

## **CASE REPORT**

## **OLGU SUNUMU**

### **BILATERAL VERTEBRAL ARTERY DISSECTION AFTER HAIR WASHING IN A YOUNG WOMAN**

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#### **ABSTRACT**

Vertebral artery dissection (VAD) may occur after minor traumas in the head and neck region. A 29-year-old female patient, she had complaints of dizziness, nausea and vomiting that started after hair washing at the hairdresser. Bilateral VAD was detected on cranial imaging and angiography. Control angiography performed after 3 months of antiaggregant treatment was normal. Here, we aimed to present a rare case of VAD that occurred after a minor neck injury and benefited from medical treatment.

**Keywords:** Vertebral artery, dissection, trauma, treatment.

### **GENÇ BİR KADINDA SAÇ YIKAMASI SONRASI BİLATERAL VERTEBRAL ARTER DİSEKSİYONU**

#### **ÖZ**

Baş ve boyun bölgesinin minör travmaları sonrasında vertebral arter diseksiyonu (VAD) oluşabilir. 29 yaşında bir kadın hasta, kuaförde saç yıkatma sonrası başlayan baş dönmesi, bulantı ve kusma şikayetleri vardı. Kranial görüntüleme ve anjiyografide bilateral VAD saptandı. Üç ay antiagregan tedavi sonrası yapılan kontrol anjiyografi normaldi. Biz burada minör bir boyun hasarı sonrası oluşan ve medikal tedaviden fayda gören nadir bir VAD olgusu sunmak istedik.

**Anahtar Sözcükler:** Vertebral arter, diseksiyon, travma, tedavi.

#### **INTRODUCTION**

Although cervical artery dissections have a small proportion among all causes of ischemic stroke, they have a large proportion among causes of young stroke. The incidence of vertebrobasilar system dissections is less than carotid artery system dissections. It can be occur in all age groups. It is more common between the ages of forty and fifty. The average age in women is lower than in men (1-3). Since mild head and neck traumas are common in daily life, it is not easy to diagnose VAD. Because minor symptoms may be overlooked or neurological symptoms may not be present in minor traumas. Therefore, after these minor traumas, delay in diagnosis and treatment may result in serious morbidity and mortality (4).

Here, we discussed clinical and radiological findings, and the treatment approaches in a young woman with bilateral VAD caused by minör trauma.

#### **CASE REPORT**

A 29-year-old female patient applied to our emergency department with the complaints of dizziness, nausea-vomiting that started after washing the hair at the hairdresser 6 days ago. Neurological examination was conscious, cooperative, orient, cerebellar tests were bilaterally skilled and had no motor deficits. There was cerebellar infarction in brain computed tomography (CT) and cranial magnetic resonance imaging (MRI) (Figure 1). Bilateral vertebral artery doppler ultrasonography showed increased blood flow changes. Irregularities (dilation and stenosis) of the vessel walls in both vertebral arteries in cranial MR angiography. Digital subtraction angiography (DSA) revealed an image compatible with dissection from the V1 segment of the bilateral vertebral artery to the distal V2 segment. Furthermore, distal filling was insufficient, there were signs of distal vasospasm (Figure 2).

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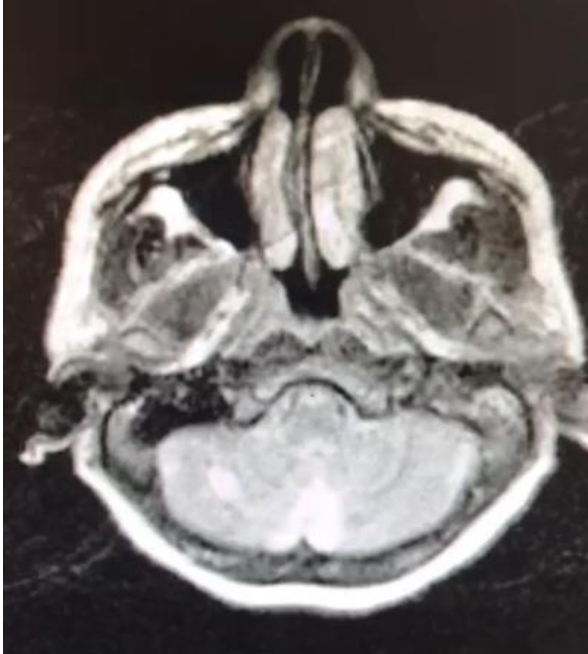


Figure 1. Cranial MRI.

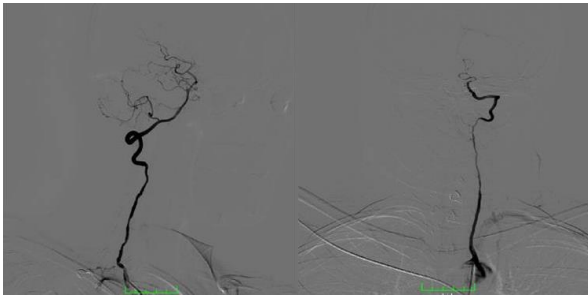


Figure 2. Bilateral VAD in DSA.

