

Correspondance

stethoscopes in the traditional manner (and their baseball caps forward).

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Lest we forget

I read with considerable interest the letter from Siroos Mirzaei and Peter Knoll drawing attention to the treatment of physicians in Iraq who refused to be involved in torture.¹ It is unfortunate that they did not name the physician who was executed for refusing to exercise medicine punitively. He must have espoused the highest Hippocratic ideals to give his life rather than inflict pain on another person. This man should be honoured by remembrances and scholarships. How many of us would give our lives in such a sacrifice?

Alan L. Russell

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Reference

1. Mirzaei S, Knoll P. The last trial of a Nazi doctor [letter]. *CMAJ* 2000;163(5):498,500.

[The authors respond:]

The name of the Iraqi physician who was executed was not stated in the Amnesty International report in which the incident was mentioned.¹ However, the names of many other health care professionals at risk have been published.^{2,3} For example, the Turkish Medical Association has protested against torture and executions, and several of its members have been threatened with imprisonment, including Veli Lök.² A Romanian physician, Atilla Kun, refused to cover up incidents of torture and was sent to prison for 3 years.³

Many physicians uphold the Hippo-

cratic oath in the face of imprisonment, mistreatment and even execution. Their courage, will and struggles have to be honoured, but not by scholarships. Rather, we should try to understand why physicians have faced human rights violations and we should work to help our colleagues who are presently at risk. The best way to honour them is to share their sense of responsibility to uphold the Hippocratic oath.

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1. Amnesty International. Amputations and branding; detention of health professionals. London: Amnesty International; 1994. Report no.: MDE

14/13/94.

2. Welsh J. Health workers at risk. *Lancet* 2000;356(9228):503.
3. Amnesty International. Harming the healers: violations of the human rights of health professionals. London: Amnesty International; 2000. Report no.: ACT 75/02/00.
4. Amnesty International Medical Commission, Marange V. *Doctors and torture: collaboration or resistance?* Paris: Bellew Publishing; 1991.

[Editors' note:]

Information on human rights issues particularly relevant to health care workers is available through Amnesty International Health Professionals Network Online (www.web.amnesty.org/rmp/hponline.nsf).

Cervical manipulation: How risky is it?

The article by John Norris and colleagues on sudden neck movement and cervical artery dissection does not mention risk factors for stroke such

as migraine, diabetes, smoking and the use of oral contraceptives.¹ There is 1 occurrence of stroke after every 1–3 million cervical manipulations.² Although it has been suggested that neck positioning during anesthesia may in fact pose a higher risk of dissection than manipulation,^{3,4} this was not mentioned as a possible risk factor by Norris and colleagues. The type and area of manipulation were also not identified. Haldeman and colleagues concluded that the literature does not assist in the identification of the mechanical trauma, neck movement or type of manipulation that precipitates vertebrobasilar artery dissection.⁵

We both have had a patient in the past year presenting with stroke-like symptoms. In neither case was the patient's cervical spine manipulated, and each patient was immediately referred for medical assessment; quite likely these cases are now (inappropriately) 2 of the consortium's statistics.

The authors state that "neck pain is

a reliable symptom of the onset of dissection."¹ Considering that neck pain is often the presenting symptom when one visits a chiropractor, how did the consortium distinguish pre- from post-manipulation pain?

The principles of science are fundamental to good case management. In the absence of a control group and statistical analysis, Norris and colleagues have presented what can only be described as junk science masquerading as research. Although medicine and chiropractic should be working together to find better detection and prevention methods, Norris and colleagues seem to be more interested in scaring the public and fanning the flames between our professions.

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Tim Pethrick
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References

1. Norris JW, Beletsky V, Nadareishvili ZG, on behalf of the Canadian Stroke Consortium. Sudden neck movement and cervical artery dissection [commentary]. *CMAJ* 2000;163(1):38-40.
2. Shekelle PG, Coulter I. Cervical spine manipulation: summary report of a systematic review of the literature and a multidisciplinary expert panel. *J Spinal Disord* 1997;10(3):223-8.
3. Tettenborn B, Caplan LR, Sloan MA, Estol CJ, Pessin MS, DeWitt LD, et al. Postoperative brainstem and cerebellar infarcts. *Neurology* 1993;43(3 Pt 1):471-7.
4. Fisher CM. Basilar artery embolism after surgery under general anesthesia: a case report. *Neurology* 1993;43(9):1856-7.
5. Haldeman S, Kohlbeck EJ, McGregor M. Risk factors and precipitating neck movements causing vertebrobasilar artery dissection after cervical trauma and spinal manipulation. *Spine* 1999;24(8):785-94.

Although the article by John Norris and colleagues on sudden neck movement and cervical artery dissection mentions only chiropractic manipulation,¹ all health care providers who use cervical manipulation should be cognizant of the adverse consequences. Indeed, in some provinces cervical manipulation has been put on a list of restricted medical procedures that may be carried

out only by licensed practitioners.

There is an abundance of information in the literature on the relative and absolute contraindications for manipulation as well as on the screening that must take place before this technique is used. However, there are other considerations that out of professional courtesy are frequently not mentioned. For example, practitioners who lack skill and experience may compensate by using excessive force. Experienced practitioners tend to avoid nonspecific general rotational techniques, especially in combination with extension, when treating the upper cervical spine. The chiropractic literature suggests that rotational techniques, especially when used in the upper cervical spine, are more dangerous than nonrotational ones.² There is little if any non-anecdotal evidence to refute the notion that nonspecific rotational techniques may be dangerous.

It is the responsibility of the practitioner to minimize the risks of spinal

manipulation. It is unreasonable to hide behind the lack of hard evidence proving the presence or frequency of these risks. After all, the absence of proof is not the same as the absence of fact; it simply demonstrates the lack of adequate research. Alternative techniques that do not utilize gross rotation have been used successfully for many years with no known resultant deaths and thus are supported by the Canadian Orthopractic Manual Therapy Association.

