115086 Elbow 2/22/05 4:31 PM Page 1

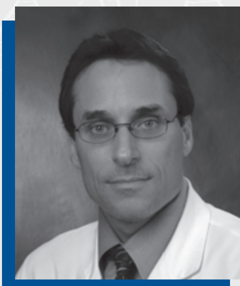
Oak Park Hospital
Medical Office Building
610 South Maple Avenue
Suite 1400
Oak Park, Illinois 60304
312.243.4244

Chicago
South Loop/River City
800 South Wells
Suite M30
Chicago, Illinois 60607
312.431.3400

Central DuPage Hospital
25 North Winfield Road
Winfield, Illinois 60190
630.682.5653

RUSH University
Medical Center
1725 West Harrison Street
Suite 1063
Chicago, Illinois 60612
312.243.4244

www.rushortho.com
Toll-Free: 877-MD BONES



Mark S. Cohen, MD

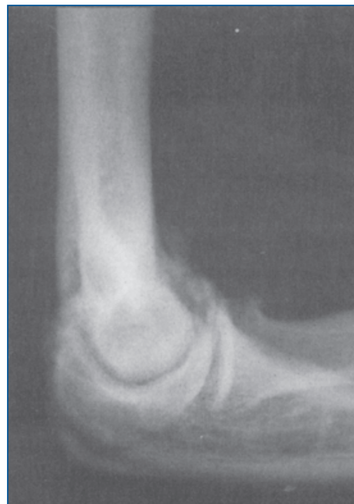
Anthony A. Romeo, MD

Chicago Medicine
February 2001

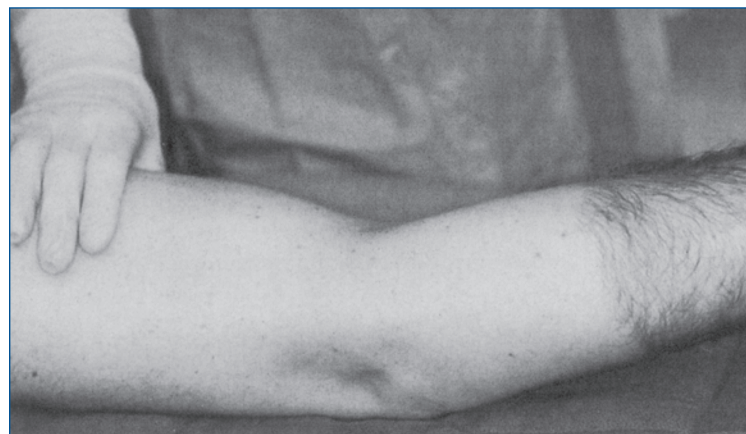
Advances in the surgical treatment of arthritis in the upper extremity

Part two of a three-part series:

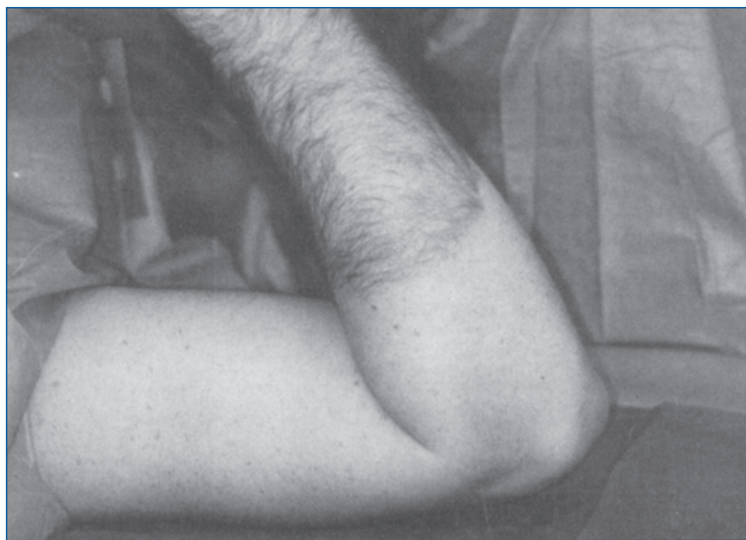
The Elbow



Lateral radiograph of a 42-year-old male with elbow arthritis. Note the anterior and posterior joint spurs and the loose bodies.



