Incidence of cervical abrasion between males and female- retrospective study.

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Abstract

Objective: To assess incidence of cervical abrasion in males and females.

Materials and Methods: Our study is an institution based retrospective descriptive study carried out in between the months of November 2020- February 2021. Data of patients who came with chief complaints of decayed tooth and diagnosed with class v caries, cervical abrasion, a fraction and who had undergone class v composite restoration were included in the study sample. We got a sample size of around 2450 samples. SPSS software version 26.0 was used for statistical analysis. Based on statistical analysis results were tabulated

Result: A total of 2499 consecutive case records were retrieved and analysed. Most of the cervical lesion cases were observed in individuals within the 25-50 years age group (1300), and the least was seen within the <25 years age group (51). High prevalence of cervical abrasions was seen in males (1924) compared to females (407). Cervical abrasion was observed in 2332 individuals out of 2499 of this study remaining 83 was cervical caries and 35 were abfraction. Within the limits of the study, most of the cervical abrasion cases are recorded in individuals within the 25-50years age group with higher predilection in males. There is a statistically significant association of cervical abrasion with gender.

Conclusion: Within the limits of the study, most of the cervical abrasion cases are seen with higher predilection in males. There is a statistically significant association of cervical abrasion with gender. It is concluded that gender has an influence on the incidence of cervical abrasion.

Keywords: Cervical abrasion, lesion, Carious, Non carious.

Introduction

Cervical lesions can be defined as lesions that involve the gingival one-third of the facial and lingual surface of the tooth crown. It is found that the cervical lesions can be divided into two types which are carious cervical lesions and non-carious cervical lesions [1].

The first type of cervical lesion is a carious cervical lesion or also can be known as cervical caries or root caries. The term cervical caries and root caries are often used interchangeably. The term cervical caries may be more accurate because carious lesions involve the cervical area. However the term root caries also have been used to describe lesions that exist on the root surface, although these may include the proximal surfaces as well [2].

Another issue concerning carious lesions is the term primary and secondary caries. The term primary caries as it is used with root caries refers to new dental caries occurring in the absence of a restoration. Secondary or recurrent root caries refers to caries occurring adjacent to an existing restoration. Root caries most often occur at supragingival areas or at close to (within 2 mm) the cement enamel junction. This phenomenon is due to the location of the gingival margin at the time conditions were favorable for caries to occur. Apparently, the location of this caries has been positively associated with age and gingival recession. It is also found that root caries occur in a location adjacent to the crest of the gingiva where dental plaque accumulates. They occur predominantly on the proximal (mesial and distal) surfaces, followed by the facial surface [3].

Tooth brushing abrasion or cervical abrasion is one of the factors historically associated with the development of non-carious cervical lesions. Erosion is a well-known cause of tooth surface loss and has been associated with non-carious lesions [4]. Tooth flexure has also been described as a cause of non-carious cervical lesions and the term abfraction coined to describe the process where lesions are formed by tooth structure breaking away due to the stresses generated as a result of cuspal loading. Some authors have attempted to classify non-carious lesions according to a single etiological factor based on the morphology of the lesions. In general, shallow saucer-shaped lesions are attributed to an erosive etiology, wedge-shaped or grooved lesions are attributed to cervical abrasion, and V-shaped lesions are attributed to tooth flexure.

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However, it has been clearly demonstrated that it is difficult to classify lesions in this manner based on studies which suggest that non carious cervical lesions have a multifactorial etiology [5].

At present, the materials of choice for restoring these carious and non-carious cervical lesions (cervical abrasion, abfraction) are glass ionomer cements (GICs), resin-modified GICs (RMGICs), polyacid-modified resin-based composites (compomer), and composite resins [6]. The purpose of the study is to evaluate the prevalence of cervical abrasion between genders.

Our team has extensive knowledge and research experience that has translate into high quality publications [7–26].

Materials and Method

Study Setting

This university hospital-based retrospective study was carried out by reviewing the dental records of patients diagnosed with cervical caries, cervical abrasion, abfraction who visited a university teaching hospital in Chennai. Since this was a university hospital setting the large sample size and distribution of population contributed a major advantage for this study. Data collected was reliable and with evidence. The study was conducted after obtaining approval from the Institutional Ethical Review Board.

