

DELTA/REVERSE TOTAL SHOULDER REPLACEMENT (TSR)



Patient to be seen within 3 weeks of discharge from the Orthopaedic Unit at Macclesfield District General Hospital

OPERATION

Purpose

People who have the type of muscle weakening and the loss of function that is consistent with end-stage cuff tear arthropathy often need their shoulder realigned. As a result the stronger muscles in other parts of the shoulder can do the work of the joint more efficiently. Also, this change in the mechanics of the shoulder and use of stronger muscles will hold the parts of the implant together more tightly than the injured shoulder could, thus making the joint more stable and less likely to experience dislocation.

Case profile

For patients, 70 years old and above, who have significant pain and little to no movement in their shoulder that have exhausted all other means of repair. They have end-stage cuff tear arthropathy in conjunction with osteoarthritis of the glenohumeral joint

Implants

Consists of 4 components – humeral stem, humeral cup spacer, glenosphere, metaglenoid

Incision

Deltopectoral incision/Superior-Lateral deltoid splitting

Approach

Incision from AC joint, running along deltopectoral groove towards deltoid insertion (approx 16cm)
Deltopectoral groove exposed. Cephalic vein retracted laterally and opened along groove (internervous plane).

Anterior part of the joint capsule exposed by laterally reflecting the anterior part of the deltoid muscle and dividing the conjoined tendon with stay sutures. Pectoralis Major insertion distally exposed and partially divided using stay sutures.

External rotation of humerus commenced whilst dividing subscapularis, until humeral articular surface becomes visible.

Alternative approach – supero-lateral approach

Procedure

Humeral head resection performed using cutting guide for orientation.

Proximal humerus reamed to appropriate size for planned implant.

Glenoid exposed via inferior retraction of humerus.

Glenoid prepared using sized circular reamer. Metaglène inserted.

Trial humeral implant, spacer and glenosphere inserted. Stability and ROM tested.

Closure: Drain inserted, muscular layers securely repaired and skin closed using clips/sutures.

Main possible complications

Neurovascular.

Humeral shaft or glenoid fracture.

Dissociation of implant components.

THERAPIST

In patient

- Patient instructed to wear polysling constantly for 2 weeks (dependent on post-operative instructions) – only to be removed for exercises and washing and dressing.
- Exercise programme begins post op:
 - i. Elbow wrist and hand exercises
 - ii. Pendular shoulder exercises
- Instruct re. fitting of sling

2 weeks

- Commence wean from polysling
- Passive range of motion exercises by therapist
- Commence active assisted exercises
- Submaximal isometric rotator cuff exercises*
- Proprioceptive re-education.
- Scapula stabilising exercises.
- Functional rehabilitation commences with Occupational Therapist – encourage midline ADLs

6 weeks

- Strengthening of deltoid throughout the active ROM.
- Emphasise correct movement pattern in activities of daily living.

12 weeks

- Progress active exercises through the full range of motion.
- Progress scapular stabiliser programme.

- Ensure scapula dynamic control through full ROM.

MILESTONES	
Week 3	50% of Pre-operative level of active ROM maintained
Week 6	Passive ROM at least the pre-operative level
Week 12	Active ROM at least the pre-operative level

* Isometric contraction <30% maximum voluntary contraction.

Functional Activities

Driving	After 6 weeks
Swimming	Breaststroke 6 weeks Freestyle 3 months
Golf	3 months
Lifting	Light lifting (cup of tea) 3 weeks Heavy lifting 6 months
Return to work	Sedentary 6 weeks Manual – guided by surgeon

Improvement continues for 18 months to 2 years and patients should continue exercising until their maximum potential has been reached