Total Elbow Replacement
Lothian Physiotherapy Orthopaedic Guidelines

Introduction

Surgery: Discovery elbow replacement. (a semi-constrained prosthesis)

Triceps sparing procedures are the normal practice unless otherwise specified. During the procedure the common wrist flexor and extensor tendons are detached, then re-attached at the end of the procedure.

Indications for surgery**:**
Disabling pain, stiffness or Instability as a result of:

- Advanced rheumatoid arthritis.
- Complex inta-articular fractures of the distal humerus in elderly low demand patients.
- Mal-union or non-union of the distal humerus
- Gross instability
- Periarticular tumors
- Post -traumatic arthritis

Expected Length of Stay: 2-3 days
Surgeons: Mr Reid, Prof Howie, Prof Breusch, Mr Brown and Mr Duckworth

Scope of practice

These guidelines are designed to guide physiotherapists when treating patients following this surgical procedure. These guidelines were produced by following systematic review of the current evidence based literature and medical and peer consultation. They were correct at the time of writing. The guidelines should be used in conjunction with the clinical reasoning skills of the physiotherapist considering case specific instructions from the orthopaedic surgeon involved. Patients should always be treated on a case-by-case basis with surgeon liaison in the initial phase.

Aim

The aim of these guidelines is to provide physiotherapy staff with a series of recommendations from the current evidence base to assist them in the management of patients who have undergone this surgical procedure.

Literature review question

What is the appropriate post-operative management following Total Elbow Replacement from day of surgery through the phases of physiotherapy rehabilitation to maximise patient outcomes?

Search Process

Appraisal process: a systematic computer-assisted search of the databases below was completed between 2015 and 2020, as previous guidelines were searched up until 2015.

The titles and abstracts of all identified studies were assessed to determine whether they were pertinent to the research question. Relevant articles were crosschecked to avoid duplication. Any duplicates were discarded.

Databases used:

Databases	Dates	Limitation
Medline	2015 - current	English
Embase	2015 - current	English
Cinahl	2015 - current	English
Cochrane	2015 - current	English
AMED	2015 - current	English
Google	2015 - current	English

Keywords used: in various combinations

	AND/OR
Total elbow arthroplasty	Physical therapy
Total elbow replacement	Rehabilitation
TER	Exercises
Elbow joint replacement	Stretch
Elbow prosthesis	Physiotherapy
	Physical therapist
	Physiotherapist
	Physio
	PT
	Bracing
	Mobilisation
	Mobilization

Results:
There continues to be a lack of in-depth evidence for rehabilitation post Total Elbow Replacement since the guidelines were previously reviewed. Most are based on expert opinion and anecdotal evidence. A limitation in the literature search was the insufficient reporting of the rehabilitation protocols.

Information was extrapolated from the literature evaluation and consensus sought from expert consultation with orthopaedic surgeons.

These guidelines have been expanded from the previous guidelines covering the literature between 2013 to 2015. The previous literature search was used as a point of reference.

Key Points to note
- There is no specific research addressing post-operative physiotherapy management following total elbow replacement.
- The recommendations and long-term precautions are based solely on expert opinion, primarily of the orthopaedic surgeons who carry out the procedure.
- Early functional use is encouraged from Day 2 post-op
- No attempt should be made to passively force any range of movement,
- All patients should be educated in lifetime precautions following this procedure.

Recommendations

It is important to note that these recommendations are for guidance only and do not reflect the specific requirements that individual patients may need. Guidance from the surgical team should always be sought, as the requirements may vary significantly with different individual circumstances. Alterations in these guidelines should be made accordingly.

Immediate post-op to initial outpatient Physiotherapy appointment

Goals	Recommendations	
Protective Immobilisation	Controlled mobilisation guided by surgeon.	C
Facilitate wound healing	Reduce bulky dressings 2-3 days post-op	C
Control Oedema	Soft tissue mobilisation, Ice and Elevation	C
Reduce inflammation	Ice	C
Maintain proximal/distal joint elbow	Active shoulder girdle, forearm, wrist and hand ROM exercises.	C
Initiate controlled ROM at elbow	Controlled active elbow ROM towards full ROM or as instructed by surgeon. If triceps has been detached then do gravity assisted extension from Day 2 Commence light function from Day 2 e.g. feeding.	C

Phase 2

5 days to 4 weeks

Precautions:

Avoid all forceful passive movements;
Avoid pushing up from chair
Avoid weight bearing through elbow joint
Avoid lifting anything weighing more than 0.5kg
Avoid varus/valgus stress to the elbow

Also, if triceps has been detached at surgery:

Do not push flexion beyond 90.
Avoid resisted/ loaded triceps exercises

Goals	Recommendations	
Increase active and passive elbow ROM	Progressing ROM exercises towards full range. 3/52 post-op, triceps can tolerate active assisted exercises if it has been reattached. Otherwise no restriction on active movement. Progress exercises from gravity assisted planes. Incorporate scapular re-training exercises.	C
Minimise scar adhesions	Soft tissue mobilisation	C
Encourage functional use	Encourage use during activities of daily living. E.g. light housework such as washing dishes.	C

Phase 3

4 weeks to discharge.

Goals	**Recommendations**	
Maximise active and passive elbow ROM.	Progress ROM exercises. Continue scar and soft tissue management as required. Splinting if indicated.	C
Maximise functional strength to encourage independence.	Incorporate resistant band exercises from 6/52 post op if appropriate. If triceps involved take further precaution. Avoid pushing up from chair for 6 weeks.	C
Educate regarding lifetime precautions, contraindications and risk of potential complications.	Avoid: Lifting items over 10Kg. Weight bearing on extended elbow. Weight bearing through elbow joint. Varus/valgus stress to elbow. Impact force to elbow.	C

Expectations: The aim of surgery is to provide the patient with a mobile, functioning elbow that is stable and free from pain. It is unlikely that the patient will be able to completely straighten their elbow following elbow replacement surgery.

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