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Use of panoramic radiographs for evaluation of maxillary and mandibular residual ridge resorption: In vitro study

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Introduction: Ridge resorption is the major reason of mandibular complete denture losing its stability and retention. The location of the mental foramen can be identified easily on panoramic radiographs, and radiographic examinations are considered an important component of Prosthodontics diagnostic and treatment planning. Also, the location of maxillary landmark is important to known how much resorption is there. Aim: To determine the average ratio of bone height with nearest constant anatomical landmarks in maxilla and in mandible. OBJECTIVE- To find out the association between radiographic findings & prosthodontics, such as measurements of the amount of resorption and the variation in the treatment planning of edentulous patients.

Methods: In this study OPG machine- Kodak C 8000 and Software to calculate the distance- Screen calipers v2.1 is used. 100 patients OPG was taken in this study. Major inclusion parameters included were presence of mandibular premolars and molars, minimal ridge resorption and clear radiographic landmarks visible on the OPG. After which the landmarks and specific structures were marked on the OPG. Then measurement was done for distance 'c', 'a', 'x', 'y', 'z'. Lastly, the calculations from measurements were done to calculate the ratio of c/a, to calculate the ratio of x/y, to calculate the ratio of x/z.

Result: The descriptive statistics was done. The C/a ratio mean is 2.71 ± 0.31. The X/Y ratio mean is 1.49 ± 0.34 and the X/Z ratio mean is 1.51 ± 0.24.

Conclusion: This ratio can be assessed in edentulous patients and then their further treatment plan can be decided according to the ratio. The implant placement can be assessed by using the measurements in this study. KEYWORDS- Average alveolar bone, panoramic radiograph, mental foramen, mandibular ridge, zygomatic process, maxillary ridge.

Figure 1: Mandibular landmarks -'c': is from the inferior border of the mandible to the alveolar crest. 'a': is from the inferior border of the mandible to lower edge of the mental foramen in dentulous mandible.

Figure 2: Maxillary landmarks- 'x': from line joining most inferior points of borders of bony orbits to line joining inferior margins of images of zygomatic processes. 'y': point from zygomatic process to alveolar crest in maxillary first molar regions) in dentulous maxilla. 'z': point from zygomatic process to alveolar crest in maxillary lateral incisor region) in dentulous maxilla.
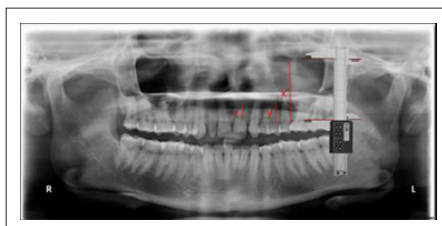
Biography

Priyanka Tiwari, a young & dynamic Indian doctor who has done her BDS- bachelor's in dental surgery from People's dental academy, Bhopal, (M.P) India and done her MDS- master's in dental surgery in Prosthodontics from K.M. Shah Dental college & Hospital, Vadodara, (Gujarat) India. She has 5 and half years of clinical experience working in eminent hospitals, clinics, and college. She practices prosthodontics and general dentistry as well. She has 5 publications in international journals and has done 3 researches. She is a part of renowned dental associations. Currently settled in Malaysia.

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