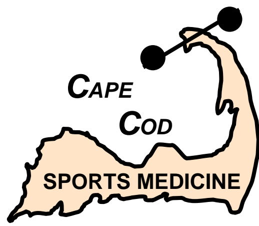


CAPE COD SPORTS MEDICINE
& RECONSTRUCTIVE SURGERY

ORTHOPEDIC SURGEON

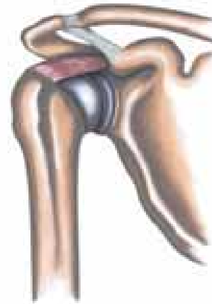
Donald E. O'Malley, M.D.
Assistant Professor of Surgery
Uniformed Services University of the Health Sciences

360 GIFFORD STREET
FALMOUTH, MA 02540
OFFICE: (508) 540-0200
FAX: (508) 540-0201

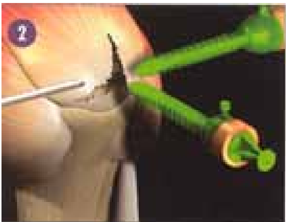
ROTATOR CUFF TEARS

Definition: A tear in the rotator cuff usually involves the partial or complete detachment of the tendon into bone. Remember that a muscle inserts into bone by its' tendon. Hence the supraspinatus muscle of the shoulder (one of the four rotator cuff muscles) changes into a tendon and the inserts into the greater tuberosity of the humerus. The confluence of four tendons at the shoulder is called the rotator cuff. A failure of any one of the tendons by ripping out from the bone is commonly referred to as a rotator cuff tear.

Normal Anatomy: The rotator cuff is actually made up of four muscles that surround the ball of the upper arm. The purpose is to provide a fulcrum to lift the arm overhead and to maintain the overhead position such as painting a ceiling.
Another function of the rotator cuff is to keep the ball of the humerus (upper arm) centered in the socket (the glenoid). In the complex act of shoulder motion, the four rotator cuff muscles work together to provide coordinated motion while maintaining the shoulder joint in the center.



Abnormal Anatomy: When overuse or traumatic injury causes a tear of the rotator cuff, it usually develops in a predictable fashion with failure at the tendon center first progressing outward, forming a "V" type or "L"-shaped tear.
The failure of this muscle will cause weakness in certain positions as the muscle fails in trying to pull the shoulder up. In addition pain will occur with certain positions, especially at rest in the recumbent position, due to the loss of gravity holding the upper arm & ball down away from the tear.



History: The cardinal feature of Rotator Cuff tears is <u>pain at rest.</u> Pain with associated weakness is often detected by the patient. A crackling sound or feeling in the shoulder is often present. These symptoms don't get better with rest, ice and NSAIDS. When you initially lie down at night, on your back, pain will develop. This is because without gravity the ball of the humerus slides upward, jamming the torn, inflamed tissue under the acromion or roof of the shoulder joint. The pain is often described as a severe throbbing pain much like a toothache. It interferes with the initiation of sleep.

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Medical Director: Cape Cod Marathon
Medical Co-Director: Falmouth Road Race
Board of Trustees; Cape Cod Healthcare System

E-Mail: domalley@ccsportsmed.com

Physical Exam: Examination of the shoulder is best accomplished by exposing the entire shoulder. Wearing Tank tops assist the examiner in getting maximal benefit of the exam. It is important to assess the voluntary vs. passive motion of the shoulder. The range of motion of the shoulder joint will be compared with the opposite non-involved side. Localized tenderness along the greater tuberosity will be sought. The muscles of the rotator cuff will be tested against resistance. The **Drop Arm Test** will usually be positive in patients with rotator cuff tears. Other special maneuvers performed by the examiner on the shoulder include the Lift Off test. The symmetry of the rotator cuff musculature will be examined closely for any signs of atrophy. The status of the biceps tendon which is frequently torn in association with the rotator cuff will be assessed. Finally a close examination of the neurologic structures will be evaluated to insure no nerve compromise.

Special Test: X-rays of the affected shoulder can yield several clues as to the size of the tear, the chronicity and the effect the tear is having on other structures in the region. If a rotator cuff tear is suspected, I prefer to get a **MRI** imaging study right away. A trained shoulder surgeon can assess how big a tear is involved. While everyone undergoes a conservative trial of treatment modalities, I tend to be more aggressive with the smaller tears that don't improve with physical therapy, electrical stimulation, ultrasound, NSAID's and ice. These smaller tears may be amenable to repair completely through the arthroscope.

Differential Diagnosis: Other problems that may mimic rotator cuff tears include impingement syndrome, gout of the shoulder, pinched nerve in the neck and metastic tumors to the proximal humerus.

Conservative Treatment: This is usually the first step in restoring shoulder function. Physical therapy can assist in building up muscle strength and "resting" the muscle that is torn. The rotator cuff muscles play an important role in stabilizing the shoulder joint and optimal control of neuromuscular forces is required to restore shoulder function. Your physical therapist will assist you in learning how to isolate individual muscles of the rotator cuff and strengthen them, while avoiding overstressing the affected tendon. Physical therapy is important to improve the muscle and tissue tone even if surgery is planned.

Surgery: Rotator Cuff surgery is blessed with good results whether done open or completely through the scope. Smaller rotator cuff tears can be fixed entirely through the arthroscope through two or three tiny ½ inch incisions, in the hands of an experienced shoulder arthroscopist. This can be down as SAME-DAY SURGERY, since little if any muscle tissue is cut or violated. Bigger tears can be addressed with arthroscopy first to define the extent & location of the tear, then a "MINI-OPEN TECHNIQUE" An arthroscopic subacromial decompression will usually be done first to widen the space under the acromion for the rotator cuff to glide. Metallic threaded "anchors" are place in the shoulder itself to fasten the tear back to its' origin. Usually an anatomic repair is carried out. A 23-hour stay is usually necessary for the mini-open technique. As always I will provide appropriate narcotic pain medication for the first several days at home. It is usually beneficial to have someone stay with you for the first 2 or 3 days after surgery.

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Rehabilitation: Can't begin soon enough!
Wrist and elbow motion is encouraged in the recovery room. On Post-operative day # 3, the bulky dressing can be removed at home and Band-Aids placed over the tiny incisions. Once the bulky dressings are off, you can begin the pendulum exercises you were doing before the surgery:

"Stir the pot"
"Bowling"
"Rock the baby"
"Saw wood"

Usually the sutures will be removed between day 10-18. At that time a consult to begin formal physical therapy will be given to you. At approximately 6 to 8 weeks you'll be ready to return to activities such as golf, swimming, sailing. Activities that I prefer 12 weeks of rehab include; bowling, fly-fishing, and throwing. Over the course of one year, as your cuff repair heals and matures, you'll notice the arm becoming stronger & stronger.

Please see the ROTATOR CUFF REPAIR REHAB PROTOCOL under "rehab" on this site.

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