



Elbow Arthroscopy

Arthroscopy is a procedure that orthopaedic surgeons use to inspect, diagnose, and repair problems inside a joint.

The word arthroscopy comes from two Greek words, "arthro" (joint) and "skopein" (to look). The term literally means "to look within the joint." During elbow arthroscopy, your surgeon inserts a small camera, called an arthroscope, into your elbow joint. The camera displays pictures on a television screen, and your surgeon uses these images to guide miniature surgical instruments.

Because the arthroscope and surgical instruments are thin, your surgeon can use very small incisions (cuts), rather than the larger incision needed for open surgery. This results in less pain for patients, less joint stiffness, and often shortens the time it takes to recover and return to favorite activities.

Elbow arthroscopy has been performed since the 1980s. It has made diagnosis, treatment, and recovery from surgery easier and faster than was once thought possible. Improvements to elbow arthroscopy occur every year as new instruments and techniques are developed.

Anatomy

The elbow is a complex joint formed by the joining of three bones:

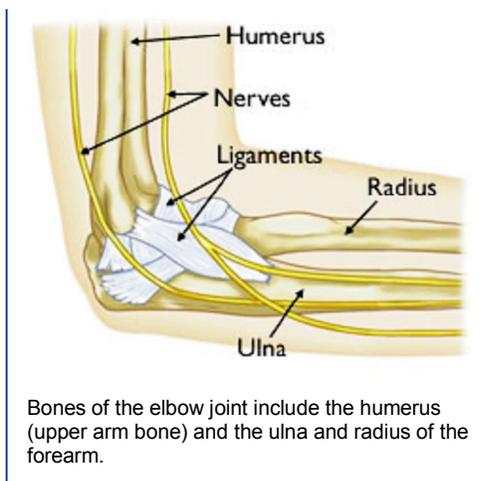
- The humerus (upper arm bone)
- The ulna (forearm bone on the pinky finger side)
- The radius (forearm bone on the thumb side)

The surfaces of the bones where they meet to form the elbow joint are covered with articular cartilage, a smooth substance that protects the bones and acts as a natural cushion to absorb forces across the joint. A thin, smooth tissue called synovial membrane covers all remaining surfaces inside the elbow joint. In a healthy elbow, this membrane makes a small amount of fluid that lubricates the cartilage and eliminates almost any friction as you bend and rotate your arm.

On the inner and outer sides of the elbow, thicker ligaments (collateral ligaments) hold the elbow joint together and prevent dislocation.

The elbow joint is surrounded by muscles on the front and back sides. In addition, the three major nerves that cross the elbow joint are located close to the joint surfaces and capsule and must be protected during arthroscopic surgery.





The elbow joint allows two basic movements: bending and straightening (flexion and extension) and forearm rotation (pronation palm down, and supination palm up).

Normal bending and straightening motion occurs at the joining of the humerus and ulna bones. Forearm rotation occurs at the joining of the ulna and radius and is also influenced by muscles and ligaments further down the forearm and at the wrist joint.

When Elbow Arthroscopy Is Recommended

Your doctor may recommend elbow arthroscopy if you have a painful condition that does not respond to nonsurgical treatment. Nonsurgical treatment includes rest, physical therapy, and medications or injections that can reduce inflammation. Inflammation is one of your body's normal reactions to injury or disease. In an injured or diseased elbow joint, inflammation causes swelling, pain, and stiffness.

Injury, overuse, and age-related wear and tear are responsible for most elbow problems. Elbow arthroscopy may relieve painful symptoms of many problems that damage the cartilage surfaces and other soft tissues surrounding the joint. Elbow arthroscopy may also be recommended to remove loose pieces of bone and cartilage, or release scar tissue that is blocking motion.

Common arthroscopic procedures include:

- Treatment of tennis elbow (lateral epicondylitis)
- Removal of loose bodies (loose cartilage and bone fragments)
- Release of scar tissue to improve range of motion
- Treatment of osteoarthritis (wear and tear arthritis)
- Treatment of rheumatoid arthritis (inflammatory arthritis)
- Treatment of osteochondritis dissecans (activity related damage to the capitulum portion of the humerus seen in throwers or gymnasts)



This xray of an elbow taken from the side shows severe osteoarthritis. Note the large bone spurs that have formed around the joint. During an arthroscopic procedure, these bone spurs can be removed, along with any loose fragments of cartilage.

There are several elbow surgical treatments that are currently most effective when done as an open, traditional procedure. These include surgeries to:

- Treat golfers elbow (medial epicondylitis)
- Repair the collateral ligaments
- Fix many fractures
- Replace the elbow joint
- Decompress the ulnar nerve (funny bone nerve)

Some advanced surgeries combine arthroscopic and open procedures in the same setting. For example, in a severe case of osteochondritis dissecans, a loose piece of bone may be removed arthroscopically, and the damaged area of the humerus may be treated with a bone graft using an open surgical technique.

Planning For Surgery

Evaluations and Tests

Your orthopaedic surgeon may ask you to see your primary doctor to make sure that you do not have any medical problems that need to be addressed before your surgery. Blood tests, an electrocardiogram, or chest xray may be needed to safely perform your surgery.

If you have certain health risks, a more extensive evaluation may be necessary before your surgery. Be sure to inform your orthopaedic surgeon of any medications or supplements that you take. You may need to stop taking some of these prior to surgery.

If you are generally healthy, your arthroscopy will most likely be performed as an outpatient. This means you will not need to stay overnight at the hospital.

Admissions Instructions

The hospital or surgery center will contact you ahead of time to provide specific details about your procedure. Make sure to follow the instructions on when to arrive and especially on when to stop eating or drinking prior to your surgery.

Anesthesia

Before the operation, a member of the anesthesia staff will talk with you about anesthesia options. Elbow arthroscopy is usually performed using general anesthesia, meaning you are put to sleep.

Regional nerve block injections that numb just your elbow area are rarely used in elbow arthroscopy because the numbing effect can last for a few hours after the procedure is completed. Although the numbing effect can help with managing pain, it prevents your surgeon from completing a careful nerve examination in the recovery room to make sure that the nerves that travel down your arm are functioning well.

If necessary for pain control, a regional anesthetic may be provided in the recovery room after your surgeon completes the nerve examination.

Surgical Procedure

Positioning

Once in the operating room, you will most likely be given general anesthesia, as well as intravenous antibiotics. Antibiotics are typically given before surgery to lessen the risk of infection after surgery.

ou will then be positioned so that your surgeon can easily adjust the arthroscope to have a clear view of the inside of your elbow. The two most common positions for elbow arthroscopy are lateral decubitus (side lying) and prone (lying on your stomach). are is taken to ensure that your spine and other pressure points in your arms and legs are protected and padded after positioning.

ext, a tourniquet is applied to your upper arm which is then placed in an arm holder to keep it in position during the procedure. A compressive dressing may be applied to your lower arm and hand to limit swelling. The surgical team will clean your skin with antiseptic and cover your shoulder and upper body with sterile surgical drapes.



The typical position of the elbow for surgery. The arm is kept in position with an arm holder device.

Reproduced from Gramstad G, Yamaguchi K: Elbow arthroscopy. American Academy of Orthopaedic Surgeons website: Orthopaedic Knowledge Online Journal, 2007. http://orthoportal.aaos.org/oko/article.aspx?article=OKO_SHO011§ion=3&#article. Accessed 7/25/2012.

urgeons typically draw lines on the elbow to indicate specific structures (such as the ulnar nerve and olecranon bone), as well as incision placements and portals for the arthroscope.

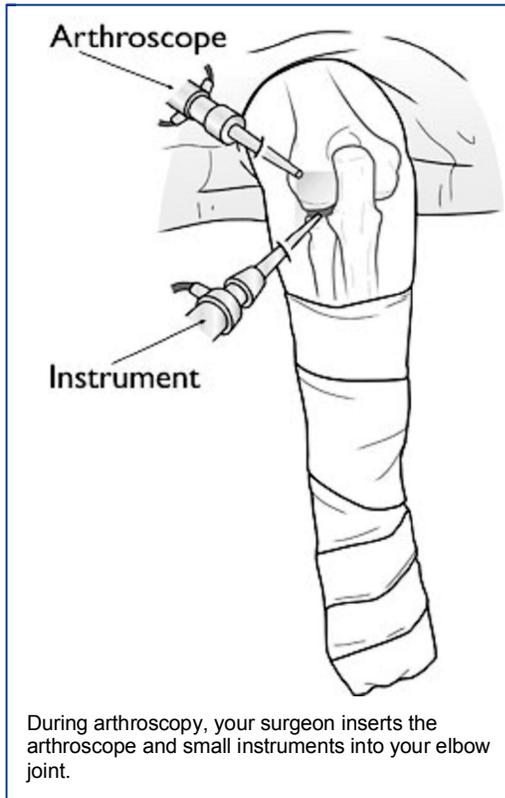


The small lines drawn on the skin are common incisions made during arthroscopic surgery.

Procedure

our surgeon will first fill the elbow joint with fluid. The fluid helps your surgeon more clearly see the structures of your elbow through the camera on the arthroscope. This lessens the risk of injury to the blood vessels and nerves surrounding your elbow joint. our surgeon will make several small incisions to introduce the arthroscope and small instruments into the joint.

fluid flows through the arthroscope to keep the view clear and control any bleeding. Images from the arthroscope are projected on the video screen showing your surgeon the inside of your elbow and any problems. our surgeon will evaluate the joint before beginning any specific treatments. If indicated, the entire joint will be evaluated, which may require a total of five or six very small arthroscopy incisions.



Once the problem is clearly identified, your surgeon will insert other small instruments through separate incisions to repair it. pecialied instruments are used for tasks like shaving, cutting, grasping, suture passing, and knot tying. In many cases, special devices are used to anchor stitches into bone.



oose pieces of bone and bone spurs removed from an arthritic elbow during arthroscopy.

The arthroscopy incisions are usually stitched or covered with skin tapes at the end of the surgery. An absorbent dressing is applied to the elbow. Depending upon the procedure, your surgeon will place either an additional soft dressing that will allow movement or a plaster splint that will restrict movement and better protect the elbow.

Recovery

Postoperative

After surgery, you will stay in the recovery room for 1 to hours before being discharged home. urses will monitor your responsiveness and provide pain medication, if needed. ou will be provided discharge instructions that cover medications, need for ice and elevation, as well dressing care. ou will need someone to drive you home and stay with you for at least the first night.

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