Duplication of Intracavernous Internal Carotid Artery

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Acta Neurol Taiwan 2019;28:57-58

A 67-year-old woman admitted to emergency department for headache, difficulty in speaking and oral rhyme deviation. No significant past medical history except for pharmacologically controlled mild hypertension.

During the neurological examination the patient appeared alert, oriented and showed no deficit of strength, sensitivity and coordination. An expressive temporary aphasia was confirmed and Transient Ischemic Attacks (TIA) was suspected. Cranial Computed Tomography Angiography (CTA) showed hypoplasia of left Internal Carotid Artery (ICA) with a focal duplication in the intracavernous segment (Figure 1, arrowhead). Circle of Willis appears to be regular, with the left middle cerebral artery supported by the vertebrobasilar system through the left posterior communicating artery of increased caliber, and by the contralateral ICA via anterior communicating artery. Consequently, patient underwent Digital Subtraction Angiography (DSA) lateral view that confirmed the segmental duplication of the left intracavernous ICA (Figure 2, arrowhead).

Vessels had a lightly winding course within the cavernous sinus and the intracranial branches downstream of their confluence presented a slight delay in visualization.

After few hours her symptoms completely regressed and, in agreement with clinical and imaging data, diagnosis of TIA was made. The transient ischemic event was, in fact, most likely caused by low flow to the left cerebral hemisphere due to hypoplasia of the ICA and aforementioned abnormalities of its intracavernous tract that caused alteration and reduction of intracranial flow distribution.

Medical treatment with anti-platelet drugs was started and patient was discharged with a clinical, laboratory and imaging follow-up program.

Duplications of ICA in the intracranial tract are very rare[1,2]. Most of the cases are localized in the supraclinoid segment. To our knowledge this is the first case described in literature of true duplication of ICA in the intracavernous tract. Patients with congenital variants or acquired pathology of ICA are mostly asymptomatic, but when symptoms appear, patients must be investigated[1-3]. CTA is considered the first line non-invasive diagnostic method for intracranial vascular anatomy. At present, medical treatment remains the choice in patients with no-complicated duplications of ICA in the intracranial tract.

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Received May 9, 2019. Revised July 9, 2019.
Accepted September 10, 2019.

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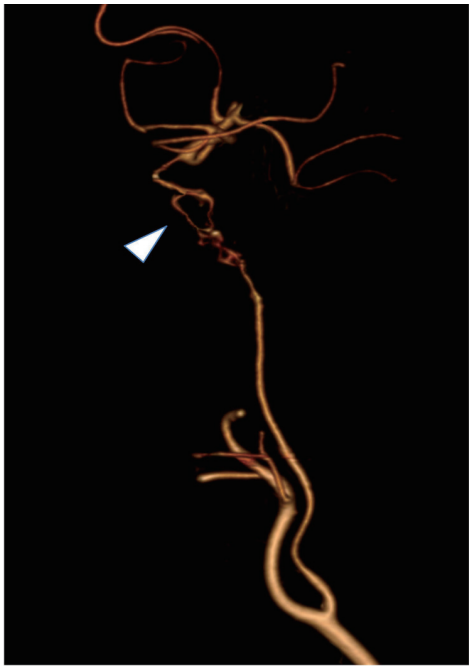

Figure 1. Computed tomographic angiography volume rendering technique reconstruction view demonstrates duplication of the intracavernous segment of ICA.

Figure 2. DSA confirms hypoplasia and duplication of the intracavernous ICA.

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