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Functional & Aesthetic Treatment In A Periodontally Compromised Patient- A Case Report

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Abstract

While periodontitis lowers a patient's quality of life, non-surgical periodontal therapy appears to help. The goal of this study was to use patient-centered assessments to analyse the influence of non-surgical and surgical periodontal treatment on oral health-related quality of life. Quadrant scaling and root planing are the most common treatments. Alternative anti-infective periodontal therapy methods have been created in an attempt to improve treatment outcomes: full-mouth scaling and surgical therapy. The key to successful periodontal disease prevention and treatment is lifelong effective personal dental hygiene. To maintain healthy gingival tissues, the patient may require lifelong preventive professional care.

KEYWORDS- Periodontitis, Surgical Therapy, Maintenance Phase

INTRODUCTION

Periodontal health is critical for retaining natural teeth and supporting the oral cavity's general health. Unusual bleeding while eating or brushing one's teeth is a warning indication of disease development.[1] It can lead to tooth loss, thus having detrimental impact on chewing function and aesthetics. Due to its great prevalence, it is a serious public health issue. It is a source of social inequity and has a considerable negative impact on people's quality of life.

Periodontitis is a chronic, damaging, and irreversible inflammatory disease that develops when a periodontal problem worsens and advances beyond gingivitis. As a result, the microorganisms can penetrate deeper into the tissues and periodontium. During an episode, this sets off a cascade of responses as a defence mechanism against the invading pathogen. It causes the periodontium to lose its attachment, which leads to alveolar bone loss.[2] It can lead to tooth loss if left untreated, although in the vast majority of cases, it is preventable and treatable. Prevention and treatment of periodontal diseases in primary care are designed to help and support primary care dental teams in providing appropriate care for patients both at risk of and with periodontal diseases.[3]

Periodontal therapy seeks to maintain and improve periodontal health, comfort, aesthetics, and function while preserving natural teeth. Periodontal disease is treated in a step-by-step manner, starting with the most conservative alternatives. The non-surgical phase is the first stage of treatment for all types of periodontitis which begins by motivating and instructing the patient's inadequate self-care, followed by re-evaluation of his/her level of oral hygiene. It also includes ultrasonic scaling of the teeth and diet counseling.[4]

Surgical treatment is done only if the non-surgical treatment does not lead to resolution of symptoms. There are two different techniques to surgical treatment:

a) Resection of the periodontal pocket, which is based on the premise of irreversible lesions and the pocket acting as a reservoir for periodontal infections. b) The option of restoring periodontal tissues to close the periodontal pocket is considered. These are surgical approaches for creating new attachments, with the ultimate goal of regenerating lost periodontal support.[5]

Aesthetic considerations have led to a greater emphasis on seeking dental treatment in order to have a flawless smile. Depigmentation by electrosurgery is another excellent therapeutic option used in this circumstance. Gingival depigmentation is a periodontal plastic surgical technique that removes or reduces gingival hyperpigmentation.[6] The most common indication for depigmentation is patient's demand for improved aesthetics.

The frena could also put the gingival health in threat. An atypical frenum might obstruct the proper placement of a toothbrush or cause the gingival crevice to open due to a muscle tension.[7] When it is linked too closely to the gingival margin, it might induce gingival recession. The aberrant frena are visually recognised by applying stress on the frenum and watching for movement of the papillary tip or a blanch caused by ischemia in the area. Frenectomy or frenotomy techniques can be used to repair the abnormal frena. Frenectomy can be performed using the standard scalpel approach, electrosurgery, or lasers.[8]

The present case report emphasizes both the functional and aesthetic rehabilitation of the patient. The CARE guidelines have been strictly adhered to.

CASE REPORT

The patient presented to the Department of Periodontology and Implantology with the primary complaint of bleeding gums around all teeth as well food lodgement in the lower right back tooth region for the past 3 months. The patient was in good general health, had no habit of tobacco smoking, and did not take any medication. Clinical examination revealed that the color of the gingiva was reddish-pink with a positive sign of bleeding on probing. Operculum was present i.r.t #48 which was the etiological factor behind food lodgement in the posterior region. (Fig.1) Pocket probing depth was more than 5 mm in 60% of present teeth (Fig. 2 a,b,c,d) so a full mouth OPG was advised to the patient. (Fig. 3) On further assessing the oral cavity, black pigmentation of gingiva was observed in both the maxillary and mandibular anterior region, tension test was positive for maxillary central incisors. (Fig. 4)

Prerequisite to the treatment, it is important to inform the patient about the diagnosis, etiological factors, risk factors, and all the treatment options available. A treatment plan was based in accordance with the need of the patient i.e., both functional as well as aesthetic outcomes. It was explained to the patient, and he gave his informed consent.

SURGICAL PROCEDURE

After clinical examination, non-surgical therapy was initiated which included ultrasonic scaling and root planing for supragingival bio-film control, correction of brushing habits, oral hygiene instructions, use of medicated toothpaste and mouthwash, and improving dietary habits. The patient was re-evaluated after 10 days. Full mouth open flap debridement (OFD) was performed quadrant-wise at weekly intervals.

Removal of the operculum was done using electrosurgery (Fig. 5) along with OFD in the respective area. Antibiotics were prescribed and the patient was again put on a maintenance phase.