Data Collection

This retrospective cross sectional study was done in between the months of November 2020 and February 2021. For this study we got approval from the Institutional Ethical Review Board and our study was carried out in a university hospital setting in a major city of Tamil Nadu, South India. For This study a samples Data including the patient's name, patient's identification number (PID), age, gender and presence of cervical abrasion were retrieved from the patients' case records. Around 2499 patients case history details who had carious and non-carious cervical lesions (cervical abrasion, abfraction) was filtered and obtained. Even photographs, radiographs in the image gallery of the patient online case sheet records were verified. In order to reduce, minimize and avoid the occurrence errors, verified case sheets were once again cross verified by another examiner.

Data Analytics

Verified data were tabulated in excel under columns of age, gender, type of cervical lesion were categorized into 3 different categories like carious lesion, cervical abrasion and abfraction. Data tabulated in excel sheets were transferred to SPSS software version 26.0 for statistical analysis. Descriptive statistics and chi square tests were conducted to evaluate differences between groups with significance level at 95% confidence interval ($P<0.05$).

Result

Based on analysis results were obtained and tabulated. A total of 2499 consecutive case records were retrieved and analysed. Most of the patients with cervical lesion were aged between 25-50 years (1300), 1099 patients were aged above 50 years and 51 patients were aged less than 25 years (Figure 1). High prevalence of cervical lesion was seen in males (1924) compared to females (407) (Figure 2). Cervical abrasion was observed in 2332 individuals out of 2499 of this study population; the remaining 83 were cervical caries and 35 were abfraction (Figure 3). Within the limits of the study, most of the cervical abrasion cases are recorded in individuals within the 25-50years age group with higher predilection in males around 1924 males and 407 female patients had cervical abrasion, 51 males and 32 female patients had carious lesion and 18 males and 17 female patients had abfraction (Figure 4). There is a statistically significant association of cervical abrasion with gender.

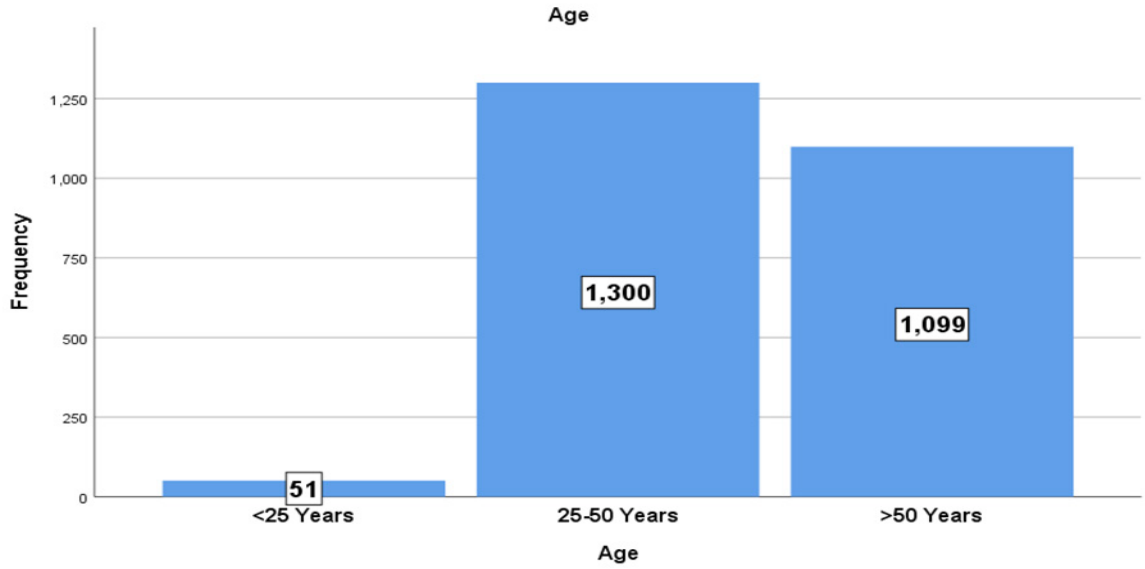

Figure 1. *Bar graph representing frequency distribution of age of patient in the study population. X-axis represents age and Y-axis represents the number of patients. Most of the patient who cervical lesion were aged between 25-50 years (1300), 1099 patients were aged above 50 years and 51 patient were aged less than 25 years.*

