Derek S. Shia, MD

Total shoulder replacement is the fastest growing joint replacement procedure in the United States. The number of shoulder replacements performed have increased from 18,000 in 2000 to 45,000 in 2013 and this trend is continuing. Total shoulder replacement is a reliable procedure that can significantly reduce pain and improve function. Studies have demonstrated greater than 90 percent good to excellent results in medium to long-term follow up. The longevity of total shoulder replacement is in line with other types of joint replacement surgeries. The typical shoulder replacement has an annual failure rate of approximately 1% per year resulting in approximately 90% retension at 10 years and 80% retention at 20 years.

Shoulder Arthritis

While not as common as hip and knee arthritis, shoulder arthritis can still result in significant disability. Arthritis occurs as the articular cartilage present on the humeral head and glenoid begin to wear away. This leads to the loss of joint space and the development of osteophytes (bone spurs). Patients typically experience worsening pain and stiffness. Pain during the night is also a common result of arthrtis. Activities of daily living can be impacted, as well as more vigorous activities. Arthritis can occur from a variety of different causes including inflammatory arthropathy, trauma, and simple wear and tear.

Non-operative management of shoulder arthritis can include anti-inflammatories such as advil or alleve, physical therapy to improve range of motion and strength, corticosteroid injections, viscosupplementation injections, such as orthovisc and synvisc, and protein rich plasma injections.

Shoulder injections should be performed under image guidance due the difficulties with placing a needle into the intra-articular space. Accuracy without image guidance has been shown to be 70% while ultrasound guidance improves this to over 92%. Cortisone injections can decrease inflammation, decrease pain and improve function. These improvements are usually temporary but with mild disease can often provide relief for long periods of time.

Protein rich plasma injections have demonstrated improvement in patients with knee arthritis and can be extrapolated to the shoulder. An in office procedure is performed for this. Blood is drawn from a vein, the blood is placed in a centrifuge and spun down. This provides a supernatent liquid high in growth factors that are then injected into the glenohumeral joint. In knees significant improvements have been demonstrated in the literature.

There are two main types of shoulder replacement. Anatomic and reverse total shoulder replacements. Anatomic shoulder replacements are typically performed in patients who have arthritis but a normal and functional rotator cuff. This involves replacing the ball and socket. In patients without a functioning rotator cuff, a prosthesis known as, a reverse will typically need to be performed.

Pre-operative planning for surgery will begin with plain radiographs and a CT scan of the shoulder. This allows detailed 3D analysis of the arthritis and deformity. Patients with more deformity can have custom guides and implants designed for their specific anatomy. The production of these typically take 4 weeks to obtain. Typically shoulder replacement involves replacing both the humeral head (ball) and glenoid (socket). The humeral component is typically involves a non-cemented stem. The amount of resection is dependant on several factors including a patients bone quality as well as the amount of deformity that is present. In younger patients a bone preserving humeral head resurfacing can be performed.

Shoulder replacement can occur in both the inpatient and outpatient setting depending on many patient factors including age, health, and complexity of the procedure. Typically patients undergo surgery, stay overnight and are discharged the next day. Surgery typically takes 1.5-2 hrs to perform. Patients usually have an interscalene block and general anesthesia. The block works to decrease post-operative pain and reduce the amount of general anesthesia used. This helps to decrease post-operative symptoms such as nausea as well as reduce the risks associated with general anesthesia.

Patients use a sling for comfort after the first day and are not required to wear their sling at home. Lifting of anything in the operative arm is not permitted immediately after surgery to allow healing of the subscapularis muscle which is taken down during the surgery. Once the subscapularis has healed increasing weight bearing is allowed, typically at three months.

Patients can resume all activities by six months. Patients are encouraged to return to their pre-operative activity level and resume sports such as golf, tennis, kayaking etc.