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Ası Sonrası Karotis Arter Diseksiyonuna Bağlı Serebral İskemi

Cerebral İschemia Associated With Carotid Artery Dissection After Hanging

Yılmaz İnanç[1], Mustafa Gökçe[1], Deniz Tuncel[1], Hamza Şahin[1], Songül Bavli[1], Yusuf İnanç[2]

[1] Kahramanmaraş Sütçü İmam Üniversitesi Tıp Fakültesi Nöroloji/Kahramanmaraş
[2] Gaziantep Üniversitesi Tıp Fakültesi Nöroloji/Gaziantep

ABSTRACT

Dissection is a term often used to describe the separation of the arterial intima layer from the media layer, and more rarely the separation of the media layer from the adventitia layer. Despite the rare occurrence of this condition, the fact that mortality rate is between 19-43% makes the early diagnosis and treatment important. The hanging-related carotid artery dissections are rarely seen. In this article, a case with cerebral ischemia resulting carotid artery dissection after hanging is presented and the clinical findings,diagnostic procedures, and choice of treatment are discussed in the light of the literature.

Key Words: Hanging, Carotid artery dissection, Ischemic infarction.

ÖZET

Diseksiyon, sıklıkla arterin intima tabakasının media tabakasından ayrılmasını, daha nadir olarak da media tabakasının adventisya tabakasından ayrılmasını tanımlamak için kullanılan bir terimdir. Az rastlanmasına rağmen bu durumun mortalitesinin %19-43 arasında olması, erken tanı ve tedaviyi önemli hale getirmektedir. Asıya bağlı karotid arter diseksiyonları nadir görülmektedir. Bu yazıda, ası sonrası karotis arter diseksiyonuna bağlı serebral enfarkt gelişen bir hasta sunulmuş, olgunun klinik ozellikleri, uygulanan tanı ve tedavi yontemlerinin secimi literatur bilgisi ile birlikte tartışılmıştır.

Anahtar Kelimeler: Ası, Karotid arter diseksiyonu, İskemik enfarkt.

Introduction

Dissection is a term often used to describe the separation of the arterial intima layer from the media layer, and more rarely the separation of the media layer from the adventitia layer. The dissection is often accompanied by the bleeding into the arterial wall. Arterial dissection can occur as a result of trauma or spontaneously. Spontaneous ones are generally seen in people over 50 years of age, but those related to any trauma are more common in patients under 40 years of age. The most common cause of carotid artery dissection is blunt trauma to the neck region. Despite the rare occurrence of this condition, the fact that the mortality rate is between 19-43% makes the early diagnosis and treatment important (1,2,3). In this article, we report a case of acute ischemic stroke who admitted to our clinic with a diagnosis of hanging-related acute traumatic dissection in his etiology.

Case Report

A 63-year-old male patient was brought to the emergency department by his relatives after an attempt of hanging. A physical examination of the patient with a psychiatric disease history revealed a trace in the neck region. His PA chest radiography, electrocardiography, and echocardiography were evaluated to be normal. In his neurological examination, his conscious was lethargic, cooperation was limited, right nasolabial duct was weak, right upper extremity was 1/5, lower extremity was 2/5 hemiplegic, and Babinski finding was positive on the right side. Imaging findings were consistent with an infarct in the left middle cerebral artery irrigation area on brain CT (figure 1) and diffusion MRI (figure 2,3), and consistent with a dissection of the left internal carotid artery on neck CT angiography of the patient (figure 4). The patient was treated with antiedema, low molecular weight heparin and

***Sorumlu Yazar:** Dr. Yılmaz İnanç, Kahramanmaraş Sütçü İmam Üniversitesi, Tıp Fakültesi Nöroloji/Kahramanmaraş
Tel: 0(505) 221 09 86, E-mail: drinancc@gmail.com
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antiaggregant therapy in the neurology intensive care unit. The patient died on the 15th day after his admission with a deterioration in his clinical condition.

