injuries. More importantly, treatment of these injuries can be completed with minimal disruption of the soft tissues. While our treatment algorithm followed the majority of the previously described treatment principles for the treatment of radiocarpal dislocations, we did not address neurovascular structures and the extrinsic wrist ligaments, which would require open decompression. Our results show that a successful clinical outcome and stable radiocarpal wrist joint are obtainable by addressing intercarpal injuries arthroscopically, and stabilizing the radiocarpal joint.


Introduction: Arthroscopy of the anterior compartment of the elbow may be performed at various flexion angles depending on the procedure. Since the brachial artery courses near the anterior surface of the distal humerus and proximal ulna, it is important to recognize how the vascular anatomy is related to elbow position in order to minimize risk of arterial injury. The purpose of this study was to determine how close the brachial artery was located to the distal humerus and proximal ulna with varying elbow flexion.

Methods: Eleven fresh-frozen cadaveric elbows were obtained and superficial muscular dissection was performed to identify the brachial artery proximal and anterior to its crossing the elbow. Barium was injected through the lumen of the artery and lateral images of the elbow in the sagittal plane were obtained with a fluoroscan at 5 different elbow flexion angles (0, 30, 60, 90, and 110 degrees). Digital software was used for 2 measurements: 1) the closest distance of the brachial artery from the anterior surface of the distal humerus (at the coronoid fossa), and 2) the closest distance of the brachial artery from the anterior surface of the ulna (15 mm distal to the tip of the coronoid). One-way ANOVA for repeated measures was used to compare the mean distances for each flexion group within each measurement group. A coronal image in full extension was also obtained to examine the medial-lateral course of the brachial artery as it passed the coronoid and fossa.

Results: The mean distances of the brachial artery from the distal humerus for each flexion angle were 12.2 mm, 17.7 mm, 21.2 mm, 21.7 mm, and 21.2 mm at 0, 30, 60, 90, and 110 degrees, respectively. The mean distance away from the distal humerus significantly increased with increasing flexion up to 60 degrees (p<0.001). The mean distances of the brachial artery from the coronoid at each flexion angle were 16.7 mm, 18.7 mm, 21.4 mm, 22.8 mm, and 24.7 mm at 0, 30, 60, 90, and 110 degrees, respectively. The mean distance away from the coronoid significantly increased with increasing flexion (p<0.002). Further, the brachial artery traversed lateral to the coronoid and fossa in 10 of 11 specimens (mean, 4.5 mm lateral).

Conclusion: The results of this study suggest that the brachial artery is located further away from the distal humerus (at the coronoid fossa) and proximal ulna (at the coronoid) with increasing elbow flexion and slightly laterally in the coronal plane. These anatomic landmarks can be used as references during elbow positioning at arthroscopy in order to reduce the risk of brachial artery injury.

Retrograde Drilling for the treatment of Capitellar Osteochondritis Dissecans (SS-50) Thomas R. Duquin, M.D., Shawn W. O’Driscoll, Ph.D., M.D.

Introduction: Osteochondritis dissecans of the capitellum is a condition that results in cavitation of the subchondral bone and can lead to subsequent damage to the overlying articular cartilage. The true etiology is unknown but it is our contention that the lesion is a non-union of a stress fracture. Therefore our preferred method of treatment for a non-displaced lesion is to stimulate a bone healing response by using an arthroscopic assisted retrograde drilling technique. The goal of this study is to report our technique and review the initial series of patients treated in this manner.

Methods: Arthroscopic assisted retrograde drilling was performed in 5 elbows of 4 patients with a non-displaced OCD of the capitellum that had failed non-operative management (Figure 1). All 4 patients were active in sports that involved impact loading of the radiocapitellar joint and were a mean age of 13 years (range 11-14). Outcome was measured using physical examination, Mayo elbow performance (MEP) and SOD scores, and radiographic imaging of lesions was performed to confirm healing.

Results: At a mean of 25 months follow up (range 12-34 months) all 4 patients were satisfied with the procedure and reported no pain with return to full activity including participation in sports without limitation. All lesions were healed on CT scans between 9 and 12 months after surgery. Physical examination revealed full strength in all patients with an average range of motion of 10 to 145 degrees of flexion/extension and 90 degrees of supination and 85 degrees of pronation. All patients had MEP.