The Dolichoarteriopathia of Common Carotid Artery Narrowing the Airway

Havayolunu Daraltan Karotid Arter Dolikoarteriopatisi

Havayolunu Daraltan Karotid Arter / Common Carotid Artery Narrowing the Airway

Erkan Eski[1], Hasan Yerli[2]
[1]Department of Otolaryngology, Başkent University İzmir, Türkiye.
[2]Department of Radiology, Başkent University İzmir, Türkiye.

Özet

Karotid arter anomalileri kulak burun boğaz pratiğinde nadir rastlanan varyasyonlardır. Bu yazıda havayolunu daraltan ve epiglota doğru uzanan tortuos karotid arter olgusu sunulmuştur. Boğazda yabancı cisim hissi ile başvuran 73 yaşında bayan olgunun endoskopik muayenesinde sağ lateral farengeal duvar piriform sinüs ve larinks düzeyinde pulsatil şişlik saptandı. Bilgisayarlı tomografi incelemesinde orofarinks ve piriform sinüse doğru bulging yapan sağ karotid arter izlendi. Laringolojik cerrahi müdahalelerden önce karotid arter anomalilerinin saptanması ciddi komplikasyonların önlenmesi açısından çok önemlidir.

Anahtar Kelimeler

Karotid Arter, Larinks, Anomali.

Abstract

Tortuousity of the common carotid artery is rarely seen in otorinolaryngologic practice. In this report, a case of tortuous common carotid artery narrowing the airway and indenting the epiglottis is presented. In endoscopic examination, pulsating bulge at the level of right lateral farengeal wall, pyriform sinus and larynx was found in a 73 year-old female. Computerized tomographic scan showed tortuous right common carotid artery bulging the submucosal area of the oropharynx and pyriform sinus. Awareness of the tortuous common carotid artery before any laryngologic surgical intervention is very important to prevent serious complications.

Keywords

Carotid Artery, Larynx, Abnormalities.

DOI: 10.4328/JCAM.589 Received: 20.01.2011 Accepted: 18.02.2011 Published Online: 01.01.2013 J Clin Anal Med 2013;4(1):52-53
Corresponding Author: Erkan Eşki, Department of Otolaryngology, Başkent University İzmir, Türkiye.
Phone: +902323305230 Fax: +902323369421 E-mail: eskierkan@mynet.com

Introduction

A dolichoarteriopathies of vascular structure is clasified as either tortuousity or kink. The anomaly is defined as a tortuosity, when the artery has C or S shape and it is defined as kink, if there is sharp angulation.[1] Pathogenesis of these anomalies is controversial. Some authors point out that it is a consequence of myointimal thickness in atherosclerosis, while others think that it is secondary to anatomical variations of embryological origin.[2] Tortuousity of the common carotid artery is rarely seen in otorinolaryngologic practice. If these anomalies are missed preoperatively, catastrophic result can occur during the any intervention of the head and neck surgery.[3] We present a case of tortuous common carotid artery narrowing the airway and indenting the epiglottis which is diagnosed by endoscopic examination and computerized tomography (CT).

Case

A 73 year-old female patient was admitted of our clinic with foreign body sensation in right
side on her throat. She had a medical history hypertension and atherosclerotic heart disease
and had undergone coronary by pass 5 years ago. There was pulsating bulge in right pharyngeal wall and narrowing the airway in physical and endoscopic examination (Figure 1). All other head and neck examinations were unremarkable. CT examination showed tortuos common carotid artery bulging the pyriform sinus and indenting epiglottis (Figure 2A). It was determined calcific foci in common carotid arter (Figure 2B). The patient was informed about possible results associated with this anomalies. No treatment was given.

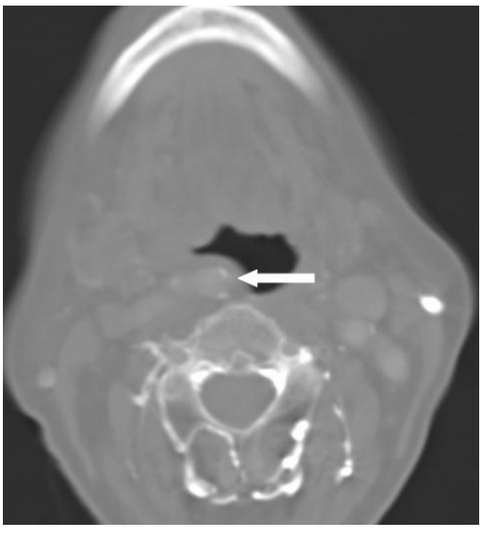


Figure 1. Endoscopic view shows narrowing of the airway.

