KIN INTERNATIONAL AWARDS
2ND INTERNATIONAL COMPETITION OF CLINICAL CASES IN PERIODONTOLOGY AND SURGERY

Multidisciplinary non-surgical treatment of advanced periodontitis: A case report

bashar hameed alhadithy
Baghdad, Iraq

Abstract

Patients with severe periodontitis often require multidisciplinary treatment to achieve healthy periodontal tissue, normal occlusion, and optimal aesthetics. In the present case we aimed to evaluate the efficacy of multidisciplinary non- surgical treatment and orthodontic treatment in a patient with stage IV/ grade C periodontitis, malocclusion, and dentition defects.

Introduction

Periodontitis is a chronic inflammatory disease caused by plaque microorganisms that can lead to periodontal tissue inflammation and alveolar bone loss. If untreated, periodontitis increases the risk of loose teeth and subsequent tooth loss
Occlusion disorder problems often occur in patients with severe periodontitis, while secondary occlusal trauma can aggravate the destruction of periodontal tissue; however, both can be treated orthodontically
Sim et al and Angelina et al have both reported that orthodontic treatment will not exacerbate periodontal destruction if the periodontal inflammation and plaque are initially controlled. Moreover, postoperative stable occlusion was found to promote periodontal tissue recovery.

Anamnesis

A 43 year old male with no medical history presented to our clinic for teeth mobility problems.

History of present illness
the patient complained of long-term problems with tooth loss and difficulties chewing. The patient had mild halitosis and bleeding during tooth brushing.

History of past illness
The patient had no significant medical history.

Physical examination
Oral hygiene (plaque assessment):
Periodontal pocket depth
Tooth mobility assessment
Bleeding on probing:
X-ray evaluation

In the clinical examination, we identified poor oral hygiene with a large amount of dental calculus and obvious plaque retention. The gingiva tissues appeared tender and edematous . Overall, more than 50% of his teeth showed mobility ? I°, and more than 50% presented a probing depth (PD) of > 4 mm with positive bleeding on probing (BOP).
According to the “Classification of Periodontal and Peri-Implant Diseases and Conditions” in 2017 and the Angle classification, the patient was diagnosed with:
(1) Periodontitis stage IV/ grade C;

(2) angle class I skeletal malocclusion, and moderate crowded malocclusion.
A therapeutic plan was subsequently proposed by a team of periodontists and orthodontists

Treatment plan

The therapeutic plan consisted of: (1) Non-surgical initial periodontal therapy, with supra- and subgingival PMPR, orthodontic treatment aimed at improving occlusion and aesthetics

The first step in therapy is aimed at guiding behaviour change by motivating the patient to undertake successful removal of supra- gingival dental biofilm and risk factor control, and include the following interventions:
- Supragingival dental biofilm control
- Interventions to improve the effectiveness of oral hygiene [motivation, instructions (oral hygiene instructions, OHI)]
- Adjunctive therapies using
Kin Gingival Complex tooth past
PerioKIN Oral Gel (Chlorhexidine digluconate: 0.20 %)
- Professional Mechanical Plaque Removal (PMPR), which includes the professional interventions aimed at removing supragingival plaque and calculus, as well as possible plaque-retentive factors that impair oral hygiene practices.

Then Step 2 “sub-gingival instrumentation”
Two weeks later, the patient underwent a session of professional plaque control, including reinforcement of oral hygiene processes via monthly checks and the use of plaque disclosing agents to facilitate daily examinations.
The second step of therapy (cause-related therapy) is aimed at the elimination (reduction) of the sub-gingival biofilm and calculus performed by power-driven (ultrasonic devices) that are specifically designed to gain access to the root surfaces in the sub-gingival environment to remove sub-gingival biofilm and calculus.
- Adjunctive therapies using
Kin Gingival Complex tooth past
PerioKIN Oral Gel (Chlorhexidine digluconate: 0.20 %)

KIN INTERNATIONAL AWARDS

2ND INTERNATIONAL COMPETITION OF CLINICAL CASES IN PERIODONTOLOGY AND SURGERY

Twelve weeks after completion of active therapy, the periodontal inflammation was deemed under control. Positive BOP sites were reduced, and the plaque index showed that the plaque accumulation markedly decreased, with a reduction in deep pockets ? 5 mm . Orthodontic treatment was therefore initiated

