



Pulsatile oropharyngeal and neck mass caused by bilateral tortuous internal carotid artery: a case report

İki taraflı kıvrımlı internal karotis arterin neden olduğu pulsatil orofarengal ve boyun kitlesi: Olgu sunumu

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The cervical course of the internal carotid artery is almost straight in contrast to the intracranial portions which are highly tortuous. The incidence of variations in the cervical course of the internal carotid artery of the population is approximately 10-40 percent. In this case report, a 76-year-old female patient with a pulsatile mass at the posterior oropharyngeal wall and anterior neck was presented. Physical examination revealed a pulsatile anterior neck mass, and a pulsatile mass at the right posterior wall of the oropharynx. Imaging revealed a bilateral tortuous internal carotid artery and segmental left internal carotid arterectomy and distal internal carotid artery - lateral common carotid artery anastomosis were performed with no postoperative complications.

Key Words: Neck mass; oropharyngeal mass; tortuous internal carotid artery.

İnternal karotis arterin servikal seyri, intrakraniyal parçasının yüksek derecede kıvrımlı olmasına karşın oldukça düzdür. İnternal karotis arterin servikal seyrindeki değişikliklerin toplumdaki oranı yaklaşık %10-40 civarındadır. Bu olgu sunumunda ağız boşluğu arka duvarında ve boyun ön kısmında kitlesi olan 76 yaşında kadın hasta sunuldu. Fizik muayenesinde ağız boşluğu arka duvarının sağ tarafında ve boyun ön kısmında pulsatil kitle izlendi. Yapılan incelemelerde iki taraflı kıvrımlı internal karotis arteri saptandı ve segmental sol internal karotis arterektomi ve distal internal karotis artere - lateral ortak karotis artere anastomoz uygulandı, ameliyat sonrası komplikasyon olmadı.

Anahtar Sözcükler: Boyun kitlesi; orofarengal kitle; kıvrımlı internal karotis arter.

The cervical course of the internal carotid artery (ICA) is almost straight in contrast to the intracranial portions which are highly tortuous. However anatomic variations are present like ICA elongation abnormalities which may be classified as coiling, looping, kinking or tortuosities of the vessels.

The prevalence of these anomalies has not been studied within healthy populations. The incidence of variations in the cervical course of the ICA has been reported as 10-40% of the population in systematic postmortem statistics.^[1] These anomalies can result in ischemic hemispheric and ocular events in some stenotic cases. These anomalies are

rarely symptomatic. For this reason, the literature includes low numbers of patients over a long time span. If the artery contacts with the oropharyngeal or nasopharyngeal wall, terrible complications may occur in routine procedures.

In this article, we present a case of pulsatile oropharyngeal and neck masses caused by bilateral tortuous ICA.

CASE REPORT

A 76-year-old woman was admitted to our clinic with the symptoms of obstructive sensation in the throat and history of an anterior neck mass within the last 4-5 years. The obstructive symptom has gradually progressed with accompanying dyspnea at night. She was on treatment of hypertension for eight years and had a history of temporary right side stroke one year ago.

Physical examination revealed a pulsatile anterior neck mass, and a pulsatile mass at the right posterior wall of the oropharynx (Figure 1, 2). The oropharyngeal mucosa and neck skin were normal. An abnormality of the carotid artery was suspected, and magnetic resonance imaging showed that the ICA was projecting toward the right pharynx and right side of the neck (Figure 3). Angiography demonstrated kinking of the upper segment internal carotid artery bilaterally and the tortuous ICA at lower anterior neck (Figure 4, 5). No other aneurysm or tumor was detected in the neck.

The patient was referred to the cardiovascular surgery clinic. Segmental left internal carotid arterectomy was performed for the kinking segment and the distal ICA was connected to the lateral side of the common carotid artery (Figure 6). No complication occurred in the early postoperative period.

