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# ANALYSIS OF GINGIVAL RECESSION AND ITS SEVERITY: A CROSS SECTIONAL STUDY OF PATIENTS

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**Abstract:**

***Introduction:*** *Gingival health and appearance are the essential components of esthetic considerations in a treatment plan.* ***Objectives of the study:*** *The basic objective of the study is to analyse the gingival recession and its severity: a cross sectional study of patients.*

***Methodology of the study:*** *This cross sectional study was conducted in Demontmorency College of Dentistry, Lahore during January 2019 to August 2019. Gingival recession was defined as distance from the cementoenamel junction (CEJ) to the free gingival margin (FGM). All measurements were made in mm and were rounded to the nearest mm.*

***Results:*** *The data was collected from 100 patients. Recession was present but recession threshold ≥3 and ≥5 mm affected only small percentage of teeth in subjects younger than 45 years. On the other hand moderate recession was ubiquitous in the older age group. Among subjects aged 45 years or old, ≥79% of subjects and ≥32% of teeth per subject had recession more than 3 mm.*

***Conclusion:*** *It is concluded that high prevalence of gingival recession could be associated to improper oral hygiene and cigarette smoking, which emphasizes the need for management of recession.*

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## INTRODUCTION:

Gingival health and appearance are the essential components of esthetic considerations in a treatment plan. Often most of the gingival conditions are neglected by the patients unless there are any major symptoms like pain; one among them is gingival recession. Gingival recession is a term used to characterize the apical shift of the marginal gingiva from its normal position on the crown of the tooth to the levels on the root surface beyond the cement enamel junction [1].

There are various etiological factors that play a role in recession development, such as excessive or inappropriate teeth brushing, destructive periodontal disease, tooth malpositioning, alveolar bone dehiscence, thin marginal tissue, high muscle attachment, frenal pull, and occlusal trauma [2]. Other predisposing factors are iatrogenic factors related to conservative, periodontal, orthodontic, and prosthetic treatment. The etiological factor of great importance is a bacterial plaque and tooth malpositioning followed by faulty or excessive tooth-brushing.

Gingival recession (GR) has been defined as the condition in which the gingival margin is located apical to the cementoenamel junction and the root is exposed to the oral environment, resulting in problems such as root caries, dental hypersensitivity [3], and esthetic problem, probably one of the most esthetic concerns associated with the periodontal tissue. However, till date the exact mechanism for gingival recession is not well understood, as various etiological factors have been reported [4]. The main etiological factor for GR is due to the accumulation of dental plaque resulting in gingival inflammation.

Along with these, the other risk factors include developmental defect such as bone dehiscence, chronic trauma that may arise from habits such as chronic impaction of foreign bodies against the gingiva [5], frictional injury due to scratching of gingival, and also abnormal tooth cleaning. Others include tooth malposition of teeth, gingival ablation, abnormal frenum attachment, ageing, smoking, and iatrogenic dentistry [6].

**Objectives of the study:**

The basic objective of the study is to analyse the gingival recession and its severity: a cross sectional study of patients.

## METHODOLOGY OF THE STUDY:

This cross sectional study was conducted in Demontmorency College of Dentistry, Lahore during January 2019 to August 2019. Gingival recession was defined as distance from the cementoenamel junction (CEJ) to the free gingival margin (FGM). All measurements were made in mm and were rounded to the nearest mm. All permanent fully erupted teeth excluding third molars were examined and measurements were made at six sites per tooth: Mesio buccal, mid buccal, disto buccal, mesio lingual, mid lingual, disto lingual, and the highest measurement was recorded. Gingival recession was scored as zero if the FGM was located at the CEJ, and was assigned a negative if FGM was coronal to CEJ.

**Statistical analysis:**

Hospital-based clinical data were presented in the form of number and percentage through tables and graphs. Statistical analysis was done by SPSS Version 20.0.

## RESULTS:

The data was collected from 100 patients. Recession was present but recession threshold ≥3 and ≥5 mm affected only small percentage of teeth in subjects younger than 45 years. On the other hand moderate recession was ubiquitous in the older age group. Among subjects aged 45 years or old, ≥79% of subjects and ≥32% of teeth per subject had recession more than 3 mm.

