Bilateral vertebral artery dissection in a patient with Turner Syndrome following manipulation of the cervical spine

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Case Report
A 26-year-old female with Turner Syndrome (TS), treated with oestrogen replacement therapy, presented with vertigo, ataxia and paraesthesia of the left arm immediately following chiropractic neck manipulation. Magnetic resonance angiography revealed dissection and partial occlusion of the left vertebral artery at the C2/3 level with an associated acute left cerebellar infarct (Figure 1). A non-occlusive dissection involving the right subclavian artery extending 4cm superiorly into the proximal right vertebral artery was also identified (Figure 2). The patient was commenced on anticoagulant therapy and her symptoms resolved completely over the following 3 days.

Case Discussion
Turner Syndrome, affecting 1:2,500 live female births, results from the absence or partial deletion of one X chromosome. Cardiovascular anomalies are the major cause of increased mortality in TS, with aortic dissection a well-recognised complication. However, arterial wall abnormalities in TS extend beyond the aorta, with demonstrable dilatation and intimal thickening of the carotid and brachial arteries. This vasculopathy may predispose TS patients to cervical arterial dissection from minimal trauma. There have been two previous case reports of spontaneous cervical artery dissection in TS, describing a bilateral vertebral artery dissection and unilateral carotid artery dissection respectively. The literature, and this case report, suggest TS patients should be advised against cervical manipulation and also support the recommendation that clinicians have a low threshold for requesting imaging studies of the cervical and intracerebral vasculature in TS patients presenting with focal neurological deficits.
**Figure 1:** 3D Time of Flight MRA: Absent flow related enhancement V3/V4 segment of the left vertebral artery secondary to dissection (short arrows). Intramural haematoma right subclavian artery (long arrow).

**Figure 2:** Axial proton density with fat suppression: Right vertebral crescentic intramural haematoma (short arrow) and flow void (long arrow)
CLINICAL CORRESPONDENCE

Competing interests: Nil

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