Case Report Neuroradiology

Separate origins of the left internal and external carotid arteries from the aorta in a patient with intracerebral hemorrhage ★☆✩★

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A B S T R A C T

Agenesis of the left common carotid artery with separate origins of the left internal and external carotid arteries from the aorta is an extremely rare anomaly. This anomaly is typically asymptomatic unless associated with other conditions. We report a case of separate origins of the left internal and external carotid arteries from the aorta in a patient with intracerebral hemorrhage. A 42-year-old man was transferred to our hospital by ambulance because of left hemiparesis. Computed tomography scan revealed right putaminal hemorrhage. Computed tomography angiography and digital subtraction angiography demonstrated independent origins of the left internal carotid artery and external carotid artery from the aortic arch. Right internal carotid angiography revealed blood supply to the left anterior cerebral artery and middle cerebral artery via the anterior communicating artery. The separate origins of the left internal and external carotid arteries from the aorta may cause hemodynamic stress to the contralateral side, leading to right intracerebral hemorrhage.

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Introduction

A separate origin for the left internal and external carotid arteries from the aorta is an extremely rare anomaly. This anomaly is typically asymptomatic. We report a case of a patient with separate origins of the left internal and external carotid arteries from the aorta with right intracerebral hemorrhage.

Case report

A 42-year-old man was transferred to our hospital by ambulance because of left hemiparesis. The patient had been diagnosed with hypertension 2 years ago, but had not received any medical treatment. The laboratory data at admission showed diabetes mellitus. Computed tomography (CT) scan revealed right putaminal hemorrhage (Fig. 1). Bone CT showed the left carotid canal was narrower than that on the right side. CT angiography and digital subtraction angiography demonstrated independent origins of the left internal carotid artery (ICA) and external carotid artery (ECA) from the aortic arch, and the left ICA was noted to be tortuous, dysplastic, and have smaller caliber (Fig. 2). The left ECA originated proximal to the left ICA (Fig. 2). Right internal carotid angiogram revealed no obvious abnormal vessels within or around the hematoma (Fig. 3). The left anterior cerebral artery and middle cerebral artery received blood flow from the right ICA via the anterior communicating artery (Fig. 3). We performed conservative therapy, particularly antihypertensive treatment. He was discharged without any permanent deficit.

Discussion

We report the case of a patient with separate origins of the left internal and external carotid arteries from the aorta with right intracerebral hemorrhage. Agenesis of the left common
dynamic stress on the contralateral (right) side in our case. Warschewske et al. reported a case of contralateral giant ICA aneurysm associated with separate origins of the left internal and external carotid arteries from the aortic arch [6]. This case also suggested that hemodynamic stress to the contralateral (right) side was involved. In the present case, we believe that the separate origins of the left internal and external carotid arteries could have caused hemodynamic stress on the contralateral side, leading to right intracerebral hemorrhage.

Conclusion

Here, we report a case of a patient with separate origins of the left internal and external carotid arteries from the aorta and intracerebral hemorrhage. Although this anomaly is typically asymptomatic, it may cause hemodynamic stress on the contralateral side, leading to intracerebral hemorrhage.

Patient Consent Statement

This study was approved by the institutional review board, and informed consent was obtained from the patient.

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