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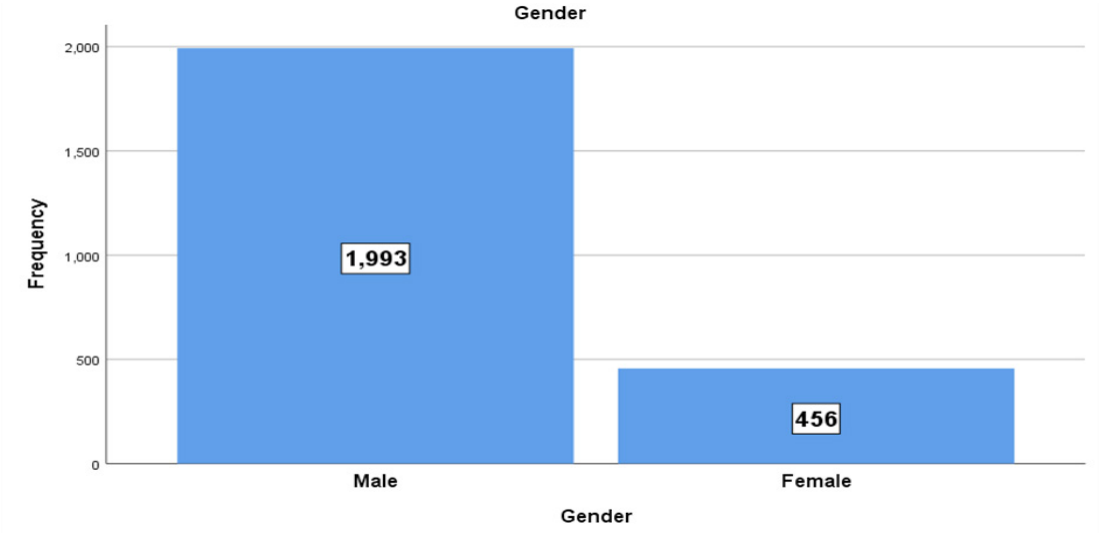

Figure 2. *Bar graph representing frequency distribution of gender of patient in the study population. X-axis represents gender and Y-axis represents the number of patients. Most of the patient who had cervical lesion was males (1993) compared to females (456).*

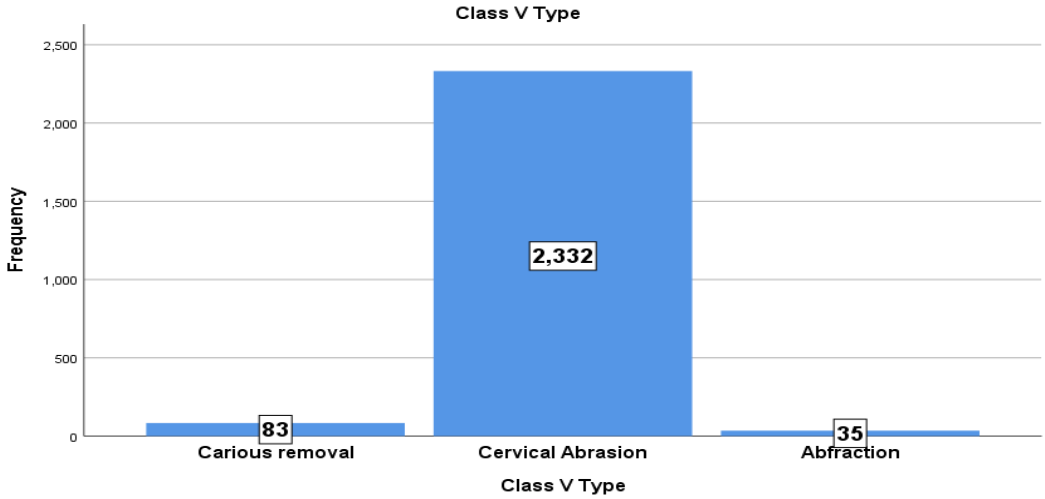

Figure 3. *Bar graph representing frequency distribution of type of cervical lesion in the study population. X-axis represents the type of cervical lesion and Y-axis represents the number of patients. Around 2332 of the patients had cervical abrasion followed by 83 patients who had lesions and 35 patients had abfraction.*