Above: Intraoperative photograph demonstrating loss of terminal elbow extension. Below: Flexion due to the arthritis.



By Mark S. Cohen, MD and Anthony A. Romeo, MD

Arthritis of the upper extremity can lead to pain and limited function. This is especially true in the elbow, which is responsible for positioning the hand in space. While the majority of cases can be treated with conservative measures, a subset of patients who fail may be candidates for surgical intervention. This second of a three-part series on the upper extremity discusses recent advances in the understanding and treatment of arthritic disorders of the elbow joint.

The elbow is one of the most complex joints in the body, consisting of three articulations within a single joint capsule. It acts as a hinge allowing flexion and extension but also provides for rotation of the forearm. While it is not typically considered a weight-bearing joint, the elbow can bear considerable loads, supporting one's body weight up to several times during certain activities such as rising from a chair.

Arthritis of the elbow most commonly occurs following trauma. The elbow is also involved in approximately 20 to 50 percent of patients with rheumatoid arthritis. When the elbow becomes stiff and painful, upper extremity function is severely compromised. Without a functional arc of motion at the elbow, simple activities such as bringing food to one's mouth or performing perineal care can be impossible. Until recently, few options were available for individuals with loss of elbow motion and function secondary to arthritis.

Over the past 10-15 years, various surgical techniques have

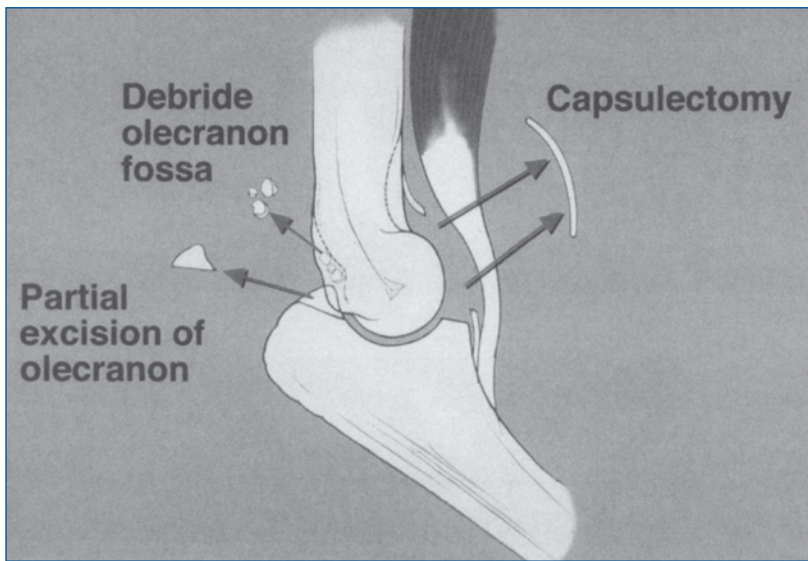
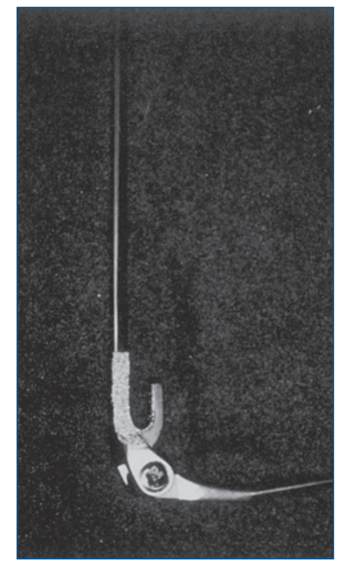
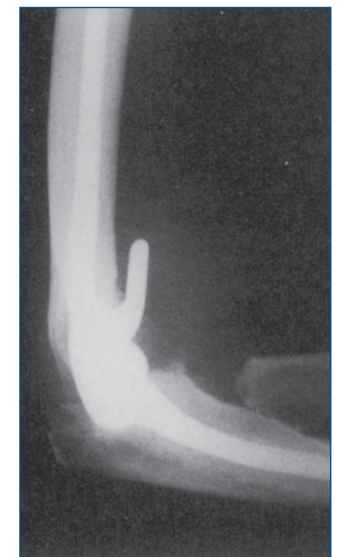


Illustration depicting surgical procedure of joint debridement with release of the elbow capsule and removal of loose bodies and osteophytes that limit joint mobility.

