Letters to the Editor

Canadian C-spine rules require validation and appropriate application

I recently attended the multidisciplinary symposium on the cervical spine, held in conjunction with the Musculoskeletal Physiotherapy 13th biennial conference at Darling Harbour, Sydney.

The role of cervical spine X-rays in trauma, as presented during the hypothetical case scenario on whiplash that concluded the day, warrants further discussion.

In the case scenario, a young female passenger was involved in a rear end collision, with her head being turned at the time of collision. The focus was on the management of whiplash injury and during the course of the discussion the question of cervical spine imaging arose. There was some discussion about the Canadian C-spine rules, but I do not believe these were portrayed accurately.

The Canadian C-spine rules were published in 2001 (Stiell et al.). Essentially, they state that the presence of any of a number of high risk factors (age greater than 65, dangerous mechanism of injury, or paraesthesia in extremities) mandates cervical spine radiology. If a defined set of low risk factors, that allow safe assessment of range of motion, are present, patients are asked to rotate the neck 45 degrees to the right and left. If they are unable to do this, then they also need X-rays. There are a number of exclusion criteria, including a delay of 48 hours or more from the time of injury and reassessment of the same injury.

During the hypothetical, the question arose of imaging the cervical spine several days following the injury, and after a period of apparent recovery. It would be inappropriate to apply the Canadian C-spine rules in such a setting.

In addition, the Canadian C-spine study had the objective of deriving a clinical decision rule. In the study itself there were 151 significant fractures and not all patients underwent X-ray evaluation thus making it difficult to detect missed fractures. The authors themselves conclude that ‘future studies will further evaluate the rule for accuracy and reliability, acceptability to clinicians and actual impact on patient care.’ In other words, the Canadian C-spine rules are in need of prospective evaluation.

A much larger prospective trial from the NEXUS group evaluated 34 069 patients with blunt trauma (Hoffman et al., 2000). The patients in this study were considered low risk if they had all five of the following:

1. Absence of cervical midline tenderness
2. No focal neurological signs
3. GCS of 15
4. No significant distracting pain
5. No evidence of intoxication.

Such patients did not require X-ray.

The findings of the NEXUS group have been validated prospectively in many patient groups including children and the elderly.

I do not believe the application of the Canadian C-Spine rules was portrayed accurately in the panel discussion. If evidence-based medicine is to be used, then it is imperative that the evidence is applied to the appropriate clinical circumstance. At present there is no prospective validation of the Canadian rules. In addition they should not be applied more than 48 hours after the injury.

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References


Shoulder massage study could be extended and refined. (Response to Vincenzino W, Australian Journal of Physiotherapy 49: 275.)

We thank Bill Vincenzino for his comments regarding our study and would like to address the issues that he has raised.

The first was that the control group in our study was a ‘no treatment’ control group that did not include putting these subjects’ shoulders in similar positions for a similar period of time as with the massage group. We agree that there may have been some effect of the positioning that this study design did not control for. When we initially designed the study we were interested in finding out whether massage around the shoulder would be useful in reducing pain and improving function and range of motion in subjects with shoulder pain compared to no treatment. As this has not been shown in any study before, we felt that this design would be a good first step in showing some effect of massage. The inclusion of sustained positioning similar to that of the treatment group would be a useful addition to future studies of this form of treatment.

The second issue raised was that the description of the massage technique was insufficient to allow readers to reproduce these techniques with similar patients in their practices. The aim of the study was to show that soft tissue massage generally worked in this patient group in improving the factors that patients usually report as their main concerns — namely pain, function, and range of motion. The massage treatment was not limited to a single technique. It often included longitudinal massage strokes down the length of the muscle over palpable ‘tight’ bands, but also included transverse frictions and sustained point pressure. During these techniques the patient usually reported some discomfort that usually disappeared within 5–10 minutes of the cessation of the massage. Pressure was not sustained until the pain disappeared during the treatment. Usually the patients would...
report that the discomfort produced during the treatment was less at subsequent treatments. It would be useful to conduct further studies where different forms of massage are applied to different groups looking at outcomes similar to this study to clarify the issue.

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Career structure and social structure

I read the editorial Taking charge of change: A new career structure in physiotherapy by Robertson et al (AJP 49: 229) with great interest. The essential structure they have proposed seems valuable in a society that demands best outcomes. It resonates with the new allied health clinical advancement program in Queensland Health.

However, a rural perspective raises some concerns about these career structure concepts, and also about the educational challenges raised in the editorial to foster the development of physiotherapy services in rural and remote regions.

A review of Fitzgerald, Hornsby and Hudson’s (2000) study of rural and remote allied health professionals suggests that about 8% of rural physiotherapists are under 30 years of age and are working in medium or smaller towns, which usually means that most of their practice is unsupervised. Employment in all but regional centres would, therefore, require competency in the three core areas of cardiopulmonary, neurology, and orthopaedic practice. Reduction in the clinical experience of entry level physiotherapists from three to only two of the core areas would provide a considerable barrier to the recruitment and retention of new graduates to rural positions as such physiotherapists find themselves at a considerable disadvantage trying to meet the needs of the employer and community.

Two factors will have a further impact on service development: new schools, such as at James Cook University due to commence intake in 2005, will go some way to improving the shortage of rural workforce by providing a larger cohort of new graduates to regions; but the rural public sector practitioner is increasingly likely to need skills of community facilitation to provide a rational service delivery framework that offsets the workforce shortages. Postgraduate training, which provides skills in community development and education, to support new models of service delivery will become essential over the next decade. Entering such training would be postponed by graduates who have to achieve competencies in a core area.

The requirement for new models of service delivery in some rural and nearly all remote communities in Australia highlights the origins of the profession. Physiotherapy, like much of modern health services, has developed within a socioeconomic framework that provides very good services for the wealthiest and very poor services for the poorest and more remote communities in Australia. Any career structure and educational changes supported by the profession will need to take into account how the balance can be better addressed. Maintaining entry level competencies in the three core areas of practice is basic to addressing the balance.

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Reference