

Shoulder Surgery in the Development of Osteoarthritis

Physical Therapy in San Jose, Los Gatos, Foster City and Burlingame for Shoulder

The Role of Shoulder Surgery in the Development of Osteoarthritis

Many studies have been done in gaining understanding of shoulder dislocations. For example, surgeons have asked the question: can they get better without surgery? If surgery is done, will arthritis set in sooner than if there never had been an injury? Another area of investigation has been the role of surgery as the cause of arthritis after repeated anterior (forward) shoulder dislocation.

In this study, a different approach was taken. This time, the presence of osteoarthritis in the shoulder joint before surgery was examined as a possible factor in the development and progression of shoulder osteoarthritis. Patients in this study were young athletes who had a shoulder injury that resulted in recurrent dislocations. All patients included had surgery to restore shoulder stability using the Bankart procedure.

The Bankart procedure is done to reattach the labrum (a rim of fibrous cartilage) when it is torn away from the shoulder socket. When the force of injury is enough to tear the labrum, a piece of bone attached to the labrum comes with it. The layers of soft tissue around the labrum (ligaments, joint capsule, tendons) are also damaged and must be stitched back together layer by layer.

In order to find the answer to the question of whether osteoarthritis was present before surgery was ever done, preoperative X-rays and CT scans were done. The surgeon also inspected the joint after making an open incision to see the damage but before making the repair. While gathering data for about the patients, the authors also analyzed the role of other factors on the development of arthritis such as age, gender, total number of dislocations, and side affected.

One-fourth of the patients had early (mild) arthritic changes observed in the shoulder before surgery. Only seven per cent of those cases actually showed up on X-rays. That's because the most frequent sign of early arthritis was bone spurs developing where the labrum attaches to the shoulder socket. This type of change doesn't appear on X-rays until the spur formation is much more advanced. The surgeons confirmed these changes when looking at the joint during the Bankart procedure.

After following these patients for five to 20 years, they saw that the arthritis progressed slowly over time. In some cases, the arthritic changes were never seen on the radiographs (X-rays). Patients who had the most severe bone defects had a higher rate and more severe arthritic changes. They were also more likely to experience repeated dislocations compared with patients who had no bone damage.

The authors conclude that CT scans may be helpful in the diagnosis of osteoarthritis in recurrent anterior shoulder dislocations. Severity of bone defect leading to preoperative arthritis can be identified using CT scans instead of standard X-rays.

Early arthritis does not seem to be linked with the age of the patient at the time of injury or the length of time between injury and surgery. The more often the shoulder dislocates, the more likely postoperative arthritic changes will develop. These preoperative dislocations cause repeated trauma to the shoulder and worsening instability.

Instability of this type should be treated operatively to avoid the worsening of arthritic changes. Whether or not the Bankart procedure itself is a factor in the development of postoperative arthritis should be studied more in the future.

Reference: Kiyohisa Ogawa, MD, et al. Outcome of the Open Bankart Procedure for Shoulder Instability and Development of Osteoarthritis. A 5- to 20 Year Follow-up Study. In *The American Journal of Sports Medicine*. August 2010. Vol. 38. No. 8. Pp. 1549-1557.