

Briefing Note for EAG

August 2022

Nerve Palsy

Updated Definition and Modeling

Purpose:

This briefing note reviews the existing and proposes a new definition for the concept of 784289008 |Nerve palsy (disorder)| and its impact on its subtypes.

Background:

This issue arose from current work on the QI project on paralysis and its interpretation and appropriateness as a synonym to 784289008 |Nerve palsy (disorder)|. This concept was authored in 2019 and is based upon a set of definitions derived from a review of medical definitions:

- **Paralysis:** A general term most used to describe the severe or complete loss of muscle function due to motor system disease or loss of sensory function; loss of the ability to move.
- **Paresis:** Slight or partial paralysis.
- **Palsy:** Synonymous with paralysis, a severe loss of muscle function marked by uncontrollable tremor of the body or a part.

As is often the case, there is a difference between dictionary definitions and how the term is used in the clinical literature and day-to-day clinical practice.

Short Review of Current Literature:

The following papers represent a small selection of nerve palsies with descriptions of their clinical manifestations:

- Median nerve palsy - <https://www.ncbi.nlm.nih.gov/books/NBK557890/>
- Peroneal nerve palsy - <https://www.ncbi.nlm.nih.gov/books/NBK549859/>
- Sixth cranial nerve palsy - <https://www.uptodate.com/contents/sixth-cranial-nerve-abducens-nerve-palsy>

Each paper describes a continuum of both sensory and motor deficits according to the muscles and dermatomes innervated by the nerve affected. Additionally, some authors seem to use palsy, neuropathy/mononeuropathy interchangeably.

A detailed description of mononeuropathy can be found in a clinical overview on ClinicalKey:

“Disorders of single peripheral nerves, mononeuropathies, are characterized by flaccid paresis, deep tendon reflex loss (areflexia), and reduced sensation, particularly for pain (hypalgesia [Greek hypo, under + algos, pain] or analgesia [Greek, insensitivity to pain]). Paradoxically, mononeuropathies and other peripheral nerve injuries sometimes lead to spontaneously occurring sensations, paresthesias (Greek para, near + aisthesis, sensation), which may be painful, dysesthesias. Peripheral nerve injuries also convert stimuli that ordinarily do not cause pain, such as a light touch or cool air, into painful sensations, allodynia; exaggerate painful responses to mildly noxious stimuli, such as the point of a pin, hyperalgesia; or delay but then exaggerate and prolong pain from noxious stimuli, hyperpathia.”

https://www.clinicalkey.com#!/content/derived_clinical_overview/76-s2.0-B9780323755702011334

The question that needs to be asked is; what, if anything, differentiates a “mononeuropathy” from a “palsy” or are they synonymous?

(For the purposes of clarification, there is no suggestion that a nerve palsy is related to Cerebral Palsy which is characterized, amongst other things, by abnormalities of motor activity, tone, and posture and results from developmental abnormalities of the fetal or infant brain development.)

From research the options are:

1. A “palsy” must include a motor deficit with or without a sensory deficit whereas a “mononeuropathy” can be sensory, motor, or mixed deficits.
2. A “palsy” can be sensory, motor, or mixed and therefore is synonymous with “mononeuropathy”.

Proposed Update to the Definition of “Palsy”:

Based on these findings it is proposed that our working definition of “palsy” should be updated depending on the answer to the question above:

1. **Mononeuropathy ≠ Palsy** “Damage to an individual nerve or nerve plexus resulting in a variable deficit of motor function, with or without a sensory function deficit, of muscles and dermatomes relative to the site and extent of damage to the affected nerve.”
2. **Mononeuropathy = Palsy:** “Damage to an individual nerve or nerve plexus resulting in variable deficits of motor or sensory functions, or both, of muscles and dermatomes relative to the site and extent of damage to the affected nerve.”

Proposed changes to 784289008 |Nerve palsy (disorder)|:

Taking each definition in turn:

Mononeuropathy = Palsy:

1. Inactivate 784289008 |Nerve palsy (disorder) as a duplicate of 128189008 |Mononeuropathy (disorder)|.
2. Where appropriate add synonyms of “X Palsy” to existing mononeuropathy concepts.
3. Where necessary reassign the subtypes of 784289008 |Nerve palsy (disorder)| to their appropriate mononeuropathy grouper e.g. subtypes of:
 - a. 609592007 |Mononeuropathy of lower limb (disorder)|
 - b. 609591000 |Mononeuropathy of upper limb (disorder)|
 - c. 73013002 |Cranial nerve disorder (disorder)|
4. Resolve duplicates should they arise.
5. The definition of these concepts includes variable motor and sensory deficits, therefore, consider adding, where the FSN is specific, role groups to model these e.g.:

For a motor deficit:

363714003 | Interprets (attribute) | = 52479005 | Motor function (observable entity) |
 363713009 | Has interpretation (attribute) | = 260379002 | Impaired (qualifier value) |

For a sensory deficit:

363714003 | Interprets (attribute) | = 106148006 | Sensory function (observable entity) |
 363713009 | Has interpretation (attribute) | = 260379002 | Impaired (qualifier value) |

Mononeuropathy ≠ Palsy:

6. Retain 784289008 | Nerve palsy (disorder)

7. Add a role Group to represent the motor deficit to each member of the hierarchy:

363714003 | Interprets (attribute) | = 52479005 | Motor function (observable entity) |
 363713009 | Has interpretation (attribute) | = 260379002 | Impaired (qualifier value) |

8. Where the FSN specifies a sensory deficit add an additional Role Group:

363714003 | Interprets (attribute) | = 106148006 | Sensory function (observable entity) |
 363713009 | Has interpretation (attribute) | = 260379002 | Impaired (qualifier value) |

Action:

The EAG members are asked to review the above proposals and discuss their views at the meeting on 24th August 2022.

Approvals	Date	Name
Chief Terminologist	Aug. 17th, 2022	James T. Case
Director of Content and Mapping	Aug. 17th, 2022	Monica Harry

Paul Amos 2022-08-16