial fascia and its distal extension
 - If blood or a hematoma is encountered at this stage, it is irrigated and suctioned out using a Frazier tip suction in order to create a clean field for the endoscope passage
- Endoscopic carpal tunnel release is then performed in standard fashion.



Figure 1



Figure 2

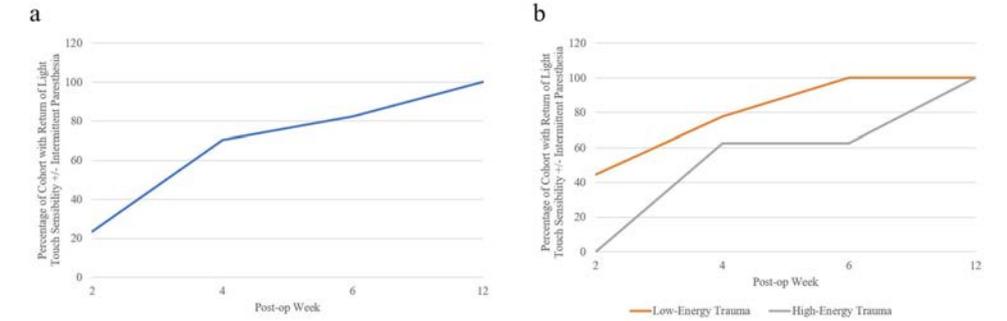


Figure 3: (a) Percent of full cohort with return of light touch sensibility +/- intermittent paresthesia; (b) Delay in time to recovery between high- versus low-energy trauma

Results and Conclusions

- The transverse carpal ligament could be visualized and released in all patients
- All patients had return of light touch sensibility with or without intermittent paresthesia by 12 weeks post-operatively
 - Median time from surgery to recovery was 19 days (range: 12-82 days)
- No observed injury to palmar cutaneous branch, recurrent motor branch, or third common digital nerve injury.
- Time to recovery was significantly different in the setting of high- versus low-energy trauma (26 days versus 18 days, respectively; $p=0.02$)