Robert Sydenham

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References

1. Norris JW, Beletsky V, Nadareishvili ZG, on behalf of the Canadian Stroke Consortium. *CMAJ* 2000;163(1):38-40.
2. Klougart N, Leboeuf-Yde C, Rasmussen LR. Safety in chiropractic practice, part I: the occurrence of cerebrovascular accidents after manipulation to the neck in Denmark from 1978-1988. *J Manipulative Physiol Ther* 1996;19(6):371-7.

The commentary by John Norris and colleagues¹ is an excellent example of pseudoscience.

The data in this article were collected retrospectively, not prospectively as suggested by Norris and the media. This type of research is fraught with examination bias.

The most obvious error is the equation of correlation or temporal coincidence with cause and effect. Norris and colleagues claim that 21 of 74 cases of stroke (28%) were caused by cervical manipulation by a chiropractor. What if the term "automobile accidents" was substituted for "stroke"? If 21 patients over the last year had car accidents after seeing a chiropractor, would it be reasonable to suggest that the chiropractor caused the accidents?

What criteria did the authors use for including patients in their survey? What was the cut-off time after chiropractic adjustment? Would it not be absurd to include patients who had visited a chiropractor 95 days, or even 6

days, before the arterial dissection? How many other confounding variables did they control for? What if a patient had a chiropractic adjustment and later that day went to their dentist or had their hair washed at a beauty parlour and then 2 days later had a violent sneeze or cough followed by a stroke?

The authors state that if a patient has neck pain after a chiropractic manipulation it represents an arterial dissection. I would like to see some hard evidence to support this statement. Some patients have neck pain after chiropractic adjustment because their spines are badly misaligned with a concomitant inflammatory process and there sometimes is correctional stress after the adjustment, such as the stress an orthodontist would create when adjusting braces.

Finally, what is the mandate of the Canadian Stroke Consortium? Have the members of the consortium applied as much effort to the study of other causes of stroke, such as adverse reactions to drugs, as they have to their study of adverse events caused by chiropractic?

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Reference

1. Norris JW, Beletsky V, Nadareishvili ZG, on behalf of the Canadian Stroke Consortium. *CMAJ* 2000;163(1):38-40.

[One of the authors responds:]

My coauthors and I regret that Brian Lecker and Tim Pethrick found our commentary¹ so disturbing. We are primarily interested in collecting cases of probable dissection of the cervical arteries following sudden neck movement. The incidence of stroke following cervical manipulation, estimated by Lecker and Pethrick to be 1 per 1-3 million manipulations, is surely conjectural and in any case is irrelevant. We need careful studies that include rigorous follow-up and investigation of all cases of stroke following therapeutic neck manipulations. Only then we will be able to estimate the true extent of this problem.

We agree that there are other risk factors for stroke and that strokes may occur, by coincidence, following any activity.

In our study, however, we are only interested in documenting cases of cervical artery dissection. We have found that there are about 50 cases per year of stroke associated with cervical artery dissection and that manipulation of the cervical spine is associated with 27% of these.

Risk factors for stroke must be distinguished from risk factors for cervical artery dissection. There is no evidence that migraine, diabetes or smoking are risk factors for dissection. Our most recent, as yet unpublished, analyses confirm these findings; the only certain risk factors are neck trauma and in some cases genetic abnormalities of the vessel wall. Neck pain is the hallmark of the arterial tear in most cases, both in our study and in all other published studies. It is sudden and severe, and easily distinguishable from the chronic pain seen in patients attending for neck manipulation.

It might be helpful to attempt a case-control study, as Lecker and Pethrick suggest. However, the research question is not whether neck manipulation can result in dissection of a cervical artery, for it surely can, but rather whether some types of manipulation have a lower risk of dissection than others. We also need careful research to document the efficacy of neck manipulation as a therapy. Only then will we be able to weigh its cost, in terms of risk of cervical artery dissection and stroke, against its benefits.

We agree with Robert Sydenham that absence of proof is not proof of absence. Members of the medical profession and those manipulating necks for whatever reason must try to find the reason for these occasional tragic accidents and not try to pretend they never happened.

Alan O'Connor raises some interesting points. First, we must reassure him that all data were collected prospectively, but, of course, after the injuries occurred. Patients were questioned in hospital regarding details of their clinical picture and laboratory tests were performed accordingly. As he questions,

what delay can one accept between neck movement and later stroke? There are several autopsy reports of causal dissection with thrombus months after neck injury. We believe that the answers to O'Connor's other questions may be found by studying the materials on our Web site (www.strokeconsortium.ca/PG.08.spontads.html). Many of our findings are posted as they emerge and we are striving to keep the site up to date.

We thank our colleagues at the Canadian Memorial Chiropractic College, with whom we have had numerous helpful discussions. We initially attempted to share all data with them but came across the barrier of patient confidentiality, which we have not yet managed to overcome.

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Reference

1. Norris JW, Beletsky V, Nadareishvili ZG, on behalf of the Canadian Stroke Consortium. Sudden neck movement and cervical artery dissection [commentary]. *CMAJ* 2000;163(1):38-40.

Lost in translation

Your translator has made a humorous but bad translation in giving to "The Left Atrium" a significance absolutely out of order with "l'oreille gauche." Hilarious but significant. Unacceptable. Every first-grade student will translate "oreille" as "ear," and "atrium," a medical word, as "oreillette" of the heart.

Jacques Desrosiers

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[The deputy editor of *CMAJ* responds:]

We confess that this is not the first time we have heard from readers who are dissatisfied with the French translation of "The Left Atrium."^{1,2} The