

Elbow Trauma: What is the Evidence?




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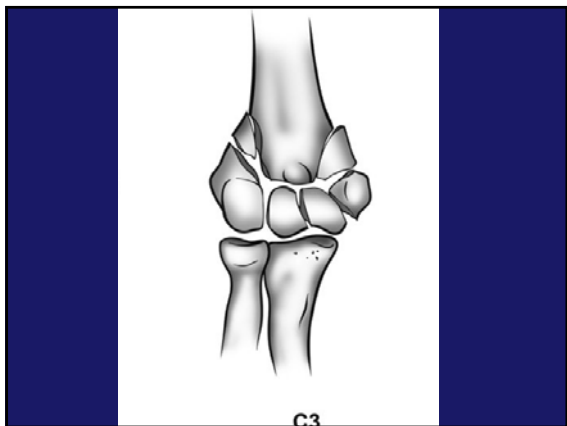
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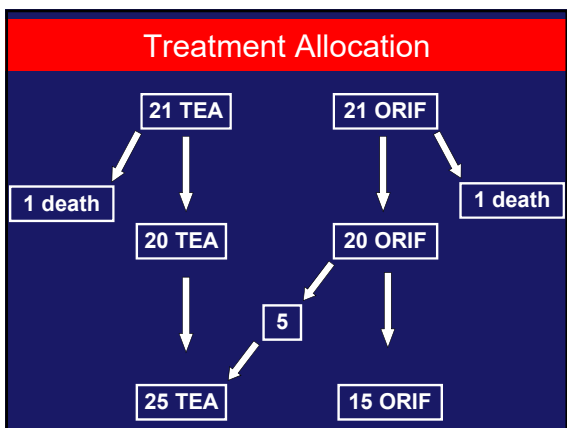
FEATURED ARTICLES

A multicenter, prospective, randomized, controlled trial of open reduction—internal fixation versus total elbow arthroplasty for displaced intra-articular distal humeral fractures in elderly patients

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Results

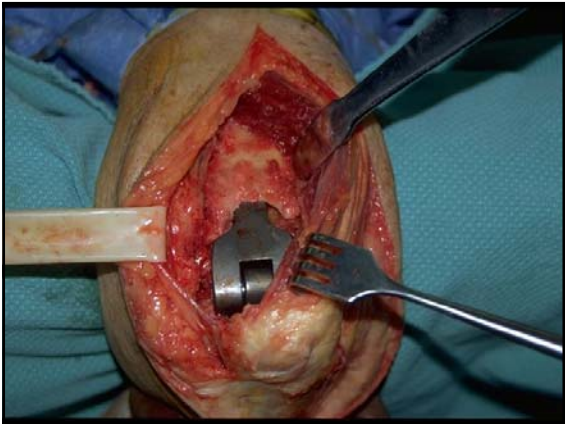
TEA Group	ORIF Group
• 25 patients	• 15 patients
• 2 male, 23 female	• 3 male, 12 female
• Mean age 78 years	• Mean age 77 years

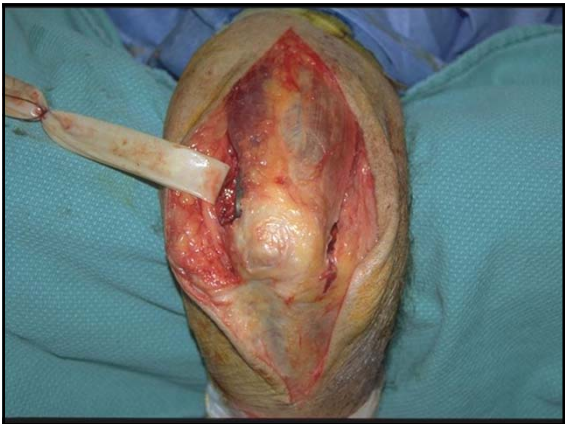
Baseline demographics the same (i.e. activity, mechanism, # type etc.)

