

Communication between Mylohyoid and Lingual Nerve: An Anatomical Variation

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ABSTRACT

Variation in the branching pattern of mandibular division of trigeminal nerve has remain one of the commonest cause among the surgeons for not obtaining adequate local anesthesia in routine oral or dental procedure. In this article, we discuss about a case of an unusual communication between mylohyoid and lingual nerve in a 50-year-old female cadaver seen in a routine dissection in medical college. The details of this anatomical variation and its clinical aspects are discussed.

Keywords: Inferior alveolar nerve (IAN), Communicating branch (CN)

CASE VIGNETTE

During routine dissection of the submandibular region for teaching medical students in the Department of Anatomy an unusual communication was found between the mylohyoid nerve and lingual nerve of a 50-year-old female cadaver. This variation was found in one of six cadavers dissected. Mylohyoid Nerve (MHN) was dissected in its entire length, and also Inferior Alveolar Nerve (IAN) was carefully dissected removing the mandibular ramus till the angle of mandible to see the intramandibular course. MHN appeared to be of normal thickness and just above the junction between Anterior belly of digastric muscle and its intermediate tendon the MHN gave a slender communicating branch that joined with the Lingual Nerve (LN) [Table/Fig-1]. Afterwards both the nerves were taking their normal course and branching pattern without any variation

DISCUSSION

The IAN before it enters the mandibular foramen, gives the MHN which supplies the mylohyoid and anterior belly of digastric muscles. Functions like chewing, swallowing, respiration and phonation are performed by this muscles [1]. Although the MHN is generally considered to be a motor it has a sensory component that continues beyond the mylohyoid and digastric muscles, by way of cutaneous branch [2]. The existence of communicating branches between the IAN and LN is most commonly mentioned in the text book. Whereas a communicating branch between the MHN and LN is described only in literatures and are not mentioned regularly

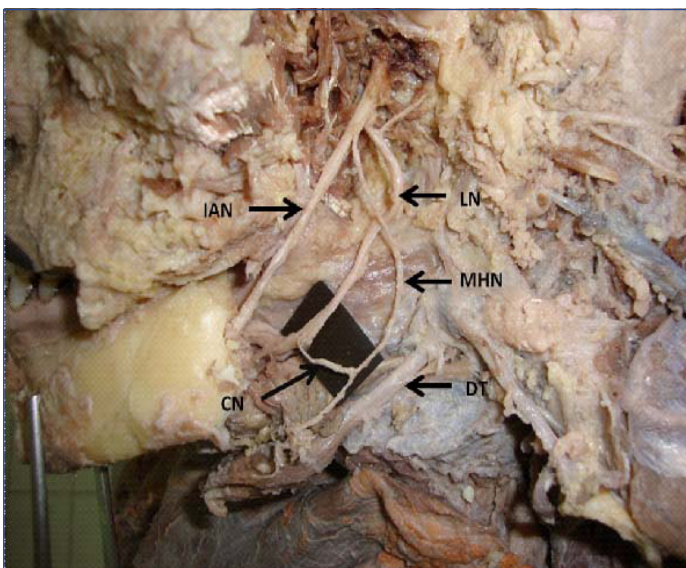
in the text books. Kim et al., has found in 12.5% of 32 heads the communication between MHN and LN and has also described that this communication could provide another route for collateral sensory transmission, being a possible cause of incomplete anesthesia during dental practice [3]. Although our findings resembles with the case reported by the previous authors [4], we did not observe any unusual thickness of the MHN in this case. Because of a very close relationship of LN with the third molar tooth makes it susceptible to injury during the third molar extraction [5] and the MHN damage can occur as a result of removal of third molar teeth or an excision of the submandibular salivary gland [4,6,7]. Since, there is the communication between MHN and LN the fibers of MHN must be contributing sensory supply to the tongue. So, if the MHN lesion is too proximal, impairment of the tongue sensation might occur without a LN lesion [4]. According to Reinhart; Chossegros et al., Joshi and Rood; the presence of this type of nerve communication would help in the LN function recovery, since the MHN would be contributing to the sensory innervation of the tongue as quoted by Fazan et al., [4]. Therefore this type of communication between MHN and LN may lead to unusual presentation after some orodental surgical procedure.

CONCLUSION

The communication between the MHN and LN can give variable clinical findings after oral and sub mandibular surgery. Therefore, the present case would be of great importance to the surgeons and in dental practice for preventing unnecessary complications during a radical neck dissection and oral surgeries.

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[Table/Fig-1]: Abbreviation: IAN= inferior alveolar nerve, LN= Lingual Nerve, MHN= Mylohyoid nerve and CN= Communicating Nerve, DT= Digastric Tendon.

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