



Case Report

## Variant Anterior Belly of Digastric Muscle- A Case Report

Prafulla S. Dakhane<sup>1</sup>, Anita S. Fating<sup>2</sup>

<sup>1</sup>Assistant Professor, <sup>2</sup>Associate Professor,  
Department of Anatomy, DR Ulhas Patil Medical College and Hospital, Jalgaon [Khurd] 425309, M.S., INDIA

Corresponding Author: Prafulla S. Dakhane

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### ABSTRACT

During the routine dissection of a 60-year-old male cadaver for the undergraduate students, we encountered accessory muscle fibres medial to the anterior belly of digastric muscle on left side. These muscles fibers originated from the digastric fossa and coursed downwards, backwards and laterally to get inserted partly into the hyoid bone and a few fibers inserted into the intermediate tendon of digastric muscle. These muscles were innervated by nerve to mylohyoid. Such variations commonly occur in the submental triangle and have to be considered in imaging procedures of soft tissue masses and in operations involving this region.

**Key Words:** Digastric muscle, Anterior belly, Submental triangle.

### INTRODUCTION

Digastric muscle consists of two bellies, anterior and posterior. Posterior belly arises from notch on the mastoid process, runs downwards and forwards to the hyoid bone. Anterior belly is attached to the fossa digastricus on mandible. Both the bellies are joined at an intermediate tendon, which perforates the lower fibers of stylohyoid and are usually held to the lesser cornu of hyoid by a fibrous sling. The anterior belly of digastric lies superficial to the mylohyoid muscle.

Nowadays the digastric muscle is used in plastic surgeries, where the digastric anterior belly transfer technique is employed to restore the depressor function of the lower lip in lesions of the facial nerve after tumor resection. <sup>(1)</sup>

The anterior bellies of the digastric muscle divide the region between the hyoid bone and mandible into two triangles: the submandibular and the submental. Laterally to the digastric muscle up to the mandibular base is located the submandibular space. The submental triangle consists of varying amounts of adipose tissue and submental lymph nodes. The anterior bellies of the digastric muscles form the lateral margins of this triangle. Anatomic variations in digastric muscles may affect diagnostic and therapeutic procedures in head and neck surgery; such abnormalities commonly occur in the submental triangle and have to be considered in imaging procedures of soft tissue masses and in operations involving this region.

## CASE REPORT

During the routine dissection of a 60-year-old male cadaver for the undergraduate students, we encountered a unilateral variation in the left suprahyoid region. On left side, accessory muscle fibres were found medial to the anterior belly of digastric muscle. These muscles fibers originated from the digastric fossa and coursed downwards, backwards and laterally to get inserted partly into the hyoid bone and a few fibers inserted into the intermediate tendon of digastric muscle (Figure 1). The anterior belly took origin from the digastric fossa lateral to these accessory muscle fibres, followed a backward and lateral course and inserted into the intermediate tendon of the digastric muscle. Both these muscles were innervated by nerve to mylohyoid which is a branch of inferior alveolar nerve, so it can be retrospectively concluded that these muscle fibres can be detached portion of anterior belly of digastrics muscle.



Fig. 1-Submental region dissection.  
AD(R)-Ant. Belly of Digastric of right side.  
AD(L)-Ant. Belly of Digastric of left side.  
AMF-Accessory Muscle Fibres

## DISCUSSION

Variations are commonly noted in submental region. They are commonly seen

in digastrics muscle. (2-5) Occasionally they are also noted in mylohyoid muscle. (6) Amongst the variations in digastrics muscle, those in anterior belly are more common. (7) Unilateral variations are more common than the bilateral. (4,7) Uzun et al. reported 5.9%-53% frequency for these variations. De Ary-Pires et al., (8) classified digastric variations from 74 cadavers and described different types of variations from their posterior belly, intermediate tendon and anterior belly. Celik et al. (9,10) reported quadrification and triplication of the anterior belly in two case reports.

Unilateral anatomical variations may present greater clinical importance, since in some cases they may be responsible for asymmetry in the anterior region of the neck or even in the movement of the floor of the mouth (11) or the temporomandibular joint, (12) and perhaps imbalance in the movement of the larynx. These types of asymmetry may lead to slight functional abnormalities or may even be confounded, in clinical examinations and in imaging examinations like ultrasound, tomography and magnetic resonance, with lymph nodes, benign cervical masses like thyroglossal cysts, or neoplasia. (5) Likewise, such conditions must be taken into consideration in surgical procedures in the neck region, especially in relation to submandibulectomy, since this muscle and its tendon are anatomical reference points during operations.