Discussion

Nowadays, the average annual incidence of extracranial carotid artery dissections, an important cause of stroke, is 2-3/100,000. It has a 2.5% incidence rate among all stroke etiologies and constitutes around 5-25% of the stroke cases in the 30-45 age group (4,5). Traumatic internal carotid artery dissection occurs as a penetrant, blunt or iatrogenic trauma to the area where the carotid artery passes. The dissection picture can be seen following an attempt of hanging or a sudden pressure of the seat belt on the neck during the motor vehicle accidents(6,7). In the carotid artery, dissection may develop into tension during the hanging. The carotid arteries, because of their relatively superficial position in the neck, can be affected by external pressure. The forces implicated in such injuries may cause small lesions of the vessel wall, which could result in intimal tears, intramural hematomas or complete lumen displacement /obstruction. Ischemic symptoms are the important signs of carotid artery dissection. The mechanism underlying the dissection is the abnormal elasticity and dysplasia of the blood vessel wall. The arterial wall disorders in the elastic tissue diseases such as fibromuscular dysplasia, Ehler-Danlos syndrome and Marfan syndrome are among the predisposing factors. The patient did not have any known disposing factor other than hanging. In the arterial dissection, blood passes from the intima layer of the artery to the media layer. Thus, the resulting hematoma causes the stenosis of the actual lumen and the development of pseudoaneurysm. Eventually, ischemic symptoms arising from stenosis or embolism occur in the internal carotid artery. Embolism, usually tends to face the middle cerebral artery. The ischemic symptoms can be seen in a wide variety of conditions such as sudden temporary loss of vision, unilateral motor and/or sensory loss, aphasia, and hemiparesis, and may develop within hours or days following the dissection (8,9,10).

Fig. 1. infarct in the left middle cerebral artery irrigation area in the head CT

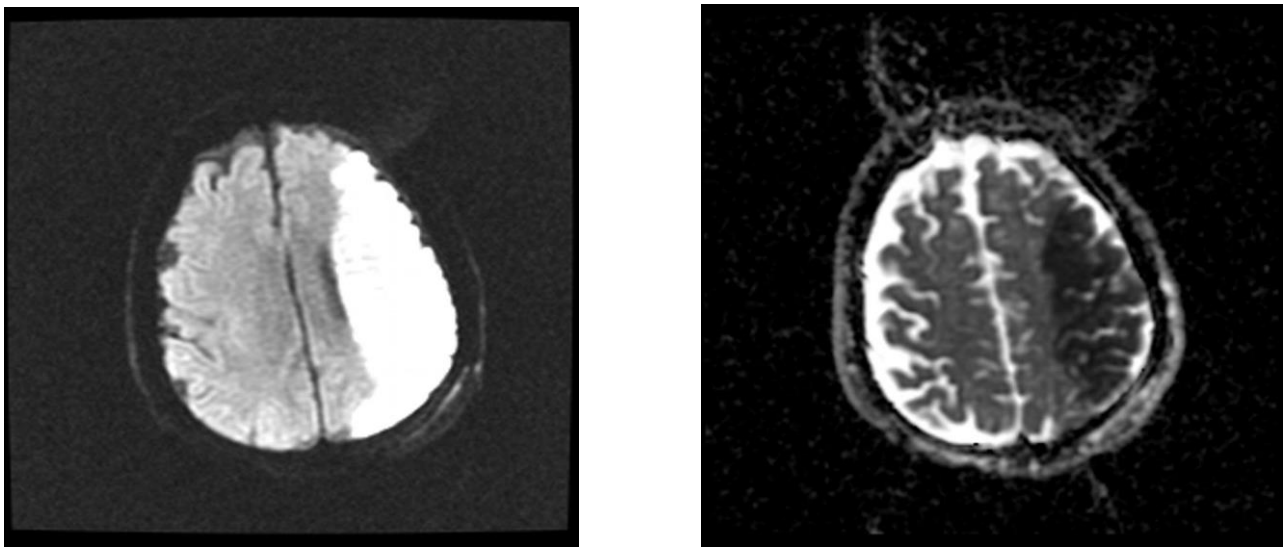

Fig. 2. 3. Diffusion-weighted images left-middle cerebral artery infarction.

