References:

Abstract: The author undertook a cadaveric dissection study to confirm the hypothesis that starting with the anterior medial portal in elbow arthroscopy is safer than starting with the anterior radial portal. In six cadaveric elbows, the capsule was distended with saline. Both anterior medial and anterior radial approaches were made with the elbow flexed to 90 degrees. Four and one-half millimeter arthroscopic sheaths were inserted and obturators were then left in place while the saline was drained; expanding polyurethane foam was used to distend the capsule. We allowed the polyurethane foam to harden and then dissected all elbows, with special attention given to exposure of the radial and medial nerve and the brachial artery. The hardened foam allowed for continued capsular distension during these dissections and recreated normal distances from instrument portals to neurovascular bundles. The minimum distance from the path of the arthroscopic sheath to the large neurovascular structures was then measured. The distance from the medial portal to the nearest neurovascular structure (median nerve, brachial artery) averaged 23 mm. The distance from the radial portal to the nearest neurovascular structure (radial nerve) averaged 3 mm. The ulnar nerve averaged a 25 mm clearance from the medial portal. Even when the medial portal was made by an incorrect method, the minimum clearance to the median nerve averaged 11 mm. The most frequently recommended current standard technique for elbow arthroscopy involves beginning with an anterior radial portal. However, the findings in this study suggest that an anterior medial portal is a superior starting point. (ABSTRACT TRUNCATED AT 250 WORDS)