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Original Article

Association of Clinical Signs of Occlusal Trauma with Gingival Recession among Patients Reporting to a Prosthodontic Department: A Cross-Sectional Study

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ABSTRACT

Gingival recession is a common dental problem with signs and symptoms of dentine hypersensitivity, root caries, and poor esthetics. Occlusal forces beyond the normal adaptive capacity of the periodontium can seriously affect the health of gingival tissues. **Objectives:** To determine the association between gingival recession and signs of trauma from occlusion such as dental fremitus, tooth migration, and tooth wear among the patients reported to the Department of Prosthodontics, LMDC, Lahore. **Methods:** A total of 150 patients of both genders, aged 30-70 years, were recruited. A single trained prosthodontist carried out the periodontal examination of the buccal anterior teeth. Patients were seated in the dental chair a thorough clinical examination was performed using a dental exam set to check the signs and symptoms of occlusal trauma and gingival recession. The following parameters were assessed: 1. plaque index, 2. supra/subgingival calculus/ 3. gingival recession, 4. Tooth wear facets; 5. fremitus. 6. Tooth migration. **Results:** Severe gingivitis was found in 32.0% of patients, and calculus was present in 58.7% of patients. 14.0% of patients had poor oral hygiene status. 51.3% of patients were found with gingival recession. Dental fremitus was present in 56.7% of patients; wear facets were present in 42.7% of patients; whereas tooth migration was found in 48.0% of patients. **Conclusions:** It was concluded that trauma from occlusion may be a significant risk factor for gingival recession. Patients with signs of trauma from occlusion should be monitored for gingival recession.

INTRODUCTION

Gingival recession is a pathological process of displacement of marginal tissue that is apical to the cementoenamel junction [1]. Apically migrated tissue exposes the roots and causes potential dentine hypersensitivity, increased susceptibility to dental caries, and esthetic concerns [2]. As a result of gingival tissue apical migration, teeth appear longer and uneven and become sensitive to hot and cold. Gingival recession can also result in occasional bleeding, puffiness of gums, or redness [1, 3]. Recession of the marginal tissues can be localized, limited to a single tooth, or it can be generalized recession, involving multiple teeth. Any tooth surface can be involved in recession, but buccal surfaces of the teeth are highly prone to be affected by gingival recession compared to the rest of the tooth surfaces [4]. Excessive occlusal force from traumatic occlusion causes periodontal tissue inflammation and resultant supporting tissue damage around teeth, leading to gingival recession. The periodontium bears heavy occlusal load beyond its adaptive capacity, which is poorly tolerated, and resultant

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tissue damage occurs [4]. The extent and duration of applied forces have a great impact on developing the signs and symptoms in patients, and variation has been noted. Signs and symptoms of trauma from occlusion have been recorded worldwide [5]. The common signs and symptoms of excessive occlusal load are tooth mobility, tooth migration, dental fremitus; tooth mobility felt when teeth tapping is done and occlusal load is applied; teeth wear and gingival recession due to attachment loss [5, 6]. Tooth migration/pathologic migration may occur when compromised periodontal support combines with abnormal occlusal forces. Many patients, besides intraoral problems, also experience extraoral problems like joint pain and clicking of the temporomandibular joints [7]. The role of trauma from occlusion in recession remains controversial, with conflicting evidence in the literature [8, 9]. Many studies have evaluated gingival recession with plaque, toothbrushing trauma, or thin biotype, but fewer have correlated it directly with clinical markers of occlusal trauma like tooth mobility/ fremitus, tooth migration, and occlusal surface wear [10, 11].

There is limited data assessing the combined association of recession with mobility, wear facets, and migration in the same cohort. Understanding this association can help dentists identify high-risk patients and develop preventive strategies. This study aimed to determine the association between gingival recession and signs of trauma from occlusion such as dental fremitus, tooth migration, and tooth wear, among the patients reporting to the Department of Prosthodontics, Lahore Medical and Dental College, Lahore.