The patient was followed up at regular intervals. Every appointment consisted of re-evaluating the patient's oral cavity and simultaneously reinforcing oral hygiene instructions to the patient. At two months follow-up visit, the patient's periodontium was found to be stable and there was no evidence of active disease, therefore treatment for esthetic rehabilitation was initiated. The maxillary and mandibular anterior areas were anesthetized using 2% articaine (1:100,000 Septanest with adrenaline, Septodont). Conventional frenectomy (Fig. 6) for the maxillary anterior region was performed followed by depigmentation using electrosurgery. (Fig. 7) Suturing was done using a 5-0 silk suture (Fig 8). While for the mandibular anterior region, depigmentation along with gingivoplasty was performed using electrosurgery (Fig 9). Post-operative instructions were given to the patient and antibiotics were again prescribed. On the 15th day, the patient was revaluated (Fig. 10 a, b) and sutures were removed from the maxillary anterior area (Fig. 10c). Evaluation of the oral cavity was done every month for up to 6 months.

CLINICAL RESULTS

At the end of 6 months, both functional and esthetic outcomes were achieved. (Fig. 11a, b) The chief complaint of the patient was resolved and there was a reduction in the Pocket probing depth. (Fig. 12)

Patient's perspective- The patient's complaint was resolved and the masticatory function had returned to normal. The patient was very satisfied with his treatment outcomes. As a result this patient had regained his self-confidence and morale.

DISCUSSION

Periodontitis, which is a damaging inflammatory condition, is caused by a poor interaction between the oral bacteria and the host defensive mechanisms. An important part of the periodontal treatment consists of controlling and eliminating the irritant and organisms associated with the disease by surgical or nonsurgical or combined strategies.[9] For this case, it was decided to perform a combination treatment strategy, i.e. non-surgical and surgical procedures.

In the case report, The goal is to achieve complete control of the bacterial plaque and potentially periodonto-pathogenic flora. The procedures entail educating the patient about oral hygiene, removing

dental calculus (both supragingival and subgingival), and modifying the local variables that facilitate the growth of bacterial plaque.[10]

In other words, the biological objective of this phase is to achieve a smooth, clean, radicular surface, biocompatible with the periodontal tissue. Once the cause is controlled, the correction of the consequences provoked by the disease is considered. This phase, called the Corrective or Surgical phase, centers on the treatment of the periodontal pocket and the mucogingival problems. The final objective of periodontal therapy is to re-establish dento-gingival relationship as favorably as possible, aiming to facilitate the patient's oral hygiene.[11]

Finally, after the cause has been identified and the consequences have been addressed, the disease should not reoccur (secondary prevention). This refers to the fourth phase of periodontal treatment, also known as Periodontal Support Treatment or Maintenance.[12] In our patient, this phase was reinforced multiple times as a result at the end of 6 months, the patient was satisfied with both functional and aesthetic treatment outcomes.

The satisfactory outcomes in the present case report can be attributed to the following reasons. a) The patient was very well motivated. b) The patient had very good compliance. This can also be because the patient’s symptoms were getting relieved in the subsequent visits. c) The patient did not have a very severe disease that couldn’t be arrested.

However, there are certain limitations as well. All the patients might not report the problems well within time and might not even consider their poor oral health a problem. This leads to delays in consulting with their dentists. And when mastication becomes a major problem, the patient would have already succumbed to the irreversible periodontal disease stage. At this stage, the only treatment option left is the extraction of the tooth. So, patient motivation is of paramount importance in attaining such outcomes clinically.

The healing of periodontal wounds after flap surgery is a more complicated process than that of a skin injury. The epithelialization of the internal face of the flap in contact with the radicular surface, generating the so-called long epithelial attachment, is the most typical healing of a periodontal wound.

More apically, connective tissue maturation re-establishes connective attachment, and at the deepest point of the lesion, a certain regeneration of the bone architecture and periodontal ligament can be seen.[13]

CONCLUSION

The key to successful periodontal disease prevention and treatment is lifelong effective personal dental hygiene. To maintain healthy gingival tissues, the patient may require lifelong preventive professional care.

Figures:

Fig. 1: Pre-operative #48

Fig. 2: Pre-Operative Pocket Probing Depth

Fig 3: Pre-operative OPG

Fig 4: Pre-Operative view

Fig. 5: Removal of operculum

Fig. 6: Conventional frenectomy

Fig. 7: Depigmentation using loop electrode.

Fig 8: Suturing done using 5-0 Silk suture

Fig 9: Gingivoplasty and Depigmentation done using electrosurgery

Fig. 10 a : 15 th day Post operative view #48

Fig. 10 b : 15 th day Post operative view

Fig. 10 c: 15th day Post-operative view after suture removal

Fig. 11a: Post-operative view 6 months

Fig. 11 b: 6 months Post-operative view

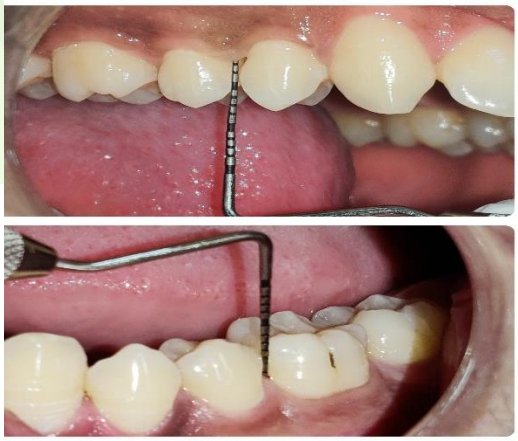

Fig. 12: 6 months Post-operative view

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