

Inappropriate use of the title chiropractor and profession of chiropractic when reporting an adverse vascular event: a commentary.

Title: Inappropriate use of the title chiropractor and profession of chiropractic when reporting an adverse vascular event: a commentary.

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Abstract

This paper will review a recent case report of a carotid artery dissection adverse event by a Chinese manual therapist providing “chiropractic massage”. The focus of the report was a Chinese national receiving a treatment in China. However, through imprecise reporting, this event was extrapolated to be associated with the chiropractic profession and reported in a medical news outlet in Australia. A discussion is presented on the weaknesses of the case report and its reporting of the associated adverse event. The intention of this discussion is to provide standardization in the reporting of future adverse events in manual therapy to avoid the mis-reporting of events regardless of who is providing the information.

Key words: Massage therapist, adverse event, internal carotid arterial dissection, chiropractic

Introduction

I read the recent publication of Yap et al (2021) [1] with great interest. The authors are to be applauded for describing an adverse event associated with manual therapy to improve practitioners’ knowledge of carotid artery dissection (CAD) and stroke. However, I am concerned about several significant flaws within the paper that are misleading to its readers. These flaws associate a “massage” by a likely massage therapist or traditional Chinese manual therapist with “chiropractic massage” in a manuscript that purports to provide “public awareness about this fatal practice” with subsequent reporting of this awareness as “chiropractic treatment” in a news piece by the Australian Doctor Group newsletter AusDoc [2] who subsequently inappropriately associates the “chiropractic treatment” to stroke [3]. Based on the limited description of the practitioner in the Yap et al [1] paper, it is highly unlikely that a registered chiropractor was involved.

It is the purpose of this paper to discuss key issues in the reporting of the case in the Yap et al [1] paper and to provide recommendation for the reporting of similar cases in the future. These issues include: the descriptions of the registered or unregistered status of the practitioner involved, the description of the injurious event(s), the interchangeable and misuse of titles and descriptions of procedures used to describe the case and the omission of a key differential diagnosis to possibly explain what had occurred.

Education or training of the practitioner

The practitioner was not specifically described in the paper. Reference was made to “chiropractor massage” in the title, “massage” in the abstract, “massage” in the case presentation. This is followed in the discussion by mention of “chiropractic neck manipulation” and “chiropractor massage” being attributed to the likely triggering risk factor which was described as a “massage” “fatal practice”. Yet, the authors also describe the unregulated state of complementary medicine in China. In fact, the World Federation of Chiropractic (WFC) lists the legal status of chiropractic in China to be unclear with “some recognition” by National health authorities [4] There is a long history of traditional body workers/manual therapists in China who are not trained chiropractors [5]. There is certainly no protection or policing of the use of the title chiropractor as occurs in Western countries. It remains unclear if the practitioner was a university trained chiropractor trained to an internationally recognized standard [6] whose true title is “chiropractor” or an unregulated non university trained lay manual therapist / manipulator such as a Tui na practitioner.

Description of the therapy

There is debate as to whether a manipulation actually took place or whether it was only a massage procedure. In either instance, it would appear to have not been delivered by a qualified chiropractor and thus the title of the paper is misleading as is some of the content that not so subtly implies that “chiropractor massage” caused the stroke when it did not. Several articles have described massage treatment prior to a stroke. The treatment was likely delivered by a massage therapist, lay manipulator or manual therapist such as a Tui na practitioner and that treatment was not delivered by a person trained to international accepted chiropractic educational standards. Thus, the practitioner should not be referred to as a chiropractor. This attribution of a of an adverse event following massage being associated with “chiropractic” when not actually performed by a chiropractor is lazy writing at best and biased writing at its worst. This form of reporting has been noted several times before in the literature [7,8,9,10].

Description of the injury

A exact description of the treatment and any associated injury was not provided. It is stated that massage was applied to the neck. However, the precise type, direction and force of the movements used in its application was not provided. Additionally, there was insufficient detail on the temporal relationship of the treatments to the onset of symptoms prior to seeing the practitioner, at the time of treatment and after the alleged injurious action.