METHODS

This analytical cross-sectional study was conducted in the OPD of the Department of Prosthodontics, Lahore Medical and Dental College, Lahore. The study was conducted from 21st October 2025 to 21st January 2026. Informed verbal consent was obtained, and ethical clearance was obtained from the Dental College Ethical Review Board; ref no. LMDC/FD/3631/25 date 21 October 2025. A total of 150 patients, aged 30-70 years, were selected, and non-probability convenience sampling was used for sample selection. The sample size was calculated using the Raosoft Sample size was calculated using the formula for a single proportion: n = Z2p(1-p) / e2, where Z = 1.96 (95% confidence level), p = 0.15 (expected prevalence of gingival recession based on previous literature), and e = 0.05 (5% margin of error), which gave an initial required sample of 196. Because the study population was limited to patients attending the Department of Prosthodontics, Lahore Medical and Dental College, during the study period, a finite population correction was applied; the total eligible population (N) was approximately 636 patients based on department records, so nadj = n/1+n-1/N = 196 / 1 + 195/636 ≈ 150. Therefore, the minimum required sample size was 150 patients. A total of 150 patients were recruited using non-probability convenience sampling [12]. All patients within the selected age range during the study period were included in the study. Patients with a history of periodontal therapy, occlusal adjustment, missing mandibular anterior teeth, or orthodontic treatment were excluded, as were those with systemic diseases and pregnant women. A single trained prosthodontist carried out the periodontal examination of the buccal anterior teeth to minimize inter-examiner bias. After the patient sat in the dental chair, demographic data, including age and gender, along with detailed medical history regarding systemic diseases, medications, smoking status, and previous dental treatment, were obtained through patient interview and noted using a pre-designed proforma. Oral hygiene status was recorded for all participants. It was categorized as good, fair, and poor based on plaque and calculus scores. A thorough clinical examination was performed to check the signs and symptoms of occlusal trauma and gingival recession. Patients were also informed about their oral hygiene status and periodontal pathology, if present. The following parameters were assessed: 1. plaque index, 2. supra/subgingival calculus/ 3. gingival recession, 4. Tooth wear facets, 5. fremitus. 6. Tooth migration. (1) Plaque index (Silness and Löe plaque index) was used. It was scored from 0 to 3: 0: No plaque, 1: Thin plaque film at the gingival margin, detectable by running a probe, 2: Moderate plaque at the gingival margin and interdental areas, and 3: Abundant plaque covering the tooth surface. (2) Calculus: supragingival and subgingival calculus were recorded as present or absent using a dental probe. (3) Gingival recession was checked based on Miller's classification [13]; it categorizes gingival recession based on the amount of recession and the position of the gingival margin relative to the mucogingival junction and interdental tissue. Class I: Marginal tissue recession not extending to the mucogingival junction; without interdental bone or loss of soft tissue. Class II: Marginal tissue recession extending to or beyond the mucogingival junction; without interdental bone/loss of soft tissue. Class III: Marginal tissue recession extending to or beyond the mucogingival junction; with interdental bone/soft tissue loss. Class IV: Severe marginal tissue recession extending to or beyond the mucogingival junction; severe interdental bone loss and soft tissue loss. (4) Tooth wear facets: Present if there was flattening or loss of enamel/ dentine on occlusal or incisal surface. (5) Trauma from occlusion, i.e., fremitus (detected by placing a finger on the labial surface of teeth during centric and eccentric movements) recorded as present or absent. (6) Teeth migration was visually assessed for facial flaring, extrusion, rotation, and tipping.

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Data were analyzed using SPSS version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were computed for all variables. Continuous variables were expressed as mean ± standard deviation (SD), and categorical variables as frequencies and percentages. The association between gingival recession and categorical variables (dental fremitus, tooth wear facets, tooth migration, gingivitis, oral hygiene status, and calculus) was assessed using the chi-square test. Multivariable binary logistic regression analysis was performed to identify independent predictors of gingival recession. Variables that were statistically significant in univariate analysis ($p < 0.20$) or considered clinically relevant (age, gender, gingivitis, calculus, wear facets, and oral hygiene status) were included in the regression model to adjust for potential confounding. Adjusted odds ratios (OR) with 95% confidence intervals (CI) were reported. A p-value < 0.05 was considered statistically significant. There were no missing data for any of the variables included in the final analysis.

RESULTS

Out of a total of 150 patients reported to the Prosthodontic Department, 80 (53.3%) were males, and 70 (46.7%) were females. The minimum age of the patients was 30 years, the maximum was 70 years, and the mean age was 54.54 ± 10.364. Periodontal status was evaluated; mild gingivitis was present in 36 (24.0%) patients, whereas moderate gingivitis was present in 66 (44.0%) patients; however, severe gingivitis was found in 48 (32.0%) patients. Table 1. Calculus was present in 88 (58.7%) patients; 62 (41.3%) patients had no calculus. Oral hygiene was checked, and good oral hygiene was found in 75 (50.0%) patients, fair hygiene was in 54 (36.0%) patients, whereas poor oral hygiene was found in 21 (14.0%) patients. Signs of trauma from occlusion were also evaluated. Dental fremitus was present in 85 (56.7%) patients. Wearing facets were present in 64 (42.7%) patients and tooth migration was found in 72 (48.0%) patients. The frequency of clinical parameters was summarized (Table 1).

