

Health Sciences

Volume 4 | Issue 1

Article 15

Prepubertal periodontitis in children: for an adequate diagnosis and optimal care

F.Z. El Mouatarif

Department of Paediatric Dentistry, Faculty of Dentistry Mohammed VI university of Health and Sciences, fz.elmouatarif@gmail.com

S. Chemlali

Department of Periodontology, Faculty of Dentistry Hassan II University Morocco

M. Hamza

Department of Paediatric Dentistry, Faculty of Dentistry, Hassan II University Morocco

J. Kissa

Department of Periodontology, faculty of Dentistry, Hassan II University Morocco

S. El Arabi

Department of Paediatric Dentistry, Faculty of Dentistry , Hassan II University Morocco.

Follow this and additional works at: <https://publishing.universitypress.ma/health-sciences>



Part of the [Biomedical Engineering and Bioengineering Commons](#), [Dentistry Commons](#), [Nursing Commons](#), [Pharmacy and Pharmaceutical Sciences Commons](#), and the [Public Health Commons](#)

Recommended Citation

El Mouatarif, F.Z.; Chemlali, S.; Hamza, M.; Kissa, J.; and El Arabi, S. (2023) "Prepubertal periodontitis in children: for an adequate diagnosis and optimal care," *Health Sciences*: Vol. 4: Iss. 1, Article 15.

DOI: 10.56264/2658-865X.1077

Available at: <https://publishing.universitypress.ma/health-sciences/vol4/iss1/15>

This Case Report is brought to you for free and open access by Health Sciences. It has been accepted for inclusion in Health Sciences by an authorized editor of Health Sciences.

CASE REPORT

Prepubertal Periodontitis in Children: For an Adequate Diagnosis and Optimal Care

Fatima Z. El Mouatarif ^{a,*}, Siham Chemlali ^b, Mouna Hamza ^c,
Jamila Kissa ^b, Samira El Arabi ^c

^a Department of Paediatric Dentistry, Faculty of Dentistry, Mohammed VI University of Health Sciences, Casablanca, Morocco

^b Department of Periodontology, Faculty of Dentistry, Hassan II University of Casablanca, Casablanca, Morocco

^c Department of Paediatric Dentistry, Faculty of Dental Medicine, Hassan II University of Casablanca, Casablanca, Morocco

Abstract

Prepubertal periodontitis (PP) is a rare and rapid progressive condition found a young cohort of patients that results in destruction of the periodontal support of the primary dentition. Its generalized form, prepubertal periodontitis is often associated with a significant gingival tissue inflammation and fast bone loss with attachment loss leading to the tooth loss. The localized form of PP is characterized by a much more discreet inflammation and slow evolution. It can be associated with a known underlying systemic disease or may occur as part of a recognized syndrome or as an isolated finding. Different treatment modalities can be used to monitor prepubertal periodontitis, but the best approach to managing periodontal diseases is plaque control.

The purpose of the present study was a case report of a 3-year-old child that was referred to Casablanca Dental University Center at Hassan II University, showing all the classical features of the disease prepubertal periodontitis.

Keywords: Prepubertal periodontitis, Children, Diagnosis, Treatment

1. Introduction

Traditionally, periodontitis is considered to be 'a disease of the periodontium occurring in an otherwise healthy adolescent and is characterized by rapid loss of alveolar bone involving more than one tooth of the permanent dentition. The amount of destruction is not manifested commensurate with the amount of local irritants present' [1]. In particular, it is characterized by severe gingival inflammation, rapid bone loss, tooth mobility, and tooth loss. Periodontitis may be localized or generalized, and can impact both the primary and mixed dentition. The generalized form of periodontitis is often associated with a significant gingival tissue inflammation and fast bone loss with attachment loss leading to the tooth loss while its localized form is characterized by a much more discreet inflammation and slow evolution.

Prepubertal periodontitis (PP) is probably a rare disease affecting primary dentition. It has been suggested that the removal of the pathogenic microflora during primary dentition through early extraction of the teeth involved, plus daily local, mechanical and chemical control of the irritant factors may have prevented consequent damage to residual teeth in prepubertal periodontitis (PP).

Here we report a case of a 3-year-old prepubertal child treated at Casablanca Dental University Center and describe the clinical features, and periodontal treatment outcomes in this patient.

2. Case report

The patient used in this report is a 3-year-old boy presented to the Casablanca Dental University Center at Hassan II University due to pain at the anterior sector. During his first visit, a comprehensive evaluation was performed by means of clinical

Received 2 August 2022; revised 14 April 2023; accepted 14 April 2023.
Available online 11 September 2023



* Corresponding author at: Department of Paediatric Dentistry Dentist, Casablanca College of Dentistry Hassan II University- Morocco, Morocco.
E-mail address: fz.elmouatarif@gmail.com (F.Z. El Mouatarif).

<https://doi.org/10.56264/2658-865X.1077>

2658-865X/© 2023 F.Z. El Mouatarif et al. Published by University Press of Morocco - Mohammed VI University of Health Sciences. This is an open access article under the CC BY 4.0 license (<https://creativecommons.org/licenses/by/4.0/>).



Fig. 1. Clinical examination of patient.

and radiographic examinations, which revealed an ulcerated gingival enlargement with overlying mucosa, associated with early childhood caries (Figs. 1 and 2).

Treatment plan: The patient received pulpal and conservative treatment, coupled with pedodontic crown placement under sedative premedication. At follow-up, a progressive gingival recession on 53, 83

with 4 mm pockets at the molars, and abscess related to 54, 84, 74 were observed (Fig. 3). Recession of gingival arouse suspicion of prepubertal periodontitis.

This finding prompted the completion of a radiological examination. Results (Fig. 4) indicated angular osteolysis at the lower side and incisive sectors, with a very pronounced lysis at the 53. Clinical and radiological assessment confirmed the presence of prepubertal periodontitis. The patient was, then, referred for a general medical evaluation to rule out any underlying systemic disease. His pediatrician hence performed further testing.

Teleradiography, a radio face and a calcium phosphate did not reveal anything abnormal.

Treatment of prepubertal periodontitis consisted of subgingival scaling followed by curative antibiotic therapy (Amoxil 250 mg, Métrozal 100 mg et Enterogermina) administered for a period of 8 days. However, plaque control remains the most important measure for satisfactory results. Clinical and

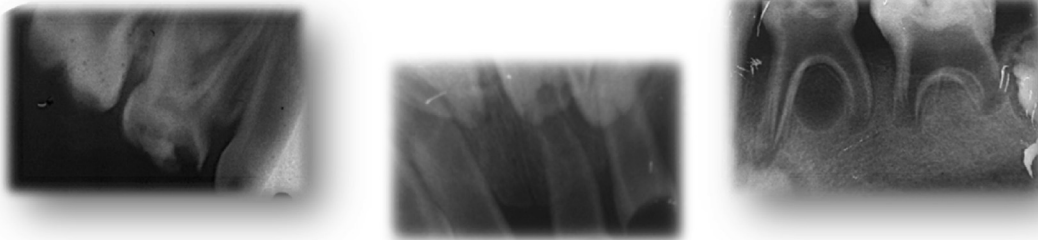


Fig. 2. Radiological examination.



Fig. 3. Follow-up sessions: complications on 54,74,84.

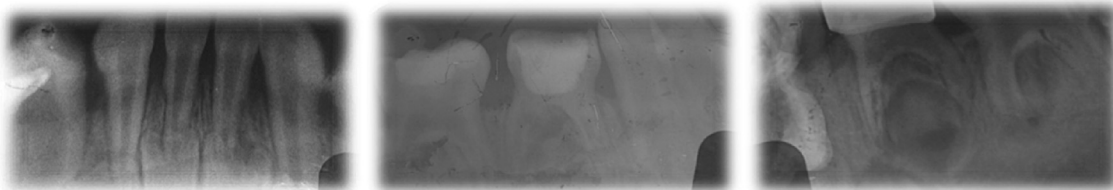


Fig. 4. Radiographic examination showed angular osteolysis at the lower side and incisive sectors, with a very pronounced lysis at the 53.

radiological re-evaluation after 2 years showed significant improvement, the disease appeared to have been controlled. Unfortunately, the patient did not present for any follow-up appointment.

3. Discussion

Children, adolescents, and young adults are not exempt from diseases. Distinct types of diseases, based on the 1999 international workshop for classification of periodontal diseases and conditions, occur in young populations, namely gingivitis, periodontitis as a manifestation of systemic diseases, localized or generalized prepubertal aggressive periodontitis (prepubertal periodontitis), chronic periodontitis, and necrotizing periodontal diseases [1,2].

Page and al. were the first to have described prepubertal periodontitis as an independent medical condition. The onset of the disease usually occurs during or soon after the eruption of the deciduous teeth. Both familial clustering of prepubertal periodontitis and a higher incidence in females have been documented [1].

Albandar & Tinoc estimated that chronic periodontitis prevails in 2–5% of the population. Less than 1% prevalence rate was reported for aggressive periodontitis. The predominance of aggressive periodontitis is higher in Africans and African Americans (1–3%) compared to Caucasians (<1%), Hispanics (<1-1%) and Asians (<1-1%) [2].

Several studies have reported a higher prevalence of periodontitis in subjects of African subjects than any other populations (Harley and Floyd, 1988, Loe and Brown, 1991). A strong association between the JP2 clone of *Aggregatibacter actinomycetemcomitans* and early-onset periodontitis have also been reported in the literature (Haubek et al., 1996, 1997; Contreras et al., 2000; Haraszthy et al., 2000) [3]. For instance, in their cross-sectional study, Haubek et al. (2001) reported a high prevalence of early-onset periodontitis in Moroccan adolescents, and demonstrated a strong association between the JP2 clone of *A. actinomycetemcomitans* and early-onset periodontitis [4].

The generalized form affects all the deciduous teeth and sometimes the permanent dentition as well. This is often accompanied by an acute inflammation of the gingival tissues and a rapid destruction of the periodontium, leading to premature teeth exfoliation. Severe gingival recession and cleft formation are also present in some patients [1].

Most prepubertal periodontitis patients suffer from related systemic diseases (e.g., human immunodeficiency virus) that alter the host responses to

the microbial dental plaque [5,6]. In the absence of these, patients are considered as healthy prepubertal children. Pathogenic bacteria (e.g., *A. actinomycetemcomitans*) as well as cementum and/or functional defects in host defense systems are strongly associated with the development of periodontitis in children [7].

In our case, despite having severe periodontitis, the child had no history of systemic diseases or infections.

Current diagnostic criteria used to assess the presence of periodontal diseases include, but are not limited to clinical measurements of periodontal attachment loss, radiographic assessment of alveolar bone loss, age, and presence of systemic diseases [2,8,9].

In the case reported here, three main characteristics of prepubertal periodontitis were observed [1]: progressive recession on 53, 83 with 4 mm deep pockets at the molars [2], abscess related to 84, 54, 74 whose periodontal origin was suspected, and [5] angular osteolysis at the lower side and incisive sector.

It is a well-known fact that periodontal diseases are caused by multifactorial etiologies, in which microorganisms play an important role. An essential component of therapy is to eliminate or manage these pathogens. This has been traditionally accomplished through by scaling and root planning which has proven insufficient in some cases of aggressive periodontal diseases [7]. These aggressive diseases involve particular groups of microorganisms that are not eliminated by mechanical means, and they, therefore, require anti-infective therapy, including local and systemic antimicrobials [7]. The most effective antibiotics for the treatment of periodontal diseases are the tetracyclines, sometimes prescribed together with metronidazole. Combined metronidazole-amoxicillin is also utilized, especially in the presence of tetracycline-resistant *A. actinomycetemcomitans* [10].

In our case, teeth that were considerably affected by periodontal disease were extracted. The extraction process eliminated unwanted habitats and potential reservoirs of periodontal pathogens. Combining a systemic antibiotic regimen with a subgingival mechanical plaque control program has been shown to be a valuable therapeutic approach in early-onset periodontitis.

To control plaque, the patient in our study was instructed to use 0,12% chlorhexidine mouth wash during the first week of treatment.

In the last decade, an increasing body of evidence has given support to the existence of an association between periodontal disease, and systemic diseases [11]. With scientific advances in the study of the links

between periodontal disease and systemic conditions relationship, the dental field is becoming more aware of the importance of early detection and treatment of various periodontal diseases. A fundamentally important measure of oral health care.

Conflict of Interest

The authors have declared no competing interest.

References

- [1] Shetty Raghavendra M, Goyal Anita, Shetty Sunaina. Pre-pubertal Periodontitis: A rare case report. *Int J Sci Stud* 2015; 2(12).
- [2] Denis F, Kinane. Periodontal disease in children and adolescents: introduction and classification. *Periodontology* 2000;26(2001):7–15.
- [3] Haubek D, Dirienzo J, Tinoco E. Racial tropism of a highly toxic clone of *actinobacillus actinomycetemcomitans* associated with juvenile periodontitis. *J Clin Microbiol* 1997; 35.
- [4] Haubek D, Ennibi O-K, Poulsen K. Early-onset periodontitis in Morocco is associated with the highly leukotoxic clone of *actinobacillus actinomycetemcomitans*. *J Dent Res* 2001;80(6): 1580–3.
- [5] Cabanilla Leyvee, Molinari Gail. Clinical considerations in the management of inflammatory periodontal diseases in children and adolescents. *J Dent Child* 2009;76(2).
- [6] Meyle Joerg, Jose R, Gonza Les. Influences of systemic diseases on periodontitis in children and adolescents. *Periodontology* 2000;26(2001):92–112.
- [7] Kini Vineet, Patil Raju Umaji, Pathak Tushar, Prakash Amit, Gupta Bharat. Diagnosis and management of periodontal disease in children and adolescents: A brief review. *J Dent Allied Sci* 2016;5(2):78–83.
- [8] Bodur Ayen. Generalized aggressive periodontitis in a pre-pubertal patient: A case report. *Quintessence Int* 2001;32:303–8.
- [9] Bimstein E/Wignall W. Root surface characteristics of children teeth with periodontal diseases. *J Clin Pediatr Dent* 2007;32(2):101–4.
- [10] Vagdouti, Tsilingaridis. Periodontal diseases in children and adolescents affected by systemic disorders - a literature review. *Int J Oral Dent Health* 2018;4:55.
- [11] Ahuja Annapurna, Baiju CS, Ahuja Vipin. Role of antibiotics in generalized aggressive periodontitis: A review of clinical trials in humans. *J Indian Soc Periodontol* 2012;16(Issue 3). Jul–Sep.