Introduction

Digastric muscle is one of the suprahoid muscles of the neck. It has two bellies, the anterior belly arises from the digastric fossa on the base of the mandible near the midline, whereas the posterior belly arises from the mastoid notch of the temporal bone, and they both meet in an intermediate tendon, which is connected to the body and greater horn of the hyoid bone by a fibrous pulley [1].

There are more reports of unilateral variations of the digastric muscle than the bilateral [2]. Further, the variations in the anterior belly of digastric muscle reported in the literature are supernumerary bellies originated medially to the digastric fossa and inserted into the mylohyoid raphe or with insertion in the contralateral intermediate tendon, supernumerary anterior belly inserted in the body of the hyoid bone, together with the insertion of the contralateral anterior belly [3,4], accessory bundle arising from the anterior part of the intermediate tendon and dividing into two parts, of which the upper one fusing with the mylohyoid of both the sides and the lower one with only that of the right mylohyoid [5], the accessory bundles organized like a cross superficial to mylohyoid and deep to platysma [6].

The present case shows the unique musculoaponeurotic attachment between two anterior bellies of digastric muscle with a normal attachment of posterior bellies.

Case Report

During the routine dissection of middle aged male cadaver fixed in 10% formalin the following variation was observed.

In the present case, the two anterior bellies on either side were arising from the digastric fossa on the base of the mandible and the posterior bellies were arising from the mastoid notch of the temporal bone with a usual insertion into the intermediate tendon that is connected to the body and greater horn of the hyoid bone. Addition to this usual anatomy, the intermediate tendon of both the anterior bellies showed a musculoaponeurotic communication between them, which had an aponeurotic inferior border and muscular upper part. This variant structure was crossing the midline parallel to the hyoid bone without being attached to the bone or underlying mylohyoid muscle (Figure 1). As per our knowledge, the present case is not reported in the literature even though there are lots of reports on the variation of digastric muscle.

Discussion

The digastric muscle having two different bellies with different origin are developed during the fourth week of development from the first and second pharyngeal arches. The anterior belly is being developed from the differentiation of the original mesoderm of the first arch [7]. In the present case, there is presence of normal anterior belly and posterior belly, in addition to these...
there is extension of musculoaponeurotic structure from the anterior belly with clear aponeurotic inferior border and rest of it as a muscle belly. The probable reason for this kind of variation may be the change in the differentiation pattern of the original mesoderm of first pharyngeal arch of both sides, which results in the formation of anterior belly. The uniqueness of this case is the non-attachment of the musculoaponeurotic part to hyoid bone or underlying mylohyoid muscle. The non-attachment to the mylohyoid muscle is indicative of the fact that during development though both anterior belly and mylohyoid are developed from the first arch the musculoaponeurotic structure found in the present case is related to the mesoderm of the first arch, which is forming the anterior belly. Further, this variation also reveals that the stratification of muscles in the region is normal and clear. The reports regarding the variation of the anterior belly have all mentioned the attachment of additional part of the anterior belly to either hyoid bone or mylohyoid muscle [3,4,8].

The knowledge of muscular variations in the suprahyoid region is important to oral surgeons specifically and even to the surgeons of head and neck to evaluate and avoid the misinterpretation of metastases or tumor or enlarged lymph nodes. Since the anterior belly of digastric serves as the landmark for the digastric triangle during surgical manipulation of the submandibular region, the variations concerned to this muscle takes the utmost importance. In the present case the two anterior bellies are interconnected by a musculoaponeurotic slip at the intermediate tendon. This probably may interfere with function of the digastic muscle by restricting the free movement of the muscle individually as the musculoaponeurotic slip does not have any attachment to the hyoid or mylohyoid muscle. The evaluation of anatomical 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 [9]. The variations of the anterior belly may lead to confusion in the scans performed on these subjects if the knowledge of this variation is ignored. Thus, the present case can add a point to the knowledge of oral and craniofacial surgeons.

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References


