

ANİ FRENE BAĞLI TRAVMATİK KAROTİS ARTER DİSEKSİYONU: OLGU SUNUMU

TRAUMATIC CAROTID ARTERY DISSECTION DUE TO SUDDEN BRAKING: CASE REPORT

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ÖZ

İnternal karotis arter diseksiyonu, iskemik inme nedenlerinden biri olup son zamanlarda artarak teşhis edilmektedir. Çeşitli görüntüleme yöntemleri ile teşhis edilebilmesine rağmen manyetik rezonans görüntüleme yüksek duyarlılığı nedeniyle en iyi tanısal yöntemdir. Bu yazıda sağ internal karotis arter diseksiyonuna bağlı inme tanısı alan 16 yaşındaki bir erkek hasta sunulmuştur. Bu olgu sunumunun amacı, bilinç kaybı nedeni ile hastaneye başvuran hastalarda motosiklet kullanımı sırasında ani frenin bile arteriyel diseksiyona neden olabileceğine dikkat çekmektir.

ANAHTAR KELİMELER: Diseksiyon, İnternal karotis arter, İskemik inme

ABSTRACT

Internal carotid artery dissection is one of the causes of ischemic stroke and has been increasingly diagnosed recently. Although it can be diagnosed by various imaging methods, magnetic resonance angiography is the best noninvasive diagnostic method due to its high sensitivity. In this article, a 16-year-old male patient diagnosed with stroke due to right internal carotid artery dissection is presented. The aim of this case report is to draw attention to the fact that even sudden braking on a motorcycle may cause arterial dissection in patients admitted to hospital due to lack of consciousness.

KEYWORDS: Dissection, Internal carotid artery, Ischemic stroke

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INTRODUCTION

Internal carotid artery dissection (ICAD) which is increasing among young adults (1) is also being reported as an etiology of ischemic stroke in children (2). We report a case of ischemic stroke caused by ICAD due to blunt trauma while riding a motorcycle.

CASE REPORT

A-16-year old male patient was referred to our hospital because of syncope and left-sided weakness. The neurological examination on admission revealed lethargy, left-sided hemiplegia (motor strength of grade 1/5) and left Babinski sign. Glasgow Coma Score of 11 (eye opening to voice, inappropriate verbal response, withdraws from pain) was determined. Brain diffusion magnetic resonance imaging revealed restricted diffusion compliant with acute infarction in the right frontoparietal subcortical areas, right caudate and lentiform nuclei leading to internal and external capsules (**Figure 1**).

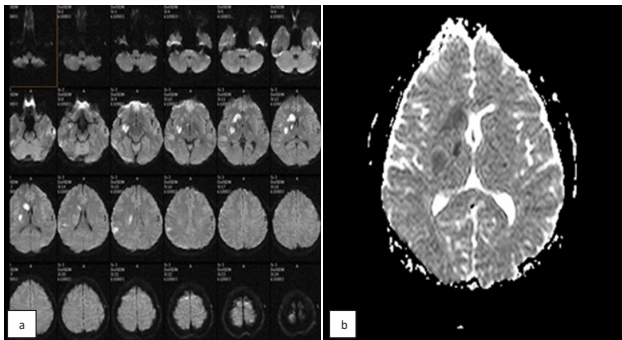


Figure 1(a,b): a. Diffusion MRI showed restricted diffusion compliant with acute ischemia in the right frontoparietal subcortical areas, right caudate and lentiform nuclei leading to internal and external capsules. b. ADC image showed lower ADC value in infarcted region.

Computed tomography angiography (CTA) demonstrated absent flow in the distal segments of the right internal carotid artery (IA) (**Figure 2**). In CTA, there were no signs of periluminal thrombus formation or periluminal hematoma indicating the presence of dissection with signs of increased vascular calibration, hypodense periluminal clot and double lumen sign. Low molecular weight heparin (LMWH) treatment was initiated for the patient due to acute ischemic stroke.

On the third day of hospitalization left hemiplegia recovered almost full. The patient's consciousness improved over time, and he recalled

that his head shook back and forth due to sudden brake while riding a motorcycle about four days before the onset of his complaints.

With this history, magnetic resonance angiography (MRA) was performed on the patient whose presence of ICAD could not be excluded with CTA before. MRA showed peripheral rim shaped hyperintense hematoma and wall irregularities were compliant with right ICAD on T1-weighted fat-suppressed series (**Figure 3**).

LMWH treatment was discontinued and clopidogrel was started on the fifteenth day. Control MRA showed a reduction of the thrombosis of right ICA at two months after the onset. Written informed consent was obtained from the patient who participated in this case.



Figure 2: Axial plane thin section neck CTA images revealed absent flow in the distal segments of the right ICA with no increase in the caliber nor a double lumen formation (arrow).

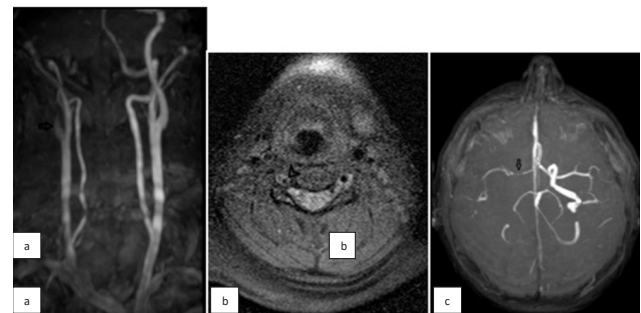


Figure 3 (a,c): MRA showed ending of a flow signal thinned as a tip of pen on the proximal segment, approximately 1.5 cm along from the origin of the bulb of right ICA and luminal narrowing (a). On distal segments, peripheral rim shaped hyperintense haematoma and wall irregularities were compliant with ICAD on T1A-weighted fat-suppressed series (b). Reduction in the calibration of M1 segment of right MCA and collateral filling on the distal MCA segments were also obtained (c).

DISCUSSION

Internal carotid artery dissection, a rare but severe cause of stroke may be either spontaneous or traumatic (3). Spontaneous dissection is more often associated with structural weakness in the vessel wall. Motor vehicle accidents

are the leading causes of traumatic ICAD. Not only a severe impact such as blunt head and neck injuries but also a mild impact such as a forceful cough can cause ICAD (4, 5). Trauma was the only underlying cause in this case. Hyperextension or sudden rotation of the cervical spine and lateral flexion of the head may cause tension on ICA and damage to the vessel intima (6, 7). In the case presented, we assume that the ICAD was caused by excessive stretching of the neck after a sudden break while riding a motorcycle.

In arterial dissection cases, MRA is the most preferred non-invasive method because of its high sensitivity and specificity. The second best option is CTA in clinics where MRA is inaccessible (8). In this case, the dissection of the right internal carotid artery was detectable only in the MRA.

As in this case, ICAD, one of the underlying causes of ischemic stroke, can occur after neck trauma. In particular, stroke patients with a history of trauma should be investigated for traumatic artery dissection. In cases with suspected dissection, if ICAD cannot be detected by CTA, MRA should be performed due to its higher diagnostic power.

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