Table 1: Clinical Characteristics of Study Population (n=150)

Parameters	Present, n (%)	Absent, n (%)
Gingivitis		
Mild	36 (24.0%)	114 (76.0%)
Moderate	66 (44.0%)	84 (56.0%)
Severe	48 (32.0%)	102 (68.0%)
Oral Hygiene Status		
Good	75 (50.0%)	75 (50.0%)
Fair	54 (36.0%)	96 (64.0%)
Poor	21 (14.0%)	129 (86.0%)
Others		
Fremitus	85 (56.7%)	65 (43.3%)
Wear Facets	64 (42.7%)	86 (57.3%)
Teeth Migration	72 (48.0%)	78 (52.0%)
Calculus	88 (58.7%)	62 (41.3%)

Multivariable binary logistic regression analysis revealed that the presence of dental fremitus [Adjusted OR = 4.473, 95% CI: 1.694-11.816, p=0.003] and tooth migration [Adjusted OR = 6.361, 95% CI: 1.794-22.550, p=0.004] were significant independent predictors of gingival recession after adjusting for age, gender, gingivitis, calculus, wear facets, and oral hygiene status (Table 2).

Table 2: Multivariable binary Logistic Regression Analysis for Predictors of Gingival Recession

Variables	B	S.E	Adjusted OR	95% CI for OR	p-value
Dental Fremitus					
Absent	Ref	0.496	1.00	1.694-11.816	<0.001
Present	1.498		4.473		
Tooth Migration					
Absent	Ref	0.646	1.00	1.79-22.550	<0.001
Present	1.850		6.361		
Others					
Gingivitis	0.787	0.417	2.197	0.969-4.979	0.050
Tooth wear facets	0.476	0.652	1.610	0.448-5.784	0.460
Calculus	-0.731	0.576	0.482	0.156-1.490	0.205
Oral hygiene	-0.428	0.391	0.652	0.303-1.402	0.274
Age	-0.026	0.022	0.975	0.934-1.017	0.243
Gender: Female	0.229	0.465	1.257	0.505-3.129	0.622

OR: Odds Ratio, CI: Confidence Interval, Ref: Reference category. The p<0.050 = significant

Recession was found in 77 (51.3%) patients; however, 73 (48.7%) patients had no recession. The association of gingival recession with fremitus, wear facets, and tooth migration was found to be significant (p<0.001) (Table 3).

Table 3: Association of Dental Fremitus, Teeth Wearing Facets and Teeth Migration with Gingival Recession (n=150)

Variables	With Recession, n (%)	Without Recession, n (%)	χ^2
Dental Fremitus			
Present	63 (81.8%)	22 (30.1%)	40.76
Absent	14 (18.2%)	51 (69.9%)	
p-value	–	–	<0.001
Tooth-Wearing Facets			
Present	51 (66.2%)	13 (17.8%)	35.92
Absent	26 (33.8%)	60 (82.2%)	
p-value	–	–	<0.001
Tooth Migration			
Present	51 (74.0%)	21 (26.0%)	42.93
Absent	20 (26.0%)	60 (74.0%)	
p-value	–	–	<0.001

