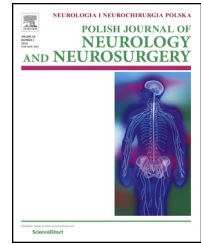


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Case report

Hypoglossal nerve palsy in the course of dissection of the internal carotid arteries – Case reports

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ARTICLE INFO

Article history:

Received 29 July 2017

Accepted 18 August 2017

Available online xxx

Keywords:

Internal carotid artery dissection

Hypoglossal nerve palsy

ABSTRACT

Internal carotid artery dissection (ICAD) has become an increasingly recognized cause of cerebrovascular accidents in young and middle-aged patients. We report 2 cases of hypoglossal nerve palsy in the course of dissection of the internal carotid arteries. The first patient was admitted to the Department of Neurology due to swallowing difficulty, speech articulation disorders and numbness of the right half of the tongue for 4 weeks. Extracranial vessel ultrasound (US) and transcranial colour Doppler (TCD) visualized thrombus causing occlusion of the right internal carotid artery (RICA). Angio-CT revealed a compression on right XII nerve and a dissection of the RICA. The second patient was referred to the Department of Neurology due to articulation disorders and swallowing difficulties. On admission, neurological examination revealed tongue deviation towards the right side with evidence of atrophy of the right half of the tongue, deviation of the uvula to the right side, absence of palatal and pharyngeal reflexes, rhinolalia and dysphagia. Vessel imaging was taken using angio-MR showing mural thrombus of the RICA.

Conclusion: The diagnosis of spontaneous non-traumatic dissection of the carotid arteries is a major challenge for clinicians. ICAD must be considered for young and middle-aged patients when severe headache is preceded by the co-existence of focal neurological symptoms. The probability of ICAD increases in the presence of predisposing diseases. The final diagnosis is based on imaging studies: color duplex ultrasound, CT angiography or MR angiography.

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1. Introduction

Internal carotid artery dissection (ICAD) has become an increasingly recognized cause of cerebrovascular accidents in young and middle-aged patients [1]. Nevertheless, ICAD remains relatively infrequent. The incidence rates are from

2.5 to 3.0 per 100,000 [2,3] and most clinicians have little experience with the condition. The variety of causative factors and clinical symptoms makes proper diagnosis difficult. Another difficulty is also related to the visualization of the dissected artery on ultrasonography and neuroimaging examinations. We report 2 cases of hypoglossal nerve palsy in the course of dissection of the internal carotid arteries.

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<http://dx.doi.org/10.1016/j.pjnns.2017.08.012>

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2. Case 1

A 50-year-old male was admitted to the Department of Neurology due to swallowing difficulty, speech articulation disorders and numbness of the right half of the tongue for 4 weeks. The patient also reported pain in the submandibular area and the right ear. The patient with suspected inflammation of the right submandibular gland was under the care of the department of laryngology. Antibiotic (amoxicillin/clavulanic acid, clarithromycin) administration did not result in improvement. On admission, physical examination revealed a homogeneous painless gland in the right submandibular area, discrete dysarthria and dysphagia, tongue deviation to the right side, a slight atrophy of the right side of the tongue, normal and symmetrical palatal and pharyngeal reflexes and asymmetry of tendon reflexes (right > left) in the upper limbs.

Laboratory tests did not reveal abnormalities (except for mixed dyslipidemia) and a routine head CT scan did not reveal any pathology. Extracranial vessel ultrasound (US) and transcranial color Doppler (TCD) visualized thrombus causing occlusion of the right internal carotid artery (RICA) in the proximal segment with compensatory acceleration of flow in the left common carotid artery (LCCA), left internal carotid artery (LICA), left anterior cerebral artery (LACA), right vertebral artery (RVA) and initiation of collateral circulation through Anterior Communicating Artery (ACoA) with the reversal of the flow direction in right anterior cerebral artery (RACA) (Fig. 1).

Angio-CT revealed a widening of the right internal carotid artery (ICA) from the division of the common carotid artery with a visible thrombus, which was 15 mm above the division completely filling the lumen of the vessel (Figs. 2 and 3). Below the carotid foramen on the basis of the skull coiling of the vessel was revealed with a clear expansion of its diameter (6–4 mm vs. 4 mm). The radiologist described compression on right XII nerve and a dissection of the RICA as the aetiology of the above symptoms.

