Unilateral variant anterior belly of the digastric muscle

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Abstract
Anterior belly of the digastric muscle usually arises from the digastric fossa of the mandible and the posterior belly of the digastric usually arises from the mastoid notch of the temporal bone.

In the present case we came across an accessory muscle medial to the anterior belly of the digastric in the left suprahyoid region. The accessory muscle took origin from the digastric fossa and also from the lower border of body of the mandible. The anterior belly took origin from the mandibular fossa, lateral to the accessory muscle. We also noted that the accessory muscle inserted partly into the hyoid bone and a few fibers inserted into the intermediate tendon. The fibers from the anterior belly of digastric muscle inserted into the intermediate tendon. This variation was observed unilaterally in the left half of the suprahyoid region.

Knowledge of such anatomical variations could be of significance during diagnosis and various surgical procedures.


Key words [accessory muscle] [anterior belly of digastric] [variation] [suprahyoid region]

Introduction
Anterior belly of the digastric muscle is a suprathyoid muscle. Its main action involves elevation of the hyoid bone during deglutition and depression of the mandible secondary to the lateral pterygoid muscle, to open the mouth. Since the anterior belly develops from the first pharyngeal arch, it is supplied by a branch from the inferior alveolar nerve, which is derived from the mandibular nerve. The posterior belly of the digastric muscle develops from the second pharyngeal arch and is supplied by the facial nerve.

Case Report
During the routine dissection of a 50-year-old male cadaver for the undergraduate students, we encountered a unilateral variation in the left suprahyoid region. An accessory muscle was found medial to the anterior belly of digastric muscle. It originated from the digastric fossa and also from the lower border of the body of mandible. These muscles fibers 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 the accessory muscle. These fibers followed a backward and lateral course and inserted into the intermediate tendon of the digastric muscle. Both these muscles were innervated by

Figure 1. Illustration shows the suprahyoid region showing unilateral accessory muscle. (ABD: anterior belly of digastric muscle; AcM: accessory muscle; H: hyoid bone; F: fascial sling of digastric muscle; M: mylohyoid muscle)
nerve to mylohyoid, derived from the inferior alveolar nerve. This indicates that the accessory muscle developed from the first pharyngeal arch.

**Discussion**

The digastric muscle has two bellies, anterior and posterior. Both these muscles are different developmentally and also by their innervation. But functionally, both the muscle bellies are similar. The present case is a unique one. It is confined to the left suprahyoid region. We found that the anterior belly, showed the usual origin and insertion. Whereas, the accessory belly originated from the lower border of the body of mandible and the digastic fossa as well, but it showed dual insertion. It inserted partly into the intermediate tendon and partly into the hyoid bone. Many case reports and studies have proven the variations of the anterior belly of the digastic muscle unilaterally and bilaterally.

In one study, out of ten cadavers dissected bilaterally, two showed unilateral variations and two showed bilateral variations [1]. Another study revealed that, out of fifteen cadavers dissected bilaterally, three showed unilateral variations and three showed bilateral variations [2].

In two cases presented by previous authors, one showed the presence of musculoaponeurotic attachment between the caudal ends of two anterior bellies of digastic muscle over the midline [3], and another showed accessory bilateral anterior belly originating in the intermediate tendon and inserted into the mylohyoid raphe [4].

The knowledge of such variation is of great importance to the oral and head and neck surgeons. Illiteracy of such variation may lead to the misinterpretation of the x-rays, MRIs and CT scans. Muscular irregularities of the submandibular region are important because mobilization of myocutaneous flaps in reconstructive procedures is an essential element in certain plastic surgery techniques [5]. The evaluation of anatomical variations and pathological abnormalities related to the floor of the mouth can be done by MRI and CT, which also guide the planning and extent of surgical resection. Thus a thorough knowledge of such anatomical variation is necessary to rule out the presence of metastases or tumor or enlarged lymph nodes. These variations may be of academic interest to the anatomists, oral and head and neck surgeons.

**References**


