AN ANOMALOUS COMMUNICATION BETWEEN NERVE TO MYLOHYOID AND THE LINGUAL NERVES AND ITS CLINICAL IMPLICATIONS – A CASE REPORT

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ABSTRACT

The mandibular nerve is the largest of the three branches of the trigeminal nerve. The inferior alveolar nerve also called as inferior dental nerve is a branch of the posterior division of the mandibular nerve. Before traversing the mandibular foramen, it first gives off the nerve to the mylohyoid, a motor nerve supplying the mylohyoid and the anterior belly of the digastric muscles. The lingual nerve is a branch of the posterior division mandibular nerve, which receives sensory innervations from the oral part of the tongue. During routine dissection in the Department of Anatomy, we found the presence of an anomalous communication between the nerve to mylohyoid and lingual nerves on the hyoglossus muscle in an adult male formalin fixed cadaver. Variations in the course of nerve to mylohyoid and its communication with the lingual nerve, have not been satisfactorily described in the anatomical or surgical literature. Variant branching pattern of the mandibular nerve are of great clinical importance since these variations can cause failure to obtain adequate local anesthesia in oral and dental procedures. We assume that this anomalous communication may contain sensory fibers from the inferior alveolar nerve entering in to the lingual nerve through nerve to mylohyoid or some fibres of the motor root of the trigeminal nerve passing through the lingual nerve to reach the nerve to mylohyoid.

Keywords: mylohyoid nerve, lingual nerve, anomalous communication.
Introduction

The mandibular nerve is the largest of the three branches or divisions of the trigeminal nerve. It is made up of a large sensory root proceeding from the inferior angle of the trigeminal ganglion, a small motor root which passes beneath the ganglion, and unites with the sensory root, just after its exit through the foramen ovale. The main trunk of the mandibular nerve lies in the infratemporal fossa where it divides into a small anterior division and large posterior division.

Inferior alveolar nerve is the larger terminal branch of the posterior division of the mandibular nerve. It runs vertically downwards lateral to the medial pterygoid and to the sphenomandibular ligament and enters the mandibular foramen. Before entering the mandibular foramen, it first gives off the nerve to the mylohyoid, a motor nerve supplying the mylohyoid and the anterior belly of the digastric muscles.

Lingual nerve is one of the two terminal branches of the posterior division of the mandibular nerve. This nerve is sensory to the anterior two-thirds of the tongue and to the floor of the mouth. The fibres of the chorda tympani carry secretomotor to the submandibular and sublingual salivary glands and gustatory to the anterior two-thirds of the tongue, are also passes through the lingual nerve.

Case Presentation

During routine dissection in the Department of Anatomy, we found the presence of an anomalous communication between the nerve to mylohyoid and lingual nerves on the hyoglossus muscle in an adult male formalin fixed cadaver. This communication is unilateral and absorbed only on left side. Formation, course, relations and branching pattern of the mandibular nerve were as usual except above said anomalous communication.

Figure 1– Photograph showing the abnormal communication between the lingual and mylohyoid nerves. LN – Lingual nerve; MHN – Mylohyoid nerve.

Asterisks showing the communication between the two nerves.
Discussion

Presence of communicating nerves between branches of the posterior division of mandibular nerve is thought to serve as an alternative route for maintaining the functional integrity of the structures innervated by it. The presence of communicating branches between the inferior alveolar and lingual nerves is frequently reported in the literature. This kind of communication is thought to be responsible for inadequate mandibular anaesthesia. However, a communicating branch between the mylohyoid and lingual nerves is seldom described in literature. It has been reported that the mylohyoid nerve might have a role in the sensory innervation of the chin and the lower incisor teeth. Some of the sensory components of the mylohyoid nerves, instead of innervating the teeth or chin, might also innervate the tongue. variations on the branching pattern of the mandibular nerve frequently account for the failure to obtain adequate local anesthesia in routine oral and dental procedures.

Conclusion

Variant branching pattern of the mandibular nerve are of great clinical importance since these variations can cause failure to obtain adequate local anesthesia in oral and dental procedures. Surgeons might be aware of this variation for the correct interpretation of the unexpected findings after oral nerves injury.

References: