

## VARIATIONS OF THE ANTERIOR BELLY OF THE DIGASTRIC MUSCLE M. digastricus'un venter anterior'unun varyasyonları

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### Abstract

**Purpose:** To investigate the variations of anterior belly of digastric muscle.

**Material and method:** Fifty human cadavers were examined using gross dissection technique. These cadavers were used for medical student demonstration in an anatomy laboratory during the last decade.

**Results:** Anterior belly variation was found in two cadavers (4%). In both muscles, some of the fibrils, separated from the anterior bellies, united in the median line. Also a few of the these fibrils inserted to the corpus of the hyoid bone. The united muscle fibrils inserted to symphysis menti by a thin tendon. The separated muscle fibrils appeared as a different muscle.

**Conclusion:** Knowledge of any variation in suprahyoid region would be helpful during surgical operations.

**Key Words:** Muscle, Variation

### Özet

**Amaç:** Muskulus (M.) digastricus'un ön karnına ait varyasyonları belirlemek.

**Gereç ve yöntem:** Son 10 yıl içerisinde (1987-1997) anatomi laboratuvarında demonstrasyon için kullanılan 50 kadavra diseksiyon yöntemiyle incelendi.

**Bulgular:** Diseksiyon yapılan kadavraların iki tanesinde (%4) m. digastricus'un venter anterior'unda varyasyon tesbit edildi. Varyasyon gözlenen iki kasa ait venter anteriordan bazı lifler ayrılıp orta hatta birleşerek hyoid kemiğe ve çene ucuna tutunmakta idi. Venter anterior'dan ayrılan bu lifler ayrı bir kas görünümü vermekteydi.

**Sonuç:** Hiyoid üstü bölgesine yapılacak cerrahi müdahalelerde bu varyasyonların bilinmesi olumlu katkı sağlayacaktır.

**Anahtar Kelimeler:** Kas, Varyasyon

During a gross anatomical dissection course, it is possible to observe some variations in muscles (1,2). These variations could be in origo, insertio or morphology. The variation ratio in some muscles could also be more prominent than others, such as the digastric muscle (m. digastricus) and abductor pollicis muscle. There are reports emphasizing that the digastric muscle shows some variations (3-5). According to classical texts, the digastric muscle is found in the suprahyoid regio and consists of two bellies, anterior and posterior, united near the hyoid bone by an intermediate tendon. The posterior belly rises from the incisura mastoidea of temporal bone and passes anteriorly and inferiorly. The anterior belly rises from fossa digastricus of mandible. It lies

on the inner side of the inferior border of the mandible and passes posteriorly and inferiorly. The ratio of variation in this muscle is more common in the anterior belly than the posterior (6,7).

### MATERIAL AND METHOD

In this study, the anterior belly (venter anterior) of digastric muscle was investigated using classical dissection technique in 50 human cadavers which were used for medical student demonstration during the last decade.

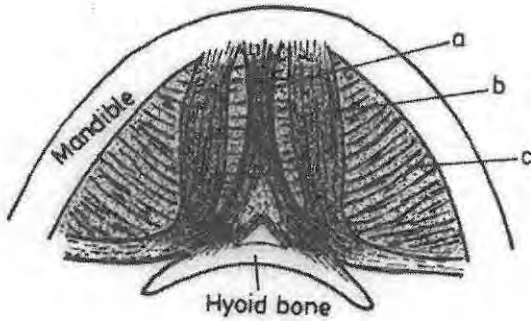
### RESULTS

It was found that two of the 50 cadavers (4%) have digastric muscle variations. These variations were in the anterior belly of the digastric muscles. The anterior belly of both muscles showed a similar structure. In these cases, a great number of fibrils

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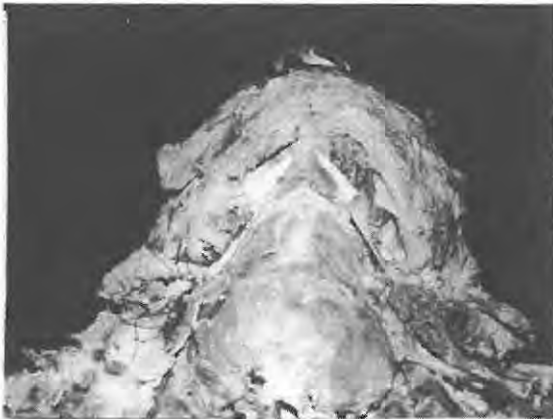
Geliş tarihi: 18 Aralık 1998

separated from the anterior bellies of the digastric muscles. While some of the separated fibrils united in the median line, some of them inserted to the corpus of the hyoid bone (Figure 1). The united muscle fibrils inserted to symphysis menti by a thin tendon. There were also a few muscle fibrils along the tendon. These separated muscle fibrils appeared as a different muscle, and there was no connection between these muscle fibrils and mylohyoid muscle.



**Figure 1.** This graph illustrates the anatomical variation of the digastric muscle.

- a: Variation of the anterior belly of the digastric muscle  
b: Anterior belly of the digastric muscle  
c: Mylohyoid muscle



**Figure 2.** Anterior belly variation of the digastric muscle

## DISCUSSION

The variations of the anterior belly of the digastric muscle have been reported in classical texts (6,7). However, there is no information about the variation incidence of this muscle.

According to Kopsch (6), the digastric muscle could have two anterior bellies, one of which arises from the angle of mandible. It was also reported that some of the fibrils of the anterior belly of the digastric muscle cross over the midline and is called the accessory anterior belly of the digastric muscle. These fibrils may support functionally the mylohyoid muscle (8). These variations were usually in both sides and rarely in one side (9).

Larsson and Lufkin (10) examined 75 patients using computerised tomography and magnetic resonance imaging techniques and found two anterior belly variations (2.33%). They reported that there was no pathologic finding in this area.

It was shown that interaction and fusion of fibrils between muscles could not be distinguished using radiologic techniques (3), and this kind of variation can easily be confused with a pathological condition (4).

Previous reports and the findings in this study suggest that knowledge of these kinds of variations may be helpful during surgical procedure in this region.

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