

tent neck ache. The patient had also been taught to manipulate his neck himself, which involved abruptly rotating his head through 60° in each direction twice a day. He sometimes experienced sharp left-sided neck pain during such manipulations and had done so during a manipulation 10 minutes before his neurologic event.

On admission to hospital, he was alert, but unable to stand, with upbeat nystagmus in the primary gaze position, an incomplete left lateral rectus palsy, bilaterally absent corneal reflexes, decreased sensation to pain and temperature on the left side of his face and a left lower motor neurone seventh cranial nerve palsy.

Plain x-rays of the cervical spine were normal. Computed tomography and magnetic resonance imaging (MRI) scans of the brain performed during the next 24 hours were normal. Manometry and analysis of the cerebrospinal fluid were normal. An MRI angiogram performed four days later failed to reveal any evidence of vertebrobasilar thrombosis, dissection or other anatomic irregularities.

Over the next seven days, the patient's signs progressively resolved and he was discharged with only a mild residual left facial paresis. Although no lesion was identified on imaging, the sudden onset, nature and progressive resolution of his neurologic deficits indicated that he had experienced bilateral pontine ischaemia, precipitated by cervical self-manipulation. The "greying out" of vision and visual illusions are likely to have resulted from transient ischaemia in the territories of the posterior cerebral arteries. To our knowledge, there have been only three cases of stroke caused by cervical self-manipulation previously reported in the literature.²⁻⁵

The normal vertebral angiography in our patient, which has been formerly documented in eight cases of chiropractic-manipulation-induced stroke,²⁻⁴ raises the possibility of vertebral artery spasm as a possible pathogenetic mechanism. However, vertebral artery intimal damage could not be excluded, particularly in view of the lower sensitivity of MRI angiography compared with conventional vertebral angiography.

We consider that there are some important lessons to be learnt from our patient's case.

1. Neck manipulation, including self-manipulation, should be considered among the risk factors for stroke in the young;
2. The practice of instructing patients to perform cervical self-manipulation should be strongly discouraged.
3. The decision to perform neck manipulation should be carefully considered, given that complications are unpredictable and often severe, and that less hazardous alternative therapies are available.

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Cervical self-manipulation and stroke

To the Editor: Stroke resulting from chiropractic neck manipulation has been previously reported in the medical literature.^{1,2} The reported cases have generally been under the age of forty, previously healthy without vascular disease risk factors, and often suffered permanent neurologic deficits or death.^{1,2} Despite these serious and largely unpredictable complications, many patients continue to attend chiropractors for cervical manipulation. We recently encountered an even more hazardous practice, where a chiropractor had instructed a patient to perform cervical self-manipulation. This case report highlights the occurrence and potential perils of this practice.

On 19 October 1992, a previously healthy 26-year-old male suddenly experienced "greying out" of vision in both eyes and visual illusions of objects moving closer toward, and then further away from, him. This was followed within minutes by nausea, vomiting, vertigo, left facial weakness, diplopia and unsteady gait. After further specific questioning regarding neck manipulation, the patient admitted to receiving regular chiropractic manipulation over five years for intermit-

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