

# Update on Hill-Sachs Shoulder Lesion

Traumatic injury to the shoulder with recurrent dislocation can be caused by a Hill-Sachs lesion or defect. This lesion is a fracture of the round head of bone at the top of the humerus (upper arm bone). Usually, this injury occurs when a person has his or her arm cocked back in a ball throwing motion. The shoulder is abducted (moved away from the body) and externally rotated.

In this position, the head of the humerus moves forward. With enough force and/or load, the forward movement can overcome the strength and restraint of the soft tissues holding the shoulder back. The joint capsule is stretched to the breaking point.

Once the soft tissues surrounding the shoulder have stretched enough to tear, then the shoulder can dislocate repeatedly. And with every dislocation, the damaged soft tissues give a little more until the shoulder is unstable and no longer stays in the shoulder socket (glenoid fossa). At the same time, the compression against the bone is enough to cause the fracture described as a Hills-Sachs lesion.

A small lesion or one that is oriented perpendicular (sideways) to the rim of the socket (glenoid rim) can be treated conservatively (without surgery). Rehab under the direction of a Physical Therapist may be all that is needed. Older adults are also usually directed toward nonoperative treatment. Even with small to mid-size lesions, rehab can be quite lengthy over a period of many months.

Larger lesions and bony defects that are parallel to the glenoid rim are usually just part of the total picture. In these more extensive injuries, other tissues (e.g., labrum, anterior capsule) are also damaged. Coexisting injuries like this require surgery to stabilize the shoulder and prevent worse shoulder instability.

Before a treatment plan can be determined, the surgeon takes a complete history, performs a physical examination, and orders imaging studies. X-rays, CT scans, MRIs, and ultrasound studies reveal the full extent of damage including location and direction of the lesion. Imaging studies also help identify the amount of bone loss for both the humeral head and the glenoid fossa.

Once the decision has been made to do surgery, then the surgeon must figure out the best approach to take. The first decision will be whether to do the surgery arthroscopically or with an open incision. It may be necessary to combine several different procedures in order to treat all the bony and soft tissue problems that are contributing to the shoulder instability.

Surgical options include bone graft to fill in the bony defect, tissue filling called remplissage, and capsular shift to tighten up the soft tissues. In some cases, a shoulder replacement or resurfacing procedure may be the only way to treat the problem. A newer procedure called disimpaction is being investigated. In this surgery, the fractured bone is lifted up and a layer of bone graft is placed underneath to support it.

Long-term results with each of these approaches are unknown. There is a great need to identify patients who can benefit from conservative care versus those who need surgery. The role of age and activity level (active versus inactive) in treatment outcomes should be investigated as well.

In summary, despite the fact that Hill-Sachs compression fracture of the humeral head has been described since 1940, new information and treatment ideas are still forthcoming. Treatment options are expanding as a result of better imaging studies available to examine, describe, and classify these lesions. These are challenging injuries to treat and optimal care is individually determined and carried out for each patient.

Reference: CDR Matthew T. Provencher, MD, et al. The Hill-Sachs Lesion: Diagnosis, Classification, and Management. In Journal of the American Academy of Orthopaedic Surgeons. April 2012. Vol. 20. No. 4. Pp. 242-252.