The symptoms present prior to the adverse event were not reported. It is commonly reported that most CAD is spontaneous with no clear indications being determined [11]. In addition, minor activities or sports are reported as potential causes for CAD [11]. It is possible that the person described in the case report experienced neck pain or headache from a minor event, which then resulted in the person seeking massage therapy.

Also, there is minimal description of potential risk factors for CAD reported in this case. For example: recent acute infection (mainly respiratory), hyperhomocysteinaemia, low body mass, low cholesterol, smoking, pulsatile tinnitus, recent head, neck or thoracic trauma, ipsilateral periorbital, frontal and upper neck pain, distinct new and continuing headache, partial Horner’s syndrome, retinal and or cerebral ischaemic symptoms are all included in a risk assessment model to exclude CAD [11,12].

Alternative mechanisms

Yap et al (2021) [1] refers to a massage as being the treatment that caused the stroke and yet it is referred to as chiropractic massage which is discussed along with chiropractic manipulation. It is possible that “chiropractic massage” is a euphemism for “chiropractic manipulation” but a casual reader would expect a paper in the British Medical Journal Case Reports journal to describe exactly what occurred rather than use such loose phraseology.

Massage can traumatize the carotids as described in a recent case [13] as can neck manipulation [14]. Stroke can also occur spontaneously and can occur in younger people, as in this case [15]. Despite these cases, recent reviews have concluded that causation cannot be inferred based on case reports alone as no causation has been definitely established [12].

Although not specifically stated, a likely mechanism for the stroke was that the massage applied an anterior to posterior force on the front of the neck injuring the right carotid artery which damaged the vessel walls likely reducing blood flow to the middle cerebral artery. The lack of blood flow in

the middle cerebral artery caused an ischaemic stroke of the region supplied by middle cerebral artery. This is a mechanism that has been noted before with massage therapy [13]. Another possible explanation is that a spontaneous arterial dissection took place [16].

Carotid artery dissection

Based on the literature, a carotid issue would present with significant symptoms including anterior neck pain amongst other significant symptoms [5, 17, 18]. Those trained in manipulation know that anterior neck pain is far less common than posterior or posterolateral neck pain and a potential cause for concern due to the presence of vascular structures anteriorly [19]. Presentations such as these should be carefully reviewed when compared to the more common posterolateral neck pain presentations [18].

It is possible that the involved practitioner made an incorrect diagnosis or no diagnosis at all. Such a departure from standard history taking may have resulted in the application of an inappropriate management strategy, missing a possible evolving dissection. It is also possible that there were no symptoms of the carotid problems on presentation either. Additionally, a more specific potential mechanism for the injury should have been discussed. The mechanism of injury noted above is key as nearly all neck manipulations known to this writer do not apply direct forceful anterior to posterior pressure to the neck at the level of the carotids. However, neck mobilisations and soft tissue techniques often do provide anterior to posterior pressure [20] using lower forces than might be expected in a high velocity low amplitude (HVLA) manipulation.

An important differential: Eagle's syndrome

The Yap et al paper mentions screening for several CAD risk factors including: cardiac, vascular, connective tissue, inflammatory, non-inflammatory, haematological and prothrombotic causes. However, the diagnosis of Eagle's Syndrome was not mentioned. Eagle's Syndrome is an injury to a carotid via direct pressure from an elongated styloid process or calcified stylohyoid ligament [21, 22, 23]. It is common after throat surgery and in particular tonsillectomy. It can also be associated with compression of cranial nerves (5,7,9,10). It may also be asymptomatic until pressure is placed on it. A case exists where massage therapy caused a stroke via pressure on an elongated styloid process [24]. It is noteworthy that although recognized as a potential mechanically induced vascular syndrome, Eagle's syndrome may be missed by vascular surgeons according to Todo et al [21] who report: "Cervical pain caused by the elongation of the styloid process (Eagle syndrome) is well known to otolaryngologists but is rarely considered by vascular surgeons".

