Physiotherapy, a responsible profession to use cervical manipulation. Response to Refshauge et al

Gwendolen Jull1, Mary Magarey2, Ken Niere3 and Robert Elvey4
1The University of Queensland 2University of South Australia 3La Trobe University 4Curtin University

Results from recent randomised controlled trials conducted by physiotherapists are contributing to the increasing evidence of the benefits of cervical manipulative therapy for the management of cervical musculoskeletal disorders (Boline 1995, Bronfort et al 2001, Hoving et al 2002, Jull et al 2002). It is known that there is a risk, albeit very slight, of devastating side effects of cervical manipulation. Issues of safety of use of high velocity cervical manipulation and risk/benefits of this procedure are of concern to all practitioners of manipulative therapy. Refshauge and colleagues (2002) have presented their views of the issues around cervical manipulation to stimulate debate amongst those professions which use cervical manipulation. The debate is welcome within the physiotherapy profession. Refshauge et al raise and present argument around four questions. It is our contention in this response that many of the arguments presented by Refshauge et al do not support their recommendations.

**Question 1. Should the cervical spine be manipulated?**

Refshauge et al argue against the use of cervical spine manipulation on issues of risk rates, doubtful benefits of cervical manipulation and legal responsibilities of practitioners. Their arguments are often biased, flawed or non-reflective of contemporary physiotherapy education nationally.

In relation to risks of cervical manipulation, the authors correctly report that precise figures for adverse events are unknown. Estimates are between one incident per 10,000 manipulations to one in more than 5 million manipulations. The risk of death from cervical manipulation calculated from insurance claims in Canada was less than 3 per 10 million manipulations (Carey 1993). It is pertinent to consider the risk rates of realistic alternatives for patients seeking treatment for cervical musculoskeletal conditions to place the argument in context. Foremost is the use of NSAIDs. These can be obtained over the counter and self administered with little or no guidance. The incidence of a serious gastrointestinal event with NSAID medication, such as bleeding or perforation, is estimated at 4 in 1,000 and the incidence of death is estimated at 4 in 10,000 cases of patients taking NSAIDs for osteoarthritis (Dabbs and Lauretti 1995). For neck surgery, the risk of neurological complications is estimated as 15.6 per 1,000 operations and death in 6.9 per 1,000 surgeries (Hurwitz et al 1996). These comparisons highlight the substantially lower relative risk from cervical manipulation, although this does not lessen the practitioner’s duty of care in using cervical manipulation. Furthermore, there is no evidence which indicates that NSAID use is more effective than cervical manipulation, yet the risks of side effects are greater. There is no adequate evidence that indicates that cervical surgery with its inherent risks has any long term superiority over conservative care (Fouyas et al 2002).

Refshauge et al argue against the use of cervical manipulation because of the lack of unequivocal evidence for its effectiveness. In the idealistic scenario of evidence-based practices, there is no unequivocal evidence for any treatment for musculoskeletal or indeed many other disorders at this time. Based on available research, the authors’ arguments against any superior efficacy of cervical manipulation are at best selective, often misleading and can be dismissed. For example, the results of Hurwitz et al’s (1996) systematic review are quoted to justify their view about cervical manipulation. The direct quote used, “the sparsity and quality of the data prevent firm conclusions (about efficacy) from being reached” (Hurwitz et al 1996, p. 1753), refers to Hurwitz et al’s conclusion for the use of mobilisation and manipulation for migraine headache only, a condition whose pathogenesis does not reside in cervical musculoskeletal dysfunction and where manipulative therapy would not be expected to be highly efficacious. The main conclusions of Hurwitz et al’s systematic review for cervical manipulation and mobilisation were “Analysis of existing data has led the authors to conclude that 1) mobilization is probably of at least short-term benefit for patients with acute neck pain; 2) manipulation is probably slightly more effective than mobilization or physical therapy for some patients with sub-acute or chronic neck pain (and all three treatments are probably superior to usual medical care)” (Hurwitz et al 1996, p. 1755). What the authors have failed to emphasise is that it is the lack of high quality trials at this point in time which make it difficult to provide unequivocal evidence for the efficacy of cervical manipulation, mobilisation or other forms of treatment.

