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Unilateral isolated hypoglossal nerve palsy associated with internal carotid artery dissection

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A 54-year-old healthy man was admitted to our hospital with acute dysarthria and mild impairment in swallowing and tongue movements, which he had noticed 2 days before. He was not taking any drugs, and his medical history was unremarkable except for mild hypertension (145/95 mm Hg). He denied prior trauma, fever, facial pain, headache or any other symptoms.

Physical examination showed mild dysarthria and left-sided tongue deviation when the patient poked his tongue out, which was consistent with left hypoglossal nerve palsy (figure 1A). Other cranial nerves were preserved. Carotid murmurs were not heard, and the general and neurological exams were otherwise normal.

Biochemical analyses and complete blood cell count were normal. Microbiological and immunological studies, respectively, excluded active viral infection and immune disorders. A cranial angiographic MRI, performed 2 weeks after onset of symptoms, showed an arterial dissection located at the distal segment of the left internal carotid artery, which extended to 1.4 cm in length, reducing the vessel diameter by 30% (figure 1B–D). No signal abnormalities in left hypoglossal nerve were detected. The patient was discharged with antihypertensive therapy and antiplatelet drugs. After 3 weeks of admission, dysarthria and tongue mobility had improved significantly.

Isolated hypoglossal nerve palsy is an uncommon cranial neuropathy, which usually presents with dysarthria and mild impairment in tongue movements and swallowing.

When attending patients with hypoglossal nerve palsy, particularly if it is not associated with other neurological deficits, clinicians should focus on lesions of its peripheral segment rather than on its origin at the brainstem.

After emerging from the medulla oblongata in the preolivary sulcus, hypoglossal nerve passes through the hypoglossal canal. At this level, metastatic tumours located at the base of the skull, traumatisms and inflammatory disorders are the most frequent conditions associated with palsy. In that case, cranial nerve XII passes between the internal carotid artery and the internal jugular vein, which explains that carotid disorders may cause nerve palsy. The hypoglossal nerve then directs towards the retropharyngeal region to finally reach the tongue. Therefore, pharyngeal abscesses may also result in nerve palsy at this level.[1]

Apart from the previously described entities, Epstein–Barr virus infection and idiopathic cases represent a high proportion of palsies, reaching up to 40% of cases in some series.[2] In our case, brain MRI was crucial to establish the diagnosis. Immunological and microbiological analyses reasonably excluded viral and inflammatory aetiologies.

Classical manifestations of carotid artery dissection include neck pain, Horner syndrome and hemispheric ischaemic symptoms. However, in some cases, the manifestations are milder. Mokri *et al* reported in 1996 that more than 5% of patients with internal carotid dissection presented with some degree of isolated hypoglossal affection.

Although treatment with anticoagulants or antiplatelet drugs remains somewhat controversial, guidelines tend to recommend the antiplatelet therapy in patients with intracranial or extracranial carotid dissections without neurological manifestations due to ischaemia.[4]

In these patients, a control angiographic MRI or CT scan should be performed within a few months.

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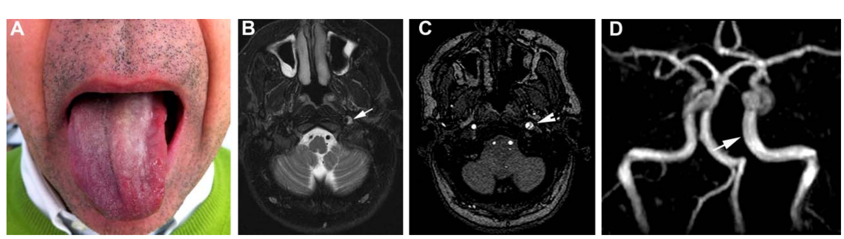

Figure 1 (A) Patient's tongue. (B) T2-weighted cranial MRI image and MRI angiography (C) narrowing of the lumen and intramural haematoma in the left internal carotid artery consistent with arterial dissection (white arrows). No signal affecting the left hypoglossal nerve. (D) An MRI angiography reconstruction.

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