However, in the absence of an elongated styloid, I propose that a heavy direct pressure from a therapist in an anterior to posterior direction at the level of the carotids may result in a pinching effect between the therapist hands and the cervical vertebrae functionally causing an Eagle-like syndrome with irritation to the internal carotid ultimately resulting in stroke.

The current case affected the carotid artery and was likely performed by a traditional manual therapist in China not a chiropractor. Regulation of chiropractic and titling is currently absent in China. In China there are many lay manipulators including the Tuina practitioners using techniques described in ancient scholarly texts describing manual therapy [25, 26, 27]. Because traditional manual therapists use manipulation, they can be incorrectly referred to as "chiropractors". It is here

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where the confusion in the publication originates. The lack of fact checking by the Australian Doctor author [2] and the want to associate the massage to manipulation and thence with extrapolation to chiropractic neck manipulation and stroke is completely inappropriate and an example of lazy writing potentially causing reputational harm to registered chiropractors.

Chiropractic is a health profession not a treatment modality

The chiropractic profession does not only offer spinal manipulation (or spinal adjustment) to patients that seek care [28, 29]. Chiropractic is a healthcare profession that utilizes a multimodal approach to manual therapy that includes spinal manipulative therapy [30]. Therefore, equating spinal manipulation with chiropractic is inappropriate. This attribution in the Yap paper is another example of a successful manipulation being referred to as a "manipulation" but an unsuccessful one being referred to as a "chiropractic manipulation" [28].

Tui na and Traditional Chinese Medicine use of manual therapy

Tui na or Chinese massage is a common traditional form of manual therapy that manages conditions of the neck and has been used for conditions such as but not limited to cervical vertigo [31], a symptom of CAD [15]. A complete description of the scope and philosophy of Tui na practitioners is beyond the scope of this paper and a link to a fuller description is provided for the reader here [32].

Tui na is a manual therapy approach that is said to promote blood circulation and strengthen the physique in order to treat and prevent disease [33]. It is a subset of many therapies that are folded in under the banner of Traditional Chinese Medicine (TCM). Other therapies include but are not limited to: Acupuncture, acupressure, moxibustion, cupping, gua sha, tai chi, qigong, and chinese manipulation [34].

Manual therapy appears to be widely practiced in China and has been associated with serious neck injury including neck fracture [35]. **As an example of technique**, Tui na practitioners perform various forceful long lever spinal manipulations such as "double doctor pulling manipulation for lumbar disc herniation" [36]. Manipulations such as these are not taught in any of the chiropractic programs in Australia.

Significance of a single case report

It is noteworthy that case reports present the outcomes of management on one individual and are not considered research [37]. Because they are not research, the extrapolation of the findings of one case should not be generalised to an entire population or profession [38]. Extrapolating the findings of one case (massage) to a whole population of massage therapists is inappropriate. Extrapolating to a completely different population of chiropractors because they sometimes use massage is worse. Yap et al could have easily targeted the professions of osteopathy, physiotherapy and even medicine using this method but they have not. It therefore appears biased in its intent. Such extrapolation if intended is unforgivable pseudoscience.

Conclusion

It is recommended that authors of adverse events associated with manual therapy and specifically manipulation, describe the following when reporting outcomes: signs and symptoms: on presentation to the practitioner, at the time event, and after the event. Additional description of: the

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manual therapy method used, the profession represented (including its scope where appropriate) and the registration status in the jurisdiction where the adverse event occurred should be provided. Finally, the likely mechanism of the adverse event should be presented if known.

Clarity in the description of adverse events will improve reporting to educate practitioners of rare but important events to consider in the application of manual therapy modalities. It will also contribute to the elimination of inappropriate professional titles and descriptions of scope being attributed to the chiropractic profession and its practitioners. This should help remove bias in writing whether unintended or otherwise whilst providing clarification of the pros and cons of all manual therapies for the benefit of the public that consumes them and the practitioners that provide them.

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