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Novel Approach to Managing Aggressive Periodontitis with Basal and Endosseous Implants: A Rare Case Report

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Abstract

Aggressive periodontitis is a condition characterized by rapid tooth loss, which can lead to complete edentulism even in young individuals. Effective control of inflammation through appropriate follow-up protocols is crucial for maintaining oral hygiene. Implant-supported restorations are commonly used for tooth replacement in such cases. In this report, we present a case of generalized aggressive periodontitis that was successfully treated using a combination of basal implants with immediate loading and endosseous implants with delayed loading. This case serves as evidence of the long-term stability achieved with a strict post-periodontal treatment maintenance protocol and excellent patient cooperation.

Keywords: Aggressive periodontitis, Dental implants, Tooth loss, Generalized aggressive periodontitis, Implant-supported restorations

Introduction

Periodontal disease is an inflammatory condition that affects the supportive and protective tissues around the teeth. It is classified into two types: chronic and aggressive periodontitis1. Aggressive periodontitis is characterized by a rapid rate of disease progression, where the severity of periodontal destruction is not commensurate with the amount of local etiologic factors. It is further classified into localized and generalized forms2. Patients with generalized aggressive periodontitis (GAP) often experience severe periodontal attachment loss, resulting in extensive tooth loss. Implant-supported restorations are commonly used as a treatment option for tooth replacement in such cases. However, the use of dental implants in patients with GAP remains controversial3, despite some systematic reviews and meta-analyses showing significantly high survival rates of implants in GAP patients4,5. In this article, we present a case of a young female with generalized aggressive periodontitis who was successfully treated using a combination of basal and endo-osseous implants.

Case Report

A 22-year-old female was referred to the department with complaints of tooth loss, poor masticatory function, and esthetic concerns. She reported a similar history of tooth loss in her mother's family. All mobile teeth were extracted, and routine blood test results were within normal limits. Extraoral examination revealed no abnormalities, and good oral hygiene status was noted with bleeding on probing in

few sites. Orthopantomogram (OPG) was taken (Figure 1).

Clinical examination showed Grade III mobility in teeth 12, 21, 22, 33, 43, 44, 45, and 46, and Grade I mobility in tooth 26. Furcation involvement was observed in tooth 46, and partial edentulism was noted in teeth 16, 11, 36, 31, 32, 41, 42, and 47. Gingival examination revealed normal color, knife edge contour, and firm consistency, except for teeth 12, 11, 33, and 46.

Based on the patient's history and clinical features, the diagnosis was generalized aggressive periodontitis with significant attachment loss. The treatment plan involved scaling and root planning during the first visit. All Grade III mobile teeth were extracted under systemic antibiotic treatment during the second visit (Figure 2). Three weeks later, re-evaluation showed reduced bleeding on probing, and implants were planned for replacing the missing teeth.

Anterior basal implants were selected for esthetic purposes, as they can be loaded immediately6,7. In the third quadrant, endosseous implants were placed, followed by cover screw placement and sutures (Figure 3). Impressions were taken using additional silicone for the temporization of anterior teeth. Temporary crowns were provided in the maxillary and mandibular anterior regions until osseointegration was completed in the posterior region, which took approximately 6 months (Figure 4). In the second stage surgery, cover screws were replaced by healing abutments in the third quadrant. After 15 days, abutments were placed, temporary anterior crowns were removed, and impressions were taken for fabrication of metal ceramic crowns (Figure 5).

The crowns were adjusted intraorally to occlude with their opposing teeth during normal working occlusion with group function occlusion. The crowns were cemented over the framework using glass ionomer cement (GIC) (Figure 6). Oral hygiene instructions were given to the patient to maintain proper oral health.

Discussion:

This case report highlights the challenging management of generalized aggressive periodontitis in a young female patient, with a focus on eliminating factors that encourage plaque accumulation and promoting effective oral hygiene. Periodontal disease, which can be categorized as chronic or aggressive, is an inflammatory condition characterized by loss of periodontal attachment support, clinical attachment loss (CAL), and bone resorption, eventually leading to tooth mobility and loss. Bacterial accumulation is the primary etiology for periodontal diseases, causing direct and indirect destruction of the host supporting tissues8. However, other factors such as smoking, diabetes, stress, genetic factors, occlusal trauma, iatrogenic dentistry, and patient compliance can also contribute to disease progression and treatment response1.

