

Prevalence Of Endo Perio Lesion - An Institutional Study

Research Article

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Abstract

The interrelationship between endodontic and periodontal disease has been a subject of confusion and controversy for many years. Pulpal and periodontal problems are responsible for more than 50% of tooth mortality rate. The aim of the study was to evaluate the prevalence of endo-perio lesions among patients in an institution. This retrospective study included patients who were diagnosed with endo perio lesion from June 2019 to March 2020 in a private institution. Variables such as age, gender and the site of endo perio lesion were retrieved from the patient's records. Data was tabulated and was statistically subjected to IBM SPSS version 23 and results were obtained. Descriptive and inferential statistics were done. In our study, out of 150 patients, 17.3% of the patients had endo perio lesion. There were 12.7% males and 4.7% females. On analysing the age and the prevalence of endo perio lesion, the higher prevalence was seen among 31-40 years age groups (5.3%). Also, there was statistically significant association between age and the endo perio lesion while there was no statistically significant association between gender and the endo perio lesion. The present study showed that 17.3% of the study population had endo perio lesion. Also, prevalence of endo perio lesion was higher among males (12.7%) and among the age group of 31-40 years (5.3%).

Keywords: Endo Perio Lesion; Periapical Abscess; Periodontal Abscess; Periodontitis.

Introduction

Periodontitis is a chronic inflammatory process which leads to destruction of the tooth, surrounding periodontium and the alveolar bone [1-3]. There are various inflammatory mediators such as cytokines and vasoactive peptides which mediate the inflammatory process and lead to periodontal destruction [3-10]. The periodontitis is diagnosed by clinical and radiological examination and can be classified into various types [11]. The treatment depends on the etiology, extent and severity of the periodontal disease and can be treated either by a non surgical [12-14] or surgical management [15-18].

Endodontium deals with the caries involvement where there is dissolution of inorganic substances and destruction of organic matter. When the caries are not treated for a longer period of time

, they may end up involving the pulp [19, 20]. Eventually there will be pulpal necrosis which progresses gradually into a periapical lesion. The diagnosis and treatment differs depending on the type of pulpal response and the severity of the lesion [19].

The endodontium and periodontium are closely related and disease of one tissue may lead to the involvement of endodontic and periodontal diseases. It can be difficult as it is important to make a correct diagnosis so that appropriate treatment can be provided [21-23].

Simring and Goldberg in 1964 were the first to describe the relationship between periodontal and pulpal disease [24]. Since then the term endo-perio lesion has been used to describe lesions due to inflammatory products found in varying degrees in both periodontal and pulpal tissue [25, 26].

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The term endo-perio lesion describes the etiopathogenesis which includes lesions caused by endodontic pathogens that have spread coronally, involving the gingival margin or by creating a fistula, or sinus tract. The infection can also spread through the marginal lesions and involve the apical periodontal tissues. The pulp and the periodontium are distinct from one another, but they are anatomically connected via foramina. An apical lesion of endodontic origin or persisting attachment and bone loss in the alveolar crest area or resulting from a combination of the above is a crucial part of the differential diagnosis [26].

These lesions often present as challenges to the clinician for diagnosis and prognosis of the involved teeth [22, 27]. The possible connection between chronic oral inflammatory processes such as apical periodontitis and periodontal disease and systemic health may have an influence on the disease process [28].

Because chronic endo-perio lesions are common in clinical practice, a number of authors have already addressed this issue [1, 3-9]. The prevalence of endo-perio lesion was studied among European population and also its relationship with Type II Diabetes Mellitus [22, 27]. Previously our team has a rich experience in working on various research projects across multiple disciplines The [29-43]. Hence, our study was to evaluate the prevalence of endo-perio lesion.

Materials And Methods

This retrospective cross-sectional study was conducted to evaluate the prevalence of endo perio lesions among patients in a private institution, Chennai from June 2019 to March 2020. The study was initiated after approval from the Institutional Ethical review board. Ethical approval number was SDC/SIHEC/2020/DIASDATA/0619-0320. A total of 150 patients were randomly recruited and data regarding age, gender, oral examination were collected from the patient's case records.

The collected data was validated, tabulated and analysed with Statistical Package for Social Sciences for Windows, SPSS version 23 and results were obtained. Descriptive (Frequency distribution and percentage) and Inferential (chi square test) statistics were done.

Results And Discussion

In our study, out of 150 patients, 17.3% of them presented with endo-perio lesion. The study population was divided into different age groups as: 21-30 years, 31-40 years, 41-50 years, 51-60 years and 61-70 years. 6 patients (4%) among 21-30 years, 8 patients (5.3%) among 31-40 years, 6 patients (4%) among 41-50 years, 4 patients (2.7%) among 51-60 years, 2 patients (1.3%) among 61-70 years presented with endo perio lesion. The endo perio lesion was more prevalent among 31-40 years (5.3%) and least prevalent among 61-70 years (1.3%). [Table 1].

Among 150 patients, 96 patients (64%) were males and 54 patients (36%) were females. On analysing 26 patients with endo perio lesion, 19 patients (12.7%) were males and 7 patients (4.7%) were females. [Table 2].

