

A Case With Thyrolingual Trunk Originating From Common Carotid Artery

ARTERIA CAROTIS COMMUNIS'TEN ORIJİN ALAN TRUNCUS THYROLINGUAL OLGUSU

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ÖZET

Boyununda bulunan büyük damarların varyasyonları ile ilgili bilgi yetersizliğinin çeşitli cerrahi problemlere yolaçtığı gözlenmektedir. Bu varyasyonlardan birisi de arteria thyroidea superior ve arteria lingualis'in arteria carotis communis'ten ortak olarak orjin almasıdır. Tiroid ve karotis arter cerrahisinde görülebilecek komplikasyonlardan sakınmak için az görülen bu anatomik varyasyonun dikkate alınarak cerrahi uygulamaların yapılması önemlidir.

Dokuz Eylül Üniversitesi Tıp Fakültesi Anatomi Anabilim Dalı'nda disseksiyon çalışmaları sırasında formalinle fikse edilmiş 60 yaşında erişkin erkek kadavrada arteria thyroidea superior ve arteria lingualis'in disseksiyonu boyun bölgesi disseksiyon kuralları çerçevesinde yapıldı.

Truncus thyrolingualis bifurcatio carotidis'in 7,6 mm distalinde, arteria carotis communis'in anterolateral yüzünden orjin almaktaydı. Ortak kökün uzunluğu 2,1 mm olarak ölçüldü.

Çalışmamızda sunulan olgu cerrahi işlemler, kemoterapötik tedavi ve radyolojik tanılama sırasında hatırla tutulması gereken boyun bölgesindeki büyük damar varyasyonlarına ait iyi bir örnek olarak gösterilebilir.

Anahtar sözcükler: Arteria carotis externa, arteria thyroidea superior, arteria lingualis, truncus thyrolingualis, varyasyonlar

SUMMARY

Many surgical problems could be observed due to lack of knowledge about anatomic variations of large vessels in the neck region. The superior thyroid artery and lingual artery originated from the common carotid artery with a common trunk is one of these variations. It is important to know and take into consideration this rare variation to avoid from the complications of the thyroid and carotid surgery.

In Anatomy Department of Dokuz Eylül University Medical Faculty, during the dissection course the thyroid and lingual arteries dissections were done according to neck region dissection procedures in a 60 years old formalin fixed male cadaver.

The thyrolingual trunk was located at the anterolateral surface of the common carotid artery, 7.6 mm distal to the carotid bifurcation. Its length was measured as 2.1 mm.

The case presented in our study can be a good sample to the large vessels variations in the neck region to be remembered during the surgical procedures, chemotherapeutic treatments and radiologic diagnosis.

Key words: External carotid artery, superior thyroid artery, lingual artery, thyrolingual trunk, variations

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The external carotid artery (ECA) begins at the superior margin of the thyroid cartilage (IC) and

divides into branches on its way in the head and neck regions. Normally it ends at the retromandibular fossa

giving the end branches. The branches originated from the anterior surface of the ECA are the superior thyroid artery (STA), facial artery (FA) and lingual artery (LA) (1-4). The STA is the first branch of the ECA, dividing at the level of the great cornu (GC) of the hyoid bone and supplies the thyroid gland and adjacent muscles. The LA, originated from the ECA between the STA and FA, supplies the tongue and floor of the oral cavity (1,4-7).

Lemaire et al. stated that the cases with the LA arising from the common carotid artery (CCA) were existing quite seldom (8). In different studies, we observed that the cases with the STA originated from the CCA (5,9-17) and the STA and LA originated from the ECA with a common trunk were seen more frequently (10,12,16,17). But the cases with the STA and LA originated from the CCA with a common trunk, called the thyrolingual trunk (TLT) were observed rarely (8,18). The case presented in this paper is a sample of this rare variation.

CASE

This study was performed in Anatomy Department of Dokuz Eylul University Medical Faculty. In routine dissections it was observed that the thyroid and lingual arteries originated from the CCA with a common trunk in a 64-years old white male cadaver at his left neck region. The properties and relations of the TLT with adjacent structures were determined with linear measurements.

The diameter of the TLT, the distances between the TLT and the horizontal planes passing from significant anatomic landmarks, the distances between the TLT and the origins of the FA, ascendens pharyngeal artery (APA), posterior auricular artery (PAA) and occipital artery (OA) were measured. The anatomic landmarks used in our study were the laryngeal prominens (LP), GC of the hyoid bone, upper end of the left lobe of the thyroid gland (LLTG). 0.1 mm sensitive compass was used for the measurements.

The case of the TLT originated from the left CCA was identified during the routine dissections. The carotid bifurcation (CB) was located at the 4th cervical

vertebral level. According to the CB level, the diameter of the CCA was measured as 7.3 mm at 2 cm below the CB, 8.5 mm at the same level with the CB and 3.9 mm just above it. The branching pattern of the CCA and ECA was observed as normal at the right side of the case.

Comparing the length and the diameter values of the TLT it was observed that its length value (2.1 mm) was smaller than its diameter value (4.2 mm). Branches of the TLT; LA and STA, were extending in superomedial and inferomedial directions respectively. At the branching point of the TLT the diameter of the STA and LA were measured as 2.1 mm and 2.0 mm respectively (Figure 1,2). The frequency of this case was determined as 3.57 % in our series.

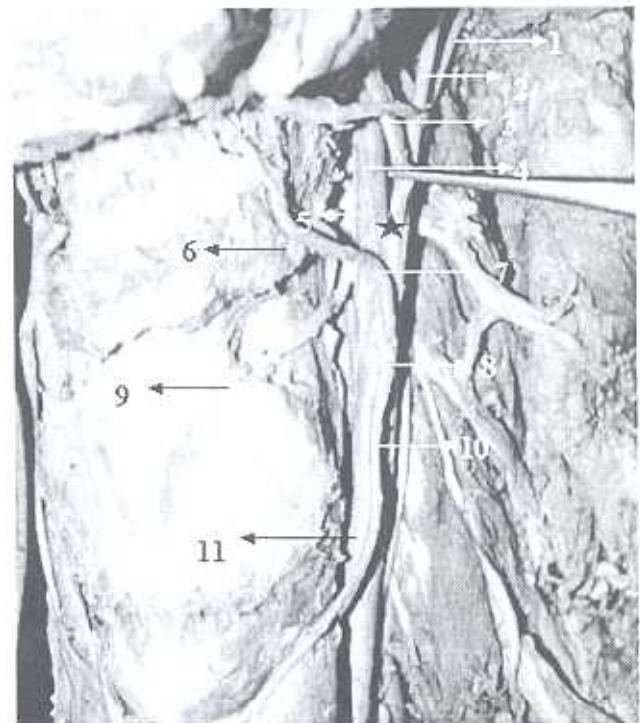


Figure 1. TLT, originating from left CCA (1) Occipital artery, (2) External carotid artery, (3): Facial artery, (4) Ascendans pharyngeal artery, (5) Internal carotid artery, (6) Great cornu of the hyoid bone, (7) Lingual artery, (8) Thyrolingual trunk, (9) Thyroid cartilage, (10) Superior thyroid artery, (11) Common carotid artery

☆ Carotid bifurcation

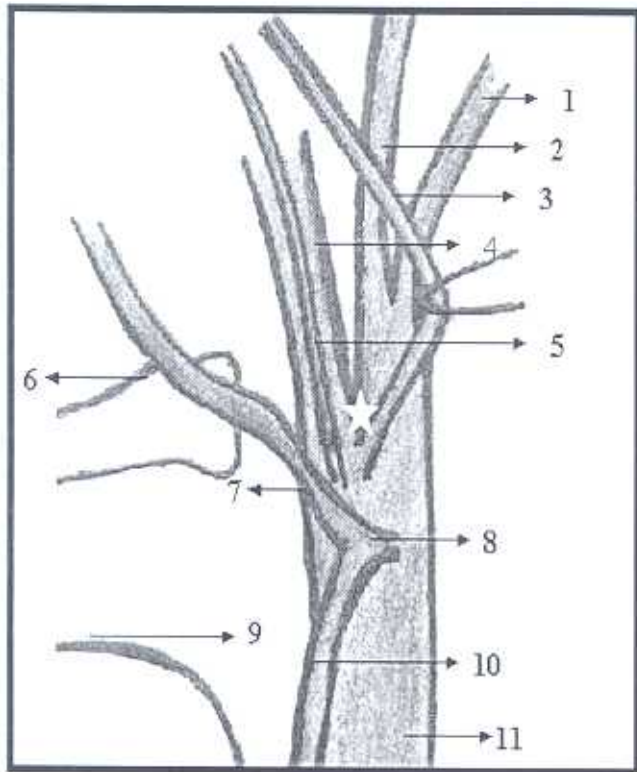


Figure 2. TLT, originating from left CCA (1) Occipital artery, (2) External carotid artery, (3): Facial artery, (4) Ascendant pharyngeal artery, (5) Internal carotid artery, (6) Great cornu of the hyoid bone, (7) Lingual artery, (8) Thyrolingual trunk, (9) Thyroid cartilage, (10) Superior thyroid artery, (11) Common carotid artery
: Carotid bifurcation

The distances between the TLT and CB, LP, GC, LLTG were measured as 7.6 mm, 11.3 mm, 10.1 mm, 33.6 mm respectively. In the comparison of the distance of the origin of the TLT to the other branches of the ECA; the closest branch was the APA

(4.4 mm), then the FA (11.2 mm), OA (23.8 mm), and the farthest branch was the PAA (40.6 mm).

DISCUSSION

After reviewing of literature, it was observed that the STA and LA originated from the CCA with a common trunk is a very rare variation (8,18). Lemaire et al. investigated the numbers of the TLT. In their review article, according to their data only Vuillième&Bruneton was observed 5 TLT cases originated from the CCA (8).

In our case, the TLT had been originated from the left CCA. It's length was 2.1 mm and the distance between the TLT and CB was 7.6 mm. The frequency rate was 3.57%. In his paper Babu, described that the TLT originating from the right CCA 2 cm below the CB in one case during the dissection of 200 cadavers (18). Lemaire et al. defined a case with the TLT, originating from the CCA, 30 cm below the CB and with 5.2 mm length (8).

Comparing with our cases, the frequency rate was higher than the results of Babu. The location of the TLT's level was higher than the data of Babu and Lemaire et al. Also the length of the TLT was longer than the results of Lemaire et al. and Babu (8,18). Table presents the comparison of our results with other investigators data.

The cases that the TLT has been originating from the CCA seen very rarely. But, during intraarteriel chemotherapy for the treatment of tongue cancers, musculomucosal island flap for partial tongue reconstruction, superselective intraarteriel chemotherapy for neck and head carcinomas, this variation should be kept in mind (19-22).

Table. The comparison of our results with other investigators' data

	Location	TLT-BC distance (mm)	TLT length (mm)	Frequency rate (%)
Ergur and Icke	Left	7.60	2.10	3.57
Babu et al	Right	20.00	-	0.25
Lemaire et al	-	30.00	5.20	-

CONCLUSION

Being aware of the neck vessel variations would be valuable for avoiding from the complications of the surgical procedures to the head and neck region, chemotherapeutic treatment of the tongue cancers and radiologic examinations. We suggest that the case presented in this paper with the rare variation, would be supplemental for the literature.

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