

# Ataxia and vertigo due to anomalous origin of the left vertebral artery

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The origin of anomalies of the left vertebral artery has been previously described. The vertebral artery is a collateral branch of subclavian artery and takes a posterior-vertical course to usually enter into the sixth cervical transverse foramen (88%).<sup>1</sup>

We report a case of a 64-year-old woman who presented with syncope and a 30-year history of vertigo during left head rotation. Physical examination showed bilateral vertical nystagmus and ataxia during deambulation with left head rotation. The duplex ultrasound showed the hemodynamically significant right carotid stenosis. The computed tomography angiography confirmed the carotid stenosis (A) with right vertebral artery hypoplasia (B) and left vertebral artery originated directly from the aortic arch between left carotid and subclavian arteries (A). There was additional abnormality of absence of the inferior thyroid branch of the thyrocervical trunk in the left side. The left vertebral artery in our case enters the fourth transverse foramen (C; Video, online only).

The patient underwent right carotid artery endarterectomy under plexus anesthesia. No complications were observed in the postoperative period. Her recovery was uneventful and she was discharged on postoperative day 3 with antiplatelet therapy. Six-month follow-up Doppler demonstrated carotid and vertebral arteries patency. The patient still complains of vertigo during left head rotation.

## DISCUSSION

The brachiocephalic trunk, left common carotid artery, and left subclavian artery are the typical three branches that arise from the aortic arch. However, the left vertebral artery arises from the arch of the aorta in approximately 6% of the population; in a few cases, it arises from the left common carotid artery or the root of the left subclavian artery.<sup>2</sup>

The patients with left vertebral artery anomalies are usually asymptomatic. Rare cases have presented with dizziness, but this does not seem to be associated with the anomalous origin. In our cases, the left vertebral artery origin anomaly with its C4 entrance and contralateral hypoplasia could be causing the ataxia during head rotation.

Accurate assessment of anatomic variations of vertebral arteries is mandatory before supra-aortic artery surgery and for planning aortic arch surgery or endovascular interventions.

## REFERENCES

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