Refshauge et al then argue that “four of the five head-to-head comparisons of the efficacy of manipulation and
physiotherapy profession in Australia has led the world in physiotherapy practice. It is worthy of note that the undergraduate and graduate entry curricula and are now 10 years old, its message is well embedded in Australian Journal of Physiotherapy 2002  Vol. 48. The High Court ruling in the case of informed consent (in this case for cervical manipulation). as are other ethical and professional issues including undergraduate and graduate entry physiotherapy curricula, the efficacy of cervical manipulation. The authors have failed to present a credible case against manipulation, publishing the protocol for pre-manipulative testing of the cervical spine in 1988 (APA 1988) with its 2000 review (Magarey et al 2000). These guidelines have been taught in undergraduate and graduate entry programs of physiotherapy since their appearance in 1988. The authors’ arguments were relevant in a past era.

Question 2. How best to screen patients to maximise safety of manipulation?

Refshauge et al highlight the pivotal need to identify the patient at risk for the application of cervical manipulation for safe practice. We have no argument with this view. The lack of sensitivity and specificity of the current clinical tests for the vertebral artery are well understood by physiotherapists. One of the strengths of undergraduate and graduate entry physiotherapy training programs, which underpins the safe practice of manipulative therapy within physiotherapy in Australia, is the emphasis on clinical reasoning in patient examination. This is based on the sound foundation knowledge of pathologies and clinical presentation of conditions which contraindicate the use of cervical manipulation, as mentioned by Refshauge et al. The guidelines, such as those presented in the Appendix of the Refshauge et al paper (2002) have always been taught in undergraduate and now graduate entry curricula and have long been published in manipulative therapy texts which are used in these programs (Grieve 1988 and 1994, Maitland et al 2000).

To place vertebral artery dissection and manipulation in context for this debate, the literature of the past 40 years was reviewed by Haldeman et al (1999) to appraise the risk factors and precipitating neck movements causing vertebrobasilar artery dissection after neck trauma and cervical manipulation. They found that almost 70% of the cases identified had no relation to cervical manipulation. From 40 years of literature, 367 cases were identified, of which 252 were either of spontaneous onset, or related to trivial or major trauma, and 115 were associated with cervical manipulation. In a review of 64 cases associated with cervical manipulation, Haldeman et al (2002) were unable to identify factors from the patients’ clinical history or physical examination which might identify the at-risk patient. They concluded that incidences appear to be an unpredictable, inherent and rare complication of cervical manipulation. While we support safety in practice with cervical manipulation, the debate must be balanced and not alarmist.

Question 3. Who should manipulate?

As stated by Refshauge et al, “After having completed an entry-level qualification in physiotherapy, and having fulfilled all other requirements for registration, a registered physiotherapist in Australia is, at law, permitted to manipulate the cervical spine of a patient, after having obtained the patient’s consent”. We support this status. Refshauge et al contend that as not all physiotherapists use cervical manipulation, physiotherapists should not automatically be registered to practise cervical manipulation.
manipulation.

The fact that not all physiotherapists might choose to use cervical manipulation in the management of their patients is a strength of the profession, not a weakness as implied. Physiotherapists are trained to treat patients across the lifespan. Global figures from the NSW Physiotherapists Registration Board some 10 years ago may be inclusive of physiotherapists practising in fields such as cardiopulmonary physiotherapy or paediatrics. There is evidence that manipulation is not an effective therapy for hypertension, asthma and other respiratory disorders (Bronfort 1997) and it is highly responsible that these physiotherapists are not manipulating their patients.