The patient was treated with unfractionated heparin (APTT monitoring), and then the oral anticoagulation drug (warfarin)

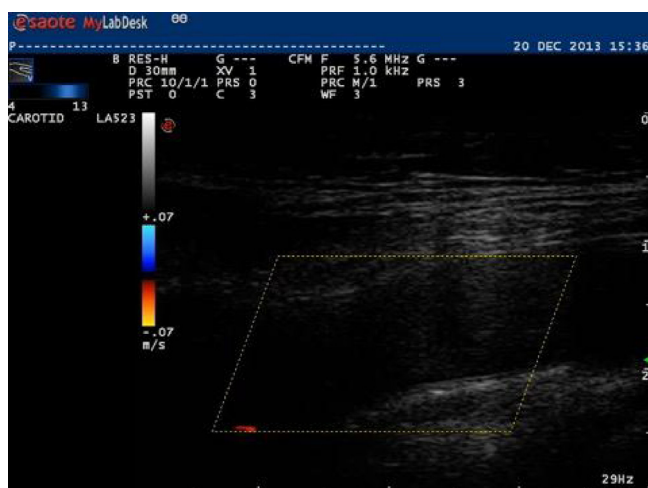


Fig. 1 – Color duplex ultrasound of carotid arteries. Case 1. Thrombus in the proximal RICA causing occlusion. Device – EsaoteMyLab60.

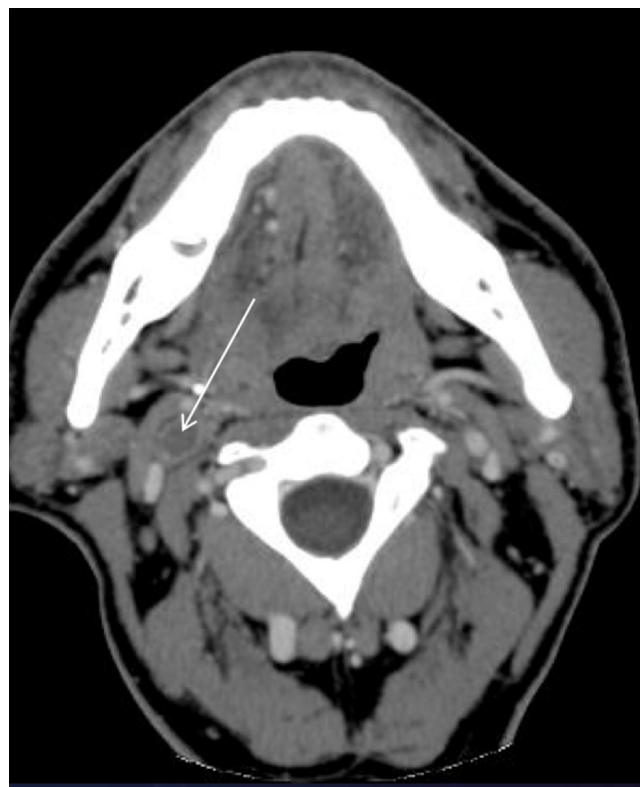


Fig. 2 – CT angiography. Case 1. Marked widening of the right internal carotid artery; about 15 mm above the division of the completely occluded vessel (no contrast enhancement). Device – CT Toshiba Aquilion 16.

was also administered. Additionally, rosuvastatin, galantamine, cefuroxime, clindamycin and lactic acid bacteria were given to the patient.

The patient was discharged with a subjective improvement in the articulation of speech and swallowing. Neurological examinations in the out-patient clinic revealed gradual regression of neurological deficits despite persistent symptoms of obstruction of the RICA on angio-CT done ~2 months after disease onset.

3. Case 2

A 48-year-old male was referred to the Department of Neurology due to articulation disorders and swallowing difficulties after a five-week treatment due to tonsillitis and sinusitis in an outpatient department of laryngology. Additionally, the patient was diagnosed with bilateral conjunctivitis and right eye keratitis. The patient's history revealed hypertension and a degenerative disease of the spine. Seven months before hospitalization the patient had participated in a car accident. At that time no injuries had been reported.

On admission, neurological examination revealed tongue deviation towards the right side with evidence of atrophy of the right half of the tongue, deviation of the uvula to the right side, absence of palatal and pharyngeal reflexes, rhinolalia (nasal speech), dysphagia (choking when swallowing liquids),

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