**Table 01:** Percentage of subjects and teeth per subject with gingival recession by age

| Gingival recession | Age (years) | | | | | | Total |
|---|---|---|---|---|---|---|---|
| | 16-25 | 26-35 | 36-45 | 46-55 | 56-65 | >65 | |
| Subjects (mm) | | | | | | | |
| >1 | 21.6 (5.2) | 66.5 (3.5) | 89.8 (1.3) | 93.3 (1) | 100 (0) | 100 (0) | 79.4 (1.1) |
| >2 | 10.3 (2.3) | 50.6 (2.3) | 76.6 (2.1) | 86.4 (2.3) | 100 (0) | 100 (0) | 65.3 (1.1) |
| >3 | 2.1 (0.6) | 21 (1.8) | 51.8 (2) | 79.2 (2.6) | 90.6 (3.2) | 94.2 (3.8) | 45.6 (1.2) |
| >5 | 0 | 3.2 (0.8) | 10.8 (1.2) | 46 (3.2) | 53.8 (3.7) | 60.6 (2.9) | 16.2 (1.3) |
| Teeth (mm) | | | | | | | |
| >1 | 2.1 (0.4) | 16.2 (1.2) | 42.3 (1.6) | 58.8 (3.1) | 70 (2.3) | 81.4 (2.3) | 37.5 (1.1) |
| >2 | 0.7 (0.2) | 7.8 (0.8) | 23.4 (1.1) | 49 (1.8) | 56 (2.0) | 64.3 (3.1) | 29 (1.2) |
| >3 | 0.4 (0.1) | 2 (0.7) | 10 (0.4) | 31.6 (2.3) | 31 (1.8) | 43 (2.8) | 13 (0.8) |
| >5 | 0 | 1 (0.0) | 2.1 (0.2) | 10.8 (1.2) | 10.3 (1) | 16.3 (2.1) | 4.8 (0.6) |

**Table 02:** Assessment of risk for having gingival recession more than 1 mm

| Variable | Localized recession | | Generalized recession | |
|---|---|---|---|---|
| | RRR | CI | RRR | CI |
| Sex | | | | |
| Male | 1.8* | 1.1–3.8 | 1.2 | 0.6–2.4 |
| Female | 1 | — | 1.0 | — |
| Smoking | | | | |
| Non smokers | 1.0 | — | 1.0 | — |
| Light smokers | 1.4 | 0.7–2.6 | 1.2 | 0.4–2.8 |
| Moderate | 1.6 | 0.8–2.6 | 1.8 | 0.8–3.1 |
| Heavy | 2.1 | 0.7–2.8 | 3.2* | 1.3–6.1 |
| Calculus | | | | |
| <25% | 1.0 | — | 1.0 | — |
| 25— | 1.2 | 0.8–2.2 | 1.8 | 1.2–3.2 |
| 50% | 1.4 | 0.9–2.6 | 4.4** | 1.8–8.0 |
| >50% | | | | |

*** = Statistically significant, RRR = Relative risk ratio, CI = Calculus index*

**DISCUSSION:**

Gingival recession is a result of apical migration of gingival tissues. It may be localized to a single tooth or a group of teeth or may be generalized throughout the mouth. Often recession is a result of a combination of various predisposing factors. The concept of multiple predisposing factors in the etiology of the gingival recession was supported by the parallel longitudinal studies conducted by Löe *et al* [7]. Data from the present study showed a prevalence of gingival recession in 24.29% of the total study population, and these findings are consistent with the previous studies conducted by Checchi *et al*., Slutzkey and Levin, and Nguyen-Hieu *et al*. confirming that gingival recession is not much common in young adults although its frequency increases with age. The prevalence of gingival recession is high in males than females, which is in agreement with the study conducted by Arowojolu Toker and Ozdemir [8]. Gender differences in the prevalence of gingival recession could be attributed due to the fact that females visit dentists more frequently and maintain good oral hygiene than males.

However, maintenance of good oral health is arguably the best method to prevent and control progression of periodontal disease. Various risk factors are associated with gingival recessions that include age, high frenum, trauma from tooth brushing, calculus, and smoking. It is evident that prevalence of calculus is much higher in most developing countries than in the developed countries [9]. In this study >80% individual above 35 years had >40% of teeth covered with calculus and was strongly associated with gingival recession that was consistent with previous studies showing a correlation between calculus and recession [10].

## CONCLUSION:

It is concluded that high prevalence of gingival recession could be associated to improper oral hygiene and cigarette smoking, which emphasizes the need for management of recession. Initial treatment would be preventive measures such as quitting smoking and measures to improve oral hygiene, followed by surgical correction as it would be easy to motivate them since they are all hospital population. Further studies are required to assess the relationship between risk factors and gingival recession.

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