DISCUSSION

The tortuous cervical ICA abnormalities are commonly observed in the outpatient clinics of otolaryngology. Angiographic studies demonstrated the incidence of this abnormality as 3-12 percent.^[1]

The exact cause of vascular tortuosity is unknown. Atherosclerosis and congenital deformities are thought to be the two main causes of this abnormality.^[2] It is also speculated that, if the abnormality has a congenital origin, atherosclerosis and hypertension may aggravate it in older ages. Our 76-year-old hypertensive patient who suffered from stroke was consistent with the literature in terms of hypertensive and atherosclerotic etiology causing tortuosity of ICA.

Our patient complained of a pulsatile neck mass, throat obstruction and dyspnea. We thought that these symptoms were caused by a narrowing in the oropharyngeal space. After detailed examination, a vascular problem was suspected and magnetic resonance imaging and magnetic resonance angiography were performed which showed ICA tortuosity.

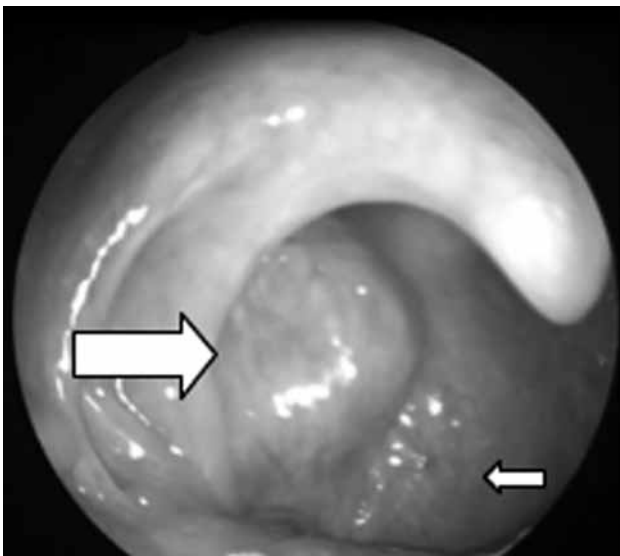


Figure 1. The pulsatile mass was located at the posterior wall of oropharynx (showed by small arrow) at the right. Round pulsating bulging of the right oropharyngeal was seen extending to uvula.

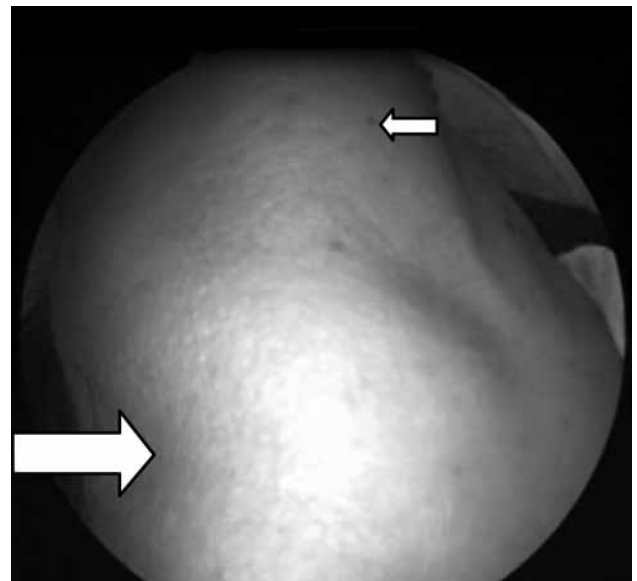


Figure 2. The pulsatile mass was located at the midline bottom of the neck. Small arrow shows trachea at the midline of the neck.

