Medical Assessor Guidance Note – Number 18

Musculoskeletal system:
Assessment of The Spine
Assessment of radiculopathy following trauma to upper cervical vertebrae

Introduction

This material is issued by the Motor Accidents Authority under s.65(2) of the *Motor Accidents Compensation Act 1999* (the Act) in the interests of promoting accurate and consistent medical assessments under the Act. The interpretation provided here is not legally binding but represents the clinically recommended interpretation in an area where more than one interpretation of existing provisions may be possible. This recommended interpretation is publically available. Any medical assessment which does not adopt this interpretation should be accompanied by clinical justification for the interpretation adopted, supported by full, robust reasons.

Reference

The Motor Accidents Authority Permanent Impairment Guidelines – Guidelines for the assessment of permanent impairment of a person injured as a result of a motor vehicle accident 1 October 2007 **(MAA Guidelines):** Chapter 4 Spinal Impairment pages 21 – 29, Clauses 4.28, 4.29, 4.30 and 4.31 page 27.

The American Medical Association Guides to the Evaluation of Permanent Impairment, 4th Edition **(AMA 4 Guides):** Chapter 3, 3.3h Cervicothoracic Spine Impairment page 103 and Table 70 page 108; and Table 23 Chapter 4 page 152.

Background

The MAA Guidelines direct that radiculopathy is assessed according to Clauses 4.28 to 4.31. Clause 4.28 of the MAA Guidelines states that:

> *'Radiculopathy is the impairment caused by dysfunction of a spinal nerve root or nerve roots.* ***To conclude that a radiculopathy is present <u>two or more</u> of the following signs should be found:***
>
> ***(i)*** ***loss or asymmetry of reflexes (see the definitions of clinical findings...)***
>
> ***(ii)*** ***positive sciatic nerve root tension signs (see the definitions of clinical findings...)***
>
> ***(iii)*** ***muscle atrophy and/or decreased limb circumference (see the definitions of clinical findings...)***
>
> ***(iv)*** ***muscle weakness which is anatomically localised to an appropriate spinal nerve root distribution***
>
> ***(v)*** ***reproducible sensory loss which is anatomically localised to an appropriate spinal nerve root distribution.'***

Issue requiring clarification

The MAA Guidelines provides a definition of radiculopathy to assist in the evaluation of impairment of spinal nerve root or nerve roots. The difficulty arises in the case of injury to the upper cervical nerve roots, C2 and C3, due to the different nature of neurology at these levels of the spine. For these nerve roots there is no motor loss because the posterior spinal muscles have multiple levels of nerve root innervation. No reflex changes are present. The C1 nerve root has no dermatomal (cutaneous) distribution. Sensory loss may occur in the C2 or C3 dermatomes in the posterior cervical and occipital regions but more usually follows the anatomical distribution of the regional peripheral nerves, the greater, lesser or third occipital nerves.

Therefore the prescribed method for the assessment of radiculopathy for injury to spinal levels C2 and C3 is not applicable. However, Chapter 4 page 152 of the AMA 4 Guides provides for assessment of upper cervical spinal nerves.

Preferred interpretation

Injury to the upper cervical nerve roots is unusual and it would not be expected this methodology would be used frequently. Care should be taken to differentiate cervicogenic occipital headache from traumatic injury to the upper cervical nerve roots causing occipital neuralgia.

Where there is objective evidence of sensory loss following trauma to C2 or C3, Table 23 of the AMA 4 Guides (Chapter 4, page 152) should be used. An injury to C2 or C3 should not be classified as DRE cervicothoracic category III (radiculopathy). The assessed degree of impairment calculated from Table 23 should be combined with the DRE rating for injury to the cervical spine.

Justification for preferred interpretation

The preferred interpretation and methodology as outlined above is suggested to promote consistency of assessment.

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