Guideline for Therapy Intervention for Median Nerve Repair and Neuropraxia

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

This guideline covers the care and rehabilitation of patients following neuropraxia of the median nerve and post-operative rehabilitation following repair of the distal median nerve and attending therapy departments in Worcestershire and Herefordshire.

This guideline is for use by the following staff groups :

Therapists who have undertaken a period of supervised practice in this field within the previous 2 years.

Supervising/senior therapists to work towards British Association of Hand Therapists (BAHT accredited training at Level II in Elective, Trauma and Hand Therapy).

Lead Clinician(s)

An Van Hyfte	Clinical specialist OT
Guideline reviewed and approved by Hand Therapy Clinical Governance Meeting on:	23rd May 2019
This is the most current document and is to be used until a revised version is available:	23RD May 2021

Key amendments to this guideline

Date	Amendment	By:
Feb 2010	Guideline approved by Hand Therapy Clinical Governance Committee	
14.12.2011	Amendments made to the documents Lay-out	An Van Hyfte
13.02.2014	Guideline reviewed with no amendments made to content	Hand Therapy Clinical Governance meeting
07.04.2016	Document extended for 12 months as per TMC paper approved on 22nd July 2015	TMC
25.02.2016	Document approved with no changes	
03.07.17	Document amended to highlight treatment for a neuropraxia and for post-surgery intervention	Hand therapy clinical governance
05.12.2017	Sentence added in at the request of the Coroner	
May 19	Documents reviewed. Minor amendments to specify conservative and post-operative management and to make lay-out more uniform with other guidelines.	An Van Hyfte

Guideline for Therapy Intervention for Median Nerve Lesions and Neurapraxia

Introduction

This guideline covers the post operative care and rehabilitation of patients that had a repair of the distal median nerve and attending therapy departments in Worcestershire and Herefordshire.

It also covers the care of any patients who experience neurapraxia of the median nerve. The median nerve is vulnerable at the wrist level and is often damaged in association with flexor tendons. When associated with flexor tendon repairs, the guideline for flexor tendon repairs should be followed.

Competencies required

- Therapists who have undertaken a period of supervised practice in this field within the previous 2 years.
- Supervising/senior therapists to work towards British Association of Hand Therapists (BAHT accredited training at Level II in Elective, Trauma and Hand Therapy).

Patients covered

- Patients with damage to the median nerve that will be managed conservatively.
- The acute stage of this guideline covers patients with a median nerve lesion not associated with flexor tendon repair.
- Any patient able to comply with the therapy regime following a repair to the median nerve.

Details of Guideline:

i) For patients with a neuropraxia:

Carry out a functional and sensory assessment of the hand. The following deficits can be expected:

- Inability to oppose or palmar abduct the thumb
- Loss of thumb flexion at IP joint
- Weakened pinch/ grip
- Clawing of index
- FDP function will be compromised if the lesion is at elbow level.
- *Sensory loss:* thenar eminence, volar thumb, index, middle and lateral half of ring finger and the dorsal tips of these digits.

Refer to week 6 onwards in this document for splinting suggestions and treatment considerations.

ii) Post-surgery intervention:

Time	Intervention
Acute stage **(week1-3)**	**Splinting:** Immobilisation of the wrist in neutral for 3 weeks. If the repair is tight, the wrist may need to be immobilised in 10º-20º flexion. This should be discussed with the referring consultant. The patient can be immobilised in the surgical backslab but if required this can be replaced by a forearm based wrist dorsal blocking splint with the wrist in neutral position and digits free. Immobilisation is required for 3 weeks unless the consultant states otherwise. **Exercises:** Active assisted flexion /active extension of digits, wrist immobilised. Make sure that the repaired nerve is not put in end position. **Oedema management:** Patient is advised to position the forearm in elevation when sitting/sleeping using pillows. **Advice:** Patient is advised not to use the affected hand for any activity i.e. work/ driving/lifting/housework Patient is advised to maintain range of movement on elbow/shoulder regularly.
Week 3-6	**Splinting:** Continue splinting at night time and in 'at risk situations' **Exercises:** Active ROM of wrist can be introduced. Release tension on the nerve during active wrist extension by digit flexion. Make sure that the neuro-tissue is not put in end position. Introduce nerve gliding exercises, avoid tension on the median nerve. **Scar management** To commence once the wound is closed (with no signs of infection). Scar massage is introduced using a non perfumed moisturiser (E45 or aqueous cream)Patients are taught to use circular motions along the scar working distal to proximal to help the reduction of oedema.
Week 6-8	Carry out a functional and sensory assessment of the hand. Deficits that can be expected: refer to 'patients with neurapraxia' above. **Splinting suggestions:** • functional thumb spica splint that positions thumb in opposition and palmar abduction • c-bar splint for night time in order to prevent contractures of the first webspace • an anti-claw splint can be added to the day/and or night to prevent clawing of index and middle