Photograph depicting osteophytes and loose bodies removed at surgery.





Above: Photograph and lateral radiograph of a prosthetic replacement for the elbow joint. These prostheses are indicated in more advanced cases of elbow arthritis in older individuals (typically over the age of 60 to 65 years).

been developed to treat the arthritic elbow. Fortunately, degeneration typically begins at the anterior and posterior margins of the joint.

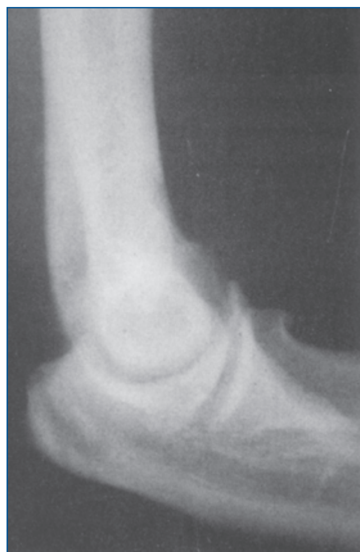
The elbow is somewhat unique in that removal of the arthritic spurs can restore joint motion and function in mild and moderately advanced cases. This joint "debridement" and contracture release can be performed with arthroscopic or limited-open techniques.

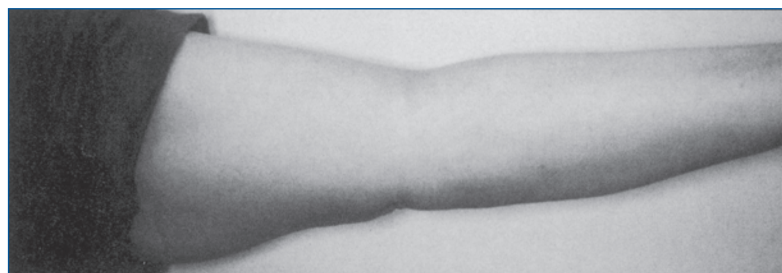
Joint spurs restricting motion are removed from the front and back of the elbow and the capsule is released without compromising the ligaments and muscles. This reliably restores motion and function of the elbow without limiting strength or stability.

For arthritis that is advanced, prosthetic replacements are currently available. Newer designs feature a semi-constrained hinge, with stems for the humerus and the ulna. The problems of implant loosening have been markedly improved by creating several degrees of laxity or "play" within the hinge. This design decreases stress at the bone-cement interfaces thereby improving implant durability.

Elbow replacements universally relieve pain and restore a functional arc of motion. The prostheses, however, must still be protected from heavy loading to maximize their longevity. In osteoarthritis, they are typically reserved for individuals over the age of 60 to 65 years. They can be used in younger patients with rheumatoid arthritis. Patient satisfaction is extremely high, with over 90 percent good and excellent results at ten years.

Left: Final radiograph and (Below) postoperative extension and (below) flexion achieved following surgical procedure. This procedure typically restores a functional arc-of-elbow motion without limiting strength or joint stability.





Drs. Cohen and Romeo are associate professors in the Department of Orthopaedic Surgery at Rush-Presbyterian-St. Luke's Medical Center in Chicago. Dr. Cohen is the director of the Hand and Elbow Program and Dr. Romeo is the director of the Shoulder Program. They are co-directors of the Midwest Orthopaedics Shoulder, Elbow and Hand Center at Rush.

Reprinted with the permission of *Chicago Medicine*, February 2001, Vol. 104 No. 2, 15-17.