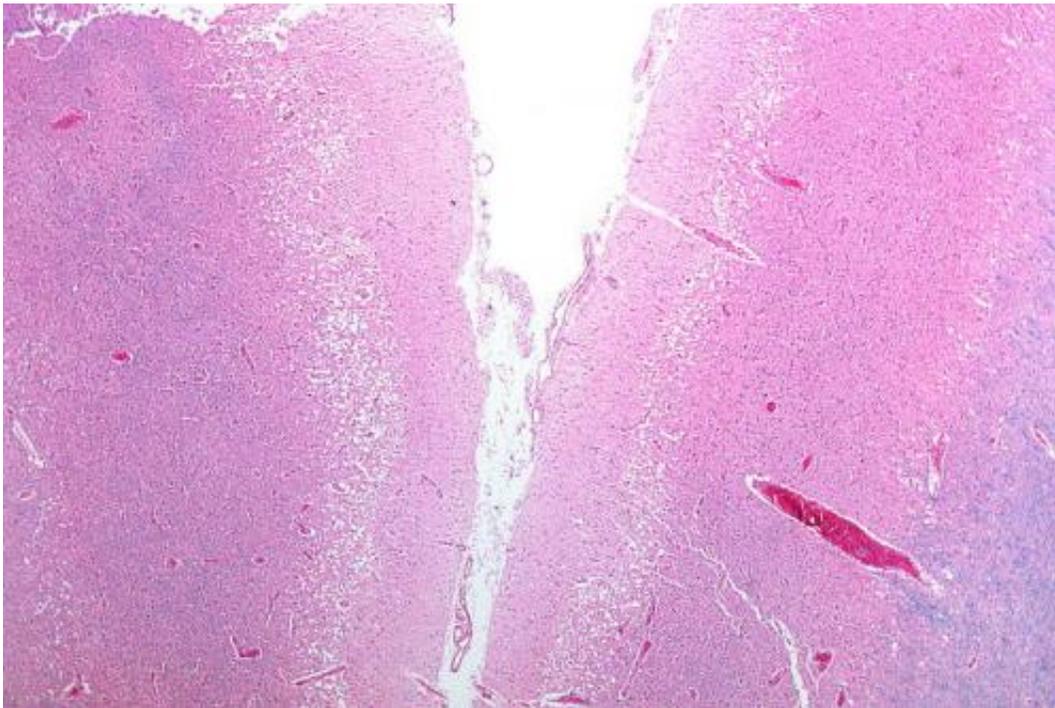


Neck manipulation may be associated with stroke

August 7 2014



Micrograph showing cortical pseudolaminar necrosis, a finding seen in strokes on medical imaging and at autopsy. H&E-LFB stain. Credit: Nephron/Wikipedia

Treatments involving neck manipulation may be associated with stroke, though it cannot be said with certainty that neck manipulation causes strokes, according to a new scientific statement published in the American Heart Association's journal *Stroke*.

Cervical artery dissection (CD) is a small tear in the layers of [artery walls](#) in the neck. It can result in ischemic stroke if a blood clot forms after a trivial or major trauma in the neck and later causes blockage of a blood vessel in the brain. Cervical artery dissection is an important cause of stroke in young and middle-aged adults.

"Most dissections involve some trauma, stretch or mechanical stress," said José Biller, M.D., lead statement author and professor and chair of neurology at the Loyola University Chicago Stritch School of Medicine. "Sudden movements that can hyperextend or rotate the neck—such as whiplash, certain sports movements, or even violent coughing or vomiting—can result in CD, even if they are deemed inconsequential by the patient."

Although techniques for cervical manipulative therapy vary, some maneuvers used as therapy by health practitioners also extend and rotate the neck and sometimes involve a forceful thrust.

There are four arteries that supply blood to the brain: the two carotid arteries on each side of the neck, and the two vertebral arteries on the back of the neck. The influence of neck manipulation seems more important in vertebral artery dissection than in internal carotid artery dissection.

"Although a cause-and-effect relationship between these therapies and CD has not been established and the risk is probably low, CD can result in serious neurological injury," Biller said. "Patients should be informed of this association before undergoing neck manipulation."

The association between cervical artery dissection and cervical manipulative therapies was identified in case control studies, which aren't designed to prove cause and effect. An association means that there appears to be a relationship between two things, i.e., manipulative

therapy of the neck and a greater incidence of cervical dissection/stroke. However, it's not clear whether other factors could account for the apparent relationship.

The relationship between neck manipulation and cervical artery dissection is difficult to evaluate because patients who already are beginning to have a cervical artery dissection may seek treatment to relieve neck pain, a common symptom of cervical artery dissection that can precede symptoms of stroke by several days.

You should seek emergency medical evaluation if you develop neurological symptoms after neck manipulation or trauma, such as:

- Pain in the back of your neck or in your head;
- Dizziness/vertigo;
- Double vision;
- Unsteadiness when walking;
- Slurred speech;
- Nausea and vomiting;
- Jerky eye movements.

"Tell the physician if you have recently had a neck trauma or neck manipulation," Biller said. "Some symptoms, such as dizziness or vertigo, are very common and can be due to minor conditions rather than stroke, but giving the information about recent [neck manipulation](#) can raise a red flag that you may have a CD rather than a less serious problem, particularly in the presence of [neck pain](#)."

Provided by American Heart Association

Citation: Neck manipulation may be associated with stroke (2014, August 7) retrieved 18 September 2024 from <https://medicalxpress.com/news/2014-08-neck.html>

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