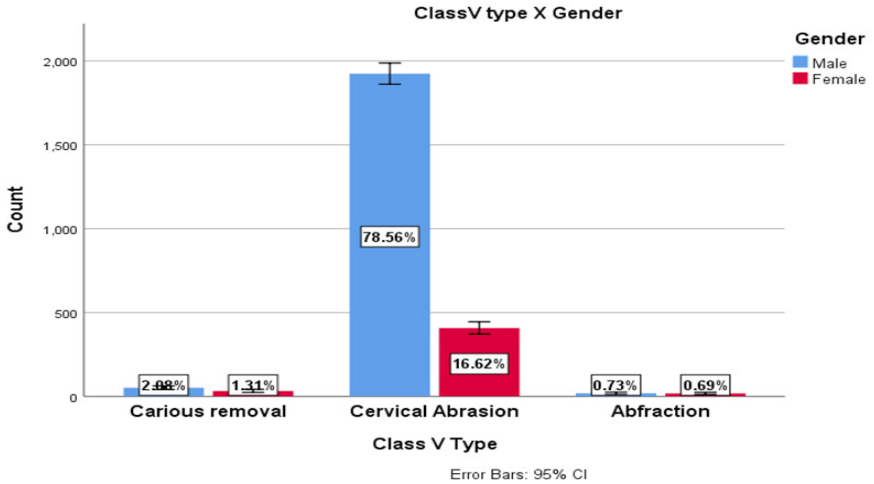

Figure 4. *Bar graph representing association between type of cervical lesion in the study population and gender. X-axis represents the type of cervical lesion in the study population in gender and Y-axis represents the number of patients. Around 1924 males and 407 female patients had cervical abrasion, 51 males and 32 female patients had carious lesion and 18 males and 17 female patients had abfraction.*

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Discussion

There is a strong association between gender and cervical lesions. In this study, it is found that there is a relationship between age and cervical lesions with $P < 0.001$. Contradictory conclusion was given by Mches, et al. gender has no significant differences with the type of lesions [27]. Aw, et al. [28] older patients were more likely to exhibit NCCLs, but there is no great difference in incidence between men and women. Most of the patients with cervical lesions were aged between 25-50 years (1300), 1099 patients were aged above 50 years and 51 patients were aged less than 25 years.

In a study by Dietschi, et al. [28,29] which divided the population into six age groups, it was found that the number of lesions increased with age. These data are in agreement with our results. With increased age, the frequency of all NCCL also increased. The fourth age group shows that the frequency of these levels increased up to 10%. In a study done by Smith, et al. [5] when persons younger than 65 were compared with persons over 65, it was found a higher association of having lesions in the over 65 age group.

Around 1924 males and 407 female patients had cervical abrasion, 51 males and 32 female patients had carious lesions and 18 males and 17 female patients had abfraction. Neo, et al. [30] concluded that Males has higher predictions of cervical abrasion when compared to females. The purpose of the study is to assess incidence of cervical abrasion in males and females and showed significant association of cervical abrasion with gender.

Conclusion

Most common tooth to be restored with amalgam restoration is 47 (Mandibular right permanent second molar). Amalgam restorations have served the profession well and will continue to do so in the years to come. In terms of longevity, they are probably superior to composite resins, especially when used for large restorations and cusp capping. The new high copper single composition alloys offer superior properties but may not offer as good seal as older amalgams. The use of amalgam can be continued as a material of choice if esthetics is not a concern.

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Conflict of Interest

Nil.

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Ethical Clearance

It is taken from "Saveetha Institute Human Ethical Committee".

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