Open Debridement: Is it a Sin?

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Disclosures

stryker

- Paid Consultant

DJO GLOBAL

- Royalties
- Speakers Bureau
- Paid Consultant
- Research Support

Arthroscopic Debridement: A Long Run for Short Slide?

- Technically Difficult
  - Tight spaces, proximity to nerves
  - ↑ risk of neurological injury
- Concomitant open procedure anyway
  - Hardware removal
  - Preexisting neurologic symptoms
- Time Consuming
  - Longer tourniquet time even for the most experienced arthroscopists

Technically Difficult

- Nerves at risk
  - Ulnar Nerve
    - Neuropathies are most common
  - Radial Nerve
  - Posterior Interosseous Nerve
  - Anterior Interosseous Nerve
  - Medial Antebrachial Cutaneous Nerve
  - Lateral Antebrachial Cutaneous Nerve
- transection during portal placement
- Compression due to extravasation of fluid
- injury during the procedure

JHS Nerve Injuries About the Elbow

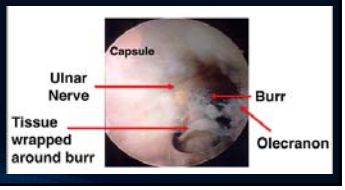
Julie E. Adams, MD, Scott P. Steinmann, MD

Technically Difficult

- Neurologic complications occurred in twenty-four (prior surgery in 13/24) out of 502 elbows (5%)
- The nerve injuries were thought to be attributable to the:
  - arthroscopic procedure in five cases (21% of the twenty-four)
  - prolonged tourniquet time in ten (42%)
  - open skin incision in seven (29%)
  - ulnar nerve transposition in three (12%)
    (one case attributable to two causes)

Concomitant open procedures were performed in 113 elbows (22.5%).

JBJS Prevention of Nerve Injury During Arthroscopic Capsulectomy of the Elbow Utilizing a Safety-Driven Strategy



Time Consuming & Risky

- Major complications occurred in 1/7 patients
- Case complexity was not a significant indicator for likelihood of a complication.

Journal of Shoulder and Elbow Surgery

Elbow arthroscopy: early complications and associated risk factors

Gregory N. Nelson, MD*, Tiffany Wu, MD*, Leesa M. Galatz, MD*, Ken Yamaguchi, MD*, Jay D. Keener, MD*,**

n	Rate of Complications		Rate of Infection		$\bar{x}$ Tourniquet Time
417	Overall	13.7%	Overall	8.9%	71 minutes
	Minor	8.9%	Superficial	6.7%	
	Major	4.8%	Deep	2.2%	

Open Treatment Options: Keepin' It Safe

- **Lateral Column Approach**
  - No access to ulnar nerve or posteromedial joint capsule
- **Medial Column Approach**
  - No access to the lateral joint
- **Outerbridge-Kashiwagi**
  - Full access

Outerbridge-Kashiwagi Procedure

Outerbridge Kashiwagi arthroplasty for osteoarthritis of the elbow joint. 1986

- Reported outcomes
  - 55% of patients had no or little pain at final follow up

Kashiwagi, D.

JBJS 2002 — Ulnohumeral arthroplasty for primary degenerative arthritis of the elbow: long-term outcome and complications

- found that 74% of patients had satisfactory results

Antuna, Morrey et al.

These studies did not include results for treatment of posttraumatic arthritis of the elbow which often requires neurolysis or hardware removal; open procedures

Study Demographics

Group I: Posttraumatic

n	Prev Sx	PreOp Ulnar Nerve Symptoms	Mean Age	Females
21	17	6	41	11

Initial Injury				Mean time to OK procedure
Distal Humerus Fx	Olecranon Fx	Radial Head Fx	Coronoid Fx	13 months
9	7	4	1	

Group II: Osteoarthritis

n	PreOp Ulnar Nerve Symptoms	Mean Age	Females
19	9	54 years	1

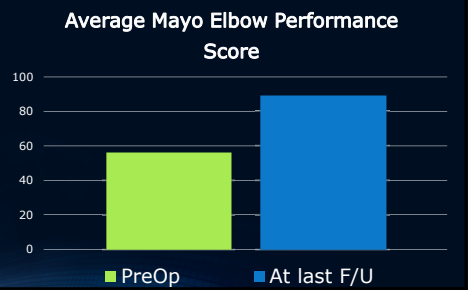
Total Tourniquet Time: 36 minutes

Surgical Technique

- Mini-open 4cm Posterior Incision
  - Incision extended for removal of hardware or nerve symptoms
- Triceps Split
- 1.5 cm olecranon fossa fenestration with burr; caution medial column
- Tip of Olecranon & Coronoid Removed
- Ulnar Nerve Decompression if:
  - PreOp Ulnar Nerve Symptoms

Results

Excellent	90 – 100
Good	75 – 89
Fair	60 – 74
Poor	< 60

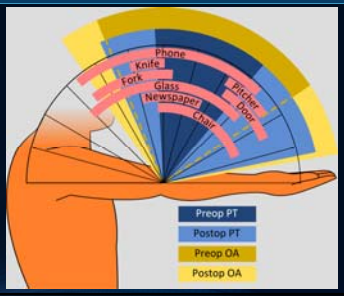


Results

Pain

At Last F/U	No Pain/Mild Pain	37 (93%)		
	Moderate Pain	3 (7%)	Posttraumatic	2
			Osteoarthritis	1

Results



Results: Ulnar Nerve Whole Population

Ulnar nerve release performed in 27 patients:

- 15 patients with symptomatic ulnar nerves
- 12 patients with significant contracture

Results: Complications & Reoperations Whole Population

- Reoperation required for 3 patients from the posttraumatic group
- Return to OR was not statistically significant
- The posttraumatic group *trended* toward statistical significance for return to OR ($p > .05$)

Conclusion: The OK Procedure

- Safe & efficient treatment
- Minimizes risk to neurological structures while allowing full access to the joint.

Thank You