

Bony Defects with Chronic Shoulder Dislocations

If the shoulder dislocates one time, it may be possible to rehab the muscles and regain normal motion and strength with no further problems. But a second or third (or more) dislocation leads to an unstable joint (also known as shoulder instability).

At that point, there can be (and there often is) damage to the bone forming the joint. The defect may be in the head of the humerus (upper arm bone) or the glenoid (socket side of the joint). In traumatic dislocations, damage may occur in both places.

The exact lesion differs from patient-to-patient. There could be a fracture in the bone or a piece of cartilage (called the labrum) pulled away from the joint. With an anterior (forward) dislocating shoulder, the fibrous capsule covering the joint can get sheared right off. Sometimes, patients experience a combination of two or more of these injuries contributing to their unstable shoulder joint.

Large bony defects of this type can't be treated conservatively (i.e., without surgery). The surgeon may be able to perform the procedure arthroscopically but many times the surgical technique is very challenging and requires an open-incision approach.

Best results from surgery require a very careful pre-operative examination. The patient's history, clinical presentation (signs and symptoms), and imaging studies are all necessary parts of the evaluation.

With the information obtained from the assessment, the surgeon can make an accurate diagnosis. Then he or she can plan the most effective and comprehensive surgical procedure required for the best results. Repairing one defect without addressing all aspects of the shoulder instability is a recipe for treatment failure.

As you might expect, the specific surgical treatment needed varies depending on which side of the joint is affected. The surgeon must also take into consideration the exact location, type, and size of the lesion. Then the decision is made whether to perform the procedure arthroscopically or with an open incision.

Large defects on the glenoid (socket) side of the joint usually require an open procedure for the best results. This is especially true if there is a fracture of the glenoid rim and/or when there is a significant amount of bone loss.

Large defects (holes) must be filled in. The surgeon has a choice of fill-in materials including bone graft material, folded over tendon material, or a bone transfer (e.g., from the tip of the coracoid, another bone in the shoulder complex).

Small defects on the humeral head can be managed arthroscopically. A new procedure called Remplissage has made it possible to treat more humeral head defects arthroscopically than ever before. Remplissage is a French word that means "to fill." As with glenoid defects, the surgeon can stuff part of a shoulder tendon into the hole using sutures to hold it in place.

Open approaches to humeral head defects are still much more common than arthroscopic procedures. Again bone grafting may be used to fill in the defect. The surgeon can also smooth the humeral head, a procedure called resurfacing. If that doesn't work, then a partial (one-sided) shoulder replacement called hemiarthroplasty may be the next step. Just the side with the defect (humeral or glenoid) is removed and replaced.

In summary, large defects in the shoulder joint affecting the bone on either side can occur with traumatic shoulder dislocation. These bony defects can also contribute to chronic, recurring shoulder dislocations. The only solution may have to be surgery but the choices of surgical approach, method, and techniques used are complex and challenging.

Exactly which way to go isn't always clear cut. More research is needed to track cases and report on outcomes. This type of information could potentially help surgeons make the necessary treatment decisions on a case-by-case basis with a little more certainty.

Reference: Oke A. Anakwenze, MD, et al. Recurrent Anterior Shoulder Instability Associated with Bony Defects. In *Orthopedics*. July 2011. Vol. 34. No. 7. Pp. 538-544.