



Age Changes in Mandible in Relation To Mental Foramen

KEYWORDS

Mandible, age, mental foramen, mental nerve, premolar

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ABSTRACT *Aim: To study the age changes in mandible in relation to position of mental foramen on dry human mandible*

Objective: To correlate the age changes in mandible in relation to position of mental foramen on dry human mandible. Background: Mental foramen is present on the anterior surface of the mandible, adjacent to root of mandibular second molar. The mental nerve, a branch of inferior alveolar nerve passes through it and supplies the chin, lower lip and buccal mucosa of incisors, canines and the premolars. One of the important feature to determine the age of the mandible is by identifying the position of the mental foramen.

Reason: This study will help the forensic department to determine the age of the mandible in various criminological cases

Introduction:

Mandible is the largest and strongest bone of the face, serves for the reception of the lower teeth. Mandible is developed from the first pharyngeal arch. It consists of a curved, horizontal portion, the body, and two perpendicular portions, the rami, which unite with the ends of the body nearly at right angles. Mental foramen is the exit point of inferior alveolar canal through which the mental neurovascular bundle emerges out from the mandible. The mental foramen changes its position with age, which is also influenced by factors like sex and the ethnicity [1].

At birth mental foramen will open below the sockets of the two premolars near the lower border. The mandibular canal passes near the lower border [1]. In adults mental foramen is present in the midway between upper and lower borders. The mandibular canal passes parallel to the mylohyoid line. In the mandibles of older people the alveolar border is resorbed so the height of the body of the mandible is reduced. The mental foramen will be near the alveolar border. The mental foramen and the mandibular canal will be close to the alveolar border [2].

Mental foramen is situated in the antero lateral part of the body of the mandible [3-5]. The mental foramen is an important anatomical structure that transmits mental nerve, artery and vein. Mental nerve is the terminal branch of the inferior alveolar nerve which will supply the sensory innervations to lower lip, buccal vestibule and gingiva mesial to the first mandibular molar. Knowledge about the location of the mental foramen is essential especially for dental surgeon to prevent the injury to the nerve during administration of local anaesthetic agent [6]. Its location and the possibility that an anterior loop of mental nerve will be present mesial to the mental foramen needs to be considered before any surgery in order to avoid injuring of the neurovascular bundles passing through these foramina and notches [7]. This study will help the forensic department to find the age of the mandible.

Materials and Method:

This experiment was conducted in anatomy department of

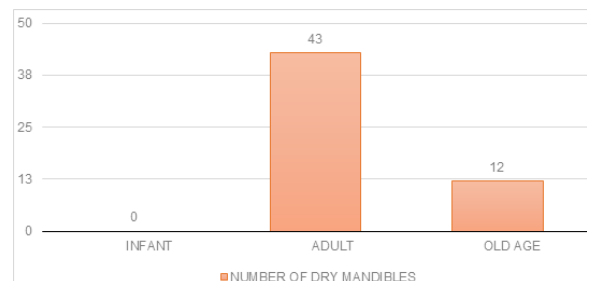
saveetha dental college. The aim of the study is to determine the age of the mandible in relation to mental foramen. This study was done using 55 mandibles. The age was determined depending upon the position of the mental foramen. For children the mental foramen will open towards the lower border, for adults it will be between lower and upper border and in old age the mental foramen will be close to alveolar border as the teeth fall off and the alveolar border is absorbed.

Result:

AGE GROUP	NUMBER OF DRY MANDIBLES
INFANT	0
ADULT	43
OLD AGE	12

Table 1: total number of mandibles

Out of the 55 mandibles, it was found that 43 (78%) of them were of adult, 12 (21%) were of old people and none of the mandibles were of infants.



Discussion: The mental foramen is a single opening on the antero lateral surface of the mandible which is generally seen to be circular or oval in shape [8]. The location of the mental foramen is an important factor while considering the mental incisive anaesthetic block and surgery in the outer premolar mandibular region. The position of the

mental foramen alters its vertical relation within the body of the mandible from the infancy to old age. In infants mental foramen is found near the lower border, in adults it is found in between upper and lower border and in old age mental foramen is found towards the alveolar border.

Conclusion: The most common position of the mental foramen is between first and second premolar. The knowledge on the position of the mental foramen is important during clinical practices. Paralysis of the mental nerve is one of the, main complications of surgery of the mandibular canal and mental foramen regions. This study also helps in determining the age of the mandible approximately which in turn will help in forensic science related cases.

References:

- [1] Anthropometrics of mental foramen in dry dentate and edentulous mandibles in Coastal Andhra population of Andhra Pradesh State Srinivas Moogala, Sahitya Sanivarapu, Ramanarayana Boyapati, Narasimha Swamy Devulapalli, Swarna Chakrapani, and Laxmikanth Kolaparthi
- [2] 1. Williams PL, Banister LH. 38th ed. New York: Churchill Living Stone; 1995. Collins Grays Anatomy in Skeletal system; pp. 576–8.
- [3] S. Agthong, T. Huanmanop, and V. Chentanez, "Anatomical variations of the supraorbital, infraorbital, and mental foramina related to gender and side," *Journal of Oral and Maxillofacial Surgery*, vol. 63, no. 6, pp. 800–804, 2005.
- [4] P. S. Igbigbi and S. Lebona, "The position and dimensions of the mental foramen in adult Malawian mandibles," *West African Journal of Medicine*, vol. 24, no. 3, pp. 184–189, 2005.
- [5] J. L. Phillips, R. N. Weller, and J. C. Kulild, "The mental foramen: 3. Size and position on panoramic radiographs.," *Journal of Endodontics*, vol. 18, no. 8, pp. 383–386, 1992.
- [6] Shankland WE. The position of mental foramen in Asia Indians. *J Oral Implantol.* 1994;20:118–23.
- [7] Wang TM, Shih C, Liu JC, Kuo KJ. A clinical and anatomical study of the location of the mental foramen in adult Chinese mandibles. *Acta Anat (Basel)* 1986;126:29–33.
- [8] Haghanifar S, Rokouei M. Radiographic evaluation of the mental foramen in a selected Iranian population. *Indian J Dent Res.* 2009;20:150–2.