The Ulnar Nerve in Trauma: Transpose It !

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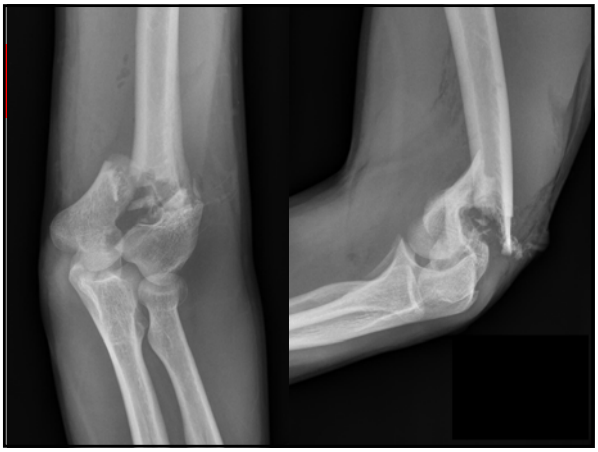
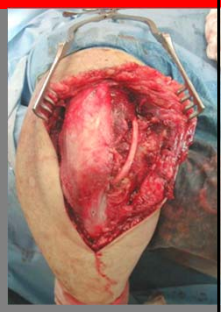
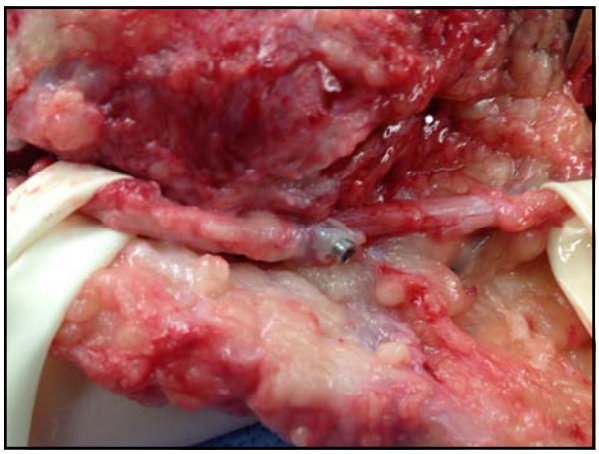
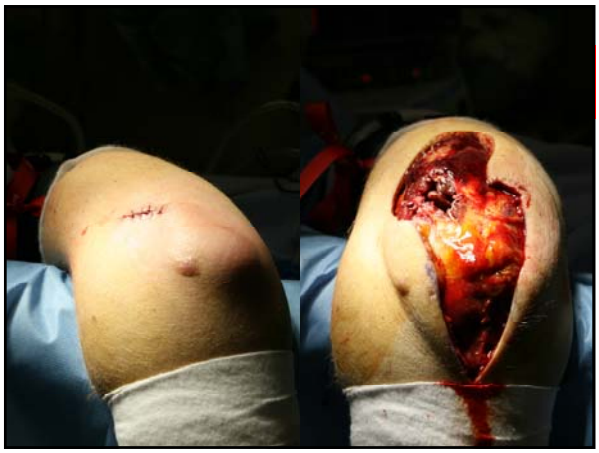


