

Assesment Of Anatomical Position And Variations In Mental Foramen For Implant Dentistry

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Abstract:

Understanding the anatomical characteristics of mental foramen is crucial in surgical dentistry, particularly during osteotomy procedures to prevent neurological complications during implant surgery. This study aims to evaluate the position and depth of the mental foramen for optimal implant placement.

Keyword: implant, mental foramen, accessory foramen, eruption ,non-eruption tooth

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I. Inroduction:

The mental foramen is situated on the anterolateral aspect of the body of the mandible. It represents an exit to blood vessels and nerves[1,2]. This foramen encompasses mental nerve which is a branch of inferior alveolar nerve which is branch of trigeminal division. It supplies lips and lower jaw[3,4]. It is important to know the location of mental foramen for implant dentistry as the location of mental foramen varies from person to person. During the implant placement,[5]if mental nerve damage occurs the patient may feel numbness ,pain and affects the doctor patient relationship. To overcome these errors in dentistry,[6]

the dental surgeons must know the anatomical position and variations during minor surgeries. Variation in mental foramen is influenced by age, sex, race or abnormalities in jaw. They may be round, oval, irregular or may be absent.

II. Aim:

To identify the variation of mental foramen in human adult skull for implant placement.

III. Materials And Methods:

This work is carried out in the department of anatomy, RVS dental college, Sulur. The samples are taken from the dry human skulls. About 20 adult mandibles and 15 old aged mandibles were measured.

Visual examinations are done to find parameters like location, size, position, shape and the distance from alveolar ridge to anterior border of mental foramen are observed for statistical analysis.

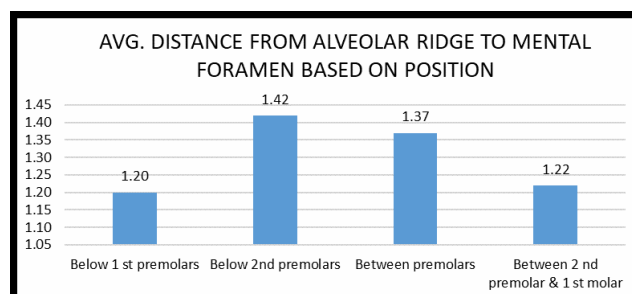
Statistical analysis were tabulated to find variations.

The obtained values are entered in Microsoft Excel sheet.

IV. Result:

The table below enumerates the average distance of mental foramen from its anterior border to the alveolar crest ridge.

The maximum distance observed is about 1.4cm below the premolars.



The average location of mental foramen is found to be below 2nd premolars.

The location of mental foramen varies from person to person. They may be classified as;

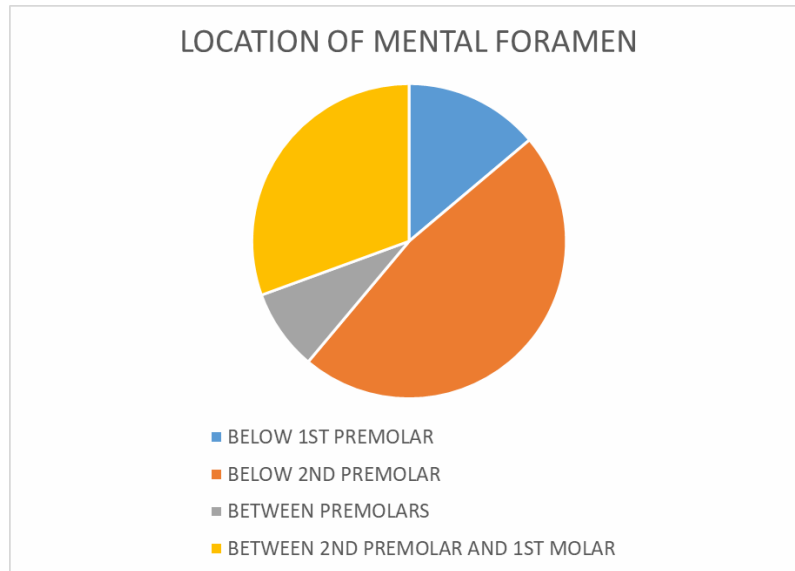
CLASS 1: Below 1st premolar;

CLASS 2: Below 2nd premolars;

CLASS 3: Between premolars;

CLASS 4: Between 2nd premolar and 1st molar;

CLASS 5: Below canine.



