

# Advances in Elbow Arthroscopy



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**E**lbow arthroscopy is increasingly used to treat both simple and complex disorders of the elbow. The elbow is formed by three bones, the humerus, ulna, and radius. It is considered a “hinge joint” and is commonly affected by conditions that can lead to stiffness. Arthroscopy is a type of procedure where specially designed instruments are introduced through small portals into a joint, permitting minimally invasive diagnostic and therapeutic surgery. As instruments and techniques have been developed, particularly over the last ten years, there have been significant advances in the treatment of elbow conditions with arthroscopy.

There are significant advantages to using arthroscopy in treating elbow conditions as opposed to the conventional “open approach”. In general, to gain access to the elbow with conventional surgery, a relatively large incision is required. Moreover, as the elbow is surrounded by extensor and flexor muscles, these have to be retracted or divided in order to reach the joint itself. The ligaments and capsule surrounding the joint also must be cut in order to visualize it. This greater amount of dissection tends to lead to more bleeding and pain postoperatively, often necessitating hospitalization for several days. Hence, primary among the advantages

of arthroscopy is its shorter rehabilitation time. Almost all elbow arthroscopy procedures can be performed on an outpatient basis. Additionally, the visualization obtained with an arthroscope is excellent and generally exceeds that obtained through “open” surgical procedures.

Elbow arthroscopy is technically demanding. It requires meticulous technique with a keen understanding of the surrounding anatomy. Injury to the surrounding nerves and blood vessels can lead to significant complications such as numbness and weakness of the hand. This necessitates a planned and careful approach to each elbow arthroscopic procedure performed.

There are multiple indications for elbow arthroscopic procedures. The one that has been recognized for the longest period of time, and is still encountered frequently, is the presence of loose bodies within the elbow. A patient with a loose body will commonly complain of locking, catching or snapping of the elbow. Occasionally stiffness is encountered. Following careful examination which includes measurement of the motion of the elbow and palpation for any crepitation or “catching” of the joint, x-rays are obtained. However, loose bodies may not be seen on x-rays and occasionally more sophisticated diagnostic studies are ordered such

as CAT scan or MRI scan. Arthroscopic removal of loose bodies in the elbow is generally very successful with a quick recovery and return to normal activities.



*This figure demonstrates loose bodies removed from a patient's elbow who had developed stiffness and arthritis.*

Arthroscopic elbow synovectomy is a procedure that is performed for inflammation of the lining of the elbow joint. This is frequently seen in rheumatoid arthritis. Surgery is indicated when appropriate medications are not helpful, and the elbow remains swollen, painful, and often quite stiff. This condition is treated with specialized motorized shavers, which are used to debride or excise the abnormal proliferative synovium or joint lining tissue. This often requires multiple portals which are the small incisions permitting access to the elbow, from multiple directions so as to access the entire joint. This generally leads to a significantly more rapid recovery than when done with an open larger surgical approach. However, physical therapy is still often helpful in recovering from this procedure.

Stiffness, or contractures, of the elbow can be caused by multiple conditions but is often related to arthritis. This condition, as well, has seen advances with elbow arthroscopy where motorized burrs can be used to remove impinging spurs in order to diminish pain and improve range of motion. This procedure is usually followed by a concerted therapy program in order to regain motion and strength as soon as possible.

There are many other disorders of the elbow that can be treated arthroscopically. These include tendonitis, commonly called tennis elbow, and disorders of the cartilage, termed osteochondritis dissecans. There have been advances also in treating disorders of the elbow arising from high level pitching and competitive throwing that can lead to ligament and bony damage termed olecranon impingement. Fortunately, this can also be frequently improved with an arthroscopic approach.



*This figure demonstrates some of the degeneration that can occur secondary to elbow arthritis. Note the lack of smooth joint surfaces.*

Elbow arthroscopy, although technically demanding, can be performed safely and effectively on an outpatient basis with consistent and excellent outcomes. Further progress in this field is expected as the instruments utilized in elbow arthroscopy are improved and the available techniques are refined.