

Reverse Shoulder Replacement (rTSR) Elective Protocol

Procedure Summary

Called a “reverse” because unlike in the normal shoulder (glenoid=socket, humeral head=ball), the humeral side is replaced using a stem with a socket and the glenoid is replaced with a hemisphere, i.e. the positions of the ball and socket are switched. The underlying biomechanics are relatively complex, but essentially the design allows a stable fulcrum for rotation and the deltoid takes over the function of the rotator cuff. (Implants: the glenoid component is usually fixed using screws and the humeral stem can be cemented or uncemented)

It is used in cases of arthritis combined with massive cuff tears where the patient has lost the ability to elevate the arm, also in selected cases of massive cuff tear without arthritis and for revision cases – i.e. cases where until recently there was no good surgical solution.

The reverse has a higher complication rate and is more difficult to perform than standard arthroplasty, also it is relatively new so there are few reports of long term results, so usually done in patients 65- 70 years of age. The most frequent complications are infection or instability of the prosthesis, both of which are very difficult to resolve with a good result.

Techniques:

Deltopectoral approach: subscap tendon is detached and repaired at end of the op so *avoid stressing, stretching or strengthening subscapularis for 6/52.*

Antero-superior approach: anterior deltoid is detached from acromion and repaired at end so *avoid active flexion for 6 weeks to protect deltoid repair*

Notes: Rehab is geared towards avoiding early dislocation of the prosthesis (cf. hip precautions) and protecting the repair of subscap or deltoid, according to the approach used, and subsequently deltoid strengthening.

AIM 1 year to achieve good ROM- as a general guide patients are expected to achieve 120° flexion and 10 to 20° external rotation and hand to L2 level.

Patients can be discharged once returned to independent living with ADL's and function as required dependant on the patient.

Day 1- 6 weeks:

- Importance of pain control.
- Ice pack use + +
- Sling use.
- Sleeping position (e.g remove sling and use body strap for support).
- Washing and dressing.
- AROM of unaffected joints eg fingers, wrist and elbow.
- Postural advice and scapular setting.
Encourage below shoulder level ADL's (e.g. brushing teeth, eating).

Patients discharged at Day 2 if they can do HEP, use sling and pain is well controlled.

Exercises taught on ward

Pendulum
Passive shoulder flexion to 90°/ pulley to 90° for 6/52.
Passive shoulder ER to neutral for 6/52.
Hand, wrist and elbow ROM.

Follow-up Physiotherapy

2/52 post op.

Follow Phase 1a and b whilst:

- avoiding IR/HBB for 6/52.
- limiting ER to neutral for 6/ 52.

Phase 1 Aim: to increase joint ROM passive to active

Range of movement progressing gradually through the following

1a Passive ROM (controlled by the patient)

1b Active assisted ROM

- NOTE** - encourage SCAPTION rather than pure abduction.
- progress using short to long lever principles.

6 weeks to 2 months:

- Follow Phase **1c**- AROM. Start anterior deltoid strengthening program as soon as 90° AA flexion achieved.
- Progress ER to 30° for 3/12.
- Add isometric strengthening in flexion and ER.
- At 2/12 start gentle passive IR/ HBB- must be patient controlled.
- Avoid abduction combined with IR or ER for 2/12.

3 months onwards:

Start isometric strengthening of IR and follow **Phase 2**.

Phase 2 Aim: Stretching at end of range and strengthening

2a Stretches at end of range

- encourage stretches to be done by the patient using a broom handle etc rather than by physiotherapist
- attention to posterior capsule stretch (within relevant restrictions).

2b Strengthening against resistance only once patient is achieving functional AROM and no pain to resisted muscle testing.

- include strengthening of rotator cuff, UFT, LFT, serratus anterior, biceps, triceps, deltoid as per assessment.

4 months onwards:

(If required)

Phase 3 Aim: full active rehab/ higher level function

Start sport specific rehab.

Patients can return back to competitive sports when achieving full AROM and normal strength.

General guidelines

Consultant post op follow up

All patients are normally followed up in clinic with consultant at 2-6/52 post op

Driving

Usually possible post op at 2/12+.

This is dependant on patient function and safety and specific post op instructions.