Case Report

JRAD Journal of Research and Advancement in Dentistry

J Res Adv Dent 2016;6:1:89-91.

Accidental Discovery of Accessory Mental Foramen During Surgery: A Case Report

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ABSTRACT

Background: The mental foramen is usually single, if there are more than one, the additional foramen is termed accessory foramen. The prevalence of accessory mental foramen is 1.4-10 %. Although this anatomical variation is rare, it should be kept in mind that an AMF may exist. Even so, in order to avoid neurovascular complications, particular attention should be paid to the possible occurrence of one or more AMF during surgical procedures involving the mandible. Careful surgical dissection should be performed in the region so that the presence of AMF can be detected and the occurrence of a neurosensory disturbance or haemorrhage can be avoided. Trigeminal neuralgia was diagnosed. On the basis of diagnostic test results, peripheral neurectomy of mental nerve was planned. Failure to do neurectomy of mental nerve branch in the reported case, coming out from AMF, would have resulted in recurrence of pain and eventually failure of the procedure.

Keywords: Accessory mental foramen, Mandible, Mental nerve, Premolar.

INTRODUCTION

Mental foramen is situated 13-15 mm superior to the inferior border of the mandibular body on the anterolateral aspect. The opening of the mental foramen is outward and upward in a posterior orientation[1, 3]. It is an oval or circular opening on the anterior surface of the mandible, located below the apex of the first or second premolar or between the first and second premolars. The mental foramen is mostly single, presence of additional foramen is termed accessory foramen. Existence of accessory mental foramen ranges from 1.4 to 10 %. AMF normally occur singly, but the number can range from 1 to 3 foramina per side [2, 4]. Variations of the mental foramen occur in its location, presence of accessory foramina or complete absence. The identification and actual location of accessory mental foramen is important in clinical dentistry during nerve block, evaluation of the morphology and maturity of the human mandible and during surgical procedures of mandible such as implant surgery, surgical procedure involving the molar and premolar region. This reduces the rate of paralysis and hemorrhage in mental region, lower lip and gingiva from the mental foramen to the midline of the ipsilateral side. This case reports accidental finding of accessory mental foramen during surgical procedure in the mandible[5].

CASE REPORT

A 52 yr old male patient came to the Department of Oral and Maxillofacial Surgery, with paroxysmal pain on right side of the face since 6months. On examination, patient complained of sudden stabbing pain on right side of the face. The attacks of pain lasted several seconds with periods of relief between the attacks. Pain was localised to

Received: Nov. 9, 2016: **Accepted**: Dec. 27, 2016
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pISSN 2278-0076
eISSN 2321-9270

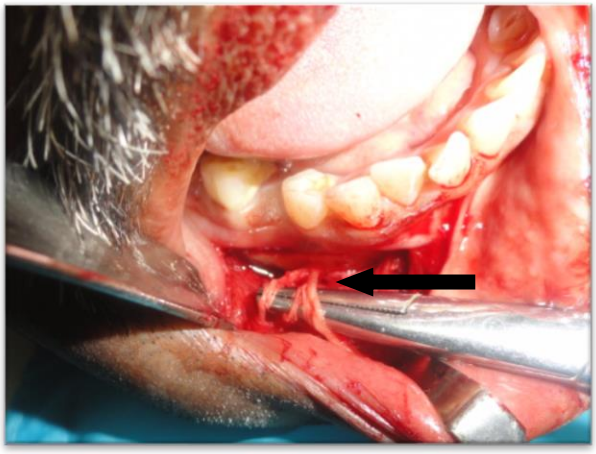

Fig 1: Accessory mental foramen with a branch of mental nerve.

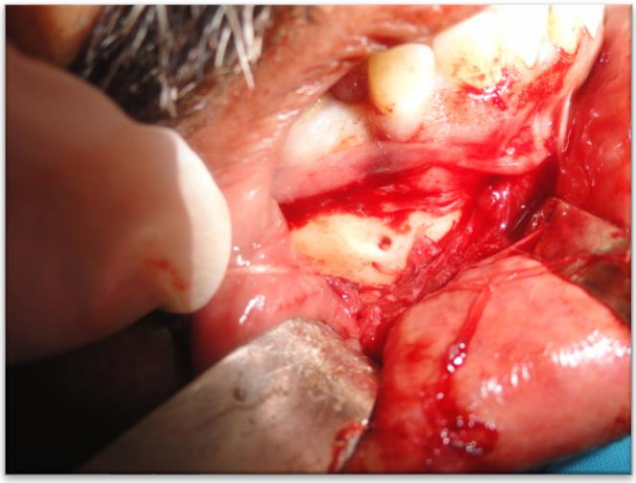

Fig 2: Mental and accessory mental foramen, after the neurectomy.

right side of the face and not crossing the midline. Trigger zones at lower lip, corner of mouth precipitated pain. Diagnostic block revealed mental nerve neuralgia with relief of symptoms. Examination of oral cavity and surrounding structures there was no abnormality detected. Patient was started with medical treatment with tegretol 600 mg/day which was increased to 1200mg/day over a period of 6 months. Patient was not relieved with medical management. Peripheral neurectomy of right mental nerve procedure was planned. A standard vestibular incision was given, mental foramen was identified and to the surprise there was an another foramen found just 3mm inferior and posterior to existing mental foramen with a branch of mental nerve coming out of it. It was identified as accessory mental foramen. Peripheral segment including accessory and main branch of mental nerve was dissected out and removed. Both the foramen were plugged with the bone taken from the adjacent area to prvent regeneration of the nerve. Patient was followed for 2 years and had no complaints of pain.

DISCUSSION

The mental foramen is not complete till the 12th gestational week, where the mental nerve separates into several fasciculi. Separation of the mental nerve earlier to the formation of the mental foramen could be the cause for the formation of the accessory mental foramen[6]. Three branches of the mental nerve emerge from the MF which innervates the skin of the mental area, skin of the lower lip, oral mucosa, and gingiva as far posterior as the second premolar. Accessory mental foramina can be detected by investigations on dry skulls, plane radiography, periapical radiography and computed tomography. Noninvasive procedure by using high-resolution cone beam computed tomography images, the course of fine accessory branch of mandibular canal between the mandibular canal and AMF was possible.

In a study, the diameter of MF ranged from 2.38 –2.64 mm, AMF ranged from 0.74–0.89 mm. The relative position of the AMF to MF was variable, greater in the horizontal direction than in the vertical direction [9]. The incidence of accessory mental foramen varied between ethnic groups. Non-Caucasians may have a higher incidence of accessory mental foramen than Caucasians. In a study, there was bilateral absence of accessory mental foramen among dry skulls. Previous studies showed no gender differences [7, 8]. In the case reported on here, the foramina were located under the first premolar. Other studies show highest percentage of mental foramen was found under the second premolar [9].

CONCLUSION

The presence or absence of AMF and its nerve should be carefully identified with proper investigations before planning for the procedures at the mental foramen region. This reduces the rate of haemorrhage and paresis in the mental region, lower lip and gingiva of that side. In cases of

trigeminal neuralgia involving mental nerve recurrence of symptoms occurs due to incomplete neurectomy.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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