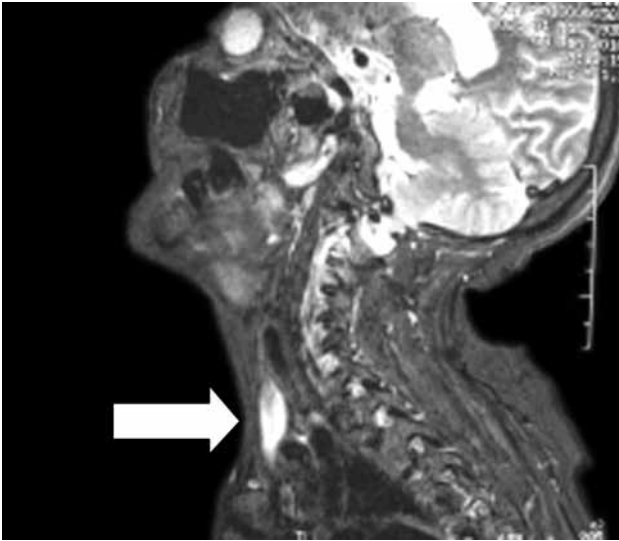


Figure 3. The magnetic resonance imaging showed the internal carotid artery which was projecting towards the right pharynx (arrows) and narrowing the oropharyngeal cavity on the axial and coronal views.

Head and neck surgeons frequently operate in the oropharynx and nasopharynx with the limited exposure offered by transoral access. It is important that otolaryngologists recognize ICA elongation anomalies, because they may cause fatal hemorrhage during surgical procedures such as tonsillectomy, adenoidectomy, biopsy and drainage of peritonsillar abscess.^[3] Radiologic evaluation is essential before surgical procedures for oropharyngeal and neck masses. Magnetic resonance



Figure 5. Left internal carotid artery.

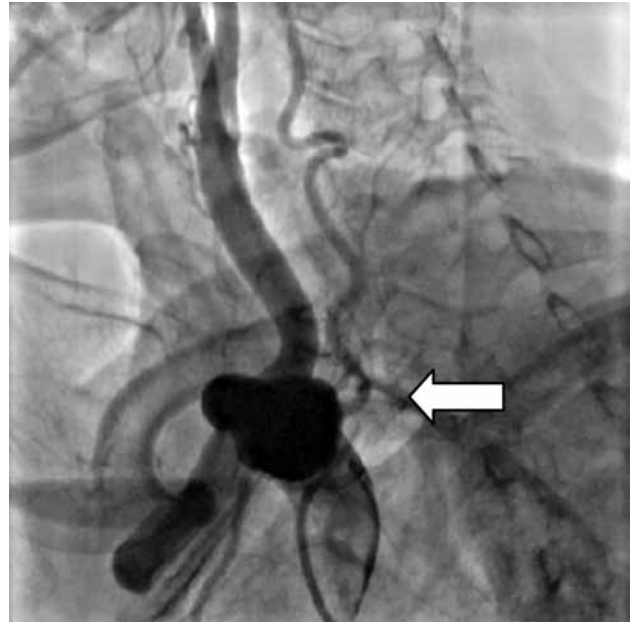


Figure 4. Right tortuous internal carotid artery.

imaging is a non-invasive method to visualize the abnormality of vessels together with the surrounding soft tissues. Angiography confirms the diagnosis of this vascular abnormality.

Commonly, these abnormalities are asymptomatic but the symptoms might reflect as sudden onset of blindness, transient ischemic attack and stroke.^[4]



Figure 6. Postoperative magnetic resonance angiography image which shows anastomosis.

Our patient had a history of transient ischemic attack one year ago. Tortuous ICA can also be a cause of pseudotumor in the retropharyngeal space.^[5,6] The tortuous ICA presenting with an abnormal sensation in the throat is uncommon.^[7] Besides, no case of a mass in the neck and oropharynx with bilateral ICA tortuosity has been reported in the literature.

Tortuous ICA needs no treatment as long as the patient does not have a cerebrovascular ischemic sign. We treated our patient in order to protect against a second left hemispheric ischemic attack by resection of tortuous part of ICA and anastomosis to the common carotid artery.

In conclusion, manual and ocular exploration of an abnormal pulsation in the neck must never be omitted. It is not always easy to detect all cases of aberrant ICA or ICA transposition during clinical exploration; therefore, we recommend the use of ICA arteriography and magnetic resonance angiography in the preoperative evaluation of those patients that present asymmetry of the posterior pharyngeal wall. Radiologists should bear in mind this anomaly and alert the clinician to its existence, even when it is an incidental finding in otherwise asymptomatic patients. Otolaryngologists must recognize this anomaly to avoid a serious compli-

cation and the patient should be made aware of their condition.^[4,8]

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