

CASE REPORT

Accidental finding of an Accessory Mental Nerve during Mandibular Fracture Reduction

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Abstract

Accessory mental nerve is defined as an additional branch of the mental nerve arising from the mental foramen. The current case report describes an accidental finding of an accessory mental nerve during mandibular fracture reduction. Also reviews literature encompassing this area.

Keywords: Accessory mental nerve, Mandibular fracture, Mental nerve

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Introduction

The mental nerve is a part of the inferior alveolar nerve which commences its course from the mental foramen supplying skin and oral mucosa of the lower lip region, chin region and intra oral mucosa. Accessory mental nerve is known by many terms such as double mental nerve, multiple mental nerve, accessory mandibular nerve and accessory buccal nerve (1). It has an incidence of 5.5 – 13% (1). It may or may not be seen in 2 dimensional radiographs as it is small in size but is seen clearly in Cone Beam Computed Tomography (CBCT) (1). It can be in either direction from the mental foramen. The mean distance between the mental foramen (MF) and accessory mental foramina (AMF) ranges from 0.67 mm to 6.3 mm (1). The mean area of AMF was 1.7 mm² and that of the ipsilateral MFs was 7.5 mm², whereas the mean area of MFs without ipsilateral AMFs was 9.4 mm² (1). Accessory mental nerves can branch out both superiorly and inferiorly supplying skin and oral mucosa (1). Also, different studies suggest differences between populations where native Americans having a higher prevalence of 11% (1). Authors Describe a situation where an accessory mental nerve was accidentally found during the open reduction and internal fixation (ORIF) on the left para-symphysial fracture highlighting clinical importance.

Case report

A 35-year-old male patient presented to the maxillofacial unit of the Teaching Hospital, Peradeniya with a mandibular fracture due to a road traffic accident. Clinically a left-sided

para-symphysial fracture of the mandible was diagnosed. The fracture was confirmed with Dental Panoramic Tomography (DPT) (Figure 1). Contralateral Condylar fracture was excluded clinically and radiologically. More advanced imaging modalities such Cone Beam Computed Tomography (CBCT) were not used since it was an isolated mandibular fracture and the extent of the fracture can be assessed by clinical findings and from the Dental Panoramic Tomography. The Open reduction and internal fixation of left side para-symphysial fracture was planned under general anesthesia. During the intra-oral approach, a vestibular incision was made, and the fracture site was exposed, so an accessory mental nerve was found in relation to mandibular left side 1st permanent premolar tooth and mandibular left side 1st permanent molar tooth (Figure 1). Postoperative patients exhibited no reports of left-sided mental nerve paresthesia. This assertion was corroborated through the application of a blunted 23-gauge needle, exerting slight pressure on the mandibular left mental region, while ensuring patients maintained closed eyes throughout the procedure and prompted them to convey any sensations experienced. Additionally, contralateral assessment was conducted for comparative purposes, both preoperatively and postoperatively.

Discussion

In Sri Lankan context, a study done by Nanayakkara et al., on fifty dry skulls had found there is a prevalence of accessory mental foramen was 11.5% (2).

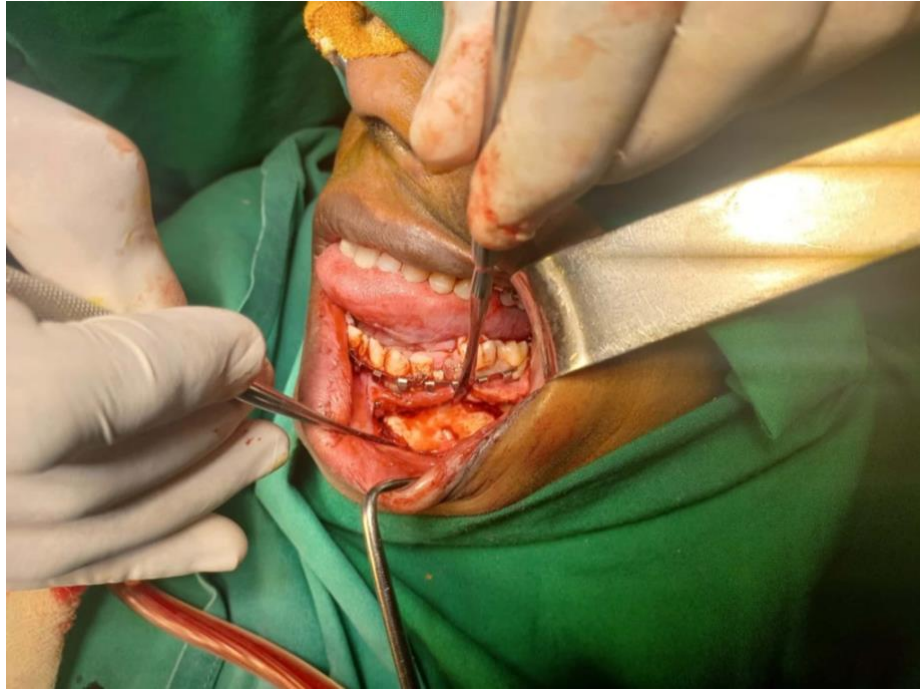


Figure 1: Exposed mandibular fracture site

In our case only a left sided accessory mental nerve was found during surgery, the other side wasn't inspected surgically. Mamatha et al., had encountered a similar situation like us in discovering an accessory mental foramen (3). Dental Panoramic Tomography of the case doesn't show accessory mental foramina bilaterally. There is higher accuracy of spotting the accessory mental nerve via CBCT scans as it provides clear resolution (4). In our case it was not requested as the extent of the fracture can be determined from clinical examination and radiological findings, so open reduction and internal fixation can be on the fracture, so further radiation exposure for a CBCT was not requested.

Mental nerve paresthesia can happen in dentistry due to deep implant placement of implants and overextending root canal fillings (5).

The taxonomy of the International Association of Study of Pain (IASP) describes paraesthesia, although abnormal, is not unpleasant. Patients have often described it as warmth, cold, burning, aching, prickling, tingling, pin and needle sensation, or numbness as a burning, tickling, or tingling sensation (6). In the case of mental nerve paresthesia there is loss of sensation to the ipsilateral side skin region of the chin and intra oral mucosa (6). Also reduced sensation of the ipsilateral central incisor, lateral incisor and Canine teeth. This reduces the quality of life of the patient (6). In the case of mental nerve damage, general treatment of choice are conservative and surgical options. Conservative options include antibiotics, nonsteroidal anti-inflammatory drugs, corticosteroids, proteolytic enzymes, and vitamin B based on the cause (6). The surgical options are nerve repair or nerve graft (6). Our

case didn't present paresthesia symptoms post operatively and no nerve damage was observed peri operatively as well.

Conclusion

Knowledge of the presence and situation of AMFs are important for maxillofacial surgeons for treatment planning and avoiding mental nerve paresthesia which is an important complication of the surgery. Maxillofacial surgeons should closely inspect AMFs in radiographs and should dissect in the mental region carefully with an understanding of this variation in mind.

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