CASE REPORT

Painless aortic dissection with bilateral carotid involvement presenting with vertigo as the chief complaint

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A 63 year-old woman was admitted to the emergency department with vertigo, nausea, and vomiting. On arrival, she was fully oriented and cooperative. She denied any pain in her chest, neck, back, or abdomen. A bruit was heard on both sides of her neck. Cranial computed tomography (CT) revealed no abnormality, while thoracic CT disclosed dissection in the ascending aorta, aortic arch, and bilateral common carotid arteries. After several hours, the patient underwent vascular surgery. She had an uneventful course and was discharged without any sequelae after 10 days. Vertigo is a rare presentation of aortic dissection with carotid involvement. Elderly patients presented with vertigo and nausea/vomiting should be evaluated for the condition and carotid dissection should be ruled out. Carotid bruit may be a clue to the diagnosis.

Acute dissection of the aorta can be one of the most dramatic of cardiovascular emergencies unless promptly recognised and treated. Classical acute aortic dissection (AD) has been described as presenting with sudden, severe chest, back, or abdominal pain characterised as ripping or tearing in nature.¹ However, not all ADs present with classic symptoms, and establishing the diagnosis can be difficult when the classic pattern of pain is absent. Painless dissection occurs in 5–15% of patients with AD.²

Carotid dissection (CD) may represent an ominous complication of AD or may be a sole disorder. The disease presents most commonly with headache, Horner's syndrome, stroke, and cranial nerve palsies.^{3,4}

Although recent literature cites patients with painless AD and CD, there is no report describing a case presenting with vertigo. This paper reports a case with painless AD extending to the bilateral common carotid arteries and presenting with a chief complaint of vertigo.

CASE REPORT

A 63 year old woman was admitted to the emergency department (ED) with vertigo, nausea, and vomiting. These symptoms appeared following an 8 hour travel by bus. She denied any history of trauma in the meantime. Her past medical history included hypertension controlled with calcium channel blockers and hypothyroidism restored with thyroid hormones. She denied any pain in her head, chest, neck, back, or abdomen. On arrival in the ED, she was fully oriented and cooperative. The blood pressure was 90/45 mmHg in the left arm and 85/45 mmHg in the right arm. Her heart rhythm was regular, with rate between 47 and 60 beats/min. Respiration rate was 24 breaths/min, temperature 36.8°C, and oxygen saturation was 95% by pulse oximetry without supplemental oxygen. Pulse was poor and equal in both upper extremities. A bruit was heard on both sides of her neck. The lungs were clear to auscultation. The

abdomen was soft with no sensation of the aortic pulsation. Although the neurological examination was otherwise unremarkable, she complained of vertigo aggravated by head movements. Cranial nerves were intact, and cerebellar tests were normal. Electrolyte levels, renal function tests, cardiac enzymes, complete blood count, and clotting tests checked in the ED were within normal ranges. ECG demonstrated sinus bradycardia and ST segment depression in V4–V6. Chest radiograph showed wide mediastinum and deviation of the trachea to the right. Thoracic computed tomography (CT) with contrast enhancement disclosed dissection in the ascending aorta (fig 1A), aortic arch (Stanford type A), and bilateral common carotid arteries (fig 1B). Cranial CT did not reveal any ischaemic or haemorrhagic abnormalities.

The patient was consulted by cardiovascular surgeons and underwent operation in 2 hours after the necessary arrangements were made. She had an uneventful course and was discharged without any sequelae after 10 days.

DISCUSSION

Although a classical presentation of AD includes severe pain of sudden onset, more recent information suggests that symptoms in patients with AD are more variable than previously recognised, and the classic findings are often absent.⁵ Furthermore, 5–15% of patients with AD are pain free on presentation.² Painless presentations are associated with prolonged investigation in the ED and increased in hospital mortality.²

Many cases with AD were reported to have presented with various complaints other than pain, especially neurological and cardiovascular manifestations. These presentations included syncope, congestive heart failure,² paraplegia,⁶ and recurrent transient ischaemic attacks.⁷

AD involving the carotid arteries or isolated CD are reportedly associated with many clinical presentations, ranging from stroke to non-specific headache. More common manifestations include incomplete hemiparesis, hemicrania, Horner's syndrome, cervical bruit, pulsatile tinnitus, and multiple cranial nerve palsies.^{3,4} In a study of 68 internal CD, 9% of patients had minor symptoms such as a subjective bruit or painful Horner's syndrome, without an ischaemic event. Cerebral ischaemia was present in 90% of cases.⁸ Other studies have shown a 90% incidence of severe headache as a presenting symptom.⁴ Some rare and atypical presentations such as dysarthria resulting from isolated hypoglossal nerve palsy was also reported.³

The present case had ascending AD with bilateral carotid involvement. The patient is not similar to other cases with AD previously reported, and she had no headache, Horner's syndrome, or other neurological deficits commonly encountered in most patients with CD.⁴ Although the predominance and precedence of vertigo may suggest to the clinician that

Abbreviations: AT, aortic dissection; CD, carotid dissection; CT, computed tomography; ED, emergency department

Figure 1 (A) CT scan with contrast enhancement disclosed dissection in the ascending aorta (arrow), aortic arch (Stanford type A), and bilateral common carotid arteries (B, arrowhead).

the culprit could be a cerebellar process, the cranial CT showed no finding indicative of cerebellar ischaemia.

The diagnosis was made by a combination of clinical suspicion and CT scan. Hypotension associated with an

audible bilateral carotid bruit may be viewed as clinical clues to the diagnosis.

CONCLUSIONS

Vertigo is a rare presentation of AD with carotid involvement, but is also a common benign complaint. Elderly patients presenting with vertigo and nausea/vomiting should be evaluated for AD. Carotid bruit could be a clue to the diagnosis.

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