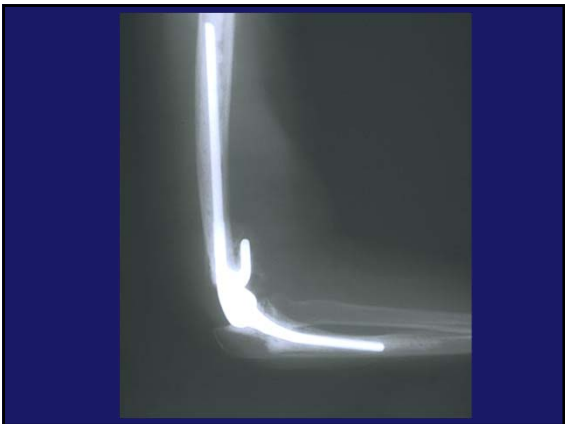


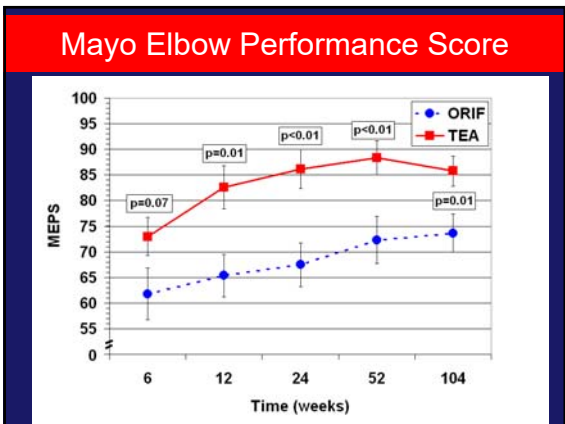


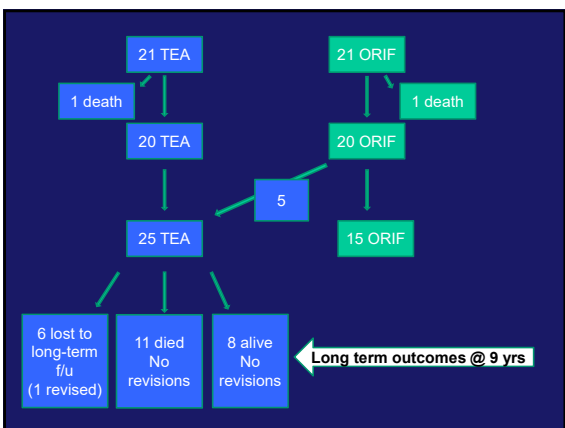













- ### Conclusions
- Non-operative treatment an option for some (demented, sick, low-demand)
 - TEA significantly improved surgeon outcomes in one specific group (C3 #, female, age 78 yrs)
 - TEA effective salvage in 25% of cases not amenable to ORIF
 - Longevity of the TEA is good – 1 / 25 revised at mean f/u of 9 years

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

Research Design

- Multi-centre randomized controlled trial
- 8 centres, 58 patients recruited



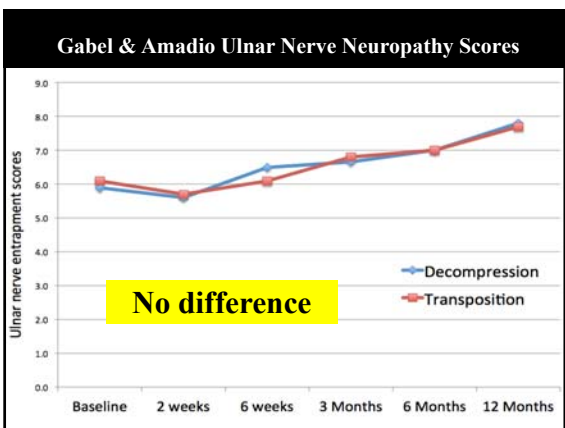
- Patients randomized to:
 1. Simple decompression
 2. Decompression + Anterior transposition

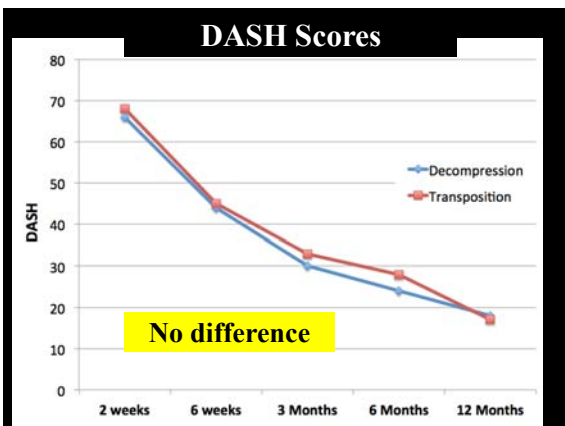
Results

- 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.





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

- ### 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

Non-operative treatment of olecranon fractures in elderly: It is possible!



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Nonoperative Management of Displaced Olecranon Fractures in Low-Demand Elderly Patients

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Investigation performed at Edinburgh Orthopaedic Trauma Unit, Royal Infirmary of Edinburgh, Edinburgh, Scotland

Background: The aim of this study was to document both the short and the long-term outcomes following primary nonoperative management of isolated displaced fractures of the olecranon.

Methods: We identified, from our prospective trauma database, all patients who had been managed nonoperatively for a displaced olecranon fracture over a thirteen-year period. Inclusion criteria included all isolated fractures of the olecranon with >2-mm displacement of the articular surface. The primary short-term outcome measure was the Broberg and Morrey Elbow Score. The primary long-term outcome measure was the Disabilities of the Arm, Shoulder and Hand (DASH) score.


