

Prevalence of Proximal Bone Loss in Patients Visiting a Dental Hospital a 2-Year Retrospective Study

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ABSTRACT

Aim: To evaluate the prevalence of proximal bone loss in patient visiting a dental hospital using OPG records.

Methods and Material: The bone loss was measured using 3x magnification. A fixed reference points were marked. If the distance from cemento-enamel junction to the crest of bone was more than 2mm it was considered as bone loss and were included in study.

Results: The bone loss in male patient were more than female patient. Similarly prevalence of bone loss was more in age group more than 46. The prevalence was more in the year 2014 than 2015.

Conclusions: Middle age patients and male were more affected with periodontal disease. With the awareness and proper treatment, we can have a large number of person with a health periodontium.

Keywords: Bone loss, OPG, crestal bone, prevalence, periodontitis.

INTRODUCTION

Periodontitis is a chronic inflammatory disease in which the crest of alveolar bone is mainly affected as a vertical or horizontal bone loss either in localized or generalized area.¹ To detect these bone loss radiographs proves to be an aid; although panoramic radiographs are of less diagnostic important but it helps in case of survey giving an overall picture.² In day to day periodontal assessment it is really a help in getting entire maxilla and mandible image on a single film.^{3,4} OPG has been proved as a diagnostic aid in various dental health surveys.^{4,5} Early screening of patients by detecting bone loss may help in identifying susceptible individual and furthermore help in early treatment for cessation of the disease process.⁶

Hence the aim of the study was to evaluate the prevalence of crestal bone loss in different age groups of patients visiting a dental college using Orthopantomogram (OPG).

MATERIALS AND METHODS

Sample Selection: Previous OPG of patients were extracted from the record and were examined for year 2014 and 2015. Patient of age 18 and above with evident crestal bone loss were included in the study. OPG showing orthodontic braces or distorted, unclear images were excluded from the study.

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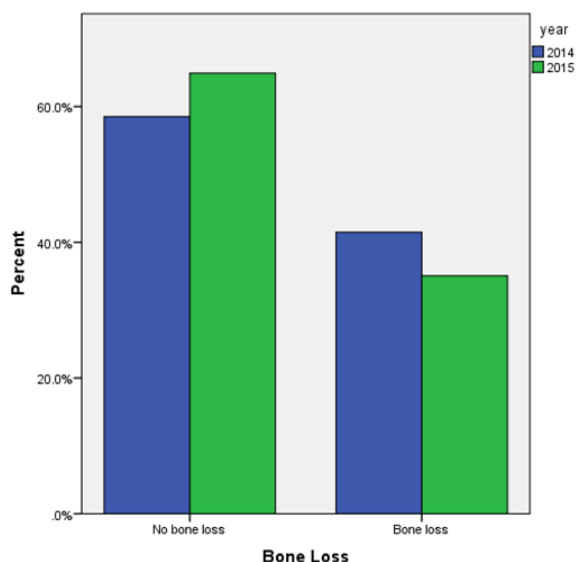
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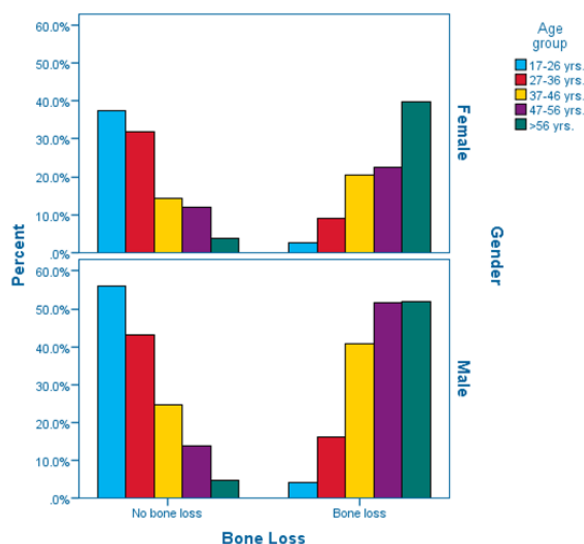
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Table 1: Table showing no. of patient affected by bone loss in year 2014 and 2015.

Total	Affected	Year
1275	529	2014
1306	458	2015



Graph 1: Percentage of bone loss in year 2014 and 2015.



Graph 2: Percentage of male and female affected in each age group.

