Acute vertebral artery dissection is a very rare but known complication following cervical manipulation/chiropractic adjustments. We present a case of a 30 year old female who sustained a vertebral artery dissection following an upper cervical manipulation. Although there is no clear consensus on treatment options we discuss the current literature and treatment for this condition.

A 30 year old female presented to the emergency department complaining of left sided neck pain, dizziness, and vomiting occurring shortly after chiropractic cervical manipulation. Physical exam was remarkable for the patient’s unwillingness to open her eyes, subtle left lateral gaze nystagmus, mild diplopia, and left sided cervical tenderness to palpation. Computed tomography angiography of the neck was performed (Figure 1A) demonstrating a left vertebral artery dissection, followed by magnetic resonance imaging (Figure 1B) demonstrating a left cerebellar infarct.

The annual incidence of spontaneous vertebral artery dissection is estimated at 1 to 1.5 per 100,000 and occurs in 0.01 percent of patients sustaining head and neck trauma [16-18]. The typical mechanism involves trauma, hyperextension or rotation of the neck [18]. Seemingly innocuous activities such as yoga, painting a ceiling, swinging a golf club, coughing, vomiting, and sneezing have all been implicated [17,19].

Regarding the management of our patient, three months of oral anti-coagulation were administered. Although, the CADISS trial suggests anti-platelet therapy is as effective for therapy with medications such as alteplase for eligible patients [10]. This is based on imaging evidence demonstrating that more than 90 percent of dissection related infarcts are thromboembolic in nature, rather than related to insufficient blood flow [11]. One approach to management is to continue anticoagulation with MRA follow up at 3 and 6 months. If luminal irregularities persist, anticoagulation is continued, and typically patients are transitioned to antiplatelet therapy at 6 months [3,11-15].
preventing recurrent stroke or death [20]. Endovascular or surgical interventions were not pursued as these modalities are currently reserved for patients with recurrent ischemic events despite medical therapy. Our patient’s three month follow up documented a good recovery with no major neurological sequelae or adverse

Discussion

Vertebral artery dissection is a rare complication of mild cervical trauma and can lead to thrombotic complications consistent with ischemic CVA’s this particular patient presented outside of the 4.5hr accepted window for intravenous thrombolysis per current AHA guidelines. Had she presented within 3 hours of onset she likely would have been administered intravenous thrombolytic therapy. Isolated vertebral dissection can be treated acutely with anti-thrombotic therapy which is believed to be slightly superior to anti-coagulation however there is little to no data to support this treatment and both are considered acceptable [11]. In most cases, excellent recovery is expected in 70–85% of patients. The rate of recurrent ischemic symptoms after dissection ranges from 0–13% in various studies.

Conclusion

We present a case of a 30 year old female who suffered from a vertebral artery dissection following a chiropractic cervical manipulation. She presented after 4.5 hours from symptom onset and was treated with aspirin and unfractionated heparin with excellent 3 month outcome.

References
