

STATISTICAL STUDY ON THE PREVALENCE OF GINGIVAL RESSION IN YOUNG ADULTS

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Abstract

Gingival recession represents a serious problem, for both patient and physician, especially when exposure of the radicular surface is related to the deterioration of the aesthetic aspect and to a more pronounced dental hypersensitivity. **Scope of the study:** to determine the prevalence and severity of recessions in young adults, correlated with the local dental, as well as socio-economic and cultural conditions. **Materials and method:** A number of 85 persons, having addressed the Department of Periodontology, Faculty of Dental Medicine of Iasi, between February-May 2011, were examined. The following parameters were recorded: sex, education level, total number of gingival recessions at the level of the oral cavity, type of brush employed, frequency of dental brushing, amount of attached gingiva, existence of labial phrenum, type of occlusion, presence of certain complications induced by the manifestation of recessions, such as hypersensitivity. **Results and discussion:** Analysis and correlation of data showed that the most important role in the occurrence of recessions was played by the local factors, which intensified the action of the determining element, the bacterial plaque. Thus, the nature of periodontal recessions is of inflammatory type, those with traumatic causes being statistically non-significant. The type of periodontium influenced the development of recessions, so that, for a delicate periodontium, 10.4 recessions/patient have been discovered, while, in a thick periodontium, only 7 recessions/patient. In cases of phrenectomies with insertion in the vicinity of the gingival margin, recessions of various sizes have been always present. In cases of dental occlusion, the obtained data suggest that the occurrence of recessions is not considerably influenced by the type of occlusion, the values being quite close. As to their sizes, most of the recessions were situated at a level of 2-3 mm, a significant decrease being observed at levels exceeding 4 or 5 mm. A complication accompanying recessions in 39.96% of the affected teeth was hypersensitivity. **Conclusions.** Recessions represent a complex pathology, with multiple etiology, sometimes difficult to identify, with special implications in the establishment of a therapeutical plan. Monitorization of the young adult, alongwith a precocious identification of the lesions and of their etiology may be therefore a

starting point for the preservation of a healthy periodontal status.

Keywords: recession, young adult, prevalence of gingival recession

INTRODUCTION

Periodontal tissue recession belongs to the periodontal pathology with a complex, multifactorial, still insufficiently elucidated etiology. The existence of recessions involves several aspects, possibly consequences of another local pathology, such as occlusal trauma, which calls for a complex treatment plan, in which its simple covering is insufficient, as it does not solve the primary cause; also, installation of recession makes other subsequent odontal or prosthetic treatments more complicated, modifying essentially the duration and costs of the treatment [1-3]. If, at old ages, the occurrence of recessions is almost a rule of a generalized bone atrophy, in the young adult the cause is less influenced by general factors, such as osteoporosis, and more by local factors, with major implications in the establishment of a treatment plan [1,4]. All these considerations challenged us to attempt at evaluating the prevalence of periodontal recessions in young adults.

MATERIALS AND METHOD

The experimental group was formed of 85 patients, with ages between 20 and 40 years, who addressed the Clinical Education Basis of Iasi, Discipline of Periodontology, between February-May 2011. The patients were clinically

examined, and their observation sheet was filled in, together with the periodontogram. To avoid contrasting opinions, the whole oral cavity was examined by a single physician. In the end of the clinical examination, the patients were informed on their oral status and diagnosed periodontal problems. The following parameters were recorded: sex, education level, total number of gingival recessions at the level of the oral cavity, type of brush employed, frequency of dental brushing, amount of attached gingiva, existence of labial phrenum, type of dental occlusion, presence of certain complications induced by the manifestation of recessions, such as hypersensitivity, the Silness and Loe index of plaque, the index of papillary bleeding.

RESULTS

The sex distribution of the experimental group was the following: women - 34.11% (29), men - 65.88% (56). The education level was registered, considering its possible correspondence with the general and - especially oral - health education. Thus, 14 persons (16.47%) graduated high education institutions, 55 (64.70%) are students, and 16 persons (18.82%) attended lyceum courses.

The gingival recessions observed at the level of patients' oral cavity were registered. In the 85 patients, 603 recessions were identified, out of which 118 in women (19.56%) and 485 in men (80.43%), which demonstrates the higher frequency of recessions among men. The number of recessions in the oral cavity varied from 0 to 30. Distribution of recessions on sexes and number of persons is plotted graphically in Figure 1. Therefore, the maximum number of recessions observed in women was of 10, and of 30 in men, which indicates males' predisposition for recessions.

Anamnesis also involved recording of the type of tooth brush utilized by the patients. Hardness of the brush thread was mainly of average type in women (96.55%) 28) and of 83.92% in men, the hard type being present only for males (16.07%) and in only one female patient. The soft-type dental brush was used by none of the patients. On using the average-type dental brush, 113 recessions were recorded in women

and 361 recessions in men; the hard brush was used exclusively by men, 124 recessions being registered in such cases.

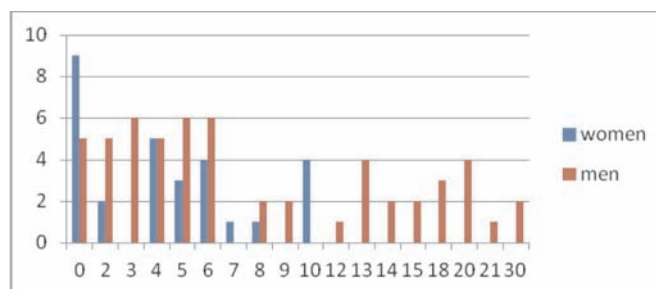


Fig. 1: Distribution of recession cases on sexes and number of persons

The number of daily dental brushings varied from 0 to 3. In the case of men who made no brushing, 34 recessions were registered, in cases of 1 brushing per day - 361 recessions in men and 81 recessions in women, at 2 brushings there were recorded 93 recessions in men and 31 in women and, at 3 brushings - 6 recessions were observed in women. A lower number of recessions was recorded with the increase of the number of brushings, in both women and men (Figure 2).

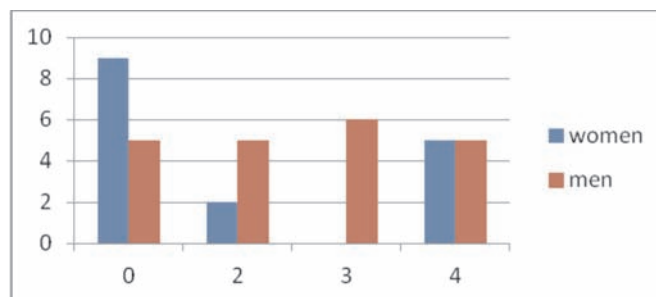


Fig. 2: Recording of the number of recessions on sexes as a function of the number of daily brushings

The periodontogram drawn for each patient registered the Silness and Loe index of bacterial plaque and calculated the number of recessions as a function of plaque index and sex of the patients. (Figure 3)

The index of papillary bleeding, an indicator of the inflammation degree, was also recorded. All these data, as well as Figure 3 show that, in women, the inflammation level is lower, 14 women having IS 1, while a large part of the men, respectively 29 persons, recorded an average inflammation level with IS 2, even if a high

inflammation level, with IS 4, was found in 2 men.

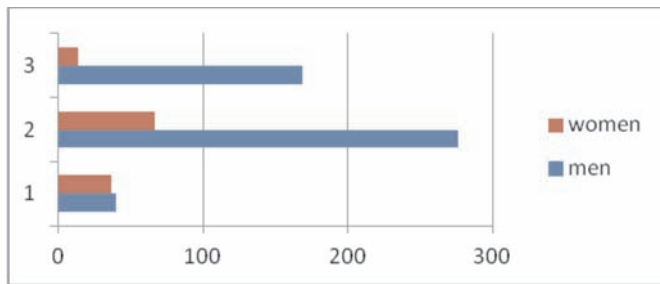


Fig. 3: Number of recessions on sexes, as a function of the index of bacterial plaque

Most of the recessions occurred in the men and women with IS 2 (Figure 4).

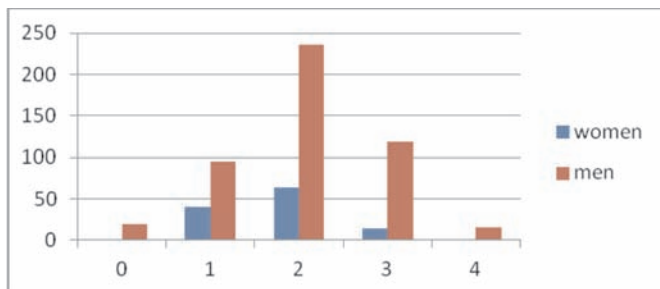


Fig. 4: Number of recessions on sexes, as a function of bleeding index

The amount of attached gingiva was also evaluated, 10 patients (11.76%) with attached gingiva below 2 mm, 51 patients (60%) with a value between 2 and 4 mm and 24 patients (28.23%) with attached gingiva exceeding 4 mm being identified.

Analysis of the type of occlusion evidenced: psalidodont occlusion (class I Angle) - 49 cases (57.64%), psalidodont occlusion with dental crowding (class I Angle) - 17 cases (20%) and other occlusion disorders (class I, II, III Angle) - 19 cases (22.36%).

To observe the manner in which the type of occlusion may influence the occurrence of recessions, their total number was registered for each type of occlusion discovered: class I Angle - 375 recessions, class I Angle, with dental crowding - 135 recessions and other occlusal disorders, such as class II/1, class II/2, class III Angle - 73 recessions.

The extent of recession was also evaluated, the obtained data revealing the following values: size < 2 mm - 202 recessions, sizes between

2-3 mm - 321 recessions, sizes between 3-4 mm - 26 recessions, and size > 4 mm - 54 recessions.

Examination of the patient was followed by the settlement of the diagnosis for each patient in part and the recommendation of a certain type of treatment. Consequently, 40 patients with localized gingivitis, 15 patients with generalized gingivitis, 23 patients with surface periodontitis, 6 patients with moderate periodontitis and only 1 case of severe periodontitis have been registered. Following this, 55 patients received an etiological treatment, 11 patients needed an additional prosthetic or orthodontic treatment, and only 5 patients required surgical intervention (Figure 5).

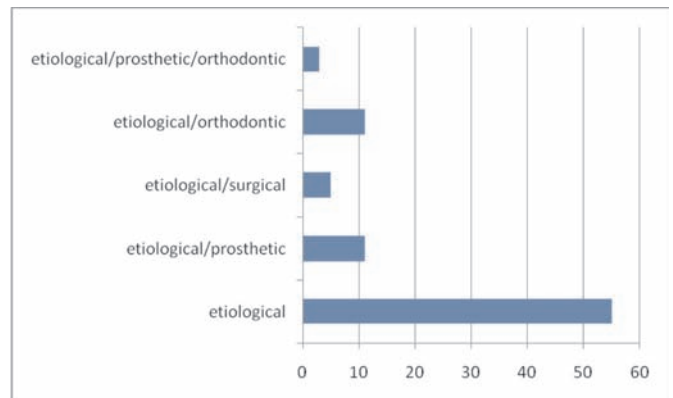


Fig. 5: The necessary treatment in the experimental group

DISCUSSION

The experimental group considered for the study includes patients who had been examined and treated, as part of a periodontology terms, by the V year-students of the Faculty of Dental Medicine, in the year 2011. The scope was to evaluate the incidence of recessions in young adults. Among them, 85 patients have been selected according to the criterion of age.

The observation made was that the number of men from the experimental group who addressed our student colleagues for being periodontally evaluated is about 2 times higher than that of women, which, apparently, contradicts the literature data, which show a higher addressability of women for stomatological treatments, in general, and for the periodontal and dental aesthetics, especially. The fact that the therapeutic specialist

is a student may be possibly explained by the general preference of women for physicians with a longer experience in the field [3,5].

As to the social categories involved in the study, of majority (64.70%) are the students who, together with the graduated ones (16.47%) represent more than 80% of the whole number of patients, all with quite advanced knowledge on sanitary education [5-7].

The analyzed category of age is generally characterized by a good health condition, representing a maximum physical, psychic, emotional state of one's whole life. Under such circumstances, the most important role will be played by the local factors.

The investigations devoted to such topics show that, in the absence of the infectious element, represented by the bacterial plaque, recession does not occur [1,3,8]. Nevertheless, no oral cavity is entirely germ-free, therefore a certain intensification of the local irritative factors, from the part of the bacterial plaque, will always exist. Hygiene is very important [5,6], that is why special stress was laid on the determination of the plaque indices, as well as on their correlation with the number of recessions. Most of the female patients evidenced plaque indices with mean values around 1, which subsequently decreased towards 2 and 3. The highest number of recessions was registered in patients with IP=2.

In men, IP records a maximum at a value of 2, slightly decreasing towards 3. Practically, more than 80% of them have plaque indices of 2 and 3, which is a sign of their disrespect for hygiene, comparatively with women, in whose case the maximum number of recessions appears for a plaque index = 2. The total number of recessions observed in men is significantly higher than in women, yet without viewing it as an absolute value, as due to their inequality in the experimental group. Nevertheless, a comparison between the ratio of women from the sample group and the frequency of recessions shows 2 times higher values than in men.

Similar results may be obtained if comparing the number of recessions with the bleeding indices. Practically, an IP - IS correlation should be observed. The maximum number of recessions appear, in both men and women, at ISP=2, obeying the curve of Gauss.

The close correlation between knowledge and utilization of hygienization procedures, the value of the indices of oral hygiene and the manifestation of gingival inflammation has been well-established [8]. Also, intempestive brushing is frequently incriminated, as favoring recessions, which explains why anamnesis also included evaluation of the type of brushes and number of daily brushings, and their correlation with the number of recorded recessions. The information was based on strictly declarative questionnaires filled in by the patients.

Most of the patients utilize manual brushes of medium bristle hardness (96.55% of women and 83.92% of men), only few of them employ a hard brush (16.07% - exclusively men). No patient used a soft brush. A comparison between the number of observed recessions and type of dental brush employed evidences sensibly equal values, only slightly higher in those using a hard brush. This means that the dental brush is not so important as believed, involved here being other factors, such as the force applied during brushing, the brushing technique, etc. Even if the soft brush is especially recommended in cases of gingival recessions and of thin periodontium, one may observe that the patients are not informed in this respect, all of them declaring that they prefer a harder brush, which gives them the sensation that the teeth are thus better cleaned.

Again for outlining the importance of the known etiological factors, data on the amount of attached gingiva, on the existence of labial phrenum, type of occlusion, occurrence of certain complications induced by recessions have been analyzed and centralized [9-11].

The following categories of patients have been identified:

1. GA < 2 mm - 10 patients (fine-type periodontium)
2. GA 2 - 4 mm - 51 patients (average periodontium)
3. GA > 4 mm - 24 patients (thick-type periodontium)

The maximum number of recessions per patient was identified in those with a thin periodontium (10.4), followed by those with average and, respectively, thick periodontium (6.56 and 7.08).

Insertion of labial phrenum close to the gingival margin is frequently incriminated for the occurrence of gingival retractions at the level of central incisors. Clinical examination of the inferior labial phrenum provided the following information:

1. Low insertion – 21 cases
2. Average insertion – 52 cases
3. High insertion – 12 cases

It was observed that all cases in which phrenum insertion occurred on the gingival margin were accompanied by recessions on either one or both of the inferior central incisors.

Generally, occlusion plays an important role in the etiology of periodontal diseases [12]. The impossibility of realizing an efficient mastication explains why the self-cleaning phenomenon is not sufficient, which increases the amount of bacterial plaque, scale deposition and manifestation of the inflammatory periodontal mechanism. The present study aimed at identifying a possible relation between malocclusions and recession. Consequently, identified in the experimental group were:

- Psalidodont-type occlusion (class I Angle) – 49 cases with 375 recessions (7.65 recessions/patient)
- Psalidodont-type occlusion with dental crowding (class I Angle) – 17 cases with 135 recessions (7.94 recessions/patient)
- Other occlusion disorders (class II/1, class II/2, class III Angle) – 19 cases with 73 recessions (3.84 recessions/patient)

A lower number of recessions per patient are registered in those with occlusion disorders, comparatively with those with psalidodont occlusion. No significant differences could be noticed between the patients from class I Angle with correctly-aligned teeth on the arch and those with dental crowding. The conclusion reached would be that occlusion does not influence the occurrence of recessions as much as it is believed, on condition of being correlated with a suitable hygiene [12].

All patients who addressed specialized periodontal services have been affected in various degrees. No recessions were observed in 14 cases, the patients being diagnosed with gingivitis or with chronic forms of periodontitis, but no recessions.

Most cases evidenced recessions in less than 30% of the examined sites, considered as representing a localized form of periodontal disease. Out of their total number, 29.4% showed recessions in generalized form.

As to the size of the recession, the following distribution of the number of recessions under analysis, with a maximum between 2 and 3 mm, may be mentioned:

- < 2 mm – 202 recessions
- 2 - 3 mm – 321 recessions
- 3 - 4 mm – 26 recessions
- 4 mm – 54 recessions

As to the Miller class, 83.34% are I and II, the remaining ones belonging to class III. No case of Miller class IV was discovered in this experimental group.

CONCLUSIONS

Recessions represent a complex pathology, with multiple etiology, sometimes difficult to identify and, more than that, with implications in the elaboration of a therapeutical plan. In numerous cases, subjective symptomatology is absent, so that the patient is not conscious of their existence. Monitorization of young adults and a precocious identification of lesions and of their etiology may represent a starting point for the preservation of a healthy periodontal status and of a sufficient amount of alveolar bone even at old ages.

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