Radiographic Examination: To estimate alveolar bone height on OPG 3x magnification was used. A constant landmark for reference point marked. Bone loss was appreciated when distance from

bone crest(BC) to cemento enamel junction (CEJ) is more than 2mm.

a) Percentage of cases with bone loss was calculated for each age groups for the same.

Age groups –

1) 17 - 26 years

2) 27 - 36 years

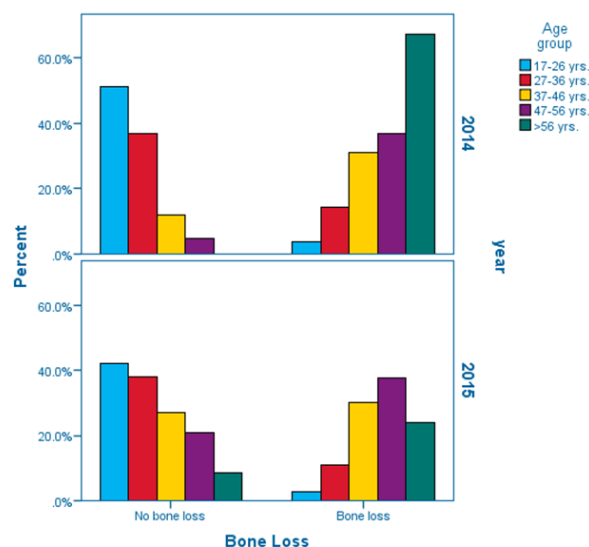
3) 37 - 46 years

4) 47 - 56 years

5) 57 years and above

b) According to gender: Male and Female in all the groups

Statistics – Bone loss within the age groups were done by Spearmans Correlation and bone loss between males and females were done by Chi-square test.



Graph 3: Percentage of bone loss in different age groups of year 2014-2015.

RESULT

There was in total 1275 OPG and out of which examined out of which 529 were found affected in the year 2014 (Table I). In the year 2015 1306 OPG were examined out of which 458 were found affected (Table I).The result of the present study shows that bone loss in 2015 was comparatively

lower than 2014(Graph I). Prevalence of bone loss was predominantly seen in male population in almost all the groups(Graph II).

Least amount of bone loss was present in the youngest age group (17-26 years), in both the year. Maximum bone loss was present in age >57 years and age group 47-56 in the year 2014 and 2015 respectively(GraphIII)

DISCUSSION

In the present study retrospective study was done to evaluate the prevalence of crestal bone loss in patient visiting the dental college of Navi Mumbai. The motive behind the study was to found out which age group and gender is more affected and can be focused later to help in cessation of the disease.

The digital OPG which was evaluated in our study proved to be a better option in screening of such a large number of patient. The limitation of the study were anatomical variation, unclear image in maxillary and mandibular anterior teeth, ghost image and distorted image. Also present clinical status to those patient can't be retrieved.

In this study 5 groups were made so that prevalence of periodontitis in specific group can be evaluated. The result obtained in our study could only detect the bone loss but it couldn't differentiated between chronic and aggressive periodontitis. Another limitation could also be magnification ratio; which may in turn lead to a wrong decision.

Epidemiological studies have quoted that high prevalence of crestal bone in adolescent and young adults may not always described as early onset of disease. Rather they are quoted as incidental bone loss found in 1.6-26%.⁷

In our study prevalence of bone loss was 41.49% in 2014 whereas it decreases to 35.06% in 2015. Also considering the gender 40% of male were affected with periodontal disease whereas it was 33.90% of female were affected. This was in consistent with the study done by Van der Veiden et al which states that female/male ratio was 1.3:1.⁸ Albander et al 2002 found out a higher prevalence of bone loss in males as compared to female in Uganda⁹.

In our study age group >56 showed 91.56% of patient were affected whereas 17-26 year age group were only 6.49%. Similar results were found in study done by Hans-Peter et al. in 2005, where he observed bone loss were more in age group more than 30 years¹⁰. Benedicto Egbert et al. in 2012 concluded that interproximal radiographs were better in detection of alveolar bone loss. He observed lower prevalence of crestal bone loss in adolescents¹¹.

Cortelli et al stated that higher incidence of periodontal disease in adult age group shows that this disease is an age dependent which occur in result of long duration of exposure to local irritants as age advances¹².

CONCLUSION

The study concludes that middle aged patient were affected more as compared to young adults. Female were comparatively less affected with periodontal disease. The best part being the prevalence of bone loss decreases in year 2015 as compared to 2014. This showed better awareness and eagerness to get treated. Since sample size was less, a large sample size may lead to more information.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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