Discussion

Anomalies of the carotid arteries in the neck are rarely seen.[4] These anomalies usually seen in older adult patients and asymptomatic.[5] Ciorba et al.[6] reported two cases abberrant internal carotid artery in the middle ear. Choi et al.[7] reported a case tortuous common carotid artery which traversed trachea encountered during neck dissection. If this condition is not identified before or during surgery, the disaster of surgical intervention may be occur.

We suspected a pathology that narrowed oropharynx and larynx in endoscopic examination. CT scan confirmed tortuousity of common carotid artery which narrowed pyriform sinus and indenting epiglottis. Okami et al.[5] reported three cases of tortuous carotid artery diagnosed by magnetic resonance angiography (MRA). Endoscopic examination and CT scan without MRA is adequate for diagnosis of this anomalies. CT is faster, more accessible, tolerable and cheaper than MRA and also sensitive in determining atherosclerotic focus.

The main causes of tortuousity are atherosclerosis, hypertension and congenital anomalies.[8]

Our patient had hypertension and atherosclerosis. We think that tortuousity is arised from atherosclerosis. The management of carotid artery tortuosity are controversial. Asymptomatic tortuosity is often managed conservatively.[8] We informed the patient about probable results related with this pathology without given treatment. Surgical treatment might be indicated for symptomatic patients. Surgical correction in symptomatic carotid elongations is better for stroke prevention than medical treatment.[8]

Tortuous common carotid artery may cause fatal hemorrhage during otolaryngologic surgical procedures such as tonsillectomy and laryngoscopic intervention. Otolaryngologist have to recognize this anomaly to avoid a serious complication.

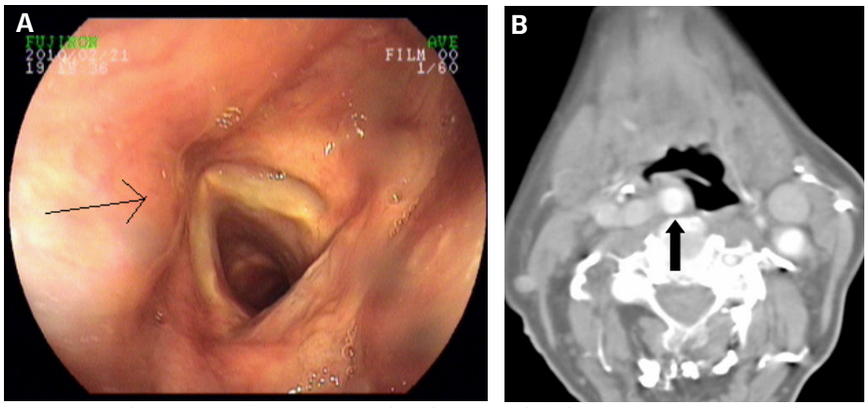


Figure 2. (A) Axial postcontrast CT examination (at the soft tissue window) shows tortuous common carotid artery bulging the pyriform sinus and indenting epiglottis at the level of the right hypopharyngeal wall (black arrow). There is minimal expansion in the orbit medial wall, no bone erosion is seen. (B) Axial CT examination (at the bone window) shows a few small punctate calcific foci (white arrow) in the right distal common carotid arter.

References

1. Mascoli F, Mari C, Liboni A, Virgili T, Marcello D, Mari F, et all. The elongation of the internal carotid artery. Diagnosis and surgical treatment. J Cardiovasc Surg 1987;28(1):9-11.
2. Beigelman R, Izaguirre AM, Robles M, Grana DR, Ambrosio G, Milei J. Are kinking and coiling of carotid artery congenital or acquired? Angiology 2010;61(1):107-112.
3. Ozcan KM, Ozcan I, Selcuk A, Pasaoglu L, Hatipoglu HG, Dere H. Tortuous internal carotid artery narrowing pyriform sinüs:two cases. Clinical Imaging 2008;32(3):220-222.
4. Aydin E, Akkuzu G, Akkuzu B, Ozluoglu LN. Tortuous internal carotid artery indenting the pyriform sinüs:a case report. Eur Arch Otorhinolaryngol 2005;262(4):351-352
5. Okami K, Onuki J, Ishida K, Kido T, Takahashi M. Tortuousity of the internal carotid artery-report of three cases and MR-angiography imaging. Auris Nasus Larynx 2001;28(4):273-276.
6. Ciorba A, Bianchini C, Ortore RP, Bovo R, Martini A. Aberrant internal carotid artery in the middle ear: two case reports. B-ENT 2007;3(4):191-4.
7. Choi G, Han SH, Choi JO. Tortuous common carotid artery encountered during neck dissection. Eur Arch Otorhinolaryngol 1998;255(5):269-270.
8. Leipzig TJ, Dohrmann GJ. The tortuous or kinked carotid artery:pathogenesis and clinical consideration.A historical review. Surg Neurol 1986;25(5):478-86.