

Incidence of the premassesteric branch of the facial artery – a cadaveric study

M. Vijayalakshmi^{1*}, Dinesh Premavathy², M. S. Thenmozhi²

ABSTRACT

Introduction: The facial artery belongs to the anterior branches of the external carotid artery. During its course, the artery passes deep to the subcutaneous fat over the cheek, risorius, zygomaticus major and minor muscles near the angle of the mouth, but superficial to buccinator and levator anguli oris muscle, and finally, it terminates as the angular artery near the medial angle of the eye. The facial artery gives labial and nasal branches, and occasionally, it gives premassesteric branch near the anterior border of the masseter muscle which usually supplies that muscle and its adjacent areas. **Materials and Methods:** The present study was conducted using conventional dissection method in 21 adult cadaveric heads, i.e., 42 hemifaces, in the Institute of Anatomy, Madras Medical College. **Results:** In the present study, the premassesteric branch was found to arise from the facial artery soon after its entry into the face. It was observed to be present in 12/42 (28.5% of the specimens). **Conclusions:** The prior knowledge of the presence of the premassesteric artery is very important for surgeons to avoid unintentional complications during surgical procedures.

KEY WORDS: Facial artery, Masseter, Premassteric artery

INTRODUCTION

The facial artery belongs to the anterior branches of the external carotid artery. It arises just above the tip of the greater cornua of the hyoid bone. The artery courses upward, forward and passes deep to the superficial part of the submandibular salivary gland, winds round the base of the mandible at the anteroinferior border of the masseter muscle. During its course, the artery passes deep to the subcutaneous fat over the cheek, risorius, zygomaticus major and minor muscles near the angle of the mouth, but superficial to buccinator and levator anguli oris muscle, and finally, it terminates as the angular artery near the medial angle of the eye and anastomoses with dorsal nasal branch of the ophthalmic artery. The facial region has rich supply contributed by the facial vessels and the superficial temporal vessels. Branches from the maxillary artery and ophthalmic artery additionally supply the facial region. In the face, the

facial artery has a tortuous course to adjust with the contraction and relaxation of the facial muscles and movements of the mandible.^[1-4]

During its course, the facial artery gives a number of branches in the face, namely the inferior labial, superior labial, labiomental, inferior and lateral nasal, septal and angular artery. They supply the lower lip, upper lip, labiomental region, nose, and medial aspect of the eye.^[5] Occasionally, a premassesteric branch may be present at the anterior border of the masseter muscle which usually supplies that muscle and its adjacent areas.^[6] Adachi, in 1928, described the premassesteric branch for the 1st time and observed that the premassesteric branch was bigger than the facial artery in 3% of cases. He observed its course along the anterior margin of the masseter muscle with the facial vein.^[7]

MATERIALS AND METHODS

The present study was conducted using conventional dissection method in 21 adult cadaveric heads, i.e., 42 hemifaces, in the Institute of Anatomy, Madras Medical College.

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¹Department of Anatomy, Melmaruvathur Adhi Parasakthi Institute of Medical Sciences and Research, Melmaruvathur, Tamil Nadu, India, ²Department of Anatomy, Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai, Tamil Nadu, India

*Corresponding author: Dr. M. Vijayalakshmi, Department of Anatomy, Melmaruvathur Adhi Parasakthi Institute of Medical Sciences and Research, Melmaruvathur, Tamil Nadu, India; Dr. MGR Medical University, Chennai, Tamil Nadu, India. Mobile: +91-9840348155. E-mail: doctorvijayalakshmi38@gmail.com

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Figure 1: Premassesteric branch. 1. Facial artery, 2. Premassesteric artery, 3. Buccinator, 4. Inferior labial artery, 5. Superior labial artery, 6. Lateral nasal artery, 7. Angular artery

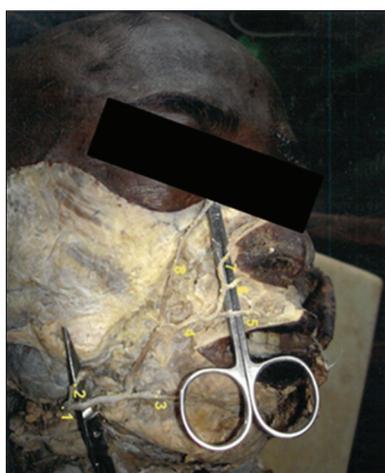


Figure 2: Premassesteric branch. 1. Facial artery, 2. Premassesteric artery, 3. Inferior labial artery, 4 and 5. Superior labial artery, 6. Inferior alar artery, 7. Lateral nasal artery, 8. Angular artery

RESULTS

In the present study, the premassesteric branch was found to arise from the facial artery soon after its entry into the face. It was observed to be present in 12/42 (28.5% of the specimens). It was found to give a short and small twig to the masseter muscle [Figure 1]. In some, it was found to run along the anterior margin of the masseter [Figure 2].

DISCUSSION

The facial artery is the prime artery supplying maximum area of the face. The premassesteric branch from the facial artery was observed in 12/42 (28.5% of specimens) in the present study. In a previous study, it was reported that the knowledge of varied branches of the facial artery is important for surgeons for plastic

and reconstructive surgeries in the face in case of congenital clefts or traumatic disfigurement. This author observed the presence of premassesteric artery in their study.^[4]

In another study, it was observed that the mean diameter of the premassesteric artery was 1.12 mm at the level of its origin from the facial artery.^[8] In a study it was observed that the premassesteric branch was larger than the facial artery. Additionally it was anastomosed with transverse facial branch of superficial temporal artery (37.03% cases) and with buccal branch of maxillary artery (22.22% cases).^[9] In the present study, the premassesteric branch was small and short as in Figures 1 and 2. It was equal in caliber with the facial artery. Hence, there is a chance of this artery getting injured during the maxillofacial surgery due to its close association with the masseter muscle.^[10] It was reported in another study that the right-sided facial artery gave premassesteric branch in addition to its usual branches in the face. It was found to ascend upward over the masseter and terminate as medial, intermediate, and lateral branches.^[11] Similarly, a small premassesteric branch was observed to emerge from the facial artery on the right side.^[12]

CONCLUSION

The present study observed the occurrence of premassesteric branch of the facial artery in 28.5%. From this, it is clear that the arterial variation is not uncommon, but the course and area of distribution of the varied branches of the facial artery should also be noted. The occurrence of the premassesteric branch of the facial artery is uncommon. The premassesteric artery is of variable size and caliber as discussed earlier. Hence, the prior knowledge of the presence of premassesteric artery is very important for surgeons to avoid unintentional complications during surgical procedures.

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