Tips for performing a physical examination of the neck in whiplash-associated disorders

There is significant controversy around the diagnosis, management, and prognosis of whiplash-associated disorders (WAD). To help address some of this controversy, The Bone and Joint Decade 2000–2010 Task Force on Neck Pain and Its Associated Disorders was created in 2000. Made up of more than 50 clinicians and scientists from nine countries, the task force screened approximately 32 000 titles and reviewed over 1200 articles on neck pain. Their findings were published in a supplement to last February's issue of the journal *Spine* (Spine 2008;33[4 suppl]:S1–213). Prior to their work, the most extensive publication on neck pain was the scientific monograph by the Quebec Task Force on Whiplash-Associated Disorders in a 1995 issue of *Spine* (Spine 1995;20[8 suppl]: S1–73). While these publications may be considered the gold standard in WAD medical issues, both pointed out the lack of level-1 evidence.

I suggest we acknowledge the lack of evidence-based studies and the controversial nature of WAD, and move on. This column is about doctors interacting with doctors to improve our knowledge base and everyday practice. There are many points of view throughout the province and many years of experience in dealing with WAD. Let's work together to improve our assessment and management of WAD. I would encourage you to send me your comments on my column or information on WADs that you think would be valuable to your colleagues. I can be reached by e-mail at Laura .Jensen@ICBC.com or fax at 604 647-6148.

Unfortunately, neck pain is not an objective finding; nor can it be measured reliably.

What to look for when examining the neck

One of the most important aspects of physical examination of a patient with neck pain following a motor vehicle collision is the recognition of serious abnormalities—including cervical fracture, and/or dislocation, and/or compression of the spinal cord or nerve roots. This type of trauma is usually found in patients involved in a high-speed crash, in which the vehicle rolled or the occupants were ejected. These patients are typically taken from the scene of the crash directly to the emergency department. While serious neck abnormalities are important to note, they won't be discussed in this article; instead, I will focus on the patient who has sustained less severe trauma.

Less severe whiplash trauma is typified by the patient who visits a general practitioner one or more days after a crash. Generally, the complaint is posterior neck pain with radiation to the occiput, shoulders, or upper back; headache; and some limitation of movement of the neck. Although there can be a multiplicity of symptoms, neck pain is the common denominator. Unfortunately, it is not an objective finding; nor can it be measured reliably.

Tips for examining the neck

The physical examination begins the moment you see the patient with your observation of posture and neck activity. It is worthwhile to make a note of posture and movement while the patient is unaware, as well as during the examination itself.

While testing range of motion in lateral flexion (ear to shoulder), rotation (chin to shoulder), forward flexion, and extension, it is important to note ease of motion and subjective complaints, as well as the degree of mobility. Sometimes it is necessary to restrict shoulder elevation during testing in order to prevent the patient from lifting the shoulder to touch the chin or ear, thereby masking cervical limitations. Testing a patient's range of motion is not routinely done with a goniometer, so it is imprecise and lacking validity. However, it is still helpful for assessment and monitoring progress.

Comparing active and passive ranges of motion will provide further information and help to differentiate between muscle pain and pain from other tissues. Passive range of motion, like testing for spasm, is best done with the patient in the supine position—with head supported and neck relaxed. Palpation for tenderness and spasm should include spinous process and interspinous ligaments, as well as the paravertebral areas and occiput. Tenderness of trigger points, especially those in the second part of the trapezius muscle, may be assessed.

Table. Quebec Task Force grades of whiplash-associated disorders

STI classification			
Grade I	Grade II	Grade III	Grade IV
No physical neck/upper back sign(s)	Neck/upper back musculoskeletal signs: • Decreased ROM • Point tenderness	Neck/upper back neurological signs: • Decreased reflexes • Decreased sensation • Decreased strength	Neck/upper back fracture/ dislocation

Although much of the "chin-in" flexion/extension and rotation movements occur at the atlanto-occipital and C1-C2 joints respectively, full active motion invokes the movement of many tissues, including muscles, ligaments, and facet joints. All of these areas have the potential to be affected by trauma and it can be difficult to isolate them during physical examination and testing.

If there is any possibility of neurological compromise, then sensorimotor function and deep tendon reflexes of the upper extremities must be done.

Consideration should be given to general medical conditions including psychological/psychiatric factors. A visual analog scale for pain may be used.

How to classify WAD based on the physical examination

In the CL19, ICBC uses the classification of grades of WAD for the neck/upper back, as defined by the Quebec Task Force in 1995 (see the **Table**).

This classification system, although not perfect, is generally accepted by clinicians and may be used to aid management of WAD. Future articles will refer to this classification system with discussion on the management of WAD.

Please direct any comments or questions to me by e-mail at Laura .Jensen@ICBC.com or fax at 604 647-6148.

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The opinions expressed in this article are those of the author and do not necessarily represent the position of the Insurance Corporation of British Columbia.

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natural evolution," she says. "We responded with our ideas and have since attended three workshops with the ministry to develop the concept—it's been a very collaborative process."

Hefford says as well as offering universal benefits—for instance the capacity to work together to meet population health needs—Divisions present the opportunity to address unique community issues. "Our Division's initial priority is supporting GPs to provide hospital care, particularly for complex patients," she says. "We also need to deal with the issue of residential care and, finally, to work on ways to ensure that unattached patients in our community get access to health care."

When the White Rock/South Surrey Division is completely established, says Hefford, it is expected to include approximately 60 family physicians.

Find out more

To form a Division, family physicians must be collaboratively involved in discussing common issues that impact patient care and physician professional satisfaction, and be interested in working as partners with their health authority and the GPSC to make changes at the practice and health system evels.

For more information, visit the GPSC section at www.bcma.org/gpsc-Divisions-family-practice or contact Brian Evoy at 604 638-2880 (direct) or 800 665-2262 (toll free) and at bevoy@bcma.bc.ca.

—Dan MacCarthy, MD
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