

Compulsive brushing in an adolescent patient: case report

José J. Echeverría, MD, DDS, MS Izaskun Lasa, DDS Juan Ramón Boj, MD, DDS, MS

Introduction

Gingival recession is common in many patients, and generally is associated with periodontal disease,¹ inadequate toothbrushing,² and repeated periodontal instrumentation,³ among other etiologies. Gingival recession as a consequence of regular toothbrushing has been reported,⁴ and can be observed even in young populations with well-established habits of oral hygiene.⁵ Gingival recession also is associated with self-inflicted injuries, whether intentional or not,⁶ using toothbrushes, toothpicks, fingernails and other materials that may produce acute, localized, or more extensive lesions.⁷⁻⁹ Localized lesions, termed "gingivitis artefacta minor,"¹⁰ usually are due to some superimposed lesion or overzealous toothbrushing habits. Extensive lesions, also called "gingivitis artefacta major," are generally the result of compulsive behavior.¹¹ These cases are found mostly among children with emotional disturbances, and deserve careful diagnosis and adequate treatment.¹² This paper presents a case of severe gingival recession and periodontal destruction due to compulsive toothbrushing.

Case report

History of present illness

A 13-year-old girl was referred to a periodontist by a pediatric dentist because of occasional bleeding, gingival ulceration, and localized gingival recession in the maxillary left quadrant of her mouth. Her parents said

they had discovered the condition 3 months earlier and had visited three physicians, including an oral and maxillofacial surgeon. Different diseases, like leukemia or eosinophilic granuloma had been ruled out because all radiologic and laboratory tests appeared normal. The patient had taken antibiotics, both locally and systemic, without any improvement.

Clinical findings

Clinical findings of the periodontist, included severe gingival recession extending from the maxillary left canine to the distal aspect of the maxillary left first molar on the buccal side, and obvious ulceration of the gingival tissue in the interproximal areas of the same teeth (Fig 1). The affected area bled easily, but the patient reported no pain. The contralateral side appeared healthy, and no other pathological changes were observed in the oral cavity.

Treatment

Due to the characteristics of this case, an external trauma was considered to be the cause of gingival recession. As a result of a frank and friendly conversation with the patient, it became clear that the cause of the injury was compulsive toothbrushing. The patient also explained that she was very upset with her parents because they did not pay enough attention to her. The periodontist then explained to the patient the clinical significance and consequences of such behavior. Her parents were informed about the direct and indirect

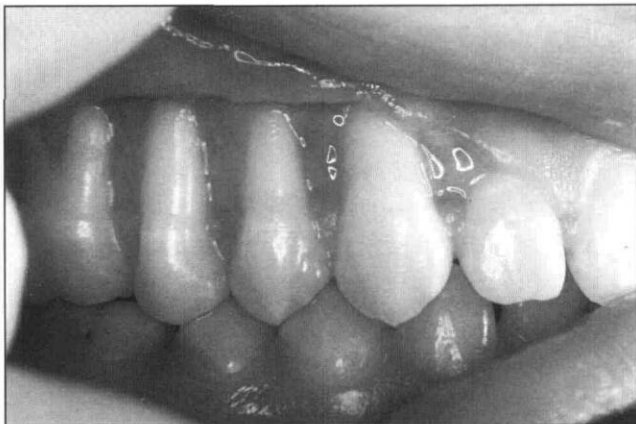


Fig 1. Gingival recession following repeated episodes of compulsive toothbrushing; clinical aspect at first visit.

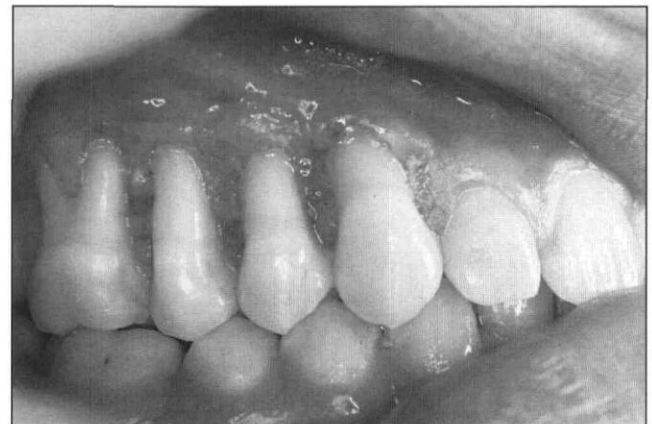


Fig 2. Four weeks after cessation of mechanical toothbrushing, partial healing of the gingival tissue can be observed.

factors involved in this case. They were told she should have professional psychological care if the case didn't improve. The periodontist prescribed 0.2% chlorhexidine mouth rinses twice a day as the only oral hygiene measure in the upper left quadrant, while in the rest of the mouth, regular toothbrushing was maintained. Four weeks later, clinical improvement was observed (Fig 2). The same therapeutic regimen was continued for 2 months, after which gentle and proper toothbrushing was initiated. Complete re-epithelization of the gingival tissue was observed at 4 months, although at that time gingival recession was also evident at the interproximal areas of the affected teeth. The patient was seen every 4 months, with no signs of abnormal toothbrushing evident on clinical examination. Two years later, a significant, albeit incomplete, coverage of the previously denuded roots was observed on the buccal aspects of the involved teeth (Fig 3), and mucogingival surgery is not anticipated. No other signs of gingival recession have appeared in the mouth during this period of time (Fig 4). Patient compliance has been excellent. Professional psychological therapy was not carried out, since no other signs of emotional disturbance were observed, and the behavior of the patient seems to be normal.

