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SUCCESSFUL MANAGEMENT OF HOPELESS TEETH IN THE AESTHETIC ZONE – A CASE REPORT

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Abstract

Aım And Background: The endo-perio interrelationship is unique and are responsible for more than 50% of tooth mortality. This case report highlights the successful management of mobility of lower anterior teeth with a periapical lesion using multidisciplinary approach. **Case Descrıptıon:** 59-year-old diabetic female patient reported to the department of periodontology with the chief complaint of exudate irt 31,41. Probing depth (PD) of 5mm, Grade II mobility was present irt 31,32,41,42 with clinical attachment loss (CAL) of 7mm irt 31 (Millers class I recession) was evident. The follow-up was performed at 6-month postsurgery. **Results**: Complete root coverage was achieved with reduction in mobility, PPD and IOPA showed significant bone fill. **Conclusıon**: We successfully managed the mobility of lower anterior teeth with a periapical lesion using a multidisciplinary approach.

Keywords: Endo-Perio Lesion, Guided Bone Regeneration, Guided Tissue Regeneration, Bone Graft, Membrane, Aesthetics.

INTRODUCTION

The endo-perio interrelationship is unique and are responsible for more than 50% of tooth mortality. This interrelationship affects health, function and disease.[1] So, these provide a great challenge to the clinician as far as diagnosis and prognosis of the involved teeth is concerned. A correct diagnosis is essential in order to provide an appropriate treatment.[2]

The relationship between the periodontium and pulp was first given by Simring and Goldberg in 1964.It is important to eliminate both disease processes, whether they exist separately or as a combined lesion for the of both periodontal and endodontic therapy.[3]

The etiology of endo-perio lesion includes bacteria, fungi, and viruses, foreign bodies, cementum chips, amalgam, root canal filling materials, absorbent paper points, gingival retraction cords leguminous foods. Contributing factors includes poor Endodontic treatment, coronal leakage, trauma, root resorption, perforations, development malformations and cracked tooth syndrome.

Management of endo-perio lesion includes surgical exposure, removal of granulation tissue, resin composite filling, apical repositioning of flap, orthodontic extrusion, hemisection, bicuspidization, radisectomy and extraction.[4]

This case report highlights the successful management of mobility of lower anterior teeth with a periapical lesion using multidisciplinary approach.

Case report

59-year-old diabetic female patient reported to the department of periodontology with the chief complaint of exudate irt 31, 41. Probing depth (PD) of 5mm and Grade II mobility was present irt 31,32,41,42 with clinical attachment loss (CAL) of 7mm irt 31 (Millers class I recession) was evident.

On clinical examination gingiva appeared erythematous with rolled out margins and bulbous interdental papilla, which was soft and edematous in consistency, with presence of exudate irt 31,41. Probing pocket depth (PPD) of 5mm and grade II mobility was present irt 31,32,41,42 with clinical attachment loss of 7mm irt 31. (Millers class I recession) was evident.

Pre-operative IOPA revealed horizontal bone loss extending upto middle third of the root irt 31,41,32,42. Evidence of a periapical radiolucency in relation to 31, 41 was seen. Electric pulp testing was done and the tooth was nonvital.

A diagnosis of chronic gingivitis with localized periodontitis irt 31,32,41,42 was given.

Pre-surgical therapy

The surgical procedure was explained and informed consent was obtained from the patient. Oral prophylaxis was done and extra coronal provisional splint was given using fiber composite irt 31, 32, 33,41,42,43. Endodontic treatment was done irt 31, 41.

Surgical technique

Following local anesthesia, a sulcular incision and vertical releasing incision was given beyond the mucogingival junction irt 32,42. A full thickness flap was elevated and the entire mucogingival tissues was passively mobilized. The cyst was completely enucleated and debridement was performed. Tetracycline hydrochloride solution was used for root conditioning and bone graft (OSSEOGRAFT-TM Demineralized bone matrix xenograft) and collagen barrier membrane (Healiguide ®) was used to facilitate regeneration. Simple interrupted sutures (5-0 vicryl) were given and the flap was coronally advanced and stabilized. A periodontal dressing - COE-PACK™ (GC America, Alsip, IL, USA) was placed on the surgical site for 2-weeks.[5] Amoxicillin 500mg and Zerodol P for 5days was prescribed to the patient to control postoperative discomfort.

