Weak and smooth elbow guidelines

A weak but smooth guideline will cover joints where the articulating surfaces have been replaced (smooth) but the surrounding musculature is weak.

In elbow surgery this will generally include patients who have had total elbow replacements (TER), resurfacing or debridement (OK procedure) removal of osteophytes.

Indications for TER:

- Arthritis - rheumatoid arthritis, osteoarthritis and post-traumatic arthritis
- Complex elbow fractures/trauma where the fracture cannot be fixed due to excessive comminution or because the quality of the bone is not suitable for fixation (more common in the elderly)
- Instability resulting from severe damage to the soft tissues in the elbow
- Malignancy in or around the elbow
- Poor results from previous elbow surgery
- Major cysts in the distal humerus or proximal ulna

Types of implant:

- **Semi-constrained** - linked prostheses; Discovery, Coonrad-Morrey and Gschwend implants have a “loose or sloppy-hinge” mechanical linkage. These are linked implants but only semi-constrained to potentially reduce the forces transmitted to the prosthetic interface
- Severe ligamentous laxity
- More than 2cm of distal humeral bone loss (may require a customised CADCAM designed prosthesis)

- **Un-constrained** - unlinked prostheses such as Kudo and Souter-Strathclyde. This is a hinge design that can transfer stress directly to the prosthetic interface

Outerbridge and Kashiwagi (OK) procedure

This involves debridement, removal of bone spurs or loose bodies that can cause locking or stiffness.

Patients who have had this procedure follow an accelerated postoperative phase where a CPM machine will be used for the first 24 hours to ensure early joint mobilisation and maintenance of operative ROM.
Guidelines

Initial post-operative Management (Day 1 – Day 3):

- Active hand and wrist and active assisted shoulder exercises to prevent stiffness
- Elevate the arm on 2 x pillows to reduce swelling

Post-operative management (day 3 < 6 weeks):

- A sling will be used to support the arm when the patient is mobilising
- Commence active assisted/active flexion as pain allows
- Commence passive extension progressing to gravity assisted in pain free range of movement (do not push extension at this stage)
- Gentle pronation and supination exercises

* If a patient is required to wear a splint then generally their rehab will be slower than someone who is not.*

Splints:

- Your patient may be required to use a resting extension splint. This will be made specifically for the patient by the plaster room before discharge and will be a light weight, removable, fibreglass cast
- It should be worn at night to preserve extension but should only be used during the day based on the surgeon’s post-operative rehabilitation plan. This is often influenced by the quality of the patient’s soft tissues (check operation notes to see if this is relevant to your patient)
- A sling may be used to support the cast when the patient is mobilising
- Ice can be applied to the cast to decrease swelling if needed
- Continue to monitor splint removing to check skin integrity and assess for pressure areas

At 6-12 weeks:

- Begin active extension progressing to tricep extensions against gravity in supine when able (no weights yet)
- Progress pronation and supination exercises through flexion/extension
- Return to functional activities, light use and work as able
- Patients must avoid varus/valgus strain
At 12 weeks:

- Start joint mobilisations if needed to increase elbow range (e.g. olecranon mobs)
- Can begin resistance work (theraband and weight ex’s)
- Start weight bearing activities through the arm
- Able to start lifting and carrying but beware of loads over 2.5kg

Outcomes

Primarily a TER is performed primarily for pain relief and some return of function. It is not going to improve on what was taken out and the life span off the implant averages 10-15 years. Lifting load restrictions will also apply long term to prolong the life of the prosthesis.

<table>
<thead>
<tr>
<th></th>
<th>Pre-surgery ROM</th>
<th>31 month follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexion</td>
<td>124 degrees</td>
<td>141 degrees</td>
</tr>
<tr>
<td>Extension</td>
<td>34 degrees</td>
<td>36 degrees</td>
</tr>
<tr>
<td>Pronation</td>
<td>65 degrees</td>
<td>77 degrees</td>
</tr>
<tr>
<td>Supination</td>
<td>44 degrees</td>
<td>61 degrees</td>
</tr>
</tbody>
</table>

(Maloney et al, 1989)

Return to activity guidelines (only after clinical review)

Driving: 6-8 weeks
Swimming: 12 weeks
Golf: 12 weeks
Work: Light desk top activities - 6 weeks
Manual duties: 12 weeks

Complications:

- Infection
- Wound dehiscence
- Dislocation
- Fracture of the bones around the elbow
- Nerve injury
- Implant loosening
- Stiffness

Please note that the information presented above is for guidance only and is specific to patients undergoing surgery at the RNOH. Each patient’s recovery time will be affected by their own health and fitness levels and will vary according to the surgery performed. We
cannot be held liable for the outcome of you undertaking any of the exercises/advice shown here independently of direct supervision from the RNOH.

Contact details

If you have any concerns:

Physiotherapy team: 020 8909 5820
Occupational therapy team: 020 8909 5310
Consultant team secretaries: 020 8909 5456/5727

References:


