

Clinical and Psychological Approaches during Periodontal Treatment in Adolescents

Abordagem clínica e psicológica durante o tratamento periodontal de adolescentes

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RESUMO

A gengivite induzida por placa é o tipo mais comum de gengivite presente em crianças e adolescentes. Deste modo, o exame periodontal deve fazer parte das consultas odontológicas dos pacientes jovens. O objetivo deste trabalho foi relatar o diagnóstico e o tratamento da gengivite induzida por placa em adolescentes. Adicionalmente, o presente estudo discute a importância de um específico e individual tratamento direcionado à pacientes jovens, uma vez que mudanças comportamentais e psicológicas inerentes a esta fase da vida estão relacionadas à participação dos pacientes no tratamento e na adequada resposta após a terapia periodontal

Palavras-chave: Doenças Periodontais, Gengivite, Psicologia do Adolescente

ABSTRACT

Adolescents should receive a periodontal examination as part of their routine dental visits, since the plaque-induced gingivitis is a very common type of gingivitis in children and adolescents. The aim of this paper was to report the diagnosis and treatment of plaque-induced gingivitis in adolescents. In addition, this paper discusses the importance of a specific and individual treatment directed to young patient, since the psychological and behaviors changes that occur during this phase are related to the compliance and the good response after the treatment.

Key words: Periodontal Diseases, Gingivitis, Adolescent Psychology.

INTRODUCTION

Different forms of periodontal disease can affect children and adolescents, ranging from reversible conditions limited to the gingival tissues, to those characterized by loss of support of the affected tooth, which may jeopardize the longevity of the deciduous or permanent dentition. Epidemiological studies have indicated that the prevalence of destructive forms of periodontal disease is lower in young individuals than in adults¹. Nevertheless, gingivitis of varying severity is nearly universal in children and adolescents^{2,3}.

Plaque-induced gingivitis is the most common type of gingivitis in children and adolescents¹. The typical features of plaque-induced gingivitis include gingival redness, swelling, loss of contour, marginal bleeding, and pseudopockets in the absence of bone

loss, all of which are reversible following appropriate therapy. The mainly bacterial species present in this type of gingivitis are *Aggregatibacter actinomycetemcomitans* and *Porphyromonas gingivalis*^{3,4}. Therefore, fundamental principles need to be applied to manage periodontal problems in these patients together with an understanding of the causation, contributory risk factors and an appreciation of the different strategies inherent in working with children and adolescents patients compared with the adult ones.

The aim of this paper was to report two clinical cases of plaque-induced gingivitis in adolescents, and describe clinical and psychological aspects associated with the treatment procedures.

CASE REPORT

CASE 1

A.P.N.G., 13 years old female leucoderm was brought by her mother to the Department of Pediatric Dentistry at Piracicaba Dental School – State University of Campinas, Brazil. The patient main complaint was pain, spontaneous bleeding and while toothbrushing. An anamnesis was carefully undertaken to obtain information about the adolescent's oral health care, behavioral and physiological characteristics. Regarding the dietary habits, the family was asked to fill a diet chart for 3 consecutive days. It was evidenced a high frequency soft foods with low content of nutrients but high content of sugar.

Despite the fact that the adolescent was in good health and her medical history was uncontributory, a generalized plaque-induced gingivitis scenario was found, along with dental caries. The clinical examination revealed great coronary destructions due to caries on the primary maxillary right first molar and on the primary mandibular left second molar.

The periodontal examination showed typical features of plaque-induced gingivitis such as alteration in gingival morphology with loss of contour, gingival redness and bleeding, mainly during meals or toothbrushing. Furthermore, there were significant supragingival and subgingival calculus and pseudopockets on permanent incisors (Fig. 1), even though the patient did not present bone loss. The plaque index and gingival index were recorded as 100%⁵.



Figure 1: Periodontal exams showing the presence of plaque-induced gingivitis: loss of gingival contour, gingival redness and bleeding, supragingival and subgingival calculus (A-B) and pseudopockets on incisors (C-D).

Firstly, the patient was submitted to initial cause-related therapy to eliminate

local plaque-retention factors. During this phase, the destructed primary maxillary right first molar and the primary mandibular left second molar were extracted and the patient received clinical monitoring and instruction in proper home-care techniques, besides professional control of dental plaque and calculus.

Removal of dental calculus, both supragingival and subgingival, was accomplished by periodontal instrumentation based in scaling and root planning procedures using Gracey hand curettes (Gracey Hu Friedy, Chicago, USA) and ultrasonic scaler (Dabi Profi III-Bios, Dabi Atlante, Ribeirão Preto, SP, Brazil) with local anaesthesia. Three sessions with an interval of 1 week were necessary to complete this treatment.

During the re-evaluation (after 6 weeks) clinical parameters such as gingival index, plaque index, probing depth, recession and attachment level were recorded again. Although it has been observed reduction of the inflammatory parameters, the patient did not show compliance within the treatment. In this case, an extra session was necessary to remove dental biofilm and newly formed calculus. Furthermore, a rigid therapeutic regimen was required, consisting of improved personal biofilm control, since this patient lacked motivation and skill to maintain a gingival health.

On the second re-evaluation, after 6 weeks, it was observed a reduction of all clinical parameters of inflammation and a better compliance was obtained. Then, the patient was submitted to a regular maintenance care that consisted of motivation of oral hygiene instructions and professional supragingival plaque control, each month, by the use of manual curettes, rubber cups and an abrasive polishing paste.

At re-evaluation of 8 months, it could be observed a complete reversion of the inflammatory process, an adequate biofilm control and a satisfactory periodontal health condition (Fig. 2). Finally, the patient was maintained in supportive periodontal therapy with recall intervals of 4–6 months for maintenance of periodontal therapies success⁶.



Figure 2: After 8 months, a complete reversion of the inflammatory process can be observed as well as adequate biofilm control and a satisfactory periodontal health condition (A-D).

CASE 2

F.W.S., 11 years old, leucoderm male was brought to the Department of Pediatric Dentistry at Piracicaba Dental School – State University of Campinas, Brazil. The anamnesis revealed information about the oral health care and clinical and radiographic examinations were also performed. His past medical history was found to be unremarkable and within normal limits. The patient referred bleeding while brushing his teeth or during meals.

The clinical examination has shown alteration in gingival morphology, gingival redness and bleeding (Fig. 3). Despite the gingivitis, this patient did not present significant calculus and the plaque and gingival indexes were recorded as 63% and 48%, respectively⁵.

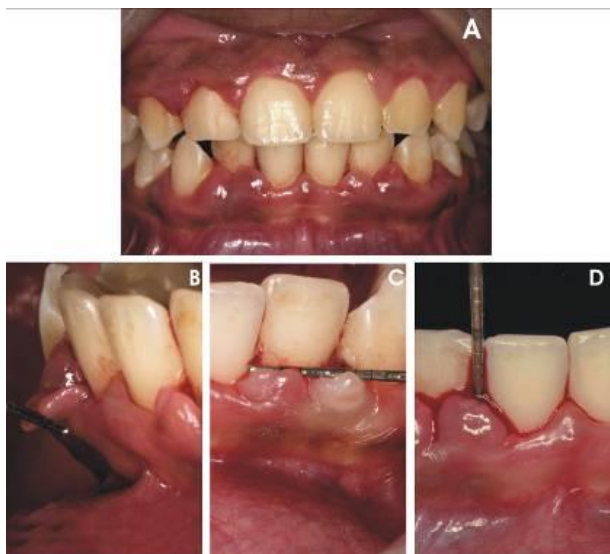


Figure 3: Clinical exam showing: alteration in gingival morphology and gingival redness (A), detached pseudopocket (B), calculus (C) and bleeding (D).

The patient was subjected to a therapeutic regimen consisting of motivation and improved personal biofilm control. After that, a scaling and root planning at one session using manual periodontal curettes (Gracey Hu Friedy, Chicago, USA) was performed.

At re-evaluation, after 6 weeks, a complete reversion of the inflammatory process was observed and an adequate biofilm control and satisfactory periodontal health condition were achieved. Furthermore, he has shown a good compliance and an adequate ability to remove biofilm, even after 6 months (Fig. 4). Then, the patient was maintained in supportive periodontal therapy with recall intervals of 4–6 months for maintenance of successful results of periodontal therapies⁶.



Figure 4: At re-evaluation, after 6 months, a complete reversion of the inflammatory process was observed (A). Adequate biofilm control and satisfactory periodontal health condition were achieved (B-C).

DISCUSSION

The periodontal diseases in children and adolescents are well documented and established⁷, but their prevalence, extent, severity and prognosis vary according to the type of disease in question. The mainly periodontal conditions that can affect young individuals include: (a) Gingival diseases (dental plaque-induced gingivitis only, gingival diseases modified by systemic factors, gingival diseases modified by medication, gingival diseases modified by malnutrition), (b) Chronic periodontitis, (c) Aggressive periodontitis, (d) Periodontitis as a manifestation of systemic diseases and (e) Necrotizing periodontal diseases (necrotizing ulcerative gingivitis, necrotizing ulcerative periodontitis)⁸.

The predominant form of periodontal disease in children and adolescents is plaque-induced gingivitis, which are almost an universal finding in young people^{1,2}. In this respect, some authors reported that the increase in gingivitis levels in the infancy and puberty may be mainly attributed to the biofilm accumulation and inflammatory changes associated with tooth eruption and exfoliation^{9,10}. Furthermore, this increase in gingivitis levels may be influenced by hormonal factors in puberty⁹. On the other hand, the decline in gingivitis, that is common after adolescence, may reflect an increased social awareness and better oral hygiene¹⁰.

During the clinical evaluation in children and young patients, some aspects need to be considered to obtain adequate and correct diagnosis. Studies have previously reported that the age has a significant influence on the probing depth at both lingual and buccal sites^{11,12}. Gomes-Filho *et al.*¹² have reported that in the majority of teeth, an increase in probing depth could be observed as age increased from 4 to 6 years. This is most likely due to the eruption of the permanent first molar, distal to this area, and the remodeling of the ramus and tuberosity in a growing child that provides space for second and third molars¹³. Moreover, for a correct diagnosis of gingivitis, is important to evaluate the maintenance of bone and verify if occasional bone loss would not be caused or influenced by caries or by the presence of imminent tooth exfoliation.

Another important point is the microbiological aspect, especially in children with mixed dentition, since it is possible that these pathogens remain in the area surrounding exfoliating primary teeth and continue to survive in the gingival sulcus around permanent teeth in the mixed dentition stage¹⁴. Even with gingivitis being considered a common finding in children, its monitoring and treatment in childhood could have considerable impact on prevention and, likely, on modulation of the disease in adults. Obviously, there is no direct proof that pediatric colonization by these bacteria predisposes an individual to adult periodontitis; however, the earlier the infection is established, the greater the opportunity the microorganisms have to establish themselves¹⁵.

There are three important phases in the periodontal treatment associated with plaque-induced gingivitis: initial cause-

related therapy to eliminate or control plaque infections; corrective therapy to provide therapeutic measures and restore function and aesthetics; and supportive therapy to prevent disease recurrence and progression with follow-up recalls arranged at a time interval appropriate to the diagnosis⁶.

Regarding plaque induced gingivitis, some patients without significant calculus, alteration in gingival morphology or systemic disease that affects oral health, may respond to a therapeutic regimen consisting of improved personal biofilm control alone¹⁶. However, while it may be possible, under controlled conditions, to remove most biofilm with a variety of mechanical oral hygiene aids, many patients, mainly children, lack the motivation and skill to attain and maintain a gingival health for significant periods of time¹⁷, as observed in the first patient of the present case report. Furthermore, since oral hygiene level may be associated with the severity of gingivitis at this phase of the treatment, it is very important to improve the motivation of the patient and parents on the plaque control.

Because adolescence is a time transition affected by many factors in the development of identity and autonomy, psychological changes that occur during this period are related to the evolving relationship with parents, which can have an impact on the relationship with dental professionals¹⁸. It is possible that the adolescent perceives the dentist as an authority figure who has to be questioned and, thus, non-compliance may be an issue. On the other hand, concern about appearance may provide a motivation for regular attendance and increased perception of need. The dental team needs to take advantage of the developmental characteristics and spend additional time providing oral home care instructions and suggestions for improving gingival health, as well as guidance directed toward the adolescent's general health and appearance¹⁹. The communication should be clinically relevant and psychologically sensitive to meet the teenager's needs. For social impact, appearance was the highest concern for girls and boys and a motive for caring for teeth. Adolescents may be influenced to change behaviors only when there are immediate consequences to their actions. They also need to buy into the process and assume ownership for oral self-

care-enhancing behaviors¹⁹. In this context, the motivation program was instituted for both adolescent patients with an open dialogue and encouragement for them to take control over their own health, regarding psychological, behavioral and aesthetic aspects. They were talked into participating actively in the biofilm control through teeth-brushing and flossing, both guided by the dentist.

Clinical trials indicate that self-administered biofilm control programs alone, without periodic professional reinforcement, are inconsistent in providing long term inhibition of gingivitis²⁰. Furthermore, it is well accepted that regular maintenance of professional care is essential for the long-term success of periodontal therapies. The therapeutic goals of supportive periodontal therapy are to prevent or minimize the recurrence and progression of periodontal inflammation; prevent the incidence of tooth loss by monitoring the dentition; increase the probability of locating and treating in a timely manner other diseases or conditions found within the oral cavity. The interval between recalls of supportive periodontal therapy depends on the patient's response to treatment, biofilm control, risk factors, patient motivation, compliance and the initial diagnosis. In summary, recall intervals of 4–6 months⁶ may be appropriate for most young patients who have been successfully treated for gingivitis, but this should be determined on an individual basis completed⁷.

In conclusion, periodic periodontal evaluations should be considered as a component of routine dental visits in young patients so to enable the early diagnosis, which is imperative for a successful treatment, since the integrity of primary teeth and their structures could influence the stability of occlusion and the health of the permanent dentition. In addition, specific individual treatment to adolescents need to be directed to each patient, since the psychological and behaviors changes that occur during this phase are related to the compliance of the young patients and the successes of the treatment.

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