

The Evaluation of Medical Records of Gingival Recession in Chronic Periodontitis Patient

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ARTICLE INFO : Received, January 17, 2023; Revised, March 25, 2023; Accepted, May 2, 2023; Published June 20, 2023

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DOI : [10.24815/jds.v8i1.33134](https://doi.org/10.24815/jds.v8i1.33134)

ABSTRACT

Background: Periodontitis is inflammation of the gingiva accompanied by alveolar bone loss, which causes loss of attachment. Local factors that can exacerbate periodontitis are gingival recession, a condition where the gingival margin is pulled away from the cemento-enamel junction (CEJ), resulting in the opening of the root surface that was initially closed. **Objective:** This study aimed to determine the distribution of gingival recession features in chronic periodontitis patients at the **Universitas Trisakti Dental Hospital**, Indonesia. **Material and Methods:** This type of research is an observational descriptive with a cross-sectional research design with periodic medical record samples from January 2013 to December 2017. Data obtained from medical records were recorded and grouped in tables and then analyzed manually. **Results:** Of the 583 periodontal patients, there were 311 patients with gingival recession consisting of 11 maxillary gingival recession patients, 21 mandibular gingival recession patients with the majority of mild classification of gingival recession (<3.0 mm from the exposed root surface) and 279 patients suffering from in both jaws with the majority classification of severe gingival recession (> 4.0 mm exposed root surface). **Conclusion:** Gingival recession in patients with chronic periodontitis is more common in the mandible than the maxilla. Patients with chronic periodontitis mostly experience gingival recession of more than 1 tooth in the upper and lower jaw with severe classification (> 4 mm).

Keywords: Chronic periodontitis, gingival recession, periodontal disease

ABSTRAK

Latar Belakang: Periodontitis merupakan peradangan pada gingiva yang disertai pengeroposan tulang alveolar yang menyebabkan kehilangan perlekatan. Faktor lokal yang dapat memperburuk periodontitis adalah resesi gingiva yaitu suatu kondisi margin gingiva tertarik dari cemento-enamel junction (CEJ), yang mengakibatkan terbukanya permukaan akar yang awalnya tertutup. **Tujuan:** Tujuan penelitian untuk mengetahui distribusi gambaran resesi gingiva pada pasien periodontitis kronis di Rumah Sakit Gigi dan Mulut (RSGM), Universitas Trisakti, Indonesia. **Materi dan Metode:** Jenis penelitian ini adalah deskriptif observasional dengan desain penelitian cross-sectional dengan sampel rekam medis periodik dari Januari 2013 sampai Desember 2017. Data yang diperoleh dari rekam medis dicatat dan dikelompokkan dalam tabel kemudian dianalisis secara manual. **Hasil:** Dari 583 pasien periodontal, terdapat 311 pasien yang menderita resesi gingiva yang terdiri dari 11 pasien resesi gingiva maksila, 21 pasien resesi gingiva mandibula dengan mayoritas klasifikasi ringan resesi gingiva (<3,0 mm dari permukaan akar yang terbuka) dan 279 pasien menderita pada kedua rahang dengan mayoritas klasifikasi parah resesi gingiva (> 4,0 mm permukaan akar terbuka). **Kesimpulan:** Resesi gingiva pada penderita periodontitis kronis lebih banyak ditemukan pada gigi rahang bawah dibandingkan rahang atas. Penderita periodontitis kronis paling banyak mengalami resesi gingiva lebih dari 1 gigi pada rahang atas dan rahang bawah dengan klasifikasi berat (>4 mm).

Kata kunci: Periodontitis kronis, penyakit periodontal, resesi gingiva

1. Introduction

The 2013 Basic Health Research (Riskesdas) states that the national prevalence of dental and oral health problems is 25.9%. Meanwhile, only 8.1% received care and treatment from dental medical personnel in 2013. Based on the 2010 Household Health Survey - National Health Survey, periodontal disease ranks second with 42.8% of Indonesia's population.¹ A survey by the National

Institute of Dental Research (NIDR) in Indonesia also said the same thing. Periodontal disease ranks second as a significant societal problem, with a percentage of 70%. The prevalence of periodontal disease continues to increase with age.²

The results of epidemiological studies show that periodontal disease, one of which is chronic periodontitis, is a major global health problem affecting most of the adult population. This does not rule out the possibility that it can affect children depending on oral hygiene and the level of plaque accumulation which is the etiology of chronic periodontitis.³ Chronic periodontitis also has local predisposing factors and systemic factors such as diabetes mellitus, HIV infection, stress, smoking, nutritional deficiencies, drug complications, weak immunity, and endocrine gland disorders. One of the local factors that can exacerbate periodontitis is gingival recession.⁴

Gingival recession is a condition in which the position of the marginal gingiva is away from the cemento-enamel junction (CEJ) so that the root surface that was initially closed becomes exposed.⁵ The etiology of gingival recession can be caused by several factors, namely anatomy, physiology, and pathology. The most common gingival recession is a manifestation of inflammation resulting from the accumulation of plaque and calculus on the tooth surface, causing tissue damage resulting in gingival recession.⁶ Gingival recession not only causes damage to the gingiva but can accompany damage to the cementum and alveolar bone. So that it can cause loss of cementum and alveolar bone.⁷

The etiological factors of gingival recession associated with periodontal disease can affect all tooth surfaces and tend to be irreversible. Chronic periodontitis accompanied by gingival recession is a disease associated with plaque and calculus.⁸ Periodontal tissue examination aims to determine the condition of the periodontium. The results of the examination of the periodontal tissue, a patient's medical record is required which contains information in the form of anamnesis from the patient, including patient identity, patient's chief complaint, general health history, dental health history, and history of treatment that has been carried out as well as clinical examination of the teeth and periodontium tissue.⁹

One of the clinical features of chronic periodontitis is gingival recession. Chronic periodontitis accompanied by gingival recession can also reduce a person's standard of quality of life. Disturbances in aesthetics are most visible in this case. These aesthetic consequences are generally associated with poor job prospects because sufferers become shy and lack self-confidence, which can hinder them from socializing.¹⁰ This study aimed to determine the distribution of gingival recession features in chronic periodontitis patients at the Dental Hospital Universitas Trisakti, Indonesia.

2. Material and Methods

This type of research is a descriptive observational study with a cross-sectional design. The research was conducted at the **Department of Periodontology Universitas Trisakti Dental Hospital**. The population in this study were all periodontal medical records at the **Department of Periodontology, Universitas Trisakti Dental Hospital** for the period January 2013 - December 2017. The samples in this study were based on predetermined inclusion criteria, namely medical records complete with a chronic and aggravated periodontitis diagnosis of gingival recession. Gingival recession will be classified as (1) mild gingival recession when <3 mm, roots are visible, (2) moderate, when roots are visible 3-4 mm, (3) severe, when roots are visible > 4 mm.

3. Result and Discussion

In the study conducted in September-November 2018, 583 periodontal medical records were stored at the **Department of Periodontology**, Faculty of Dentistry, **Universitas Trisakti**, Indonesia. From these medical records, a sample that met the inclusion criteria was 311 medical records with a diagnosis of chronic periodontitis accompanied by gingival recession. Based on the medical records, patient data were obtained in the form of year, sex, diagnosis, and gingival recession. The distribution of the number of medical records that match the inclusion criteria can be seen in Table 1. Based on the respondent data from the medical records collected, the majority were female, 177 subjects (56.91%) and 134 female subjects (43.09%). The distribution of the number of medical records that match the inclusion criteria can be seen in Table 1. Table 1 shows that the most medical records were obtained in 2016 (31.51%) and the least in 2017 (6.43%).

Table 1. Frequency distribution of medical records that meet the inclusion criteria

Years	Number of Medical Records	Percentage
2013	43	13.83
2014	71	22.83
2015	79	25.40
2016	98	31.51
2017	20	6.43

Table 2. Gingival Recession Frequency Distribution in 2013-2017

Recession Location	Number of Teeth Involved	Classification	2013	2014	2015	2016	2017
Maxilla	1	Mild	0	0	2	0	0
		Moderate	0	0	0	0	0
		Severe	0	0	0	0	0
	>1	Mild	1	0	3	0	1
		Moderate	1	0	1	1	0
		Severe	0	1	0	0	0
	1	Mild	0	0	1	0	0
		Moderate	0	0	0	0	0
		Severe	0	0	0	0	0
Mandibular	>1	Mild	2	1	4	3	0
		Moderate	0	0	0	2	0
		Severe	2	0	2	4	0
Maxilla and Mandibular	>1	Mild	4	10	18	27	8
		Moderate	6	12	6	14	2
		Severe	27	47	42	47	9

Table 2 reports that in the 2013-2017 medical records. In 2013, there were 27 patients with severe gingival recession, which affected more than one tooth in the upper and lower jaw. In 2014, n = 47 patients had severe gingival recession affecting more than the teeth in the upper and lower jaws. In 2015, the highest number of patients, n = 42, had a recession with severe calcification involving more than one tooth in the upper and lower jaw. In 2016, the highest number of patients, n = 47, had a recession with severe calcification involving more than one tooth in the upper and lower jaw. In 2017 7 showed that recession in the maxilla and mandible, which affected more than one tooth, was the most (n = 9)

