Severe periodontitis treated by nonsurgical periodontal therapy

Shahabe Saquib Abullais¹, Mohammad Yunis Saleem Bhat¹, Anoop Gore², Aashima Gupta³

¹Department of Periodontics and Community Dental Sciences, King Khalid University, Abha, Asir, Saudi Arabia, ²Department of Periodontics, Khambe Dental College and Hospital, Akola, Maharashtra, India, ³Department of Oral Diagnosis and Radiology, Pacific Dental College and Hospital, Udaipur, Rajasthan, India

Abstract

The basic aim of periodontal therapy is to eliminate the basic etiological agent responsible for the disease. A treatment is basically divided into nonsurgical and surgical periodontal therapy. Nonsurgical periodontal therapy remains an integral part of periodontal treatment. In most of the periodontitis cases, an improvement in the clinical signs and symptoms of disease can be seen by simply performing scaling, root planing, and thorough periodontal debridement. A 45-year-old female patient reported to Department of Periodontology complaining of gingival bleeding, pus discharge, halitosis, and gingival enlargement in the anterior region of the jaw. The patient noticed the problems 1 year back which was gradually increasing in severity. The patient was medical fit. In this case, a complete elimination of severe periodontal disease was achieved by scaling and root planing with a frequent maintenance visit without any surgical intervention in the patient.

Keywords: Periodontal pockets, periodontitis, plaque and calculus, scaling and root planing

Introduction

Periodontal diseases are one of the most common diseases of the oral cavity. Two main classes of periodontal disease are gingivitis and periodontitis. Periodontitis is associated with alveolar bone loss, pocket deepening, and loss of attachment. Periodontal disease is infectious in nature and it is associated with plaque biofilm.

The main challenge in the treatment of periodontal disease is that it is impossible to completely eliminate bacteria from oral cavity. In addition to that the bacteria in the plaque are more resistant to the antibiotics. Although it is clear that plaque is essential for the initiation of periodontal disease, the severity and extent of the disease are not completely explained by the amount of plaque only. Other factors, such as host immune response and environmental factors, are also important in initiation and progression of the disease.

According to the American Academy of Periodontology, the main aim of periodontal therapy is to maintain and preserve the natural dentition.¹ There are various treatment options available for the treatment of periodontal disease; they are broadly classified into surgical and non-surgical. According to the American Academy treatment guidelines, periodontal health should be achieved in the most cost-effective and least invasive manner. These goals can be achieved through nonsurgical periodontal therapy. Surgical periodontal therapy is indicated if the desired results are not achieved by the nonsurgical periodontal therapy, because of certain limitations of the nonsurgical therapy.

Nonsurgical therapy includes plaque control, scaling and root planing, and the adjunctive role of chemotherapeutic agents locally or systemically. The basic objective of non-surgical therapy is to reduce the bacterial load and alter the microbial composition toward a flora more associated with health. In turn, these microbiologic changes result in a reduction in inflammation and stable periodontal attachment levels.²³ Most periodontist would agree with the fact that, many patients do not require any further invasive surgical treatment if effective scaling and root planing is delivered. However, the majority of patients will require ongoing maintenance therapy to sustain health.

Case Report

A 45-year-old female patient reported to Department of Periodontology complaining of gingival bleeding, pus discharge, halitosis, and gingival enlargement in the anterior region of the jaw. The patient noticed the problems 1 year back, which was gradually increasing in severity. The patient was medical fit and with no history of medication, systemic health seemed to be non-
contributory to the periodontal disease, and there was no history of hormonal disturbances.

The intraoral examination revealed diffuse inflammatory gingival enlargements with 11, 12, 31, 32, 41 anterior regions of both the arches [Figure 1]. Enlargement was of Grade II according to the Bokenkamp classification system.[4] Gingival and periodontal examination revealed generalized deep periodontal pocket of 5-9 mm [Figures 2 and 3], pocket examination was done by Michigan O probe with Williams graduated markings with, pockets in upper and lower anterior region were combined (true + pseudo) because of the gingival enlargement in that region; chronic periodontal abscess was recorded with 11, 36, 37 and 47. Various grades of mobility were associated with respective teeth; Grade I with 11, Grade II with 32 and Grade III mobility were present with 31, 41 and 42, respectively. Extrusion was associated with 11, suggesting of pathological migration. The case was diagnosed as chronic generalized severe periodontitis depending on the nature of the disease, distribution of the disease and amount of attachment loss.

