

# Clinical Comments

## OCCUPATIONAL SHOULDER INJURIES



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Injuries to the shoulder area rank second behind spinal problems in the work place. Occupational shoulder disorders appear to be increasing in frequency. Whether there is a true increase in the incidents of injuries versus awareness or a combination of both, is not certain.

Shoulder problems which are the result of injuries in the work place can be broken down primarily into four categories: 1) Cervicobrachial Syndrome, (2) Rotator Cuff Tendinitis/tear, (3) Arthritis, (4) and Distinct Traumatic Injuries.

Cervicobrachial syndrome is a vague entity, although quite common. Patients usually present with vague pain and tenderness along the neck, scapular and glenohumeral areas. Quite often there is vague radicular pain into the upper extremity. It is commonly seen in occupations requiring fine repetitive motion with the upper extremity while the shoulder is held in a static position. Examples would be keyboard operators and light assembly line workers. The difficulty of diagnosing and treating this injury is that it has no specific pathologic etiology. Commonly, these workers are under high levels of stress and subsequent tension may predispose them to complain of constitutional symptoms including fatigue, headaches, etc.

The second category of Occupational Shoulder Disorders includes injury to the rotator cuff complex. The rotator cuff is a series of muscles that extend from the front and back of the scapular region (shoulder blade). Disorders range from a simple bursitis/tendinitis to a rupture of the rotator cuff. This is frequently seen in jobs that require arm elevation at eye level or higher and the frequent use of heavy tools. It is the result of high loads being applied to the rotator cuff itself. Workers will often complain of pain into the shoulder and upper arm area with findings of crepitation in the bursa, painful motions and weakness. Problems in the labrum (cartilage) are being seen almost as commonly as rotator cuff disruptions. It is known that the farther the arm has to be moved away from the body and the heavier the object held in the hand, the greater the force has to be generated from the rotator cuff

to perform this activity.

The third category of injury around the shoulder includes degenerative arthritis. Whether years of heavy loading of the shoulder directly causes the arthritis or an arthritic condition is present to which the load is applied, is often controversial. Certainly both of these conditions exist in the work place and a combination of the two are quite possibly frequent. Manifestations of arthritis in the sternoclavicular and glenohumeral joint are commonly seen in heavy categories of work.

The final type of work place injuries occurs due to a traumatic situation. These injuries are usually caused by a one-time severe load applied to the shoulder. The resultant injury can range from a strain to a tear in the rotator cuff or labrum (cartilage), or even a fracture if severe enough. In this situation, there is no doubt as to the mechanism that has caused the injury.

There are several preventative measures that can be implemented in the work environment to help avoid these occupational shoulder disorders. First and foremost is to modify the job in terms of arm position and movement. Reducing the horizontal distance, height and weight of the object being worked on can substantially reduce forces across the shoulder joint. Also, using lighter tools, tools that are more balanced, and providing arm supports such as arm rests and slings can be helpful.

Prevention of injuries through the use of rest breaks and job rotation has become popular as well. In general, it is suggested that regularly scheduled active breaks of 5-10 minutes per hour should be considered, as well as micro-pauses every 10-15 minutes. Job rotation can be effective in environments that include jobs with different mechanical uses of the musculature.

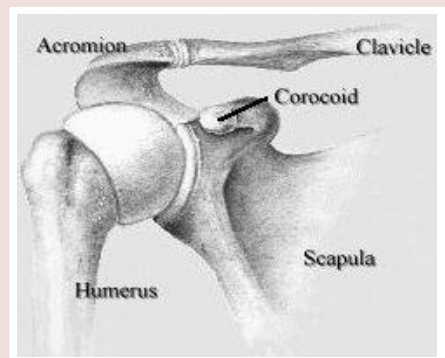
Worker selection can be of benefit in reducing injury rates as well. Prior history of shoulder injuries can be useful information when screening employees. Also, a history of performing similar type jobs without problems may be a useful indicator for prevention of work-related injuries.

Worker education can also be of significant benefit. Training individuals to handle loads in a proper manner is beneficial in preventing injuries. This includes the use of han-

dling loads close to the body, avoiding fast arm movements, and breaking from static work activities.

Once a work place injury has occurred in the shoulder region, proper diagnosis is essential to providing care to resolve the injury. Sending the injured worker to a skilled physician that specializes in shoulder injuries is the key. Treatment options include the use of medications such as steroidal and nonsteroidal anti-inflammatory drugs, muscle relaxants, analgesics and judicious use of injection treatments. Defining aggravating activities and work modification can also be critical to allowing the injured area to heal appropriately. The use of physical therapy and therapeutic exercises to return the range of motion and strength can be of significant benefit. Finally, surgical intervention when necessary is used to restore functional anatomy once a substantial injury has occurred. Fortunately, almost all shoulder surgeries can be performed arthroscopically, such as repairs to the labrum and rotator cuff.

Once again, shoulder disorders in the work place are quite common and seem to be occurring with increasing frequency. Substantial effort should be concentrated on education to decrease the injury rates. However, once an injury has occurred, significant advances in medical treatment have helped us to better treat these patients.



\*Reference: *The Shoulder*, Volume 2; Rockwood, Jr., M.D., Charles and Matsen III, M.D., Frederick; Chapter 29, "Occupational Shoulder Disorders."

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