

CEREBRAL INFARCTION DUE TO THROMBOSIS OF ICA IN A NEAR HANGING CASE

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ABSTRACT

Suicidal hangings usually result in death. Sometimes the hanging attempts were finished incomplete namely near hanging. Dissection and occlusion in variable degree of internal carotid artery (ICA) result in neurologic complications due to cerebral hypoxia and anoxia in the near hanging. These are hemiplegia, paraplegia,

quadriplegia, choreic movements, Korsakoff syndrome, retrograde amnesia, epilepsy. This case report describes a cerebral infarction due to the left ICA occlusion by atherosclerotic thrombosis in a patient with near hanging.

Key Words: Near hanging, cerebral infarction, internal carotid artery, thrombosis, suicide *Nobel Med* 2011; 7(1): 109-111

ÖLÜMLE SONUÇLANMAYAN ASI VAKASINDA ICA TROMBOZUNA BAĞLI SEREBRAL İNFARKT

ÖZET

Ası şeklindeki intiharlar genellikle ölümlü sonuçlanır. Bazen ası girişimi eksik kalır ve asılayazma şeklinde tanımlanır. İnternal karotid arterdeki (ICA) yırtılma veya tıkanma şeklinde çeşitli derecelerdeki lezyonlar, serebral hipoksi veya anoksiye bağlı nörolojik komp-

likasyonlarla sonuçlanabilir. Bunlar; hemipleji, parapleji, kuadripleji, koreik hareketler, Korsakof sendromu, retrograd amnezi veya epilepsidir. Çalışmamızda sol internal karotid arterde aterosklerotik tromboza bağlı tıkanma sonucu serebral infarkt gelişen asılayazma olgusu değerlendirilmiştir.

Anahtar Kelimeler: Asılayazma, serebral infarkt, internal karotid arter, tromboz, intihar *Nobel Med* 2011; 7(1): 109-111

INTRODUCTION

Suicidal hangings usually result in death. Sometimes the person survives and this incomplete hanging is named as near hanging. Dissection and occlusion in variable degree of internal carotid artery (ICA) result in neurologic complications in near hanging. Hemiplegia, paraplegia, quadriplegia, choreic movements, Korsakoff syndrome, retrograde amnesia, and epilepsy are the neurological complications.^{1,2} Dissection or thrombotic occlusion of carotid arteries requires medical and surgical attention.

We report a case with cerebral infarction due to total ICA occlusion developed on the atherosclerotic artery wall in a near hanging case on the second day.

CASE REPORT

A 50-year-old man was brought to the emergency department after his suicide attempt with hanging. The duration of the hanging was not known. The general physical examination revealed a “V” shaped ecchymosis and an edema appearance on his neck from front to backward bilaterally. On neurological examination, he was unconscious with shallow spontaneous breathing. Pupils were symmetrically isochoric and reacting to light. Motor responses were extensor to painful stimuli in four extremities. Plantar reflexes were unresponsive. No objective pathology was showed on cervical X-ray and computerized tomography (CT). The brain CT performed the same day was also normal and had no findings of early stage cerebral infarction. Routine hemogram and biochemical parameters were in the normal range. The patient has been taken to the intensive care unit.

Antiedema and supportive treatment was started. He was alert on the second day. The right hemiparesis with central facial paralysis was observed. He had no aphasia. He was dysphonic. Laryngoscopic examination showed bilateral vocal cord paralysis. Brain CT revealed large infarction area of the left medial cerebral artery (MCA) territory (Figure 1). Doppler USG of the carotid arteries revealed total occlusion with thrombosis and calcified echogenic foci distally of the left ICA (Figure 2). Occlusion from the proximal left ICA and thrombus was observed in magnetic resonance angiography Pencil type ending occlusion of the left ICA was demonstrated just behind bifurcation on bilateral carotid arteries angiography (Figure 3). Cardiac evaluation was normal by auscultation, electrocardiography and transthoracic and esophageal echocardiography. No other causes such as Protein C, S, antitrombin-III, APC resistance were detected to result in thrombus. Antiagregant

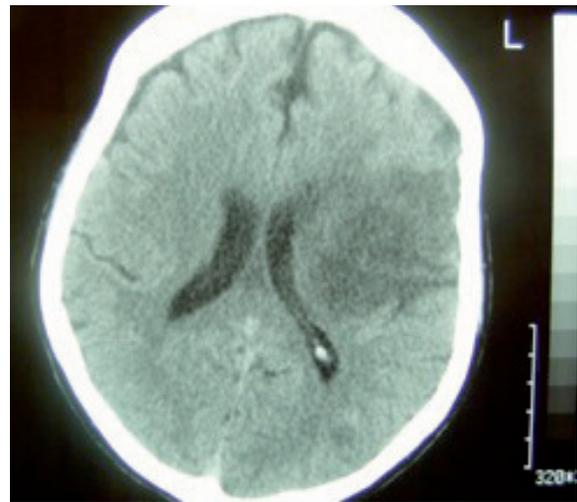


Figure 1. Large infarction area of left medial cerebral artery territory.