p-value significance ≤ 0.05

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DISCUSSION

The current study was carried out to find out the association of gingival recession with the most commonly observed signs and symptoms of trauma from occlusion (TFO). The high prevalence and frequency of gingival recession have been documented in dental literature [14, 15]. In the present study, 51.3% (77/150) of patients had gingival recession. This patient-level prevalence cannot be directly compared with the tooth-level finding of Gürbüz *et al.* who reported that 57.4% of mandibular teeth with gingival attachment loss had occlusal interferences [15]; the units of analysis differ. Among all 150 patients, dental fremitus was present in 56.7% (85/150), wear facets in 42.7% (64/150), and tooth migration in 48.0% (72/150). Among the 77 patients with gingival recession, dental fremitus was present in 81.8% (63/77), wear facets in 66.2% (51/77), and tooth migration in 66.2% (51/77)(Table 2). These findings show that signs of occlusal trauma were frequent in the recession subgroup, but they should not be reported as prevalence in the entire sample [16]. In accordance with the results of the current study, a greater percentage of traumatic occlusion was reported by Soh *et al.* who found 65% nonvital teeth due to excessive traumatic forces [15]. Similarly, Nazif *et al.* reported 70.7% of patients with primary trauma [17]. Nazif *et al.* and Nirola *et al.* stated that occlusal trauma is the prime reason for periodontal damage and apical migration of the tissues. They emphasized the importance of timely detection and occlusal correction to stop destructive alveolar bone and tissue damage [16, 17]. In the current study, it was found that 74.0% of patients who had tooth migration in the bucco-lingual, mesio-distal, or occlusal direction also had gingival recession. Excessive occlusal loading on single or multiple teeth beyond the adaptive capacity of the periodontium immensely affects the gingival attachment and its health. Nirola *et al.* likewise concluded that tooth mobility is the most important sign of traumatic occlusion [18]. Da Silva *et al.* concluded that the presence and extent of gingival recessions were affected by the increase in the number of occlusal interferences of premolar/molar teeth [19]. In the current study, gingival recession was frequently found in 51.3% of patients who had occlusal trauma.66.2% of patients who had gingival recession also had tooth wear due to parafunctional habits; only 17.8% of patients, besides having wearing facets, did not have gingival destruction. In the current study, a strong association between gingival recession and traumatic wearing facets was seen, indicating that heavy occlusal load not only destroys the hard tissues but also results in gingival recession. In accordance with the results of current studies concluded that occlusal adjustment does help, as it stabilizes teeth with increasing mobility, and it helps patients who have signs of trauma like wear, fractures, or muscle problems [20, 21]. Öcal *et al.* likewise pointed out that occlusal trauma, along with parafunctional habits, must be diagnosed in a timely manner to reduce the chances of developing gingival recession [21]. Gingival recession is a common finding in daily clinical practice. Several issues like dentine hypersensitivity, root caries, and compromised esthetics are associated with apically moving gingival tissues. It is important to identify signs and symptoms of traumatic occlusion in patients and consider it an important factor.

This study had a few limitations. First, it was a single-center cross-sectional study conducted at one institution, so the results cannot be generalized to the wider population. It is recommended that future multi-center longitudinal studies with larger sample sizes and objective occlusal analysis should be conducted to establish a definitive association. Clinicians should also incorporate routine occlusal evaluation in patients presenting with gingival recession for comprehensive treatment planning.

CONCLUSIONS

It was concluded that trauma from occlusion may be a significant risk factor for gingival recession. Patients with signs of trauma from occlusion should be monitored for gingival recession. Dentists should consider occlusal evaluation and management in treatment plans for patients with gingival recession.

Authors' Contribution

Conceptualization: KY
Methodology: KY, MM, HIQ, AN
Formal analysis: KQ
Writing and Drafting: KY, MR, UEH, SN
Review and Editing: KY, MM, HIQ, MR, AN, UEH, KQ, SN, TH

All authors approved the final manuscript and take responsibility for the integrity of the work

Conflicts of Interest

All the authors declare no conflict of interest.

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REFERENCES

[1] Nascimento MM, Dilbone DA, Pereira PN, Duarte WR, Geraldeli S, Delgado AJ. Abfraction Lesions: Etiology, Diagnosis, and Treatment Options. Clinical, Cosmetic and Investigational Dentistry. 2016 May: 79-87. doi: 10.2147/CCIDE.S63465.

[2] Šimunović L, Lapter Varga M, Negovetić Vranić D, Čuković-Bagić I, Bergman L, Meštrović S. The Role of Malocclusion and Oral Parafunctions in Predicting Signs and Symptoms of Temporomandibular Disorders—A Cross-Sectional Study. Dentistry Journal. 2024 Jul; 12(7): 213. doi: 10.3390/dj12070213.

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DOI: https://doi.org/10.54393/pbmj.v9i8.1428

[3] Worawongvasu R. Scanning Electron Microscope Characterization of Noncarious Cervical Lesions in Human Teeth. Journal of Oral and Maxillofacial Pathology. 2021 May; 25(1): 202. doi: 10.4103/jomfp.JOMFP_232_20.

[4] Warreth A, Abuhijleh E, Almaghribi MA, Mahwal G, Ashawish A. Tooth Surface Loss: A Review of Literature. The Saudi Dental Journal. 2020 Feb; 32(2): 53-60. doi: 10.1016/j.sdentj.2019.09.004.

[5] Shah MU, Fazal M, Khuwaja SH, Awais F, Mushtaq S, Sultan A *et al.* Prevalence of TMJ Disorders among Dental Students and Its Relation to Malocclusion. Pakistan Oral and Dental Journal. 2020 Dec; 40(4): 255-9.

[6] Pornprom A, Pumklin J, Tohnak S, Piyapattamin T, Wirojchanasak S. Association of Bone Loss Severity with Signs of Occlusal Trauma in Teeth with Reduced Periodontium. Journal of International Dental and Medical Research. 2024; 17(1): 196-202.