Discussion

In this case, the pediatric dentist and the periodontist ruled out systemic and neoplastic diseases as the cause of the gingival recession because: of the macroscopic aspect and solitary appearance of the lesion, the gingival recession was observed only in the buccal aspect of the affected teeth, and the interproximal gingiva was ulcerated but not destroyed. Furthermore, the general health of the patient was excellent and laboratory results were normal. Dental plaque was almost nonexistent, and the periodontal condition in the rest of the oral cavity was excellent. Although periodontal diseases

may affect children and adolescents, sometimes resulting in severe destruction of periodontal support and gingival recession,¹³ the clinical aspect differs widely from that observed in this case. Once systemic and local diseases are ruled out, some exogenous trauma must be suspected, specifically self-inflicted trauma.¹⁴ A candid conversation with the patient determined that she had been brushing the affected area compulsively for several weeks, because of emotional stress. Emotional factors must be suspected and identified in cases of self-inflicted trauma and both conditions must be treated. In this case, the periodontist was able to motivate the patient to discontinue the compulsive habit, with progressive healing of the gingival ulceration. To obtain such a result, several visits were considered necessary, mostly to demonstrate care and support to the patient. In other similar cases, however, professional psychological treatment also may be necessary.¹⁵

Gingival injuries frequently cause apical migration of the gingival cuff, resulting in gingival recession¹⁶ — implying previous loss of periodontal tissue.¹⁷ Spontaneous regeneration of the lost tissue cannot be expected, although a certain amount of new gingival tissue covering the previously denuded root surface often is observed on buccal surfaces after several months, as in this case. In proximal areas, gingival recession, when present, does not tend to improve over time. Lack of gingiva as a consequence of gingival recession does not necessarily need to be treated to avoid further loss of periodontal attachment or to favor adequate oral hygiene.¹⁸ However, esthetic factors may justify mucogingival surgery to treat gingival recession.¹⁹

Dr. Echeverría is professor of periodontics, Dental School, University of Barcelona, Barcelona, Spain. Dr. Lasa is in private practice, Bilbao, Spain. Dr. Bojis is professor, pediatric dentistry, Dental School, University of Barcelona, Barcelona, Spain.

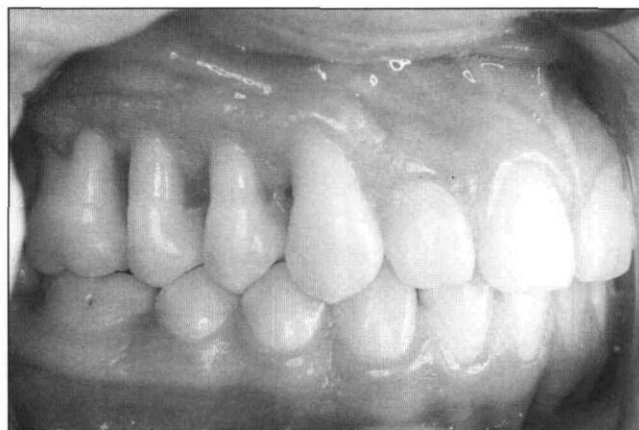


Fig 3. After 2 years of maintenance care, gingival recession has improved significantly.

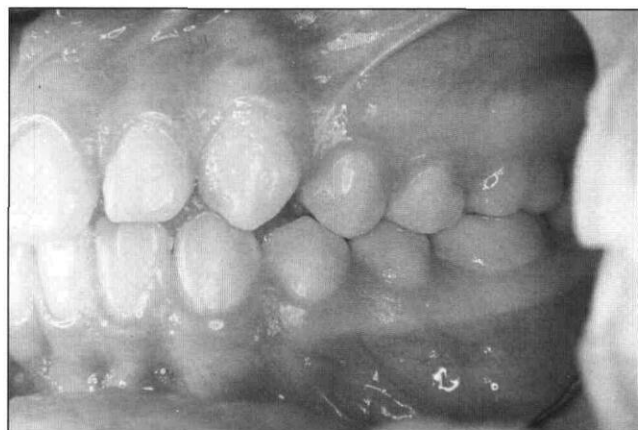


Fig 4. Clinical aspect of the right quadrants shows no signs of gingival recession.