Ziolkowski M. et al have observed that the symmetrical variations are extremely rare in human fetus. (13)

Turan -Ozdemir et al (5) observed a bilateral accessory anterior belly of digastric. Aktekin et al (4) also reported a bilateral and symmetrical variation of anterior belly of digastric in which accessory bundles were arranged in cross, superficial to the mylohyoid muscle. In our case, the variation was assymetrical, only confined to left side of neck. Right sided digastric

muscle fibres were as per usual description of it.

Traini M, <sup>(3)</sup> reported a case of bilateral accessory digastric muscles. Holibkova & Machalek <sup>(14)</sup> demonstrated bilateral accessory anterior bellies in two cases. Reyes et al <sup>(2)</sup> observed bilateral accessory anterior bellies forming a triangular configuration. Both the bellies running from intermediate tendon and get inserted over the mylohyoid raphe. Peker et al <sup>(11)</sup> reported a bilateral anomaly of digastric muscle in which lateral fibers originating from the digastric fossa were inserted on a hyoid bone and medial fibers from both the sides were inserted on the median raphe of mylohyoid muscle.

Mangalgiiri AS et al <sup>(15)</sup> carried out recently a study on 15 cadavers and concluded that unilateral and bilateral variations in anterior belly of digastric occur equally. Symmetrical variations are uncommon. Accessory belly frequently cross midline and attached over the mylohyoid muscle.

Such variations in anterior belly of digastrics muscle can be attributed to variant morphogenesis of myotomic component of first pharyngeal arch. These should be kept in mind as they have radiological as well as surgical importance. They may mislead while evaluating submental region for detection of tumors or staging of tumors using C. T. or M.R.I.

## REFERENCES

1. Tan ST. Anterior belly of digastric muscle transfer: a useful technique in head and neck surgery. New York Head and Neck Society, 2002, vol. 24, no. 10, p. 947-54.
2. Reyes G, Contreras C, Ramirez LM, Ballesteros LE. The digastric muscle's anterior accessory belly: Case report. Med Oral Patol Oral Cir Bucal. 2007;12:E341-343.
3. Traini M: Bilateral accessory digastric muscles. Surgical and Radiologic Anatomy. 1983; 5: 199 - 200.
4. Atkekin M, Kurtoglu Z, Ozturk AH. A bilateral and symmetrical variation of the anterior belly of the digastric muscle. Acta Med. Okayama. 2003; 57: 205 - 207.
5. Turan-Ozdemir S, Oygucu IH, Kafa IM.: Bilateral abnormal anterior bellies of digastric muscles. Anatomical Science International. 2004; 79: 95 - 97.
6. Sehirli U, Cavdar S. An accessory mylohyoid muscle. Surg Radiol Anat. 1996; 18(1): 57-59.
7. Uzun A, Aluclu A, Kavakli A. Bilateral accessory anterior bellies of digastric muscle and review of the literature. Auris Nasus Larynx. 2001; 28(2):181-183.
8. De Ary-Pires B, Ary-Pires R, Ary-Pires-Neto M. The human digastric muscle: Patterns and variations with clinical and surgical correlations. Ann Anat 2003;185:471-9.
9. Celik HH, Yilmaz E, Atasever A Durgun B and Taner D: Observation of anomalous triplication of unilateral anterior digastric muscle. Clin Anat 1993;6:353-5.
10. Celik HH, Aldur MM, Ozdemir B, Aksit MD. Abnormal digastric muscle with unilateral quadrification of the anterior belly. Clin Anat2002;15:32-4.
11. Peker T, Turgut HB, Anil A. Bilateral anomaly of anterior bellies of digastric muscles. Surgical and Radiologic Anatomy. 2000; 22: 119 - 121.
12. Andreo, J. C.; Navarro, J. A. C. & Toledo, Filho, J. L. Anatomical study on the variations of the anterior

- belly of the digastric muscle. Rev. Chil. Anat., 15 (1):111-4, 1997.
13. Ziolkowski M, Marek J, Klak A. The human digastric muscle in the fetal period. Folia Morphol.1984; 3: 243-249.
14. Holibkova A, Machalek I. A report on anomalies of digastric muscle. Acta Univ. Palacki. Olomuc. Fac. Med. 1999; 142: 57 - 59.
15. Mangalagiri AS, Razvi MRA. Variations in the Anterior Belly of Digastric. Int J Health Sci (Qassim). Jul 2009; 3(2): 257–262.

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