Results: There were forty-three patients with a mean age of seventy-six years (range, forty to ninety-eight years) in the study cohort. A low-energy fall from a standing height accounted for 84% of all injuries, and one or more comorbidities were documented in thirty-eight patients (88%). At a mean of four months (range, 1.5 to ten months) following injury, the mean Broberg and Morrey score was 83 points (range, 48 to 100 points), with 72% of the patients having an excellent or good short-term outcome. No patient underwent surgery for a symptomatic nonunion. At a mean of six years (range, two to fifteen years) postinjury, the mean DASH score was 2.9 points (range, 0 to 33.5 points) and the mean Oxford Elbow Score was 47 points (range, 42 to 48 points); 91% (twenty-one) of twenty-three patients available for follow-up expressed satisfaction with the result of the procedure.

Conclusions: We found satisfactory short-term and long-term outcomes following the nonoperative management of isolated displaced olecranon fractures in older, lower-demand patients.

Level of Evidence: Therapeutic Level IV. See Instructions for Authors for a complete description of levels of evidence.

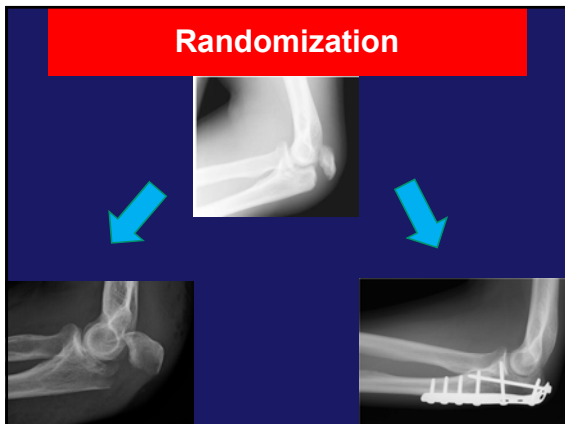
Outcome of Olecranon Surgery in the Elderly

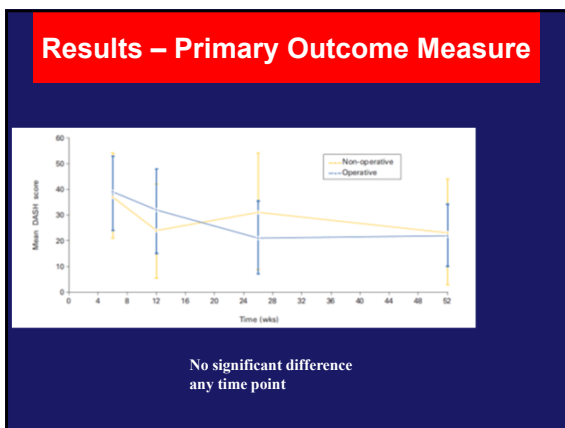
- **Risks factors for a poor outcome following operative treatment:**
 - Increasing age
 - Fracture morphology
- **Complications**
 - Loss of reduction up to 50%

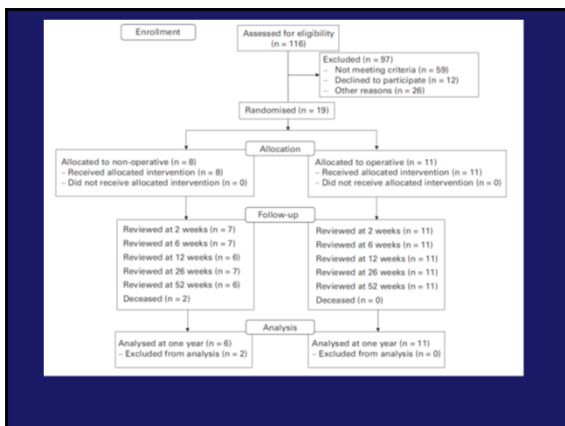


Methods – Criteria

Inclusion criteria	Exclusion criteria
1. Age ≥75 years	1. Patients unable to give informed consent
2. Displaced fracture of the olecranon	2. Associated fractures to the coronoid, radial head and/or distal humerus
3. Minimal, moderate or severe fragmentation of the olecranon	3. Associated ligamentous injury, dislocation or subluxation
4. Within two weeks of olecranon fracture	4. Open fractures
	5. Patients unable to comply with follow-up







Results - Complications

- 13 complications in 10 patients
- Significantly higher rate in the operative arm

	Non-operative (n=7)	Operative (n=11)	p value
Total complications	1	9	0.013
Infection	1	1 (plate)	1.000
Loss of reduction	1	6 (all TBW)	0.151
Subsequent surgery	1	3	0.245
ROM	0	3 (2 plates, 1 TBW)	
Revision	1	0	



Results - Radiographic

- 9 patients radiological union
 - (all operative group)
- 9 functional non-union
 - (7/7 non-op, 2/11 op)



Conclusions

- Non-operative management of isolated displaced olecranon fractures in lower demand elderly patients
 - Growing body of evidence
 - Lower cost and complication rate
 - Caveat is the subtle unstable injury
- Future studies: alternative fixation methods?