The safe, appropriate and selective use of cervical manipulation is the key to responsible practice and this practice is in evidence within contemporary physiotherapy in Australia (see Jull 2002, this issue) and Grant and Niere (2000). These studies provide evidence that physiotherapists use cervical manipulation selectively and responsibly, and do so on the basis of their clinical reasoning in the examination and re-examination of their patients. Cervical manipulation is not applied routinely on all patients with neck disorders. The strength of physiotherapists is that they have skills in a variety of procedures, of which cervical manipulation is one. From the various procedures, they can select to use those which are relevant to address the multifaceted entity of neck pain. They are not reliant on, and do not use, a single method approach.

Question 4. The educational standards required for practitioners choosing to use manipulation

The pedagogical basis of the argument offered by Refshauge et al is of concern and rather mystifying. The foundations for safe use of cervical manipulation are embedded in Australian physiotherapy undergraduate and entry level curricula. The training of a physiotherapist includes a thorough knowledge of the basic sciences of anatomy, physiology and pathology, as well as the medical and physiotherapy clinical sciences to ensure that graduates have the knowledge base to clinically reason and diagnose effectively with full appreciation of conditions, symptoms and signs that flag warnings about the patient’s suitability for a particular form of treatment. It is the essence of a first contact practitioner to be safe and responsible in their practice and educational curricula have trained and successfully prepared physiotherapists to be first contact practitioners for nearly three decades. Furthermore the schools of physiotherapy in Australia contain acclaimed world leaders in research into musculoskeletal and manipulative physiotherapy and this research has forged contemporary research based practices, on which contemporary curricula are based.

From a physical perspective, it seems that Refshauge et al have attempted to cloak the technique of cervical manipulation in an aura of mystique. Physiotherapy practice includes the analysis of movement dysfunction through observation and the careful and skilled application of active and passive movement. The essence of physiotherapy education is to produce ethical professionals with high-level skills in the diagnosis and treatment of movement disorders and of related pain states. Physiotherapy education develops practitioners who are highly skilled in the use of passive, facilitated and active movement. Manipulation is a technique using movement; the difference in its physical application as compared with passive mobilisation is the speed of the applied motion. It is not a mystical procedure. Intellectual and practical skill is required for the safe, responsible and efficacious application of all physical therapy techniques of which cervical spine manipulation is one. Physiotherapy students are trained to develop problem solving, clinical reasoning and manual handling skills from the very beginning of their educational programs. Cognitive and practical training in the safe and effective use of spinal passive mobilisation and manipulation are an inherent part of pre-registration training in the vast majority of Australian schools of physiotherapy. Physiotherapists are eminently suitable health practitioners to use cervical manipulation should they responsibly choose to do so.

Refshauge et al’s summation of educational options regress to the past and do not acknowledge, nor are they reflective of, contemporary physiotherapy education, physiotherapy practice and the Australian Physiotherapy Association’s professional development program towards specialised practice in each area of physiotherapy.

We welcome a debate but let it be one that acknowledges the collective good sense of ethical physiotherapists in carrying the profession forward.

Correspondence

Associate Professor Gwendolen Jull,
Department of Physiotherapy, The University of Queensland, Brisbane, Queensland 4072. E-mail: g.jull@shrs.uq.edu.au.

References


Cassidy JD, Lopes AA and Yong Hing K (1992): The
Physiotherapy, a responsible profession to use cervical manipulation. Response to Refshauge et al

Kathryn M Refshauge¹, Sharon Parry¹, Debra Shirley¹, Dale Larsen¹, Darren A Rivett² and Rob Boland¹

¹The University of Sydney ²The University of Newcastle

It is an exciting but challenging era when physiotherapy has matured to the point where we are able to debate issues of great significance to the profession (see also Malone 2002). Unfortunately, the “debate” about cervical manipulation now risks being argued around interpretation of fine detail of fact rather than around the real issues concerning cervical manipulation. This lends emotion rather than measured argument to the debate. Jull et al have not reflected on the major issues as we would have hoped; rather, they have chosen to cloud our discussion with the very strategies they contend we have employed, ie selective use of literature and misrepresentation of results. More importantly, they appear to have misunderstood the entire point of our paper.

Our question is not whether the physiotherapy profession is...