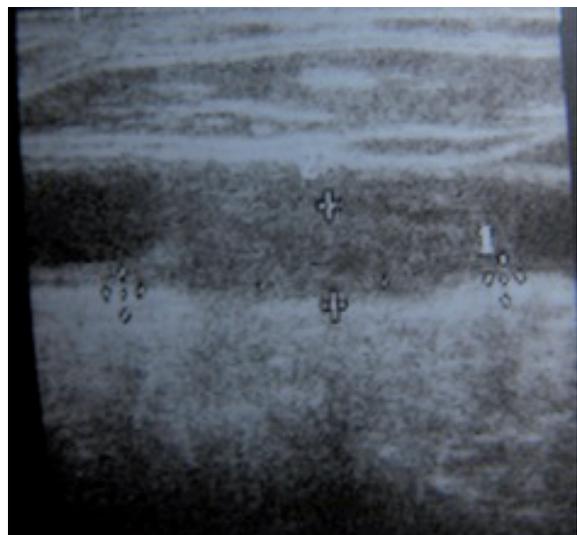


Figure 2. Atherosclerotic plaque in both proximity of total thrombosis in left ICA.

treatment ensued and intense rehabilitation has been performed. At the end of the second month he was able to walk with braces. Dysphonia improved with cortisone therapy.

After approximately two years; he was able to walk by himself with mild spastic right hemi paresis.

DISCUSSION

In hanging, there are several factors influencing cerebral ischemia including autonomic hyperactivity leading to cardiac arrest, airway compromise by upward displacement of the tongue and epiglottis, jugular vein occlusion by mild compression, carotid artery occlusion by moderate compression and vertebral artery occlusion due to spine injuries.^{1,3} With loss of consciousness, decreased muscle tone facilitates arterial obstruction and intimal tears, which are →

found at the level of the ligature in about 5% of autopsies of hanging victims.⁴ There are only a few case reports of thrombosis of the carotid artery secondary to traumatic lesions of the artery wall such as intramural bleeding, dissection of the medial layer or horizontal rupture of intima, media and adventitia.⁵⁻⁷

A subtotal rupture of the carotid artery is assumed to be a rare event after hanging and is more frequently caused by blunt neck trauma, extreme overstretching or whiplash-injuries.^{7,8} Suspected carotid artery injury can be evaluated using color flow Doppler ultrasound, but injuries often lie above the carotid bifurcation and are better visualized using conventional angiography or magnetic resonance angiography.⁹⁻¹¹

We postulate that thrombosis might have been developed due to intima injury. Elongation of atherosclerotic plaque in both proximity of thrombosis level might be considered as an evidence of plaque rupture. In unilaterally carotid occlusions conservative treatment methods are applied as in our patient.⁶ As carotid occlusion may develop four days later in near hanging,⁵ we suggest that patients with

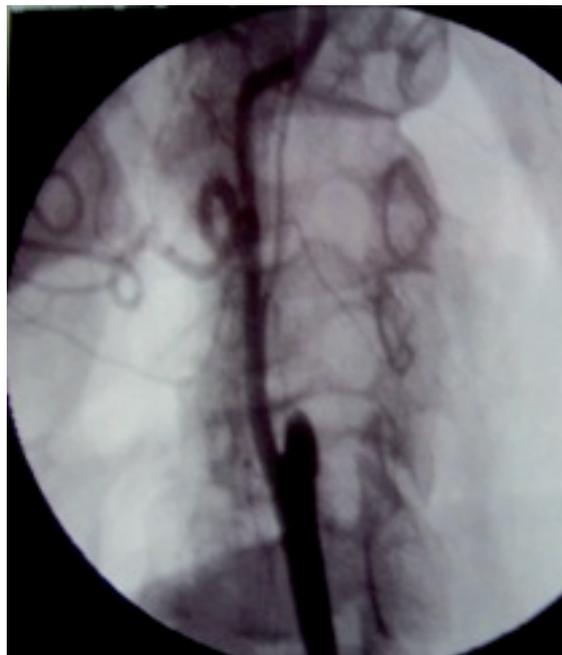


Figure 3. Pencil type ending occlusion of the left ICA was demonstrated just behind bifurcation on bilateral carotid angiography.

near hanging should be (followed up) with Doppler USG.



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