AN INSIGHT INTO A DISAPPEARED MENTAL FORAMEN IN AN EDENTULOUS OLD AGE MANDIBLE

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Abstract
In old age the teeth in the alveolar sockets of mandible is lost and is called as edentulous mandible. If the teeth are lost, alveolar bone is resorbed and the mental foramen comes to lie nearer the superior border of the body of the mandible. The objective of this study is to determine the position of mental foramen in an edentulous old age mandible. A total of 50 edentulous old age mandibles were collected from the department of anatomy, RVS dental college and hospital at Coimbatore. The position of mental foramen was observed manually based on the criteria whether the foramen lies close to the alveolar border or on the alveolar ridge. Out of 50 mandibles, 40 mandibles showed the mental foramen lies close to the alveolar border, 9 showed on the alveolar ridge and one mandible showed a unique feature of disappeared mental foramen with exposed mandibular canal. Since the mandibular canal is exposed along the anterior part of the body of the mandible the mental nerve may be covered by the oral mucosa alone. In intraoral procedures, the mental nerve is under high risk of getting impaired since its position lies adjacent to the alveolar crest and hence the knowledge about the position of mental foramen in edentulous mandible is important for Anatomist, Oral Surgeons and Health care professionals.

Keywords: Edentulous Old Age Mandible, Alveolar Crest, Mental Foramen, Inferior Border of Mandible.

INTRODUCTION
The largest, most strongest and widely movable part of the skull is the lower jaw which is formed by the mandible. It develops from the first pharyngeal arch. It has a horse shoe- shaped body which lodges the teeth, and a pair of rami which project upwards from the posterior ends of the body. The body of the mandible is somewhat U- shaped, and has external and internal surfaces separated by upper and lower borders. The upper or superior border of the body of mandible is called as alveolar part which contains alveolar sockets for the lower teeth. The alveolar part contains 16 alveoli for the roots of the lower teeth. It consists of buccal and lingual plates of bone joined by interdental and interradicular septa.

The mental foramen lies along the body of the mandible just below the interval between the premolar teeth. Through this foramen the mental nerve and vessels emerges out. The mental foramen changes its position according to the age changes. At birth the mental foramen lies closer to the inferior border of the mandible. In adults, it opens midway between the superior and inferior borders because the alveolar and subalveolar parts of the bone are equally developed. In old age the teeth fall out and the alveolar border is absorbed, so that the height of body is markedly reduced and the mental foramen lies close to the alveolar border.

The mental nerve is the branch of inferior alveolar nerve which is sensory, originates from the mandibular division of the trigeminal nerve. It arises from the same within the inferior alveolar canal of the mandible. As it exits from the mental foramen, it divides into three branches the mental branch, labial branch, and gingival branch, which supply the chin, lower lip and gingiva, respectively. In the present study the position of mental foramen in an edentulous old age mandibles were examined and studied.

RESULTS
Out of 50 edentulous old age mandibles, 80% (40/50) of mandibles showed the mental foramen close to the alveolar border, 18% (9/50) lies on the alveolar ridge and 2% (1/50) showed a unique feature of disappeared mental foramen with exposed mandibular canal (Fig.1). Since the mandibular canal is exposed in the anterior part of the body of the mandible, the mental nerve may be covered by the oral mucosa alone.

Fig. 1: Exposed mandibular canal (MC) in an edentulous old age mandible
DISCUSSION

Mandible for, as the contour of the lower face. In old age the contour of the face is lost, one of the reason for it is mandible where resorption of alveolar bone occurs due to loss of teeth and their periodontal membranes. The resorbed alveolar ridge reduces the height of the body of the mandible which changes the position of mental foramen to lie near the superior border of the alveolar bone. Initial phase of the bone resorption takes place on the alveolar crest, while the inferior border of the mandible remains unchanged. The resorption process is rapid till the first year after teeth loss and after the second year the resorption of bone gradually gets stabilized. This resorption process is more rapid in the labial and buccal parts of the alveolar crest and it is particularly quick and faster in mandible when compared to resorption in maxilla. In the present study the mental foramen position was close to alveolar border in 80% and on the alveolar ridge in 18% of the edentulous old age mandibles which corroborates with the study of Charalampakis. The rare feature found in the present study was absence of mental foramen with the exposed mandibular canal where the nerve may be covered by oral mucosa alone. The exposed canal was observed in the anterior part of the body of the mandible, the mental nerve and its branches may be compressed while masticatory movement of the jaw. Thus it may end up in permanent or transitory sensitive, tactile and thermal changes. Depending on the quantity of pressure exerted on the mental nerve, the injury to the could be categorized as neurapraxia or as axonotmesis. Lower lip numbness is a common symptom that occurs due to damage, injury or irritation of the mental nerve. It usually causes unilateral loss of sensitivity of the lower lip and gums, numbness, a tingling sensation, and dryness of the affected mucosa. It is often preceded by intense pain and burning sensation in the affected area. Prosthetic rehabilitation treatment with osseointegrated implants has increased in recent scenario. It makes the quality of life of the patients to improve and with that restoring self-dignity and social recognition. It also will restore the normal function, masticatory and the normal anatomy of the mouth. There are several factors which the clinicians take as criteria before they choose the most suitable prosthesis. The area situated between mental foramen and the symphysis menti is commonly the choice by oral surgeons and prosthodontist to install the implants that retain the complete fixed denture in the mandibular arch. One of the genuine reasons to choose the anterior part is because of the fact that human mandible has a complex and bio-mechanical behavior when it is subjected to the various functions performed by it. In addition to it the implants need to be fastened so that it forms a rigid bar and at the same time it should not extend to the posterior region where it is full of important structures. Therefore a careful preoperative evaluation of mandible and anatomical structures lying close to it is a mandate to yield a postoperative satisfactory results.

CONCLUSION

To conclude, a detailed knowledge of the exact position and also the rare position of the mental foramen are extremely important for Anatomist, Oral Surgeons and Health care professionals, especially in edentulous old age mandibles where mental nerve impairment is very high during implants.

REFERENCES