

# An anatomical variation of mental nerve and foramen in a trauma patient

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## ABSTRACT

Mental nerve is the terminal branch of inferior alveolar nerve. It innervates chin, lower lip and gingiva. Anatomical variations of this nerve were reported previously. Nerve could be damaged during repair of mandibular fracture or elective surgical procedures. Maxillofacial surgeon should be cautious while performing surgery below the premolar tooth in mandible to prevent damage to the mental nerve. © IJAV. 2010; 3: 165–166.

**Key words** [mental nerve] [mental foramen] [anatomical variation]

## Introduction

Mental nerve is the terminal branch of inferior alveolar nerve. It passes through the mental foramen to innervate the skin of chin, mucosa of lower lip and gingival regions [1]. Anatomical variations of this nerve have been previously reported in literature [2–5]. We are presenting a case with double mental nerve and mental foramen.

## Case Report

A 44-year-old male patient was referred to our clinic with mandibular fracture, one month after a maxillofacial trauma due to altercation. Fracture of left side of mandibular body was established with x-ray and physical examination. Patient was operated under general anesthesia. Intraoral incision was made on the left gingivolabial sulcus, then periosteum elevated. Subperiosteal dissection was performed carefully in order to prevent mental nerve damage. On the left side, below the premolar teeth level two mental nerves emerging from two different mental foramina was observed. Two nerves were almost in the same diameter. One of the mental foramina was located more anterior and superiorly (Figures 1 & 2). Fracture at the left side of mandibular body was fully exposed. The fracture site was highly comminuted and there were evidence of osteomyelitis. For this reason, internal fixation with miniplates and screws was not considered. All necrotic tissues were removed. Occlusion was re-established and maxillomandibular fixation (MMF) was done. Both nerves were preserved during surgical procedures.

Appropriate antibiotic treatment was administrated. Four weeks after the operation MMF was removed without any complications.

## Discussion

Inferior alveolar nerve divides into terminal incisive and mental branches. Mental nerve emerges from mental foramen and has three branches. Two branches form an incisor plexus innervates the gingiva. There are some communications between lingual and mylohyoid nerves with this incisor plexus. Third branch innervates lower lip and skin over the chin. These branches communicate freely with the mandibular branch of facial nerve [1]. Mental foramen is usually located inferior to the second



**Figure 1.** Intraoperative view of two mental nerves. (Arrows: mental nerves)



**Figure 2.** Closer view of second mental nerve, which is more anterior and superiorly located. (*Arrow: mental nerve*)

premolar tooth; however, its relation to the mandibular teeth may show variations among ethnic groups and its location changes with age. In adults it is located in the middle of upper and lower borders of the mandibular

body. During childhood it is located near to lower border and located close to the upper border in the edentulous mandible [6].

Two different foramina which are located away from each other, and two different mental nerves almost in the same diameter is a rare condition.

Maxillofacial surgeon should be careful during repair of fractures and elective surgical procedures of mandible to prevent possible nerve damages. While performing surgery below the second premolar tooth, dissection should be done meticulously and it has to be kept in mind that there could be two mental nerves. We believe maxillofacial surgeons must have a detailed knowledge of anatomy and possible variations. Each patient should be evaluated individually. By this way, surgeons could find undefined anatomical variations and possible neurovascular damages could be prevented.

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