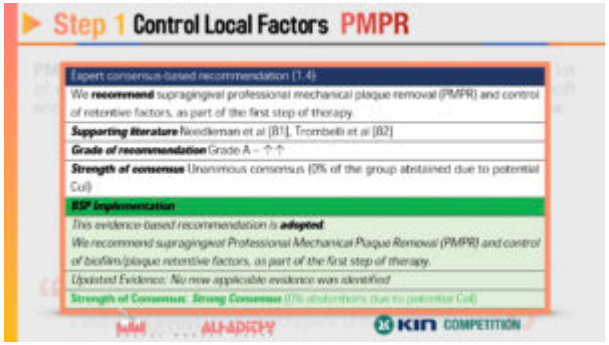
The patient was recalled for periodontal maintenance every 3 mo throughout orthodontic therapy, at which point his periodontal parameters were examined and any changes in her condition were recorded. Positive therapeutic effects with a low risk assessment level and overall improvements in PD were ultimately achieved

KIN INTERNATIONAL AWARDS

2ND INTERNATIONAL COMPETITION OF CLINICAL CASES IN PERIODONTOLOGY AND SURGERY

KIN INTERNATIONAL AWARDS

2ND INTERNATIONAL COMPETITION OF CLINICAL CASES IN PERIODONTOLOGY AND SURGERY



Carrying out the treatment

The overall aim was to improve the periodontal condition and encourage efficient oral hygiene habits and plaque control. The aesthetic needs of the patient and problems with occlusion were also considered.

Follow up

The patient was recalled for periodontal maintenance every 3 mo throughout orthodontic therapy, at which point his periodontal parameters were examined and any changes in her condition were recorded. Positive therapeutic effects with a low risk assessment level and overall improvements in PD were ultimately achieved

KIN INTERNATIONAL AWARDS

2ND INTERNATIONAL COMPETITION OF CLINICAL CASES IN PERIODONTOLOGY AND SURGERY

Discussion

A large number of long-term clinical studies have shown that patients with severe periodontitis who show good plaque control and receive only normative non-surgical periodontal treatment can achieve notable improvements in their periodontal condition. For example, Barros et al showed that non- surgical periodontal treatment alone could result in improvements in alveolar bone density.

Orthodontic treatment can re-arrange the dentition, eliminate occlusal trauma, restore stability, and disperse the occlusal force, all of which are crucial in gaining healthy periodontal soft and hard tissue
The precondition of orthodontic treatment is control of periodontal inflammation, which, if not achieved, can result in treatment failure or even accelerate periodontal destruction. In patients with moderate to severe periodontal disease, periodontal-orthodontic treatment can not only correct malocclusion, but also significantly improve periodontal health

Conclusion

In some patients with stage IV/grade C periodontitis, systematic and sequential non-surgical treatment can provide excellent therapeutic results.

References

Borgnakke WS. Does Treatment of Periodontal Disease Influence Systemic Disease? Dent Clin North Am 2015; 59: 885- 917 [PMID: 26427573 DOI: 10.1016/j.cden.2015.06.007]

Rios HF, Lin Z, Oh B, Park CH, Giannobile WV. Cell- and gene-based therapeutic strategies for periodontal regenerative medicine. J Periodontol 2011; 82: 1223-1237 [PMID: 21284553 DOI: 10.1902/jop.2011.100710]

Sim HY, Kim HS, Jung DU, Lee H, Lee JW, Han K, Yun KI. Association between orthodontic treatment and periodontal diseases: Results from a national survey. Angle Orthod 2017; 87: 651-657 [PMID: 28686092 DOI: 10.2319/030317-162.1]

Gorbunkova A, Pagni G, Brizhak A, Farronato G, Rasperini G. Impact of Orthodontic Treatment on Periodontal Tissues: A Narrative Review of Multidisciplinary Literature. Int J Dent 2016; 2016: 4723589 [PMID: 26904120 DOI: 10.1155/2016/4723589]

Papapanou PN, Sanz M, Buduneli N, Dietrich T, Feres M, Fine DH, Flemmig TF, Garcia R, Giannobile WV, Graziani F, Greenwell H, Herrera D, Kao RT, Kebschull M, Kinane DF, Kirkwood KL, Kocher T, Kornman KS, Kumar PS, Loos BG, Machtei E, Meng H, Mombelli A, Needleman I, Offenbacher S, Seymour GJ, Teles R, Tonetti MS. Periodontitis: Consensus report of workgroup 2 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. J Periodontol 2018; 89 Suppl 1: S173-S182 [PMID: 29926951 DOI: 10.1002/JPER.17-0721]