[7] Goodacre CJ, Eugene Roberts W, Munoz CA. Noncarious Cervical Lesions: Morphology and Progression, Prevalence, Etiology, Pathophysiology, and Clinical Guidelines for Restoration. Journal of Prosthodontics. 2023 Feb; 32(2): e1-8. doi: 10.1111/jopr.13585.

[8] Ríos CC, Campiño JI, Posada-López A, Rodríguez-Medina C, Botero JE. Occlusal Trauma Is Associated with Periodontitis: A Retrospective Case-Control Study. Journal of Periodontology. 2021 Dec; 92(12): 1788-94. doi: 10.1002/JPER.20-0598.

[9] Hayashi M, Kubo S, Pereira PN, Ikeda M, Takagaki T, Nikaido T *et al.* Progression of Non-Carious Cervical Lesions: 3D Morphological Analysis. Clinical Oral Investigations. 2022 Jan; 26(1): 575-83. doi: 10.1007/s00784-021-04036-x.

[10] Ijaz Y, Iqbal MU, Hamid T, Saleem A, Nazif A, Mawiz A *et al.* Occlusal Trauma and Non-Carious lesions: The role of Eccentric Movements and Guidance. Indus Journal of Bioscience Research. 2025 Sep; 3(9): 18-22. doi: 10.70749/ijbr.v3i9.2212.

[11] Silness J and Löe H. Periodontal Disease in Pregnancy II. Correlation Between Oral Hygiene and Periodontal Condition. Acta Odontologica Scandinavica. 1964 Jan; 22(1): 121-35. doi: 10.3109/00016356408993968.

[12] Marschner F, Lechte C, Kanzow P, Hraský V, Pfister W. Systematic Review and Meta-Analysis on Prevalence and Risk Factors for Gingival Recession. Journal of Dentistry. 2025 Apr; 155: 105645. doi: 10.1016/j.jdent.2025.105645.

[13] Tomina D, Buduru S, Dinu CM, Kui A, Dee C, Cosgarea R *et al.* Incidence of Malocclusion among Young Patients with Gingival Recessions—A Cross-Sectional Observational Pilot Study. Medicina. 2021 Nov; 57(12): 1316. doi: 10.3390/medicina57121316.

[14] Gürbüz S, Bakhishov H, Koçyiğit EG, Işık A, Tuncer BB, Özdemir B. Evaluation of Mid-Buccal Gingival Recessions and Occlusal Interferences. Journal of Oral Rehabilitation. 2023 Oct; 50(10): 1058-69. doi: 10.1111/joor.13543.

[15] Soh NHBC, Nasim I, Arthi B. Association Between Trauma from Occlusion and Vitality of Teeth - A Retrospective Study. International Journal of Dentistry and Oral Science. 2021; 8(8): 4085-4090. doi: 10.19070/2377-8075-21000834.

[16] Nazif A, Hussain TD, Sahar N, Iftikhar MH, Iqbal MU, Hamid T *et al.* Association of Trauma from Occlusion with Demographic Factors, Occlusal Scheme and Type of Dental Prosthesis: A Clinical Study. Indus Journal of Bioscience Research. 2026; 4(1):1-5. doi: 10.70749/ijbr.v4i1.2738.

[17] Nirola A, Batra P, Mohindra K, Kaur T. Role of Occlusion as a Risk Factor in Periodontal Disease. Journal of the International Clinical Dental Research Organization. 2020 Jul; 12(2): 102-9. doi: 10.4103/jicdro.jicdro_44_20.

[18] Da Silva Guimarães DH, Ávila Soares L, Lopes Oliveira M, de Oliveira Moreira V, Rodrigues Correa AD, Santiago Junior O. Impact of Occlusal Trauma on Periodontal Disease: A Literature Review. Jaw Functional Orthopedics and Craniofacial Growth. 2025 Dec; 5(2): 45-56. doi: 10.21595/jfocg.2025.25058.

[19] Kanarakis I, Sandu D, Solomon SM, Pasarin L, Sufaru IG, Martu MA *et al.* Contemporary Aspects Regarding the Etiology of Gingival Recessions. A review. Romanian Journal of Oral Rehabilitation. 2021 Apr; 13: 78-86.

[20] Imber JC and Kasaj A. Treatment of Gingival Recession: When and How? International Dental Journal. 2021 Jun 1; 71(3):178-87. doi: 10.1111/idj.12617.

[21] Öcal F, Çetintaş R, Demirtaş Öcal Y. Evaluation of Tooth Wear and Gingival Recession in Individuals with Obsessive-Compulsive Symptoms: A Clinical Study. Journal of Dental Sciences and Education. 2025; 3(4). doi: 10.51271/JDSE-0063.

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