1. Bernimoulin JP, Curilović Z: Gingival recession and tooth mobility. *J Clin Periodontol* 4:107-14, 1977.
2. Björn AL, Andersson U, Olsson A: Gingival recession in 15-year-old pupils. *Swedish Dent J* 5:141-46, 1981.
3. Loe H, Anerud A, Boysen H: The natural history of periodontal disease in man: prevalence, severity and extent of gingival recession. *J Periodontol* 63:489-95, 1992.
4. Sangnes G: Traumatization of teeth and gingiva related to habitual tooth cleaning procedures. *J Clin Periodontol* 3:94-103, 1976.
5. Källestal C, Matsson L: Periodontal conditions in a group of Swedish adolescents II. Analysis of date. *J Clin Periodontol* 17:609-12, 1990.
6. Pattison GL: Self-inflicted gingival injuries: literature review and case report. *J Periodontol* 54:229-304, 1983.
7. Groves BG: Self-inflicted periodontal injury. *Br Dent J* 147:244-46, 1979.
8. Bakdash MB: Anomalous destruction caused by the use of toothpicks. *Oral Surg Oral Med Oral Pathol* 46:167-68, 1978.
9. Raab FJ, Young LL: Episodic factitious gingival injury secondary to topical anesthesia: a case report. *J Periodontol* 62:402-6, 1991.
10. Stewart DJ: Minor self-inflicted injuries to the gingivae: gingivitis artefacta minor. *J Clin Periodontol* 3:128-32, 1976.
11. Stewart DJ, Kernohan DC: Self-inflicted gingival injuries: gingivitis artefacta, factitial gingivitis. *Dent Pract Dent Rec* 22:418-26, 1972.
12. Hoffman HA, Baer PN: Gingival mutilation in children. *Psychiatry* 31:380-86, 1968.
13. Baer PN, Benjamin SD: Gingival atrophy. In: *Periodontal Disease in Children and Adolescents*. Philadelphia: JB Lippincott Co, 1974, pp 101-8.
14. Golden S, Chosack A: Oral manifestations of a psychological problem. *J Periodontol* 35:349-50, 1964.
15. Ayer WA, Levin MP: Self-mutilating behavior involving the oral cavity. *J Oral Med* 29:4-7, 1974.
16. Stahl SS, Slavkin HC, Yamada L, Levine S: Speculations about gingival repair. *J Periodontol* 43:395-402, 1972.
17. Ainamo J, Paloheino L, Nordblad A, Murtomea H: Gingival recession in schoolchildren at 7, 12 and 17 years of age in Espoo, Finland. *Community Dent Oral Epidemiol* 14:283-86, 1986.
18. Wennström JL, Lindhe J: Role of attached gingiva for maintenance of periodontal health. Healing following excisional and grafting procedures in dogs. *J Clin Periodontol* 10:206-21, 1983.
19. Miller PD Jr: Root coverage using a free soft tissue autograft following citric acid application III. A successful and predictable procedure in areas of deep-wide recession. *Int J Periodontol Rest Dent* 5:14-37, 1985.



William C. Berlocher, DDS recently took over as Chair of the American Board of Pediatric Dentistry.

He received his DDS from the University of Texas Dental Branch at Houston, his certificate in pediatric dentistry from the University of Texas Health Science Center at

San Antonio and his Masters in Education from the University of Texas at San Antonio. He is a Diplomate of the ABPD and a Fellow of the American Academy of Pediatric Dentistry.

Dr. Berlocher has published numerous articles and has lectured widely. He has served as president of the Texas Academy of Pediatric Dentistry and currently is chair of the Advisory Committee on Pediatric Dentistry Advanced Education to the Commission on Dental Accreditation of the American Dental Association. He is active in the AAPD and has been a member of numerous Academy committees.

Dr. Berlocher served in the US Public Health Service and as faculty at the University of Texas Health Science Center at San Antonio where he directed the postdoctoral training program in pediatric dentistry. He currently practices in Corpus Christi, Texas.



Dr. Stephen Brandt was recently elected a Director of the American Board of Pediatric Dentistry at the annual meeting of the American Academy of Pediatric Dentistry in Orlando, Florida. He is a Diplomate of the ABPD, is a fellow of the American Academy of Pediatric Dentistry, and has been a consultant to the ABPD for the last 10 years. He is a member of the AAPD subcommittee on development of a handbook of pediatric dentistry.

After receiving his DDS from the University of Texas Dental Branch of Houston, Brandt entered the US Air Force and completed a General Practice Residency at Eglin Air Force Base in Florida. After serving two additional years in the Air Force he completed his pediatric residency at the University of Texas Health Science Center in San Antonio and later was a member of the faculty there teaching in the residency program. Brandt is Vice-President of the Texas Academy of Pediatric Dentistry and maintains a private practice in Killeen, Texas.

After receiving his DDS from the University of Texas Dental Branch of Houston, Brandt entered the US Air Force and completed a General Practice Residency at Eglin Air Force Base in Florida. After serving two additional years in the Air Force he completed his pediatric residency at the University of Texas Health Science Center in San Antonio and later was a member of the faculty there teaching in the residency program. Brandt is Vice-President of the Texas Academy of Pediatric Dentistry and maintains a private practice in Killeen, Texas.