Post-operative care

Patient was asked not to brush at the surgical site for 4 weeks and was advised 0.2% chlorhexidine mouthwash twice daily for 15 days. The coe pak was removed on the 14th day of surgery, and all the clinical parameters were observed.

Healing

14days after the surgery, the sutures were removed and the surgical site was observed for uneventful healing. Instructions was given to the patient to use a soft toothbrush in the surgical area and oral hygiene instructions were given.

RESULTS

Clinical parameters such as Probing Depth (PD), Clinical attachment level (CAL) and mobility was observed at baseline and at 6-month recall visits. At baseline, the mean value of PD was 5mm, RD was 2mm, RW was 2mm and clinical attachment loss (CAL) was 7mm, at 6-month follow up complete root coverage was achieved with reduction in mobility, PD of 3mm and IOPA showed significant bone fill.

DISCUSSION

An appropriate diagnosis is essential to carry out the treatment plan and determine the long-term prognosis of the tooth. The existence of both pulpal and periodontal tissue destruction can affect the diagnosis and subsequently the prognosis of the teeth. Treatment of endo–perio lesion involves both endodontic treatment and periodontal regenerative treatment.[5]

The treatment strategy mainly enhances on the debridement and disinfection of the root canal followed by periodontal treatment. The goal of any periodontal therapy is to eliminate all necrotic tissues from the involved surgical site and enhance the regeneration of hard and soft tissue.[6]

Lindhe et al. 1999 reported that incase of any accessory canal exposure, the inflammatory bacterial components might reach the pulp via accessory canal or the apical foramen .[7] Rubach and Mitchell 1965 also suggested the role of accessory canals in causing periodontal lesion with secondary endodontic involvement.[8]

In this present case report, tooth 31,41 was noncarious but it was associated with deep periodontal pocket and grade II mobility. Radiographic examination revealed an advanced periodontal bone loss. These findings were suggestive of a primary periodontal lesion with secondary endodontic involvement based on Simons Classification. As demonstrated by Vakalis and collaborators (2005) root canal therapy followed with periodontal therapy was done for alveolar bone gain with an improvement of clinical parameters.

Also, Cortellini et al. (2011) have demonstrated that even in hopeless teeth regenerative periodontal treatment is very effective.[10] Endodontic therapy was carried out followed by periodontal regeneration. Demineralized bone matrix xenograft (DMBM) along with collagen barrier membrane (Healiguide) was used to facilitate regeneration.

Munis mukhtar et al in 2021 conducted a 5 year follow up study about the successful management and repair of bone defect in endo-perio lesion involved teeth having questionable to poor prognosis can be effectively treated using GTR.[11]

Treatment outcomes are more predictable if the clinician has thorough knowledge about the diagnosis, treatment plan and prognosis of the involved teeth. Therefore, appropriate management of the endo-perio lesions can minimise the tooth loss.[12]

CONCLUSION

In this case, we have successfully managed the primary periodontal lesion with secondary endodontic involvement by stabilizing the teeth followed by the endodontic treatment and later periodontal regeneration therapy.

Footnotes

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Nil.

Conflicts of interest

There are no conflicts of interest.

References

1) Sunitha V R, Emmadi P, Namasivayam A, Thyegarajan R, Rajaraman V. The periodontal - endodontic continuum: A review. J Conserv Dent. 2008;11(2):54-62.

2) Chen SY, Wang HL, Glickman GN. The influence of endodontic treatment upon periodontal wound healing. J Clin Periodontol. 1997;24(7):449-56.

3) Simring M, Goldberg M. The pulpal pocket approach: retrograde periodontitis. J of Periodontol. 1964;35(1):22-48

4) Newman and Carranza's Clinical Periodontology - Elsevier eBook on VitalSource, 13th Edition

5) Alfawaz Y. Management of an Endodontic-periodontal Lesion caused by Iatrogenic Restoration. World J Dent. 2017;8(3):239-246.

