



ULNAR NERVE REPAIR VS. ULNAR NERVE REPAIR PLUS AIN TO MOTOR BRANCH OF THE ULNAR NERVE END TO SIDE NERVE TRANSFER IN ISOLATED HIGH ULNAR NERVE INJURIES

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Introduction

- To evaluate clinical differences between Ulnar Nerve Repair vs. Ulnar Nerve Repair plus AIN to Motor Branch of the Ulnar Nerve End to Side Nerve transfer in Isolated High Ulnar Nerve Injuries.
- Despite a meticulous microsurgical nerve repair the results can be disappointing in terms of incomplete motor recovery of the ulnar innervated muscles (intrinsic muscles) when standard repair is performed without adjuvant procedures.
- We report the functional recovery of ulnar innervated muscles distal to the injury site comparing the standard nerve repair vs. standard nerve repair plus an end to side AIN transfer to the motor branch of the ulnar nerve.

Methods

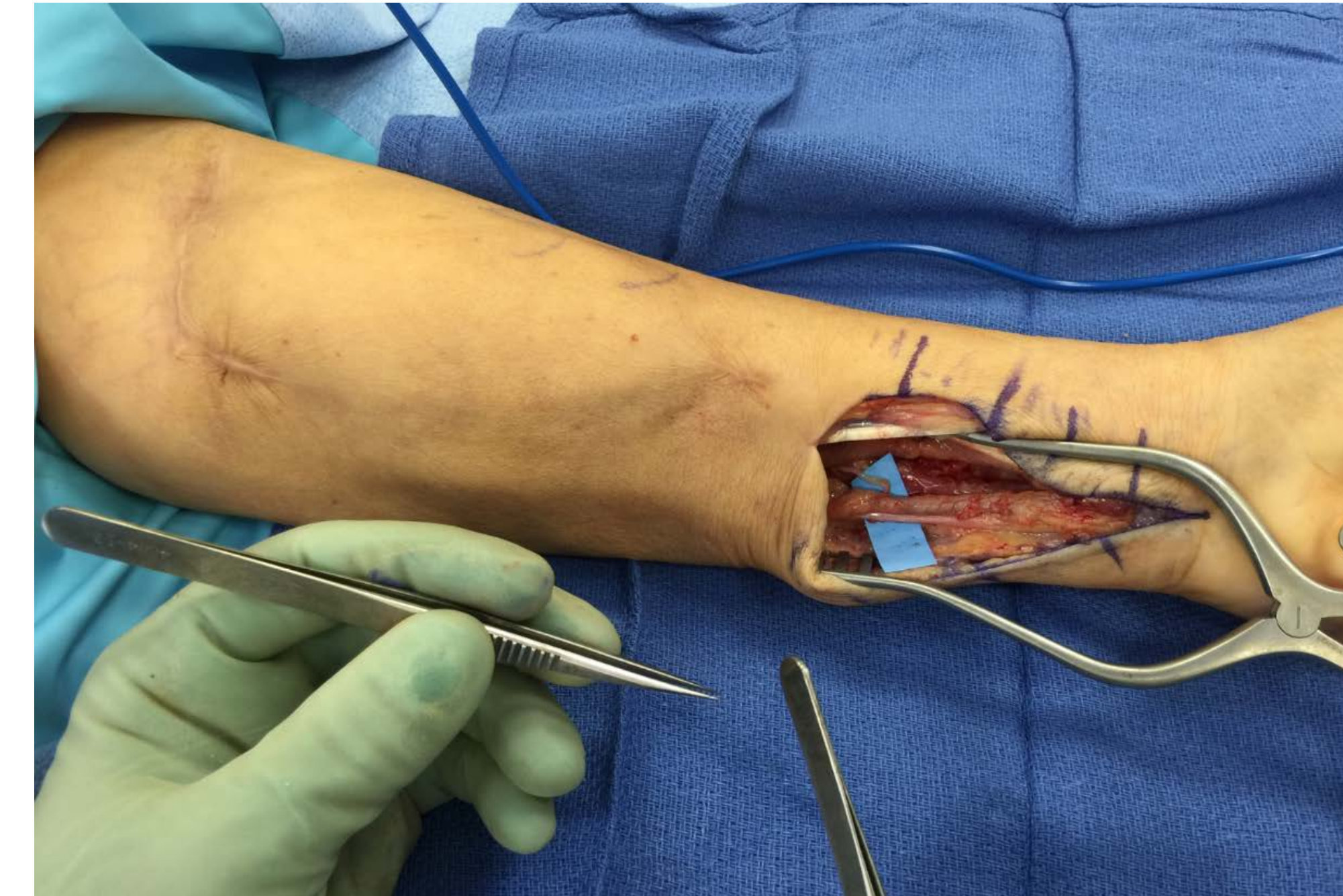
- Patients were randomly selected, all surgeries done by the same surgeon at UMC/TTUHSC El Paso, Texas from January/2015 to December/2016.
- A retrospective chart review of prospectively collected data of 30 patients in each group, total 60 patients included.
- Variables to be studied include: demographics, etiology, affected dominant hand, modified British Medical Research Council (MRC scale) and complications.
- Surgeries were performed within 6 to 36 hours from the time of injury. A tension free, end to end coaptation under visual magnification with 9-0 nylon was performed.
- Patients with other than ulnar nerve injury or vascular injury were excluded.
- Evaluations were done at 6 and 12 months after surgery.

