Imagens em NEUROLOGIA

Left internal carotid artery agenesis

Agenesia da artéria carótida interna esquerda

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Absence of internal carotid artery, comprising agenesis, aplasia, and hypoplasia, is a rare congenital anomaly. All three variations might represent the sequel from an insult to the developing embryo. The most common type of collateral flow is through the circle of Willis. Although many cases remain asymptomatic and go undetected, these patients may present later in life with symptoms related to cerebrovascular insufficiency and may develop cerebral aneurysm. Recognizing this anomaly has important implications during carotid endarterectomy, transsphenoidal hypophyseal surgery, and in the setting of thromboembolic disease (Figure 1)[1,2].

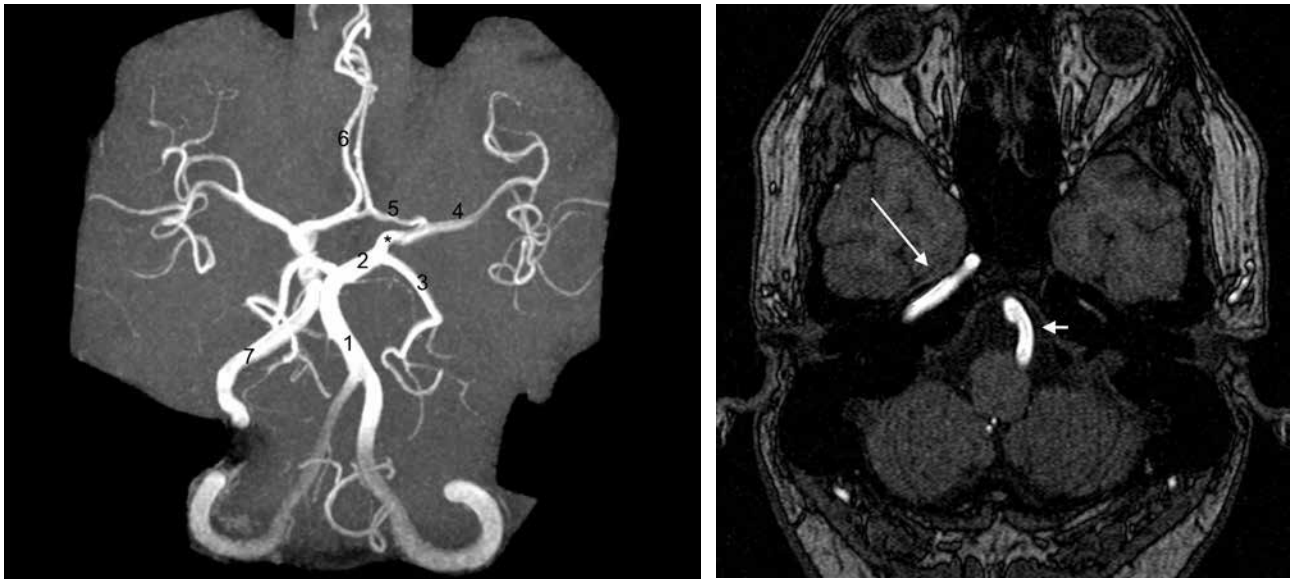

Figure 1. Left internal carotid artery agenesis in a 42-year-old woman with tension-type headache who insistently requested to undergo brain magnetic resonance imaging and magnetic resonance angiography (MRA) to rule out cerebral aneurysm. **Panel A:** Time-of-flight sequenced brain MRA showing only the right internal carotid artery (long arrow) and the basilar artery (short arrow). **Panel B:** Maximal-intensity-projection sequenced brain MRA showing a hypertrophic posterior communicating artery providing supply to the territory of the left middle cerebral artery and the left anterior cerebral artery (also supplied by the contralateral internal carotid artery). **1:** basilar artery; **2:** left posterior cerebral artery segment P1; **3:** left posterior cerebral artery segment P2; **4:** left middle cerebral artery; **5:** anterior cerebral artery segment A1; **6:** anterior cerebral artery segment A2. Asterisk indicates a hypertrophic posterior communicating artery.

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Patient has consented with the publication of this manuscript.

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REFERENCES

1. Given CA 2nd, Huang-Hellinger F, Baker MD, Chepuri NB, Morris PP. Congenital absence of the internal carotid artery: case reports and review of the collateral circulation. Am J Neuroradiol. 2001;22:1953-9.
2. Iqbal S. A comprehensive study of the anatomical variations of the circle of Willis in adult human brains. J Clin Diagn Res. 2013;7(11):2423-7.