	Exercises: Gentle passive ROM of wrist and digits can be introduced. (If flexor tendons are associated passive extension should be delayed until 12 weeks post surgery!)
Considerations	**Desensitisation/ sensory re-education** Begin with localisation of moving touch using light and deep pressures over the involved area. When moving touch is perceived upgrade to recognizing of shapes (starting with large objects and moving on to smaller objects) and discriminative sensation of different textures. **Advice** Reinforce importance of protection of digits from harm by sharp or hot objects

Monitoring Tool

STANDARDS	%	Clinical Exceptions
All patients who have had a median nerve lesion/ neurapraxia	100	Patients who are unable to safely follow the regime instructions e.g. those with cognitive impairment. Their treatment will be discussed on an individual basis with their consultant.

How will monitoring be carried out?	Continuous
When will monitoring be carried out?	As treatment occurs
Who will monitor compliance with the guideline?	Clinical Specialist physio/ OT in Rheumatology/Hand trauma

References

- **Occupational Therapy splinting and hand therapy procedure**. WAHNHST (2000); Elliott J.
- **Occupational Therapy Risk Assessment COSSH**; WAHNHST (1999). Elliott J.
- Selly Oak Hospital Birmingham: Hand Protocols
- Queen Victoria Hospital NHS Trust, Hand Therapy Protocols
- Derby Royal Infirmary, Hand Therapy guidelines
- Frenchay Hand Centre, Bristol, Hand Therapy Guidelines
- Hereford NHS Trust, Hand Therapy Guidelines.
- Brigham and Women's hospital, hand therapy guidelines.

- **Hand Therapy Protocols Alexandra Hospital/Worcester Royal Hospitals;** WAHNHST (2002) Worcestershire Hand Therapies Group

- **Hand Therapy Principles and Practice** Butterworth Heinemann – Salter M, Cheshire L Chapter 12 Splinting the Hand (2000)

- **Rehabilitation of the Hand: Surgery and Therapy Forth Edition** Mosby (1995) Hunter James, MD; Mackin Evelyn, PT; and Callahan Anne, MS-OTR/LCHT

Contribution List

Key individuals involved in developing the document

Name	Designation
An Van Hyfte	Clinical specialist OT
Collette James	Senior OT
Mandy Rawlings	Senior physio
Suzette Botha	OT Hereford NHS Trust
Alison Hinton	Clinical specialist OT

Circulated to the following individuals for comments

Name	Designation
Mr P.J Ratcliffe	Orthopaedic Consultant, WRH
Mr Mahon	Orthopaedic Consultant Alex
Mr Liu	Orthopaedic Consultant Alex
Mr. Arafa	Orthopaedic Consultant, Alex
Mr Pereira	Orthopaedic Consultant, Alex
Mr C Bell	Orthopaedic Consultant, Alex
Mr Knebel	Orthopaedic Consultant, Alex
Mr D Selvy	Orthopaedic Consultant, Alex
Mr Sforza	Orthopaedic Consultant, Alex
Mr A Reading	Orthopaedic Consultant, Alex
Mr Luscombe	Orthopaedic Consultant, Alex
Ms R Johnson	A&E Consultant
Physiotherapy Departments (outpatients)	WRH, Alex, Kidderminster
OT Departments (outpatients)	WRH, Alex, Kidderminster

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy/guidance affect one group less or more favourably than another on the basis of:**		
	• Age	no	
	• Disability	no	
	• Gender reassignment	no	
	• Marriage and civil partnership	no	
	• Pregnancy and maternity	no	
	• Race	no	
	• Religion or belief	no	
	• Sex	no	
	• Sexual orientation	no	
2.	**Is there any evidence that some groups are affected differently?**	no	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	n/a	
4.	**Is the impact of the policy/guidance likely to be negative?**	no	
5.	**If so can the impact be avoided?**	n/a	
6.	**What alternatives are there to achieving the policy/guidance without the impact?**	n/a	
7.	**Can we reduce the impact by taking different action?**	n/a	

If you have identified a potential discriminatory impact of this key document, please refer it to Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Human Resources.

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	no
2.	Does the implementation of this document require additional revenue	no
3.	Does the implementation of this document require additional manpower	no
4.	Does the implementation of this document release any manpower costs through a change in practice	no
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	no
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval