International Journal of Anatomy and Research,
Int J Anat Res 2015, Vol 3(1):828-30. ISSN 2321- 4287
DOI: 10.16965/ijar.2014.555

Case Report

# VARIATION IN THE BRANCHING PATTERN OF FACIAL ARTERY: PREMASSETERIC ARTERY

**Deepa Somanath**

Assistant Professor, Dept. of Anatomy, Sri Manakula Vinayagar Medical College, Puducherry, India.

## ABSTRACT

Arterial variations are uncommon. In the present case, the arterial variation observed was an additional branch of the facial artery arising from the main trunk while it crosses the base of the mandible. It ascended on the masseter and terminated into three branches. Knowledge of vascular variations will enhance the surgical precision, avoid misdiagnosis and prevent iatrogenic complications during surgical procedures of the face.

**KEYWORDS:** Facial artery, Premasseteric artery, Variation.

**Address for Correspondence:** Dr. Deepa Somanath, Assistant Professor, Dept. of Anatomy, Sri Manakula Vinayagar Medical College, Madagadipet, Puducherry- 605 107, India.
**E-Mail:** deepa.somanath@gmail.com

**Access this Article online**

**Quick Response code**

**DOI:** 10.16965/ijar.2014.555

**Web site:** International Journal of Anatomy and Research
ISSN 2321-4287
www.ijmhr.org/ijar.htm

Received: 08 Dec 2014
Peer Review: 08 Dec 2014 Published (O):31 Jan 2015
Accepted: 13 Jan 2015 Published (P):31 Mar 2015

## INTRODUCTION

Among vascular variations, discrepancies of the arterial system are less common than those in venous system. Such variations may or may not cause harm to the individual, however their presence and frequency is of significance in clinical practice.

The morphological understanding of the facial artery, its course, branches and variations are significant in the field of vascular, dental and head and neck surgeries, angiography and plastic surgeries.

The facial artery is a branch of the external carotid artery in the neck. The artery reaches the face at the anteroinferior border of the masseter at the base of the mandible. It runs a tortuous course towards the angle of the mouth, along the side of the nose and reaches the medial angle of the eye, where it terminates. Commonly seen branches of the facial artery are inferior labial, superior labial and lateral nasal arteries. Several other variations have been noted, however, they were small and inconstant [1].

One of the variations of facial artery is the premasseteric artery, which is depicted in the present case report.

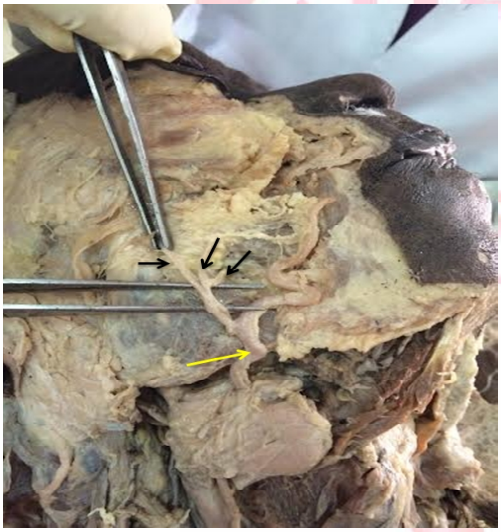
## CASE REPORT

During routine dissection of a 60- 65 year old male cadaver, for under graduate students of Sri Manakula Vinayagar Medical College and Hospital, a variation of the facial artery was noted on the right side of the face.

The facial artery was seen to be arising from the right external carotid artery just above the origin of lingual artery. It crossed the base of mandible at the anteroinferior angle of masseter. Here an additional branch of the facial artery was seen arising from the main trunk. The main trunk of the artery ran tortuously towards the

**Fig. 1:** Showing the main trunk of the facial artery (Orange arow), Inferior labial artery (Blue arrow), Superior labial artery (Black arrow), lateral nasal artery (Yellow arrow) and the premasseteric artery (Red arrow).

**Fig. 2:** Showing Main trunk of facial artery (Yellow arrow) and the three terminal branches of premasseteric artery (Black arrows).



angle of the mouth and gave two branches namely the superior and inferior labial arteries. Then it ascended on the side of the nose and gave the lateral nasal branch and continued as the angular artery towards the medial angle of the eye.

The variant artery arising from the facial artery at the anteroinferior angle of the masseter is called the premasseteric artery which is usually small and inconstant [1]. However, in the present case report the premasseteric artery was of significant size. The artery ascended for about 2.5cm on the masseter and terminated into three branches. The medial branch passed deep to the zygomaticus major, the middle branch pierced buccinator and the lateral branch pierced masseter.

The facial artery on the left side followed a normal course and branching.

## DISCUSSION

Among vascular variations, discrepancies of the arterial system are less common than those in venous system. Such variations may or may not cause harm to the individual, however their presence and frequency is of significance in clinical practice.

The morphological understanding of the facial artery, its course, branches and variations are significant in the field of vascular, dental and head and neck surgeries, angiography and plastic surgeries.

The facial artery is a branch of the external carotid artery in the neck. The artery reaches the face at the anteroinferior border of the masseter at the base of the mandible. It runs a tortuous course towards the angle of the mouth, along the side of the nose and reaches the medial angle of the eye, where it terminates. Commonly seen branches of the facial artery are inferior labial, superior labial and lateral nasal arteries. Several other variations have been noted, however, they were small and inconstant [1].

One of the variations of facial artery is the premasseteric artery, which is depicted in the present case report.

Kumar N et al. reported a large sized unusual posterior branch of the facial artery which had a tortuous course and ascended to terminate by anastomosing with infraorbital artery [2].

Kolte SV et al. reported a case of bilateral variations in the facial vasculature in which a small premasseteric branch of the facial artery was observed only on the right side [3].

Magden et al. studied the premasseteric branch of the facial artery in 14 formalin fixed cadavers. It was observed that the premasseteric artery originated separately in 100% cases. In most of the cases, the artery followed a course ascending on the masseter. The mean diameter

of the premasseteric branch at origin was 1.12 mm and was larger than that of the facial artery in only 3% cases [4].

In a study by Lydia QS et al. done on 50 formalin fixed hemi- faces, it was concluded that 8% showed a premasseteric branch of the facial artery [5].

In the present case report, a significant sized posterior branch of the facial artery called premasseteric artery on the right side was observed.

Masseter is commonly exploited for transposition operations to correct facial palsy by craniofacial surgeons [6].

In the field of plastic surgery where flap procedures with their vascular pedicles are commonly used, it is essential to be aware of unexpected variations in order to prevent haemorrhage and further complications. With increasing incidence of cancer of the head and neck region, microsurgical reconstruction procedures are on the rise. Hence, these variations are of significance in orthodontic procedures, angiography, oral and maxillofacial surgeries.

Even though the arterial variations of the face are less commonly reported, various fields of medical practice should be aware of such anomalies to avoid iatrogenic injury in procedures involving areas supplied by them. Understanding of vascular variations is beneficial to academicians also.

## CONCLUSION

Even though the frequency of arterial variations of the face is less commonly reported, various fields of medical practice should be aware of such anomalies to avoid iatrogenic injury in procedures involving areas supplied by them. Understanding of vascular variations is also beneficial to academicians.

**Conflicts of Interests: None**

## REFERENCES

[1]. Standring, Gray's Anatomy: The Anatomical Basis of Clinical Practice. 40th ed. Philadelphia: Churchill Livingstone, 2008.

[2]. Kumar N, Nayak BS, Shetty S, Guru A. Unusual posterior (premasseteric) branch of facial artery- a case report. International Journal of Anatomical Variations 2011;4:161-163.

[3]. Kolte VS, Khambatta S, Ambiye MV. Bilateral anatomical variation in the arterial supply of face involving the facial and transverse facial artery. International Journal of Anatomy and Research 2014; 2(1):256-258.

[4]. Orhan M, Nuket G, Sevda S, Mete E, Umit K, Selim H. Facial artery: Its importance for craniofacial surgery. Turkish Neurosurgery 2009; 19(1):45-50.

[5]. Lydia SQ, Babu A, D'Souza AS. Facial artery on face- a study on south Indian cadavers and specimens. Nitte University Journal of Health Science 2013; 3(3):72-76.

[6]. Kumar A, Elumalai G, Thangamani M, Palayathan N, Singh MK. A rare variation in facial artery and its implications in facial surgery: Case report. Journal of Surgery 2014; 2(5): 68-71.

**How to cite this article**:

Deepa Somanath. VARIATION IN THE BRANCHING PATTERN OF FACIAL ARTERY: PREMASSETERIC ARTERY. Int J Anat Res 2015;3(1):828-830.**DOI:**10.16965/ijar.2014.555