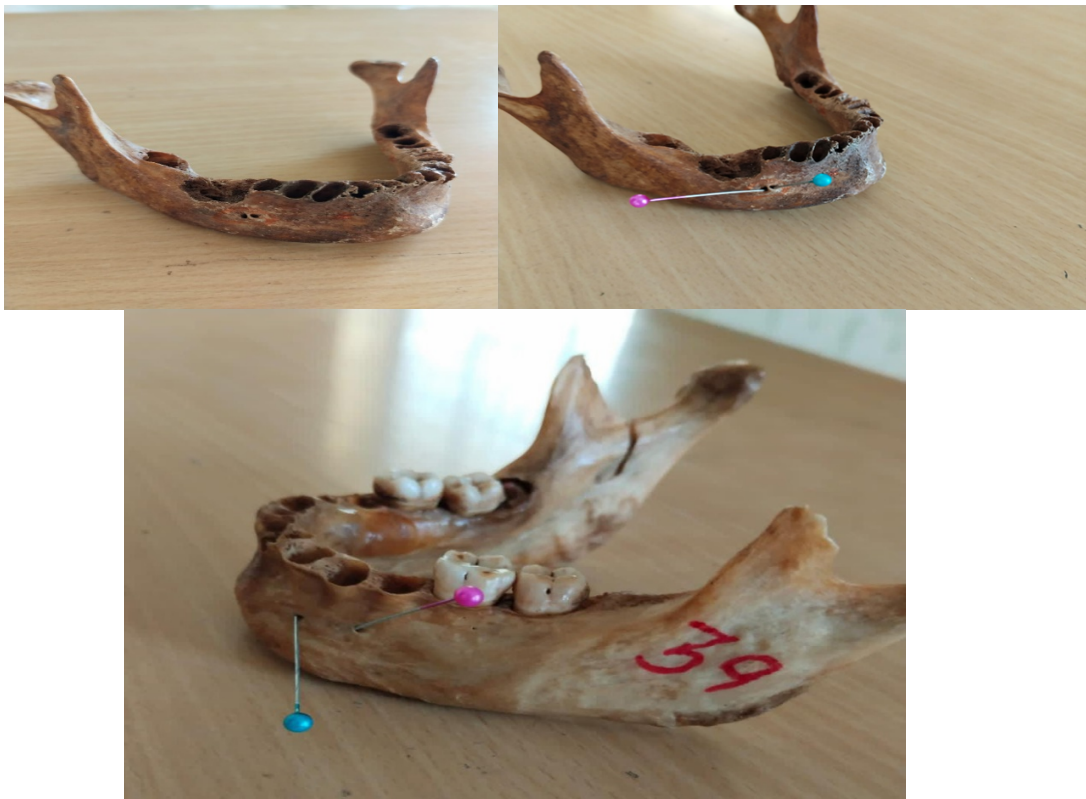
The size of mental foramen in the dry human skull are round and bilaterally present at both the sides of the mandible. 90 percent of skull have round foramen and remaining few skull have oval and other variations are seen.





V. Discussion:

Out of 35 dry skulls; 2 accessory and bilobed mental foramen were seen[9]. Thus it can reduce the incidence of misjudgments during implant placement and maxillofacial surgery.[10]



The distance between the mental foramen and accessory mental foramen is 2.1mm. Any foramen in addition to the mental foramen is known as an accessory mental foramen in the body of the mandible.

To overcome these errors in dentistry, CBCT [cone beam computed tomography] scans are recommended by dentists. These CBCT scans are easy to diagnose, expose less radiation, and precise positioning of implants can be done[11,12].

After finding the location through a CBCT scan, implants must be located 4mm away from the mental foramen.

VI. Conclusion:

Thus knowledge of assessment of anatomical landmark and variations can reduce unsolicited complications and can satisfy the patients with successful treatment with less pain.

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