

Position and symmetry of mental foramen: A radiographic study in South Indian population

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ABSTRACT

Introduction: Mental foramen is one of the two foramina located on the anterior surface of the mandible. It transmits the terminal branches of the inferior alveolar nerve and vessels. The anatomical variation in the position of mental foramen is different for different procedures. The mental foramen location was determined by drawing imaginary lines parallel with long access of lower premolars and mesial root of the first molar on the same side. **Materials and Methods:** A total of 100 Orthopantomogram (OPG) were taken, and the position of the mental foramen was noted. The criteria considered were situated (1) anterior to the premolar, (2) in line with the first premolar, (3) between the first and second premolar, (4) in line with the second premolar, (5) between the second premolar and first molar, and (6) in line with the first molar. **Results and Discussions:** We can determine the position and symmetry of the mental foramen. The blue color represents the mental foramen on the right side, and orange color represents the mental foramen on the left side. The number of OPGs considered is 100 in number. The age group of the people who were analyzed for the position of mental foramen is 14–70 years of age. **Conclusion:** In most of the cases, it was found in line with the second premolar, next in between two premolars, and then rarest in case of its presence anterior to first premolar.

KEY WORDS: Mental foramen, orthopantomogram, radiology, South Indian

INTRODUCTION

Mental foramen is one of the two foramina located on the anterior surface of the mandible. It transmits the terminal branches of the inferior alveolar nerve and vessels. The anatomical variation in the position of mental foramen is different for different procedures. The mental foramen location was determined by drawing imaginary lines parallel with long access of lower premolars and mesial root of the first molar on the same side.^[1] The position of mental foramen is very important for diagnostic and clinical procedures.^[2] In endodontics, the radiographic view of mental foramen may lead to misdiagnosis of radiolucent periapical lesion in the position of mandibular premolar teeth. Clinically, mental nerve can also be damaged due to the surgical procedures.^[3]

The measurement of mental foramen decreases with age. The resorption factor in males and females is used for early diagnosis and also for implant analysis.^[4] The position of this foramen helps in giving local anesthesia

during various oral and maxillofacial surgeries. It helps in preventing effective nerve blocks and avoids injuries to neurovascular bundles.^[5] The conventional radiographs are not accurate in determining the position of the radiographs.^[6]

The most common position of the foramen is below the apex of the second premolar in the mandible.^[7] The location of mental foramen could change the development of jaws.^[8]

The OPG radiographs allow more determined location of the foramen in both horizontal and vertical positions.^[9]

MATERIALS AND METHODS

A total of 100 OPGs [Figure 1] were taken, and the position of the mental foramen was noted.

The criteria considered were as follows:

- Situated anterior to the premolar.
- In line with the first premolar
- Between the first and second premolars
- In line with the second premolar
- Between the second premolar and first molar
- In line with the first molar.

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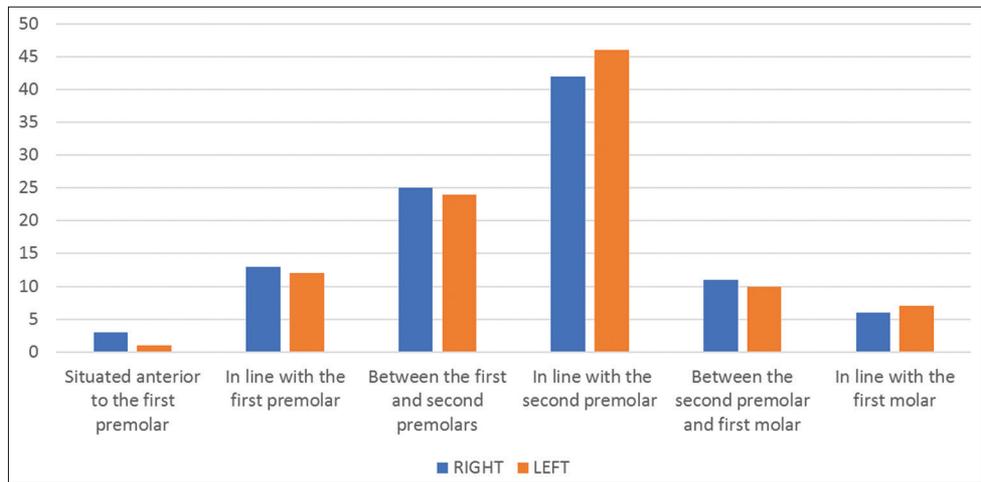
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Graph 1: Position of mental foramen



Figure 1: An orthopantomogram of a patient

RESULTS

From Graph 1, we can determine the position and symmetry of the mental foramen. The blue color represents the mental foramen on the right side, and orange color represents the mental foramen on the left side [Graph 1]. The number of OPGs considered is 100 in number. The age group of the people who were analyzed for the position of mental foramen is 14–70 years of age.

DISCUSSION

From the results obtained, we can infer that in most of study subjects, the position of the foramen is in line with the second premolar. In some people, it was also found in least number in relation to its presence anterior to first premolar.^[10] Various studies were conducted on the position of mental foramen which had some similarities and differences to the present study. According to Nandakumar and Thenmozhi, the foramen was found in line with second premolar which was in accordance to the results obtained from previous studies.^[10]

CONCLUSION

This study was conducted to analyze the position of radiographs so that it prevents damage to the nerves during surgical procedures.^[11] In most of the cases, it was found in line with second premolar,^[12] next in

between two premolars, and then rarest in case of its presence anterior to first premolar.

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