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Background and Purpose

It is well established that the association of a vascular event resulting from cervical spinal manipulation (cSMT) in the general population is non-causative.1 However, a subset of patients with vascular anomalies may have an increased risk of vascular compromise when receiving cSMT.2 This case highlights the clinical decision-making that took place over a 12-year period for a patient with intermittent cervical spine symptoms in the presence of vascular anomalies and multiple comorbidities.

Case Description

59-year-old female

- Dizziness
- Facial Paresthesia
- Chronic Neck Pain
- Chronic Multiregional Pain Syndrome
- Vertebral Artery Abnormalities/Potential Vascular Disorder (Fibromuscular Dysplasia)
- Hypermobility Syndrome (Potential Ehlers Danlos Syndrome)

Additional Relevant Clinical History:

Physical Examination Findings:
- Symptoms elicited with left cervical rotation and left lateral flexion
- Positive George’s test
- Negative benign positional vertigo testing

Diagnostic Imaging:
- CT-angiograms: Vascular changes suggestive of probable fibromuscular dysplasia, a left internal carotid artery aneurysm, and a tortuous dominant left vertebral artery.
- MRI: Multilevel degenerative disc and facet changes with uncinate degenerative changes.
- Cerebral angiogram: Patient vertebral artery flow in the position of symptom provocation.

Intervention/Rational

Individuals with certain connective tissue diseases have an increased risk of suffering a vascular event from cSMT.2 Due to the patient’s clinical presentation and imaging findings obtained over time, treatment consisted primarily of the following:

Modified Cervical Spinal Manipulative Therapy:

Due to the presence of relative contraindications, high velocity low amplitude thrust manipulation was avoided to reduce risk of a vascular event. Instead, mild manual long axis traction was implemented and resulted in symptom relief. Relief was most immediate and prominent when a mild cavitation occurred.

Post-isometric relaxation of hypertonic musculature:

Considering that the patient’s blood flow was not compromised, as evidenced on cerebral angiogram (Fig. 2), the benefit of this was believed to be a result of decreased compressive forces on the facet joints leading to desensitization of the cervical spinal structures.

Outcomes

"This chiropractic treatment allowed me to perform my responsibilities as a mother and accountant, whereas without the treatment, I was unable to function in these roles."

Discussion/Conclusion

Current practice guidelines recommend chiropractors to consider signs, symptoms, and known risk factors for vertebral artery dissection when delivering care to ensure patient safety.4 Additionally, they recommend ongoing care at intervals of 1 to 4 times per month for patients who have reached maximum therapeutic benefit and whose condition deteriorates in the absence of physician intervention.5

This patient with idiopathic intermittent cervical spine symptoms, of which were consistent with vascular involvement, received care that was modified to reduce the risk of an adverse vascular event. Throughout the duration of care, it was found that the patient was not vascularly compromised but did have findings that were consistent with connective tissue disease. Despite the presence of vascular anomalies and other complicating factors, she received care that resulted in ongoing temporary periods of relief for over a decade. This case demonstrates that by adhering to clinical practice guidelines to ensure patient safety, effective care for patients with relative contraindications of unknown etiology can be delivered.

References