The digastric muscle’s anterior accessory belly: Case report

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ABSTRACT

Digastric muscle is characterized by presenting occasional variations. The suprahoid region of an 83 year-old male cadaver was dissected and an anatomic variation of the digastric muscle was observed in its anterior belly. It consisted of an accessory bilateral anterior belly originating in the intermediate tendon and inserted into the mylohyoid raphe. The implications of this variation are discussed from a diagnostic and functional perspective.

Key words: Digastric anterior accessory belly, mylohyoid, intermediate tendon.

CASE REPORT

A group of neck-dissection students working in the Universidad Industrial de Santander’s morphology laboratory found a bilateral anatomical variation of the digastric muscle’s anterior belly in one of the twenty-five cadavers dissected during the academic year (Figure 1, Figure 2). This cadaver was an 83 year-old male. An additional anterior belly was bilaterally observed in the intermediate tendon that ran in an anteriomedial direction and was bilaterally inserted into the mylohyoid raphe. Both additional anterior bellies had a triangular configuration, having a base in the mylohyoid raphe and a vertex in the intermediate tendon. The left variation was 34.88 mm long and 14.24 mm wide. Its fibers originated in the ipsilateral digastric muscle’s anterior belly in a 9.72 mm long segment and were inserted into the middle line of the mylohyoid raphe. Both additional anterior bellies had a triangular configuration, having a base in the mylohyoid raphe and a vertex in the intermediate tendon. The left variation was 34.88 mm long and 14.24 mm wide. Its fibers originated in the ipsilateral digastric muscle’s anterior belly in a 9.72 mm long segment and were inserted into the intermediate tendon. The left variation was 34.88 mm long and 14.24 mm wide. Its fibers originated in the ipsilateral digastric muscle’s anterior belly in a 9.72 mm long segment and were inserted into the middle line of the mylohyoid raphe. The contralateral variation was 32.20 mm long and 9.64 mm wide and its fibers originated in the ipsilateral anterior belly in an 8.10 mm long segment, being inserted into the same place in contralateral digastric muscle. The mylohyoid nerve goes between the homonymous muscle and the anterior belly of the digastric muscle, providing additional branches to the digastric muscle’s extra belly running through its deep face (Figure 3, Figure 4).
DISCUSSION
Digastric muscle variations began to be reported at the end of the 20th century, unilateral types being more common than bilateral ones (3,4). Several authors have reported anatomical variations in the suprathyroid region, describing them according to their location, innervation, trajectory and composition (5-18). Uzun et al. (3), reported 5.9%-53% frequency for these variations. De Ary-Pires et al. (19), classified digastric variations from 74 cadavers and described different types of variations from their posterior belly, intermediate tendon and anterior belly. Aktekin et al., described symmetric muscular bands between the muscle’s two bellies. Sarikcioglu et al., showed three accessory bellies and a fibrous band being inserted into the mylohyoid raphe. Celik et al. (20-22) reported quadrification and triplication of the anterior belly in two case reports and mylohyoid-digastric muscle group variation in another.

Holibkova et al. (23), reported an anterior belly separated into medial and lateral heads which had varied trajectories and accessory bundles connecting mandible, hyoid bone and intermediate tendon crossing the middle line. Regarding innervation, Kawai et al. (24) found 0.83% prevalence among 1,078 head sides in relation to additional innervation of the anterior digastric belly coming from the stylohyoid muscle’s facial branch. According to the innervation classification proposed by Sakamoto et al. (6), this variation presents digastric dominance, since the innervations were localized on the accessory anterior belly’s deep face (Photo 2). This variation does not match the extensive descriptions proposed by De Ary-Pires et al. (19), making this variation a not very common presentation.

This variation’s presence has implications when interpreting imagenologic studies and possibly in digastric muscle biomechanics (25). It must be carefully analyzed when interpreting
diagnostic images to avoid confusing it with tumor masses or lymphatic nodes; it should also be kept in mind during suprahypoid area surgery. In 1991 Stockstill (8) affirmed that these variations were related to unusual jaw movements; however, we believe (from a functional perspective) that their origin-insertion relationship should be remembered to understand their possible muscle-skeletal implication, such as facilitators in jaw opening movement, elevating the tongue base (during swallowing) and ventro-dorsal flexion of the head. Further statement loses functional value and becomes merely speculative. A suitable electromyography activity study may be done during different cranio-cervical-mandibular movements (26).

**CONCLUSION**

This case report is important in the sense that it is aimed at raising awareness of the significance of anatomical variations in body areas especially enriched with structures having different functionality which might become confused when diagnosing images and during surgery.

**REFERENCES**