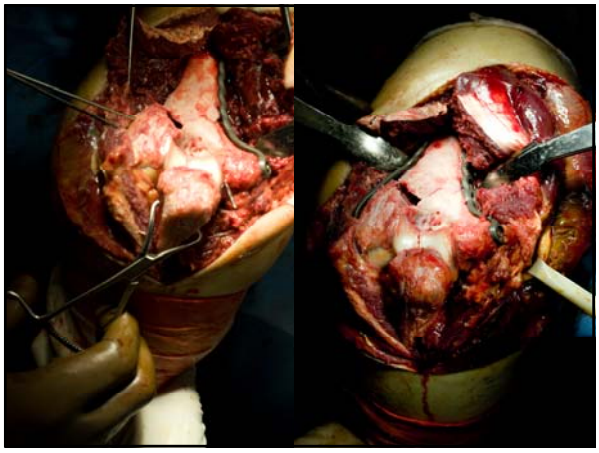
Approach

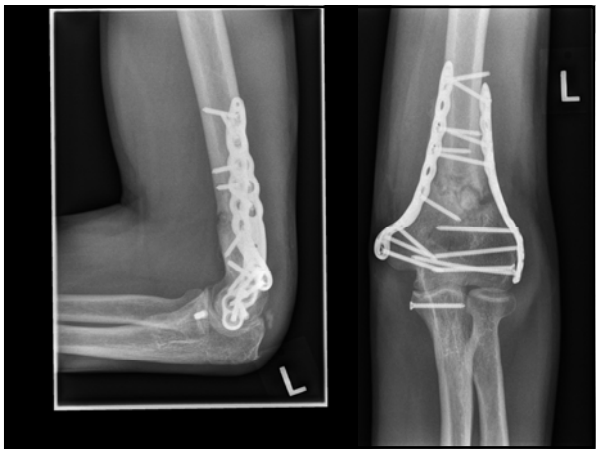
- Posterior approach
- Isolate and protect ulnar nerve
- Extensor mechanism
  - triceps split or peel
  - olecranon osteotomy

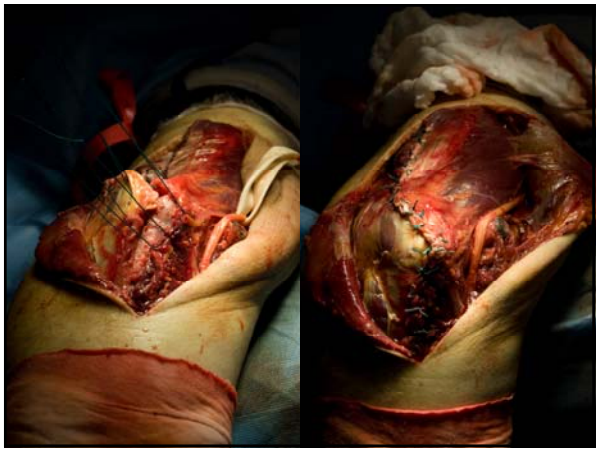












What to do with the ulnar nerve?

- Transpose?
- Leave in situ?

Simple Decompression vs Anterior Transposition of the Ulnar Nerve for Distal Humerus Fractures Treated with Plate Fixation: A Multi Centre Randomized Controlled Trial

Canadian Orthopaedic Trauma Society

- St. Michael's Hospital, Toronto, Ontario, Canada
  Dr. Emil Schetmisch, Dr. Michael McKee, Dr. Niloofar Dehghan, Dr. Jeremy Hall, Dr. Aaron Nauth, Dr. G. Midroni, Milena Vicente, Jennifer Hidy, Melanie Macnevin
- The Ottawa Hospital, Ottawa, Ontario, Canada
  Julia Foxall, Dr. Steven Papp, Dr. Allan Liew, Dr. Wade Gofton
- Royal Columbian Hospital, New Westminster, BC, Canada
  Karyn Moon, Raely Moon, Drs. Farhad Moola, Bertrand Perey, Kelly Apostle, Darius Viskontas, H. Michael Lemke, Trevor Stone, Dory Boyer, Joy Kirkwood, Tasha Forbes, Gene Patterson, Shaveen Kullar, Dr. Chaman Preet Singh Chahal
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- Hamilton General Hospital, Hamilton, Ontario, Canada
  Nicole Simunovic, Sofia Bzovsky, Hiba Mannan, Sarah Crouch, Rebecca Lum
- Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada
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- University of Saskatchewan, Saskatoon, Saskatchewan, Canada
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- QEII Health Sciences Centre, Halifax, Nova Scotia, Canada
  Shelley MacDonald, Kelly Trask , Dr. Chad Coles, Dr. Glen Richardson, Dr. J. Andrew Trenholm