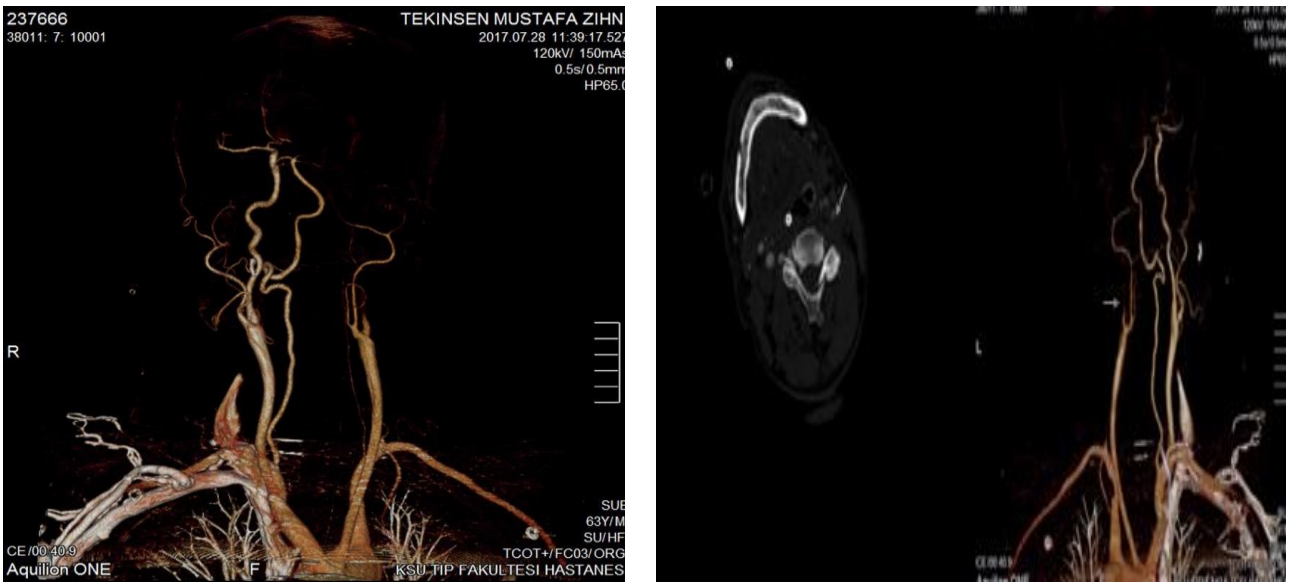

Fig. 4.5. Dissection of the left internal carotid artery in neck CT angiography

In the present case, the ischemic symptoms and impaired consciousness appeared immediately after the event.This is a clinical picture with a high mortality and morbidity (11). The Doppler USG, CT angiography, MRI angiography are the radiological methods that can be used for the diagnosis. In the present case, there have been findings consistent with the infarct in the left middle cerebral artery irrigation area in the head CT and diffusion MRI. Besides, symptoms were determined consistent with the dissection in the left internal carotid artery in the CT angiography. The hanging-related carotid artery dissections are rare. In the study by Jayaprakashet al., only 1.1% of one hundred eighty nine hanging cases were determined to have carotid artery dissection (7). The treatment is usually implemented with antiaggregants and anticoagulants. Anticoagulant therapy is the first choice in the medical treatment of traumatic carotid artery dissection.The purpose of anticoagulation is to prevent the embolisms that may originate from the damaged dissection region and the possible vascular occlusions. The treatment is usually started with heparin and continued with warfarin is used in the maintenance treatment.The surgical treatment can be performed in patients with neurological deterioration despite the anticoagulant therapy, patients with pseudoaneurysm, and patients who cannot get anticoagulant due to the risk of bleeding (12,13,14). Heparin may increase the risk of bleeding in a patient with multiple traumas or a patient with large infarction.For this reason, the low molecular weight heparin can be administered in such patients. It is known that antiaggregant therapy can also be applied to reduce the risk of bleeding in the presence of underlying arterial disease or residual aneurysms.In the present case, the low-molecular heparin therapy and antiaggregant therapy were applied because of a wide infarction.In conclusion, the carotid artery dissection should be kept in mind particularly in patients who are brought to the emergency department after hanging, and it is important in this disease with high mortality that the diagnosis of the patient is made and the treatment is started as soon as possible.

Hasta Onamı: Yazılı hasta onamı bu olguya katılan hastanın birinci derece yakınından alınmıştır(Olgu yoğun bakımda exitus olmuştur).

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