‘URSA’ HEMI-SHOULDER ARTHROPLASTY

SURGICAL TECHNIQUE

BIOTEK

Surgical Position

Once general anesthesia has been satisfactorily induced, or a supraclavicular nerve block has been given, the patient is placed supine with the affected shoulder positioned as lateral as possible on the operating table. A folded sheet is placed below the scapula and a modified beach chair position is utilized. The arm and shoulder are then prepped and draped free (Figure 1).

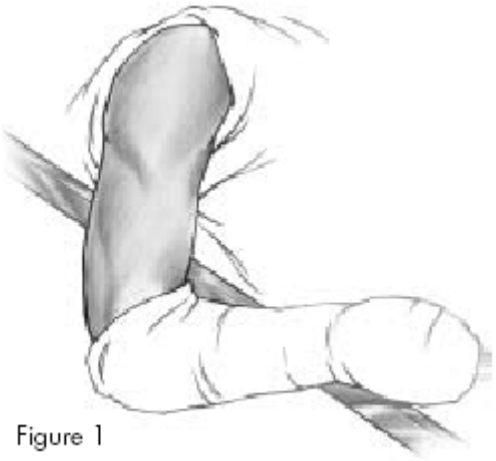

Figure 1

Surgical Incision

The approach utilized is an extended deltopectoral anterior incision that begins immediately above the coracoid process and extends distally and laterally, following the deltopectoral groove along the anterior border of the deltoid (Figure 2). The deltoid muscle is carefully retracted laterally to avoid releasing the deltoid from the clavicle. If necessary, the deltoid may be partially released from its distal insertion by subperiosteal dissection. The conjoined tendon is retracted medially after partially releasing it (less than 1cm through the tendon) from the coracoid.

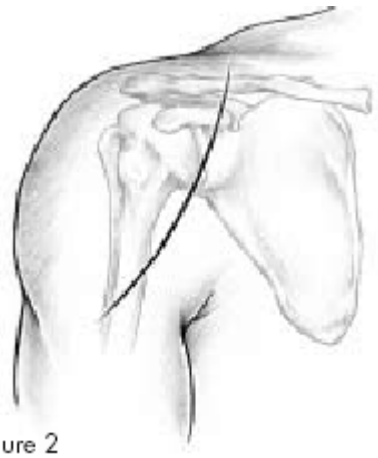

Figure 2

Once the anterior structures are identified, the humerus is gently rotated externally, and a longitudinal incision is made through the tendinous portion of the subscapularis muscle and capsule, just medial to the lesser tuberosity (Figure 3). In cases of severe contracture, subscapularis lengthening may be required. The subscapularis tendon may be tagged at this time with non-absorbent sutures. The humerus is now externally rotated and extended to expose the humeral head. The axillary recess, if contracted, will require dissection inferiorly to avoid the axillary nerve.

In cases of hemiarthroplasty for proximal humeral fractures, the approach may have to be modified in order to better visualize the fracture fragments and mobilize the tuberosity fragments for reconstruction.

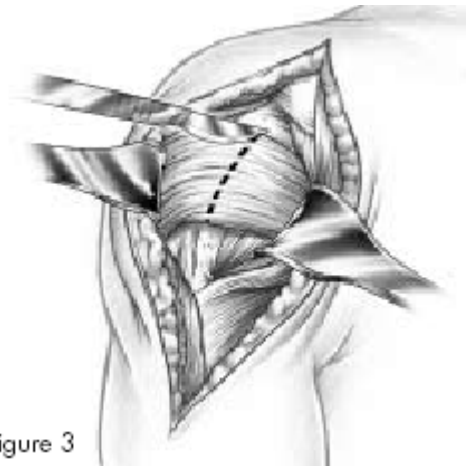

Figure 3

RESECTION OF HUMERAL HEAD

Use the appropriate retractors to expose the humeral head and neck. The humeral resection guide is then either fixed to the humeral shaft with two pins or held in place by way of its handle. This is used as a guide to resect the articular portion of the humeral head at approximately 55 degrees. The osteotomy should be performed with a reciprocating saw to remove the entire articular surface of the humerus. The humeral head is resected at a 30-degree retroversion to the shaft. This is accomplished by externally rotating the humerus 30degrees at the time of resection to form a 30-degree angle with the handle on the guide. Care should be taken not to remove excessive bone, particularly inferiorly, or to injure the rotator cuff posteriorly.

REAMING AND RASPING THE HUMERUS

The humeral shaft is initially prepared utilizing a pilot hand held reamer using the T-handle for reamer. Sequential reaming can be performed, based on surgeon's preference, employing the URSA Shoulder reamers. The proximal humeral canal is shaped using humeral rasps in sequential order. Loose cancellous bone is curetted from the canal under direct vision, but care is taken during the rasping to maintain 30 to 40 degrees of retroversion of the humeral stem. Once the rasping is completed, the appropriate humeral stem size is selected according to the final rasp utilized.

HUMERAL STEM INSERTION

After the trial stem is removed from the humeral shaft, the selected humeral implant is inserted using the humeral stem insertor. The humerus is appropriately sized utilizing sequential rasps and then thoroughly cleansed with a pulsating lavage/suction unit. Dry the canal with absorbent gauze and inject doughy cement in a retrograde manner, completely filling the humeral canal. In order to achieve the desired 1 mm cement mantle necessary for correct implant fit, select a stem 2mm smaller than the rasp. Progressively introduce the implant into the canal until the desired position is attained, and remove all excess cement. In desired circumstances, humeral stem impactor-extractor can be used for insertion and extraction of humeral stem.

HUMERAL HEAD INSERTION

Once the appropriate head component has been established, the permanent component is impacted into place utilizing the humeral head impactor. Humeral head extractor can be used for extraction of humeral head component. Care should be taken to thoroughly cleanse and dry the female component of the taper prior to impaction. The shoulder is then reduced; the subscapularis and capsule are closed. Tenotomies, which had been carried out previously, are appropriately repaired. The wound is then dressed and the patient is placed in a sling and swathe postoperatively.

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