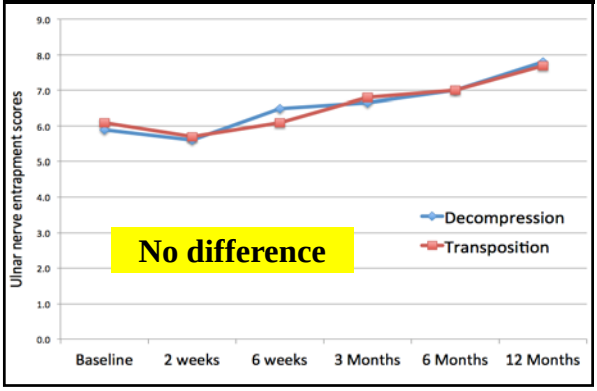
Results

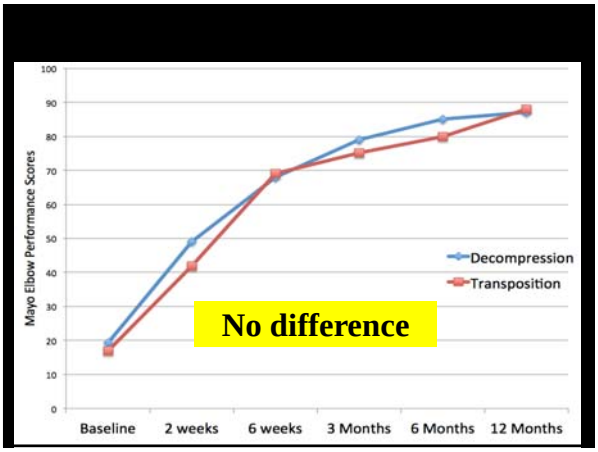
- 31 Randomized to simple decompression
- 27 Randomized to decompression + anterior transposition

- Mean age 52 years (17-79 years), 60% female
- Pre-operative hand numbness in 25%

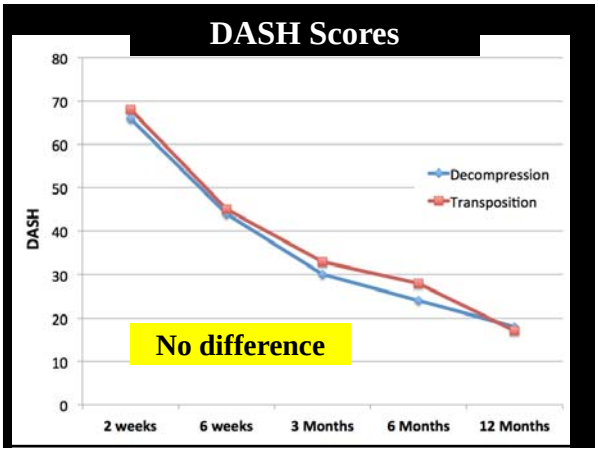
- No difference between the two groups with regards to age, gender, BMI, smoking, diabetes, injury characteristics, pre-operative neurologic dysfunction, time to operation, length of operation, or surgical approach.

Gabel & Amadio Ulnar Nerve Neuropathy Scores





DASH Scores



Nerve Conduction Studies

Nerve conduction test results	All Patients N=45		Decompression N=22		Transposition N=23		P
	N	%	N	%	N	%	
Abnormal results	28	62%	12	55%	16	70%	0.30
Minor abnormality	15	33%	6	27%	9	39%	0.40
Severe abnormality	12	27%	6	27%	6	26%	0.93
Sensory only	10	22%	3	14%	7	30%	0.17
Sensory + Motor	16	36%	8	36%	8	35%	0.91

No difference

Surgical Complications

Complications			
Superficial infection	4	1	3
Deep infection	2	1	1
Repeat surgery	11	5	6
Non-union/hardware failure	5	1	4

No difference

Conclusions

- Majority of patients develop ulnar nerve symptoms post-surgery
- Significant improvement by 1-year post-injury in neurologic symptoms and functional outcomes
- No difference with regards to ulnar nerve symptoms, functional outcomes or complications for patients treated with either simple decompression or anterior transposition
- Either strategy for managing the ulnar nerve is acceptable, and can be used at the discretion of the treating surgeon