Dynamic Chiropractic

Arterial Dissections: Approximately 1 in 5.85 Million Cervical Manipulations," Study Says

Editorial Staff

A paper[1] published in the October 2 issue of the *Canadian Medical Association Journal (CMAJ)* by Scott Haldeman,DC, MD,PhD, Paul Carey, et al. ("Arterial Dissections following Cervical Manipulation: the Chiropractic Experience") reports that the chances of arterial dissection after cervical manipulation is approximately 1 in 5.85 million manipulations.

Specifically, the authors state:

"The likelihood that a chiropractor will be made aware of an arterial dissection following cervical manipulation is approximately 1:8.06 million office visits, 1:5.85 million cervical manipulations, 1:1430 chiropractic practice years and 1:48 chiropractic practice careers."

The authors note that their numbers are "significantly less than the estimates of 1:500,000 to 1:1 million cervical manipulations calculated from surveys of neurologists." [2,3,4]

The Haldeman, Carey, et al. study reviewed malpractice data from the Canadian Chiropractic Protective Association (CCPA) between 1988 and 1997 on stroke claims following chiropractic manipulation. Extapolating from the data, its was determined that approximately 134.5 million cervical manipulations were performed by chiropractors covered by the CCPA. Of those, 43 cases of neurological symptoms were identified: 20 were minor (not diagnosed as stroke by neurologists), and 23 cases involved stroke or vertebral artery dissection.

A profile of the 23 people (ages 24 to 75) was compiled to see if they had preexisting conditions (hypertension, diabetes, migraine headaches) or behavior (smoking) that could be identified as complicating factors in their conditions. Of the 23, five were smokers; four suffered migraines; and four had hypertension. These numbers, however, were not sufficient to identify these factors as complications, nor has a recent review of the literature been able to identify those patients at greater risk for stroke after cervical manipulation.[5]

"This study is based on the most factual evidence available for determining the risk of stroke associated with neck adjustment," said Paul Carey,DC, one of the principal authors of the study, and president of the CCPA. Dr. Carey is in charge of the CCPA's claims, files and management.

"There has been much recent speculation about this risk, and some neurologists have expressed concern that the risk may be higher than previously believed," observed Dr. Carey. "This most recent study establishes such an extremely low degree of risk, that patients can feel confident about the safety of neck manipulation performed by chiropractors."

Dr. Carey said that the study supports recent research published in the *Canadian Medical Association Journal* by the Institute for Clinical Evaluative Studies, which found that the incidence of stroke associated with neck adjustment is so rare that it was not possible for the researchers to establish a meaningful rate of occurrence for the high number of cervical adjustments that are

performed.

In the same issue of the of the *CMAJ* as the Haldeman, Carey, et al., study was the paper "Cervical Manipulation and Risk of Stroke" by Drs. Kapra and Bondy.[6] They noted that the Haldeman, Carey, et al., study provided "important data about the association between stroke and specific chiropractic interventions," but opined that the "use of malpractice claims data is unlikely to lead to an accurate estimation of the risk of stroke."

Drs. Kapra and Bondy asserted that a "less biased estimate" of the risk factor was an Ontario case-control study using administrative data.[7] That study set the risk of stroke for people under 45 years old at 1.3 per 100 000 chiropractic visits (there was no significant association for patients aged over 45 years).

Still, Kapra and Bonday state that the risk associated with cervical manipulation "is both small and inaccurately estimated ... smaller than that associated with many commonly used diagnostic tests or prescription drugs."

Kapra and Bonday recommend: "...given the potentially devastating consequences of arterial dissection, physicians and chiropractors should discuss this risk, however small it may be, with patients contemplating neck manipulation."

The Haldeman, Carey, et al. paper concludes with a recommendation for future research:

> "The only manner in which the real incidence of dissection following cervical manipulation can be established and the feasibility of screening patients determined is to carry out research in which both chiropractors and neurologists participate. Failure to cooperate in such research will result in confusing and conflicting information being given to patients and will reduce the likelihood that these complications can be avoided."

References

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