Neurovascular Complications in Elbow Arthroscopy: A Systematic Review of 5,767 Cases

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Introduction

• Neurovascular injuries are rare but potentially serious complications in elbow arthroscopy
  – Exact incidence of neurovascular complications following elbow arthroscopy is unknown
Purpose

• To systematically review the literature to determine the rate of neurovascular injuries following elbow arthroscopic procedures.
Hypothesis

• Total complication rate following elbow arthroscopy would be <10%, with a <5% rate of reported neurovascular injury

• The majority of neurologic symptoms would be transient in nature.
Methods

• A comprehensive literature search was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines
  – PubMed, Embase, and Cochrane Central databases

• All original English-language studies of >5 patients reporting complications following elbow arthroscopy were included
Methods

• Demographic data, operative indications, and complications were recorded

• Neurologic complications were further classified as minor if transient or major if they required microsurgical repair or resulted in permanent deficit
Results

• 88 studies
  – 5,767 elbow arthroscopies in 5,649 patients
  – 50.3% male (n=2,844)
  – Mean age 31.3 years (range 6-90)
  – Mean follow-up 17.2 months (range 1-192)
Results

- Total complication rate
  - 5.0% (n=290)

- **126 (2.2%) neurovascular adverse events**
  - 5 major nerve injuries (0.1%)
    - 3 ulnar nerve and 2 median nerve lacerations
  - Most common minor nerve complication was ulnar nerve palsy (n=46) followed by delayed-onset ulnar neuropathy (n=33) and radial nerve palsy (n=19)
  - Most frequently reported non-neurovascular complication was superficial infection or persistent portal drainage (n=38)
  - no reported vascular complications, and no reports of compartment syndrome.
Discussion

• Major neurovascular injuries are rare events
• The majority of neurologic complications are transient
• The ulnar nerve is most commonly affected and all patients undergoing elbow arthroscopy should be examined for an unstable nerve or surgical scar suggesting previous transposition
Thank you!

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