Based on the study results, it was shown that women more often experienced chronic periodontitis than male patients. Still, this situation was not inevitable because this was inversely proportional to the data obtained by NHANES in 2009-2010, which stated that the prevalence of periodontitis globally was that men were at higher risk. Namely suffering from periodontitis by 56.4% compared to women.¹¹ This condition may be caused by the higher level of concern for women about dental and oral health, as seen from the greater number of people who come to the **Universitas Trisakti Dental Hospital**, Indonesia, to have their teeth and mouth health checked. This situation was also influenced by the working hours of the **dental hospital**, namely 8 am to 5 pm, at which time the men were still busy working so most of the patients who came were women who were housewives. In addition, women also pay more attention to appearance and aesthetics compared to men.

The study showed that patients with gingival recession in one of the jaws were found more in the lower jaw than the upper jaw. This follows a study conducted by Humangain, M and Kafle, D which stated that lower gingival recession in the maxillary teeth might be related to the characteristics of the keratinized mucosa, which is broader and thicker in the maxilla than the mandible.¹² This study showed that a recession occurs in patients with more than one tooth involvement in the upper and lower jaws with chronic periodontitis. This follows Pappanou et al.'s statement that one of the characteristics of chronic periodontitis is the complete gingival recession.¹³ In this study, there was a decrease in the number of patients in 2017 from previous years. This is due to the lack of collection of medical records at the Periodontist Clinic. Patients who came in 2017 undergo periodontal treatment, so medical records are still used to record patient care.

Several possibilities can cause the gingival recession, such as the wrong way of brushing teeth, malposition, crowding, and use of orthodontic devices. This tooth brushing factor is related to the development of gingival recession itself, namely from the duration of brushing teeth, the strength when brushing teeth, the frequency of changing toothbrushes, and the consistency of the bristles and the method used in brushing teeth so that it can cause shifting of the gingiva in an apical direction.¹⁴ Malposition alone does not cause periodontal disease, but a lack of understanding of plaque control and awareness to maintain

oral hygiene can result in plaque accumulation. If plaque is not eliminated, it can lead to gingivitis, the most common periodontal problem.

Although the primary etiology of periodontal disease is bacterial plaque, crowding is a functional etiological factor of periodontal disease because it makes it difficult to maintain oral hygiene, so plaque accumulates and develops, which causes pathological periodontal changes.¹⁵ Lack of public knowledge and concern about maintaining healthy teeth and gums. The mouth can also be a predisposing factor for periodontal problems. Knowledge is an essential component that influences a person's attitude and behavior. Educational factors influence knowledge. The higher a person's education, the more comprehensive his knowledge.¹⁶ A person's education can affect dental and oral hygiene levels. Someone with low education has less knowledge of maintaining oral hygiene. Conversely, someone with higher education will pay more attention to the condition of his mouth to keep the cleanliness of his teeth and mouth.¹⁷

Properly preventing gingival recession is by conducting communication, information, and education (IEC). Patients can be informed to eliminate bad habits that can cause the gingival recession, such as brushing the wrong teeth, hard bristles, and the tradition of scraping the gingiva with a toothpick. After the primary etiology is resolved, instruct the patient to maintain oral hygiene monitored by the treating dentist.¹⁸ Scaling and root planing can also be carried out to eliminate plaque and calculus. Meanwhile, surgical procedures, including various mucogingival surgeries, are the final choice for patients with severe gingival recession and broad sensitivity. Ultimately, the goal is to carry out surgical and non-surgical treatment to eliminate patient complaints aesthetically, functionally, and if there are complaints of pain.¹⁹

4. Conclusion

Gingival recession in patients with chronic periodontitis is more commonly found in the mandibular teeth than the maxillary teeth. Patients with chronic periodontitis mostly experience gingival recession of more than one tooth in the upper and lower jaw with severe classification (> 4 mm).

5. Acknowledgments

The authors express their gratitude to the Department of Periodontology and Universitas Trisakti Dental Hospital for their generous provision of the medical records utilized in this research study.

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Authors Contribution

Contribution	Astuti L	Shafina S
Concepts or ideas	√	√
Design	√	√
Definition of intellectual content	√	
Literature search	√	√
Experimental studies	√	
Data acquisition	√	√
Data analysis	√	
Statistical analysis	√	√
Manuscript preparation	√	√
Manuscript editing	√	√
Manuscript review	√	√



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Citation Format: Astuti L, Shafina S. The evaluation of medical records of gingival recession in chronic periodontitis patient. J Syiah Kuala Dent Soc. 2023; 8(1): 50-54.

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