Inform consent was obtained from the patient in the written form before starting the treatment. The treatment plan advised to patient was; extraction of hopeless teeth, i.e., 31 and 41. 32 and 42 were kept under observation to assess the mobility, if mobility is progressive then extraction with 32 and 42 because that will not serve as a good abutment for removable partial denture/fixed partial denture. Abscess drainage and antibiotic coverage were advised to limit the bacterial etiological agents. Scaling and root planing were advised to eliminate local etiological agent, i.e., calculus and plaque which will result in a reduction in pocket depth, if the pocket still persists then intervention with surgical periodontal therapy. Comprehensive plaque control including flossing, the use of interproximal brush and 0.2% of chlorhexidine mouthwash was advised to the patient as a part of home care. After explaining complete treatment plan to the patient, she was reluctant to the surgical therapy because of psychological fear against the surgical therapy. The only treatment option left was no-surgical periodontal therapy.

After consecutive sittings of scaling and root planing and comprehensive oral hygiene maintenance as a part of home care patient showed significant improvement in the gingival and periodontal condition [Figure 4]. One year follow-up of the patient showed complete resolution of inflammation, gingival enlargement suppuration and probing depth reduction to 3 mm [Figures 5 and 6]. The periodontal condition reverts back to normal only by efficient scaling and root planing and regular maintenance visit.

---

**Figure 1:** Pre-operative intraoral view with severe gingival enlargement and inflammation

**Figure 2:** Pre-operative probing depth revealed deep periodontal pockets with maxillary arch

**Figure 3:** Pre-operative probing depth revealed deep periodontal pockets with mandibular arch

**Figure 4:** One year post-operative intraoral view with complete resolution of inflammation
Nonsurgical periodontal therapy

Discussion

The basic goal of periodontal therapy is to preserve a functional natural dentition of the patient. With significant advances in diagnostic techniques and a better understanding of the etiopathogenesis of periodontal disease it became easy to understand periodontal disease.\textsuperscript{[5,6]} Despite these advances, however, we continue to use the same basic therapy as described by Abu'l-Qasim in the first century AD.\textsuperscript{[7]} Nonsurgical periodontal therapy is still considered as the gold standard to which other treatment methods are compared instead of various advancement in the treatment modalities. The cleaning of the root surface in the prevention of periodontal disease was first recognize by Bunting.\textsuperscript{[8]} Many clinical studies conducted in the past few decades have confirmed the effectiveness of the scaling and root planing in the treatment of periodontal disease.\textsuperscript{[9-11]}

In this case report, because of the psychological limitation nonsurgical periodontal therapy has been given to the patient which resulted in resolution of the periodontal inflammation and pocket. The core of the treatment consisted of repeated through scaling and root planing by the specialist and comprehensive home care regimen by the patient. In the routine clinical practice such cases are comprehensively treated by periodontal flap surgery. But in some limited cases where we cannot perform the surgery because of medical or psychological limitation, we have to restrict our self to nonsurgical therapy. In such condition, this case report will be helpful to the clinician. While treating such cases, long-term maintenance of the result should be the basic aim of the clinician and not just the mere reduction in the clinical parameter like pocket depth and periodontal inflammation.

Conventional nonsurgical mechanical therapy is usually performed in a quadrant-wise or sextant-wise manner. Recent data indicate that periodontal pathogens reside in intraoral sites such as tongue, mucosa, saliva, and tonsils, other than periodontal pockets, and translocation might occur between these ecologic niches as well as between individuals. If such a translocation occurs, it seems logical that during conventional mechanical therapy, an already treated pocket could be reinfected from periodontal pathogens colonizing other untreated pockets or the extra dental domains. This would adversely affect the treatment outcome. Such a revelation would call for a change in our approach, if we intend to improve the effectiveness of nonsurgical mechanical therapy. A full-mouth approach to non-surgical therapy was thus suggested recently.

Conclusion

Despite various treatment option available, non-surgical periodontal therapy is still the gold standard for the periodontal therapy. The most important part of nonsurgical periodontal therapy is that it is noninvasive and used in the cases where surgical intervention is contraindicated. In this case, we managed a case of sever periodontitis with non-surgical periodontal therapy and comprehensive maintenance by the patient.

References

9. Badersten A, Nilvéus R, Egelberg J. Effect of nonsurgical...