

## Association of chiropractic therapy, atherosclerosis and Amaurosis Fugax: Case-report

**Background:** Chiropractic therapy (CPT) is a popular physical therapy. Cerebrovascular accidents were reported with neck manipulation (NM), mainly due to vertebral artery dissection. However, it is unclear whether NM could be associated with internal carotid artery atherosclerosis (ICAA). We present a case of ICAA and recurrent transient ischemic attacks associated with CPT.

**Methods:/ Case:** A 38-year-old man with two-year history of hypertension presented to clinic reporting recurrent episodes of vision loss. He smokes tobacco. No family history of stroke. He recently had NM. Investigation showed normal inflammatory markers, EKG, echocardiogram, computed tomography (CT) of the head, and magnetic resonance imaging of the brain. (Figure1-A) CT angiography of the neck showed evidence of right ICAA(Figure1-B). However, CT angiography of the head, chest, abdomen and pelvis revealed absence of atherosclerotic (AS) disease.

**Results:** Although he had risk factors for AS, his imaging lacks evidence for AS in other vascular territories. This raises the question whether CPT played a role in his ICAA. He was started on risk modifying therapy along with avoidance of his further NM which interestingly prevented relapse.

**Conclusion:** Previous case-report showed an association between NM and cerebrovascular accidents were. Whether NM could play a role in the AS formation or embolization is not clear. Further studies are needed to show a causal relationship. Perhaps neck vessel imaging will be needed prior to CPT.

Figure 1-A

	Result	Normal range
Sodium	141 mmol/L	135–145 mmol/L
Potassium	4.5 mmol/L	3.4–5.1 mmol/L
Chloride	105 mmol/L	98–107 mmol/L
Carbon dioxide	26 mmol/L	22–29 mmol/L
Creatinine	1	0.7–1.2 mg/dL
Urea	12 mg/dl	<23 mg/dL
Calcium	9.9	2.2–2.55 mmol/L
White Blood Cell	7.6 x 10 <sup>9</sup> /L	4–11 x 10 <sup>9</sup>
Hemoglobin	155 g/L	132–177 g/L
Platelet	468 x 10 <sup>9</sup> /L	140–450 x 10 <sup>9</sup>
Low Density Lipoprotein	91 mg/dL	< 100 mg/dL
High Density Lipoprotein	29 mg/dL	40–60 mg/dL
Cholesterol	187 mg/dL	< 200 mg/dL
Triglyceride	337 mg/dL	0–150 mg/dL
Haemoglobin A1C	5.7	< 6.5
Sedimentation rate	12	0–15
C-Reactive Protein	<0.05 mg/dL	<10 mg/dL
Rheumatoid Factor	<9 IU/mL	<20 IU/mL
Anti- cyclic citrullinated peptide antibodies	<16 units	<20 units
Anti-Nuclear Antibody screen	Negative	
Aldosterone/renin ratio	1.1	0.9–28.9
Cortisol	0.9 ug/dL	4.5 – 22.7 ug/dL
Adrenocorticotrophic hormone	< 5 pg/mL	6–50 pg/mL

Figure 1-B



