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Teaching *NeuroImages*: Unilateral agenesis of internal carotid artery with ophthalmic artery from opposite side

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Figure Unilateral agenesis of internal carotid artery and ophthalmic artery from contralateral side

(A) Left common carotid arteriography shows the absent left internal carotid artery. (B) 3D image reveals bilateral ophthalmic arteries (arrowhead) from the right internal carotid artery. (C) Left vertebral arteriography shows that the left middle cerebral artery is supplied by posterior circulation. (D) CT scan discloses the carotid canal (arrow) in the right side.

A 42-year-old man with a 3-day history of gradual left-sided blindness was suspected to have internal carotid artery (ICA) chronic occlusion by magnetic resonance angiography. Catheter angiography showed that the left ICA was totally absent with the ipsilateral ophthalmic artery arising from the right ICA, and the left ICA territory was supplied by the right anterior communicating artery and the left posterior communicating artery (figure, A–C). Absence of the left carotid canal on CT proved the left ICA agenesis (figure, D). The patient was diagnosed with optic neuritis, and eyesight improved after medical treatment.

Congenital absence of ICA includes agenesis and aplasia.¹ Absent carotid canal on CT distinguishes agenesis from aplasia.²

AUTHOR CONTRIBUTIONS

Dr. Zhou: study concept and design, acquisition of data, and critical revision of the manuscript for important intellectual content. Dr. Zhao: acquisition of data and critical revision of the manuscript for important intellectual content. Dr. Liu: study concept and design, acquisition of data, critical revision of the manuscript for important intellectual content, and study supervision. Dr. Shi: study concept and design, critical revision of the manuscript for important intellectual content, and study supervision.

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