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Diagnostic Elbow Arthroscopy: Indications and Technique

Jeffrey B. Witty, MD,* and Edward Rhett Hobgood, MD†

Elbow arthroscopy is a safe and effective method of treating a broad range of elbow pathology. Fundamental to achieving this goal is the ability to perform a safe and efficient procedure. Thus, the knowledge of the operative layout, patient positioning, pertinent anatomy, and effective portal placement for clear visualization are essential. It is the goal of this chapter to provide the reader with that information. This chapter describes a variety of ways to position the patient for elbow arthroscopy. In addition, pertinent anatomy is reviewed specifically as it relates to portal placement. There are a variety of portal locations to consider, and these are discussed in detail, and at the same time, noting relevant nuances and applicable situations in which to employ them.

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The arthroscope has proven itself to be the ideal tool for evaluation and treatment of intra-articular pathology about the elbow. Elbow arthroscopy has become useful for removal of loose bodies,¹⁻⁷ treatment of rheumatoid arthritis and synovectomy,^{8,9} lysis of adhesions,^{10,11} excision of osteophytes and treatment of osteoarthritis,^{12,13} treatment of osteochondritis dissecans (OCD) lesions,^{5,14-16} radial head resection,¹⁷ plica excision,^{18,19} instability,²⁰ septic arthritis,²¹ and diagnostic arthroscopy for complex elbow pain.⁵

Advances in elbow arthroscopy have enabled surgeons to treat a broad spectrum of disorders that were once thought to be unsafe through arthroscopic techniques. Although technically demanding, recent advances in surgical technique, arthroscopic equipment, and an improved understanding of neurovascular and joint anatomy have made this procedure safer and more effective. More recently, indications have been expanded to include autograft replacement for OCD, treatment of lateral epicondylitis, and reduction and fixation of fractures of the radial head, capitellum, and distal humerus. Elbow arthroscopy can also be useful in the treatment of posterolateral instability.²²

The potential advantages of treating elbow pathology arthroscopically include the following: reducing iatrogenic insult by decreasing incision size, a more thorough evaluation of the intra-articular compartments of the elbow, and possibly reducing scarring and potential stiffness owing to limited disruption of the capsule. The disadvantages center squarely on the technical requirements needed to safely and effectively perform the procedure due to the close proximity of neurovascular structures. Understanding of the anatomy of the elbow as well as the principles and techniques of elbow arthroscopy allows a surgeon to perform these procedures safely and effectively.

Anatomy

Before performing arthroscopic surgery of the elbow, a thorough understanding of the relevant anatomy must be obtained. Superficial landmarks can be palpated and marked for reference during surgery.²³ Starting posteriorly, the triceps tendon and olecranon can be palpated. Moving medially, the ulnar nerve should be palpated in the groove along the posterior aspect of the medial epicondyle. Flexing and extending the arm while palpating the ulnar groove is important to recognize whether the nerve subluxes out of the groove. A subluxable ulnar nerve is present in 16% of the population.²⁴ Marking the course of the ulnar nerve is

*North Oaks Orthopaedic Specialty Center, Hammond, 15813 Paul Vega MD Drive Suite 100 Hammond, LA 70403.

†Mississippi Sports Medicine and Orthopaedic Center, Jackson, MS
Address reprint requests to Jeffrey B. Witty, MD, North Oaks Orthopaedic Specialty Center, Hammond, LA. E-mail: jeffwittymd@gmail.com