Since these dissection findings did not cause serious neurological deficits, endovascular procedure was not considered and medical treatment was decided. Medical treatment (Acetyl salicylic acid 100 mg/day+Clopidogrel 75 mg/day+Atorvastatin 10 mg/day) follow-up and control DSA 3 months later was recommended. Large scale laboratory and vasculitis tests were performed. Negative results were eliminated a systemic vasculitis. Fibrinogen 475 mg/dL (200-400), D-Dimer 0.52 mg/L (0-0.5), total cholesterol 223 mg/dL (<200) were measured. Bilateral vertebral artery was evaluated as normal in the control DSA examination performed after three months of medical treatment (Figure 3). Signed consent was obtained from the patient regarding the case report.

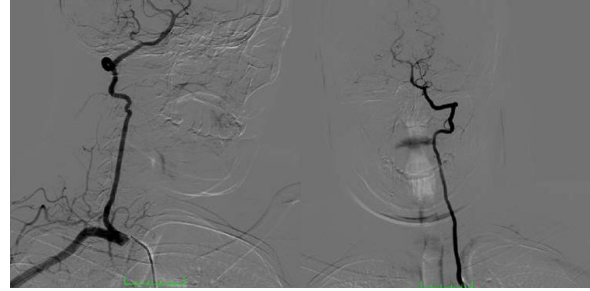


Figure 3. Control DSA after 3 month.

## DISCUSSION AND CONCLUSION

It composes 2% of all ischemic stroke causes and 20% of ischemic stroke causes under 45 age (1-3). The annual incidence is 2.6-5 / 100.000 (5). In recent years, the incidence has been increased, albeit partially, by using modern diagnostic imaging methods. There is no obvious gender dominance. A study has shown that women tend to develop this condition 5 years earlier than men. In another study conducted by Hassan et al., showed that the incidence of bilateral VAD was 7%. Bilateral VAD is mostly connected to the chiropractic maneuvers of the cervical spine. In addition, it has been stated that volleyball, basketball, swimming, dancing, sudden neck movements and even stretching can cause the VAD (6,7).

Extracranial parts of the vertebral artery are more prone to dissection. The section known as the place where it penetrates into the cranium by piercing the dura is the part where dissection is seen most frequently. Up to 10% of extracranial VAD may extend into intracranial (5,6). Thus, subarachnoid hemorrhage can be added to the clinical table. Distraction / extension, distraction / flexion and lateral flexion injuries are the mechanisms underlying traumatic VAD. In addition, it is known that non-traumatic vasculitic causes (such as Systemic Lupus Erythematosus-SLE, Behçet's Disease-BD, Familial Mediterranean Fever-FMF) of predisposing VAD (8).

Headache is a common symptom. The pain is localized to the occipital region, unilateral or bilateral. Neck pain may be an initial symptom. There was no head or neck pain in this case. Tinnitus, vertigo, unilateral facial numbness, nausea and imbalance are other accompanying symptoms. Neurological damage after VAD is largely due to cerebral ischemia. Often the

posterior inferior cerebellar artery is affected (6,9). In this case, Wallenberg syndrome could be seen. In some cases, minor symptoms or no neurological symptoms may delay diagnosis and treatment (4).

DSA is the gold standard for diagnosis. The most common findings here are chronic stenosis as eccentric, flat or irregular. Cranial MRI, MRA and CT-angio are other alternative diagnostic methods. The crescent sign is diagnostic on the fat-saturated T1 imaging. The sensitivity and specificity of CT-angio are higher. Color DUS can be used as an auxiliary diagnostic method (6,9).

Anticoagulation is the primary approach to early treatment. There are studies showing that the anti-aggregate treatment option is equally effective as an anticoagulant. As a practical approach, it is recommended to continue with anticoagulant therapy (warfarin after heparin) for 3 months in the acute period, followed by antiaggregant therapy (clopidogrel or ASA) for 3 months if there is no problem in control imaging. If there is a risk of bleeding against conventional anticoagulant agents, then new generation oral anticoagulant agents may be preferred (5,9). General opinion in dissections is the use of anticoagulants in medical treatment. But there is no conclusive evidence about this. In this case, she was followed up with double antiaggregant, without anticoagulant. The patient has benefited from this treatment. Surgical interventions concern endovascular treatment and arterial repair. This is a recommended form of treatment in case of a complete transection of the vessel or an accessible lesion with an early neurological deficit. In a study by Majidi et al., a national database was scanned and 84 vertebral artery dissection patients were examined. It was observed that 6 of these patients received endovascular treatment (10). In another single-center study presented by Borata et al. were reported that intracranial stents were applied to six iatrogenically occurring (three internal carotid artery, three vertebral arteries) dissection cases, as they reduced or stopped cerebral blood flow almost completely. In the control angiographies performed 6-8 months after the patients who were followed up with dual antiaggregant therapy after the application, it was observed that the arterial lumen was reconstructed and the current

was restored (11). There is a lot of controversy about the advisability of endovascular intervention. Most of the literature agrees on a multidisciplinary approach to final decision (12,13).

As a result, VAD has a relatively benign prognosis. Many of the cases benefit from medical treatment. However, the option of endovascular treatment should be an alternative method in cases of dissection with symptomatic and progression that seriously blocks cerebral blood flow.

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Çabalar et al.

**Ethics**

**Informed Consent:** The authors declared that informed consent form was signed by the patient.

**Copyright Transfer Form:** Copyright Transfer Form was signed by the authors.

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