Figure 1



High Ulnar Nerve Injury

Figure 2



Distal Nerve Transfer

Table 1

GROUP	NUMBER	AGE	GENDER	ETIOLOGY	AFFECTED DOMINANT HAND	Functional MRC scale of the ulnar intrinsic innervated muscles at 6 M	Functional MRC scale of the ulnar intrinsic innervated muscles at 12 M	COMPLICATIONS
standard repair	30	17-52	24 M, 6 F	28 glass lac, 2 knife	18 dominant, 12 non dominant	M4 11, M3 8, M2 7, M1 4	M4 17, M3 7, M2 5, M1 1	post op superficial wound infection at the site of injury 2
standard repair + nerve transfer	30	18-61	22 M, 8 F	25 glass lac, 5 knife	21 dominant, 9 non dominant	M4 17, M3 6, M2 4, M1 3	M4 22, M3 4, M2 4	post op superficial wound infection at the site of injury 3, post op superficial wound infection at the site of nerve transfer 3, delayed hematoma at the site of the nerve transfer 4
total	60	17-61	46M, 14F	53 glass lac, 7 knife	39 dominant, 21 non dominant	M4 28, M3 14, M2 11, M1 7	M4 39, M3 11, M2 9 M1 1	12

Results

- Patients that met the inclusion criteria were 60 patients, 30 on each group.
- Age ranged from 17 to 61yo
- Gender 46 males, 14 females
- Etiology 53 glass laceration and 7 knife injuries
- 39 dominant hands and 21 non dominant hands.
- MRC scale of the ulnar intrinsic innervated muscles at 6 months in the standard repair was M4 11, M3 8, M2 7, M1 4.
- MRC scale of the ulnar intrinsic innervated muscles at 12 months in the standard repair was M4 17, M3 7, M2 5, M1 1.
- MRC scale of the ulnar intrinsic innervated muscles at 6 months in the standard repair + nerve transfer was M4 17, M3 6, M2 4, M1 3.
- MRC scale of the ulnar intrinsic innervated muscles at 12 months in the standard repair + nerve transfer was M4 22, M3 4, M2 4.
- Complications in group 1 were: post op superficial wound infection at the site of injury 2.
- Complications in group 2 were: post op superficial wound infection at the site of injury 3, post op superficial wound infection at the site of nerve transfer 3, delayed hematoma at the site of the nerve transfer 4.

Conclusion

- Better functional recovery on the ulnar innervated intrinsic muscles in the standard repair + nerve transfer group
- More complications in the standard repair + nerve transfer group.
- Added OR time/cost in the nerve transfer group.
- Better designed studies and multicentric studies must be done in order to suggest the gold standard when treated isolated high ulnar nerve injuries.