

Clinical Case Presentation

Title: HSS Reverse Total Shoulder Rehabilitation Guidelines and Case Study: Reverse Total Shoulder Arthroplasty Following Proximal Humerus Fracture with Axillary nerve

Author: Rosenzweig L: Hospital For Special Surgery, New York, NY

Background: Reverse total shoulder arthroplasty is now being used more widely for patients with OA and rotator cuff arthropathy, complex proximal humerus fractures, osteonecrosis, and revisions of failed total shoulder replacements.

Purpose: Post operative rehabilitation following a reverse total shoulder arthroplasty is different than that of a traditional total shoulder arthroplasty due to the fact that these patients generally do not have a functioning rotator cuff. In addition the biomechanics of the prosthesis are different, and the precautions differ as well. This presentation will review the guidelines that we use at the Hospital for Special Surgery for rehabilitation. The presentation will also include a case a patient with an axillary nerve injury sustained during a proximal humerus fracture who underwent reverse total shoulder arthroplasty and describe his rehabilitation.

Case Description: The case describes an 80 year old previously very healthy active male who sustained a proximal humerus fracture. The patient underwent a reverse total shoulder arthroplasty. Following surgery the patient developed a large hardened lump which was thought to be a hematoma in his upper arm. In addition, after having difficulty activating his middle deltoid, the patient was evaluated by a physiatrist and it was determined after nerve conduction testing and EMG that he has axillary nerve damage.

Outcomes: The surgery and subsequent physical therapy resulted in improved pain and function of his arm considering the severity of his injury. However patient is still undergoing PT at the time of this writing, and is frustrated/challenged by the lack of strength, muscle atrophy and continued pain that he has in his arm.

Discussion: There is a wide variance in outcomes after reverse total shoulder arthroplasty. This patient was very physically active prior to his injury, doing a lot of work in his home including his own landscaping and yardwork, He had a high expectation level for the outcome of this procedure, perhaps unrealistic considering the magnitude of his injury. There are a few key postoperative considerations following a reverse total shoulder arthroplasty. Joint protection, deltoid function, and establishing appropriate expectations. In this case the last two were both compromised. Establishing and enhancing deltoid function is key for success following total shoulder arthroplasty. Overall strength and stability of the shoulder is dependent on deltoid and scapular muscle function in the absence of rotator cuff function. In this case, the patient did not have full deltoid function. In addition, he has very high expectations, and was lifting 50-60 lbs routinely prior to his accident when working at his home. This presentation reviews the guidelines for a reverse total shoulder arthroplasty at Hospital for Special Surgery and demonstrates a challenging case in which the deltoid was compromised in a patient with high expectations. Rehabilitation following reverse total shoulder arthroplasty is challenging for both the therapist and patient. This presentation will provide useful information about how to rehabilitate a reverse total shoulder, open up a dialogue allowing other clinicians to share their experiences with reverse shoulder

arthroplasty procedures as well as share feedback about this particular case and similar cases they may have seen. Criteria for advancement will be presented.