

Avoiding Neurological Complications of Elbow Arthroscopy

William B. Stetson, M.D.,^{1,2}, Stephanie A. Morgan, MPAP, PA-C,¹ Samuel Polinsky, B.A.¹, Brian Chung, B.S.¹

¹Stetson Powell Orthopedics and Sports Medicine, Burbank, CA, USA

²Keck School of Medicine, University of Southern California, Department of Orthopaedic Surgery



Abstract

Elbow arthroscopy is an increasingly common procedure performed in orthopaedic surgery. However, due to the presence of several major neurovascular structures in close proximity to the operative portals it can have potentially devastating complications. The largest series of elbow arthroscopies to date described a 2.5% rate of neurological injury after elbow arthroscopy. All of these injuries were transient nerve injuries and resolved without intervention. A recent report of major nerve injuries after elbow arthroscopy demonstrated that these injuries are likely under-reported in the literature.

A retrospective review of the medical records was performed at our institutions for patients who had undergone elbow arthroscopy and had documented neurological deficits post-operatively. Charts were analyzed for the original indication for elbow arthroscopy, the documented neurological injury, and any additional surgeries undertaken to address these injuries.

A review of our records from 1998 to 2014 revealed six patients who had undergone elbow arthroscopy and developed neurological injury post-operatively. Four out of the six patients (66%) had a documented permanent posterior interosseous nerve (PIN) palsy. Two out of six patients (33%) developed a permanent ulnar nerve palsy.

While complications after elbow arthroscopy are rare, the most common permanent nerve palsy post-operatively is the posterior interosseous nerve (PIN) followed by the ulnar nerve. Because of the surrounding neurovascular structures, familiarity with the normal elbow anatomy and portals will decrease the risk of damage to important structures. With a sound understanding of the important bony anatomic landmarks, sensory nerves, and neurovascular structures, elbow arthroscopy can provide both diagnostic and therapeutic intervention with little morbidity.

Keywords— Elbow Arthroscopy, neurological complications, posterior interosseous nerve palsy

Biography

Dr. Stetson attended the University of Southern California (USC) on an athletic scholarship where he was a two-time NCAA All-American in volleyball and graduated Phi Beta Kappa. He attended the USC Keck School of Medicine and completed his Residency at Los Angeles County-USC Medical Center. He completed his Fellowship in

Sports Medicine at the Southern California Orthopedic Institute and has been in private practice since 1995. He is currently a voluntary professor at the USC Keck School of Medicine where he teaches the residents arthroscopic and orthopaedic surgery.

Dr. Stetson is passionate about education and sharing his knowledge of orthopedic medicine. He instructs young orthopedic surgeons on the latest techniques of arthroscopic surgery. In addition to his local endeavours, Dr. Stetson has traveled throughout the world including Romania, Vietnam, Haiti and Cuba teaching arthroscopy and orthopaedic surgery. Over the last 6 years, he has travelled to Romania multiple times where he and his colleagues are bringing modern techniques of shoulder surgery to their Romanian colleagues. In addition, Dr. Stetson has started a non-profit organization, Operation Arthroscopy www.operationarthroscopy.org, whose mission is to bring orthopaedic surgery and arthroscopy to countries and communities in need.

Email Id: wbstetsonmd@gmail.com

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