6) Kujur S, Gupta V. Sreeraj V S, Ratre S. Endo-perio lesions: A dilemma. Int J Prev Clin Dent Res.2022;9:86-9

7) Lindhe. Textbook of clinical periodontics and oral implantology.1999;3rd ed.

8) Rubach WC, mitchell DF. Periodontal disease, accessory canals and pulp pathosis. J periodontal.1965;36:34-8

9) Vakalis SV, Whitworth JM, Ellwood RP, Preshaw PM. A pilot study of treatment of periodontal-endodontic lesions. Int Dent J. 2005;55(5):313-8.

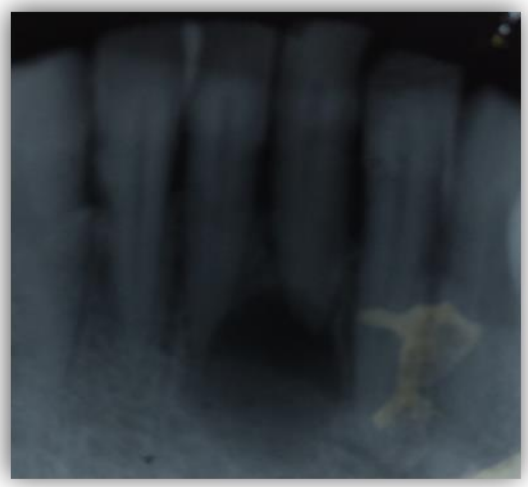
10) Cortellini P, Stalpers G, Mollo A, Tonetti MS. Periodontal regeneration versus extraction and prosthetic replacement of teeth severely compromised by attachment loss to the apex: 5-year results of an ongoing randomized clinical trial. J Clin Periodontol. 2011;38(10):915-24

11) Munis Mukhtar Clinical Management of Endo-Perio Lesion Through Guided Tissue Regeneration: a 5 Year Follow-Up -Int. J. Dent. Sc.1969;13(1): 45-52.

12) Aksel H, Serper A. A case series associated with different kinds of endo-perio lesions. J Clin Exp Dent. 2014;6(1):91-5

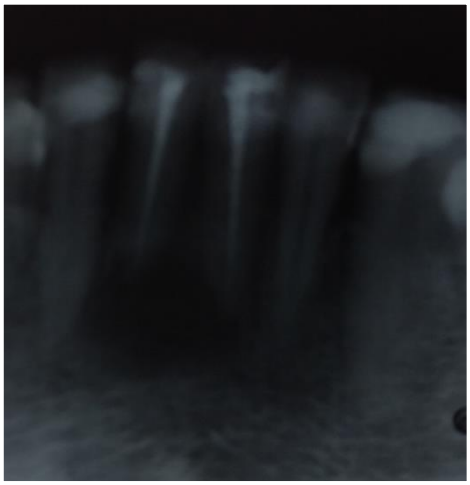
IMAGES

Pre Operative



Pre-Operative Radiograph

Fibre Composite Splint Done



IOPA Post Endodontic Treatment

Full Thickness Mucoperiosteal Flap Elevated

Complete Enucleation Of The Cyst Done

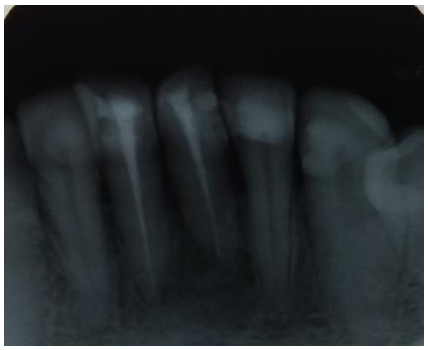
Bone Graft Placed

GTR MEMBRANE PLACED

Simple Interrupted Sutures Placed

COE Pack Placed

Post-Operative (After 2 Weeks)



Post-Operative IOPA (6 MONTHS)