Lower limb nerve Neurolysis and Exploration

This surgery involves exploration of a nerve and removal of any adhesions or scar tissue which were causing compression and reducing nerve function. The aim of surgery is to explore the extent of damage to the nerve and allow improved neural function, reduce pain and restore the innervation to the affected muscles and/or sensory areas.

Please note: Intra-operative nerve studies are undertaken and will provide information as to the prognosis following surgery. The results and findings from the operation should inform the rehabilitation that the patient receives and the prognosis given to the patient. Details can be requested from the Consultant’s secretary (contact details below). Nerves recover function slowly and it may take many months to see a flicker of activity within the target muscle(s). In addition, in a degenerative lesion muscles will become progressively re-innervated as the nerve grows; therefore a sound knowledge of neural anatomy is required (see recommended reading overleaf).

A definitive timescale of recovery is not always possible to predict exactly. This protocol therefore follows a phased format; whereby a patient is to be progressed to the next level once they reach the relevant milestone. Common complications and their suggested management strategies are outlined below.

<table>
<thead>
<tr>
<th>Possible complications:</th>
<th>Symptoms:</th>
<th>Action:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection</td>
<td>Pain, fever, redness, wound oozing, rash, itching, general feeling of malaise.</td>
<td>Contact RNOH CNS, surgical team +/- GP.</td>
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<tr>
<td>Seroma</td>
<td>Palpable and visible pain free lump or swelling, close to surgical site.</td>
<td>Contact RNOH CNS, surgical team +/- GP.</td>
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<tr>
<td>Neuropathic pain</td>
<td>Pain felt in the lower limb; cramping, burning, stinging or shooting in nature.</td>
<td>Ensure regular analgesia is being taken (Paracetamol) to distinguish between post operative pain. Contact RNOH CNS, surgical team +/- GP.</td>
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<tr>
<td>Numbness in the lower limb</td>
<td>Tingling or lack of feeling in the lower limb which is not painful.</td>
<td>Discuss with RNOH surgical team +/- therapy team at next routine appointment</td>
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<tr>
<td>Failure to progress through phases</td>
<td>Lack of palpable or visible muscle contraction at 6 months post op. Failure to increase strength despite appropriate and tailored strengthening programme. Poor motivation to continue with rehabilitation.</td>
<td>Discuss with RNOH surgical team +/- therapy team at next routine appointment. Ensure that patient has an understanding of the slow nature of recovery in order to keep their motivation to rehabilitate.</td>
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<tr>
<td>Co-contraction</td>
<td>Activation of both agonist and antagonist muscle groups reducing effective movement through range. Abnormal movement patterning.</td>
<td>Discuss with RNOH surgical team +/- therapy team at next routine appointment.</td>
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<tr>
<td>Scar adhesions/tethering</td>
<td>Tight cord or band of scar tissue. Overgrowth of scar beyond normal boundaries. Skin adhered to deeper layers of tissue noticeable of palpation of scar site.</td>
<td>Reinforce scar massage and ensure good technique. Consider other treatment modalities such as silicone gels. Discuss with RNOH therapy team if needed.</td>
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Telephone numbers:
**Therapy Team (Physio and OT):** 0208 909 5820  
**Clinical Nurse Specialist:** 0208 909 5608  
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**Secretaries:**  
Mr Fox: 0208 909 5331  
Mr Quick: 0208 909 5447  
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This is a guideline of rehabilitation; any limitations and restrictions recorded in the patients’ operation note should take precedence. These guidelines should be used in conjunction with your assessment of the patient. Your treatment should be clinically reasoned and adapted to the individual patient’s needs. Time frames are approximate; progress as clinically indicated, only moving onto the next phase once the patient can comfortably achieve phase appropriate exercises and tasks, unless the operation note specifies otherwise. The exercises offer ideas rather than being a prescription.

<table>
<thead>
<tr>
<th>Phase 1: PROTECTION</th>
<th>Phase 2: MUSCLE ACTIVATION</th>
<th>Phase 3: PROGRESS LOADING and NORMAL MOVEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Milestone:</em> 0 - 2 weeks</td>
<td><em>Milestone:</em> 2 weeks onwards</td>
<td><em>Milestone:</em> Grade 3 muscle activation</td>
</tr>
</tbody>
</table>

**Advice**
- Crutches NWB/PWB 2/52 – as outlined in operation notes.
- Strip wash – wound to remain dry.
- Neuropathic pain relief as appropriate.

**Exercises (SHOULD NOT EXACERBATE PAIN)**
- Immobilise joints as outlined in the operation notes.
- Maintain AROM and PROM of joints as specified in the operation notes.

**Advice**
- Gait re-education and wean walking aid(s) – as comfort/symptoms allow.
- May need lower limb orthosis – provide or refer to appropriate team.
- Scar management can begin as appropriate after wound check.
- Sensory re-education programme as appropriate.
- Pace activities throughout day.
- Encourage good posture with an emphasis on normal movement.
- May return to work.
- The individual may return to driving when they decide that they are safe to do so. May need DSA assessment.

**Exercises (SHOULD NOT EXACERBATE PAIN)**
- Phased ROM, strengthening and proprioception programme depending on MRC grade of muscle activation.
- Passive stretches for joints that are at risk of getting stiff.
- Once MRC Grade 1 muscle activation seen in a muscle group consider electrical stimulation +/- biofeedback to assist muscle activation.
- Consider active assisted and gravity neutral positions at first signs of re-innervation.
- Progress gym activities as appropriate e.g. cross trainer and exercise bike.
- Consider water based exercises.

**Exercises**
- Encourage good posture and gait with emphasis on normal movement.
- Ensure that patient specific goals are set and treatments are holistic.
- Continued education regarding timescales of recovery and importance of continuing with rehabilitation programme.
- Continued sensory re-education as appropriate.

**Exercises**
- Continue to focus on active functional movements, balance and proprioception.
- Begin light resistance exercises as appropriate (related to the patient’s level of muscle activation within specific muscle groups).
- Retrain muscle patterning if required.

Therapists who are not experienced in treating patients who have undergone nerve surgery may find the following references useful:
- www.rnoh.nhs.uk/services/rehabilitation-guidelines