The association between different age groups and endo perio lesion was assessed using chi square test and was found to be statistically significant with the p value of 0.000. [Figure 1] Also, the association between gender and endo perio lesion was assessed using chi square test and was found to be statistically not significant with the p value of 0.289. [Figure 2]

The present retrospective study assessed the prevalence of endo perio lesion. Among 150 patients, 26 patients (17.3%) presented with endo perio lesion. Study done by Issac et al assessed the prevalence of endo perio lesion among Type II diabetic patients and found that there was 18% prevalence of endo perio lesion. [44] Study by Grudianov et al showed 17.78% of prevalence of

Table 1. Table showing distribution of study participants based on different age groups. The endo perio lesion were in higher prevalence among 31-40 years (5.3%) and least among 61-70 years (1.3%).

Age groups (years)	Number of patients with endo perio lesion n (%)	Number of patients without endo perio lesion n (%)	Total n (%)
21-30	6 (4%)	89 (59.3%)	95 (63.3%)
31-40	8 (5.3%)	26 (17.3%)	34 (22.7%)
41-50	6 (4%)	3 (2%)	9 (6%)
51-60	4 (2.7%)	2 (1.3%)	6 (4%)
61-70	2 (1.3%)	4 (2.7%)	6 (4%)
Total n (%)	26 (17.3%)	124 (82.7%)	150 (100%)

Table 2. Table showing distribution of study participants based on gender. Males (12.7%) had higher prevalence of endo perio lesion than females (4.7%).

Gender	Number of patients with endo perio lesion n (%)	Number of patients without endo perio lesion n (%)	Total n (%)
Males	19 (12.7%)	77 (51.3%)	96 (64%)
Females	7 (4.7%)	47 (31.3%)	54 (36%)
Total n (%)	26 (17.3%)	124 (82.7%)	150 (100%)

Figure 1. Bar graph shows the association between different age groups and endo perio lesion. X axis represents different age groups and Y axis represents percentage distribution of patients with (blue) and without (green) endo perio lesion. The endo perio lesion was more prevalent among 31-40 years (5.3%) and least prevalent among 61-70 years (1.3%). The association between different age groups and endo perio lesion prevalence was statistically significant. (Chi-square test; p=0.000).

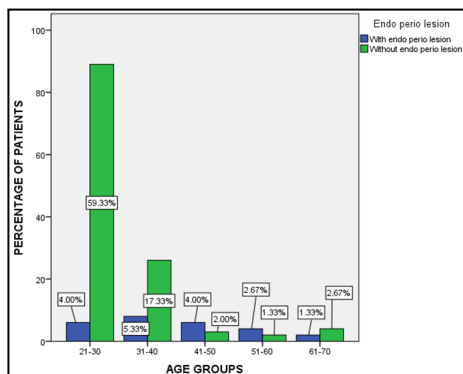
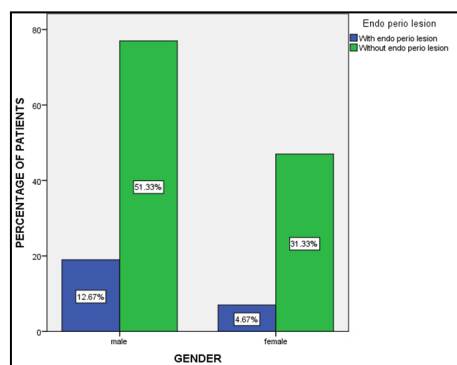


Figure 2. Bar graph shows the association between gender and endo perio lesion. X axis represents gender and Y axis represents percentage distribution of patients with (blue) and without (green) endo perio lesion. The endo perio lesion was more prevalent among males (12.67%) than females (4.67%). The association between gender and endo perio lesion prevalence was statistically not significant. (Chi-square test; p=0.289).



endo perio lesion. [45] Emrich et al suggested that there was an increased risk for progressive periodontal destruction in patients with periapical lesions. [46] Our findings are in accordance with the previous studies.

In the present study, prevalence of endo perio lesion was more common among 31-40 years and was least common among 61-70 years. Study done by Kavathapu et al assessed the management of endo perio lesion in patients with aggressive periodontitis and there was a higher prevalence of endo-perio lesion among 31-40 years [47]. Study done by Viswanath et al suggested different treatment modalities for managing endo perio lesion and found that there was higher prevalence of endo perio lesion among 31-40 years [48]. Our findings are in accordance with the previous studies. Our institution is passionate about high quality evidence based research and has excelled in various fields [49-59].

In the present study, males had higher prevalence of endo perio lesion than females. Study by Grudianov et al showed gender prediction of males reporting with endo-perio lesion. Studies done by Eke et al and Dye et al showed that periodontitis had a higher prevalence in men than women [60]. Anerud et al and Loe et al studied the natural history of periodontal diseases and found that there was association between periodontitis and gender, suggesting a male predilection [61, 62]. Our findings are in accordance with the previous studies.

The present study showed that 17.3% of the study population had endo perio lesion. Also, prevalence of endo perio lesion was higher among males (12.7%) and among the age group of 31-40 years (5.3%). However, the results cannot be generalised because of the limited sample size. Therefore, multicenter studies among larger populations need to be conducted to assess the prevalence of endo perio lesion and the other factors associated with endo perio lesion.

Conclusion

Within the limitations of the present study, it can be concluded that 17.3% of the study population had endo perio lesion. Also, prevalence of endo perio lesion was higher among males (12.7%) and among the age group of 31-40 years (5.3%).

Authors Contribution

Prashaanthi.N contributed acquisition of data, analysis, literature collection and also in drafting the article and revising it critically for important intellectual content. Arvina Rajasekar contributed in conception, the study design, interpretation of data, formatting, manuscript preparation, supervision and guidance. Shantha sundari.K.K contributed in editing, supervision and final approval of the submitted version of the manuscript. All the authors had equally contributed in developing the manuscript.

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