Aggressive periodontitis, as seen in this case, has a rapid rate of disease progression and often presents with a familial pattern and distinctive radiographic features, such as vertical alveolar bone loss at the first permanent molars and one or more incisor teeth2,9. Recent studies have also shown that periodontal pathogens can persist in edentulous subjects, even after being edentulous for a year or more, and can be transmitted from teeth to implants, indicating that periodontal pockets can serve as reservoirs for bacterial colonization around implants10.

In this case, extraction of all teeth with a hopeless prognosis was deemed necessary, and the anteriors and mandibular right posterior teeth were extracted accordingly. A combination of basal and endosseous implants were planned for this patient based on the clinical need. Implant-supported prosthesis, as supported by the literature, is an acceptable treatment modality for patients with aggressive periodontitis11.

At the 2-year follow-up, both teeth and implants showed no signs of instability or further bone resorption. Regular recall and maintenance visits throughout the patient's lifetime are crucial for ensuring the long-term success of implant therapy.

Conclusion:

Implant-supported restorations are often the preferred treatment option for tooth replacement, and the success of implants is highly dependent on proper oral hygiene maintenance. The case report presented in this study, with a 2-year follow-up, demonstrates that a combination of basal and endosseous implants can be successfully placed in cases of partial

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edentulism in patients suffering from tooth loss and vertical bone loss due to advanced generalized aggressive periodontitis. With regular follow-up visits and meticulous oral hygiene maintenance, long-term success of the implants can be achieved.

References:

1. Armitage GC. Treating chronic periodontitis: current status, challenges, and future directions. Periodontology 2000. 2020 Oct; 84(1):32-53.
2. Albandar JM. Aggressive periodontitis: case definition and diagnostic criteria. Periodontology 2000. 2014 Oct;65(1):13-26.
3. Al-Zahrani MS. Implant therapy in aggressive periodontitis patients: a systematic review and clinical implications. Quintessence International. 2008 Mar;39(3):261-70.
4. Papapanou PN, Sanz M, Buduneli N, Dietrich T, Feres M, Fine DH, Flemmig TF, Garcia R, Giannobile WV, Graziani F, Greenwell H. Periodontitis: consensus report of workgroup 2 of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. Journal of Clinical Periodontology. 2018 Jun;45:S162-70.
5. Ramesh A, Ravi S, Kaarthikeyan G. Comprehensive rehabilitation using dental implants in generalized aggressive periodontitis. Journal of Indian Society of Periodontology. 2017 Mar;21(2):160-4.
6. Palem S et al. A Boon For Atrophied Ridges – Classification And Review Of Basal Implants. International Journal of Medical Science and Current Research. 2022;5(6):391-4
7. Talasani RR et al. A Review On Splinting And Healing Of Basal Implants. International Journal of Medical Science and Current Research. 2022;5(6):731-4.
8. Sousa V, Nibali L, Spratt D, Dopico J, Mardas N, Petrie A, Donos N. Peri-implant and periodontal microbiome diversity in aggressive periodontitis patients: a pilot study. Clinical Oral Implants Research. 2017 May;28(5):558-70.
9. Fine DH, Patil AG, Loos BG. Classification and diagnosis of aggressive periodontitis. Journal of Clinical Periodontology. 2018 Jun;45:S95-111.
10. Yussif NM, Rahman AA, Darhous M. Evaluation of the health of the peri-implant tissues around immediately placed dental implants in aggressive periodontitis patients versus periodontally healthy individuals in the maxillary esthetic zone: Controlled clinical trial. Journal of Osseointegration. 2020;12(1):74-81.
11. Al-Zahrani MS. Implant therapy in aggressive periodontitis patients: a systematic review and clinical implications. Quintessence International. 2008 Mar;39(3):261-70.

Figure 1

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Figure 2

Figure 3

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Figure 4

Figure 5

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Figure 6

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