

## STUDY ON THE OCCURRENCE OF DOUBLE OR BIFID ZYGOMATICUS MAJOR: A MUSCLE OF FACIAL EXPRESSION

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### ABSTRACT

**Background:** Zygomaticus major is one of the muscles of facial expressions and is also known as musculus zygomaticus major, the greater zygomatic muscle, as well as musculus zygomaticus. There are so many variations in the insertion of this muscles and may leads to the formation of dimple in the cheek region. This particular property of this muscle is quiet interesting and became the background of this study.

**Materials and Methods:** Present study was done among 10 cadaveric hemi faces belongs to the department of anatomy Tagore Medical College to find the occurrence of bifid zygomaticus major which is responsible for dimple formation in cheeks.

**Result:** Among the 10 hemi faces we found only 2 faces with bifid zygomaticus major along its insertion.

**Conclusion:** Even though bifid zygomaticus major is considered as a developmental defect, the dimple in cheek formed by it is always measured as a mark of beauty. So learning more about the muscle and its variation paved ways to produce artificial dimples in the face to beautify it.

**KEY WORDS:** Zygomaticus Major, Bifid, Dimple, Insertion, Developmental defect.

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### INTRODUCTION

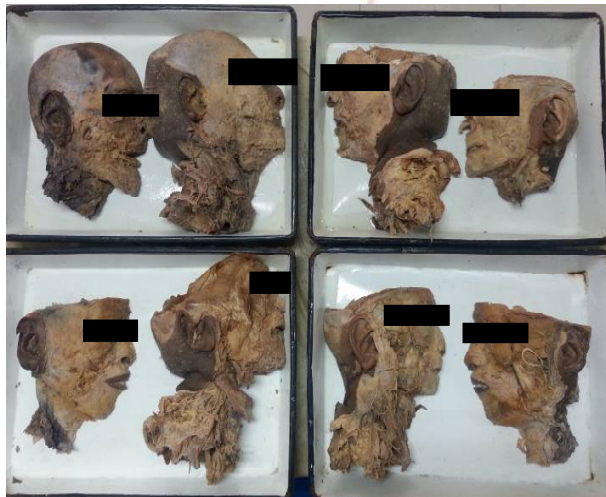
The Zygomaticus major belongs to the muscles of facial expression. It originates from the zygomatic bone lateral to zygomaticus minor, runs downwards and medially and gets inserted into the corner of the lips [1]. It raises the corners of the mouth when a person smiles. The double or bifid zygomaticus major muscle represents an anatomical variation of this muscle of facial expression and causes dimple in the region of cheek [2]. This bifid muscle originates as a single structure from the zygomatic bone. It travels anteriorly and downwards and divides at the sub-zygomatic hollow into superior and inferior muscle bundles.

The superior bundle gets inserted at the usual position above the corner of the mouth. The inferior bundle inserts into the modiolus below the corner of the mouth. The inferior mostly found to have a dermal attachment along its mid-portion, which tethers the overlying skin. When an individual smiles, traction on the skin over the muscle may create a dimple due to dermal tethering effect [3]. In general dimples are considered as birth defect in the facial muscles and is also controlled genetically [4,5]. As the dimple in the face is always an interesting factor we framed a study to find the occurrence of bifid zygomaticus major muscles among the cadavers of Department of Anatomy, Tagore Medical College, Tamil Nadu, India.

## MATERIALS AND METHODS

10 cadaveric hemi faces were selected to study the occurrence of double or bifid zygomaticus major muscle. Facial dissection was done in all the cadaveric faces and were analyzed for the bifid zygomaticus major (Fig. 1,2,3).

**Fig. 1:** Showing 8 hemi faces without bifid zygomaticus major muscle.



**Fig. 2:** First hemi face with bifid zygomaticus major muscle.



**Fig. 3:** Second hemi face with bifid zygomaticus major muscle.



## RESULTS AND DISCUSSION

According to Pessa *et al.*, 1998, Incidence of double zygomaticus major muscle was 34% and was found to be present in 17 of 50 cadaver dissections [6]. But in this present study 20% that is only two faces were found to have bifid zygomaticus major among 10 cadaveric hemi faces belongs to the department of Anatomy (Table -1), (Fig. 1,2,3).

**Table 1:** Showing the occurrences of the Bifid zygomaticus major.

Study	Number of cadaveric faces analyzed	faces with bifid zygomaticus major	% of occurrence
Pessa JE et al. 1998 [7]	50	17	34%
Present study	10	2	20%

Both of them shown a common origin for the muscle zygomaticus major and immediately was divided into two muscle bundles and gone for insertion [7,8]. The upper bundle was inserted into the upper lip and the lower bundle was seen to be inserted far away from the corner of the mouth into the skin which is responsible for the formation of the dimple in the cheek of the person while the person attempting to smile.

## CONCLUSION

As dimple is considered one of the measures of beauty we can conclude the muscle zygomaticus major as muscles of beauty and smile or simply as the muscle of beautiful smile [9]. This study is not only useful to know the anatomical variation in zygomaticus major but the basic anatomy learned with the insertion of this muscle is very much useful in making artificial dimples [10]. Nowadays artificial dimples are created on this anatomical basis by plastic surgery to those who wish to have it [11].

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**Conflicts of Interests: None**

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