

Non-Surgical Management of Endo Perio Lesion: A Case Report

Ruchi Gupta¹, Asit Vats², Anooja V Chandran³, Manudev S⁴,
Priyansh Saxena⁵, Parvathi S Jayan⁶, Th Sujatha Devi⁷

¹Professor, Department of Conservative Dentistry and Endodontics, Divya Jyoti College of Dental Science and Research.

²Professor and Head, Department of Conservative Dentistry and Endodontics, Divya Jyoti College of Dental Science and Research.

^{3,4,5,6,7}PG student, Department of Conservative Dentistry and Endodontics, Divya Jyoti College of Dental Science and Research.

Abstract

Endodontic-periodontal lesions, which stem primarily from issues with the dental pulp and secondarily from problems with the gingiva, are frequently encountered in dental practice. It emphasizes the importance of integrating both endodontic and periodontal treatments to effectively address these complex cases. Correct diagnosis in endodontics, based on a thorough dental history, clinical examination, and radiographic evaluation, is pivotal in determining the prognosis and formulating an effective treatment plan for endodontic-periodontal lesions. This case report enlighten the management of a case of endo – perio lesion.

Keywords: Endo-Perio Lesion, Abscess, Sinus Tract, Healing, Periapical Disease

Introduction

Endodontic-periodontal lesions, which stem primarily from issues with the dental pulp and secondarily from problems with the gingiva, are frequently encountered in dental practice. Research indicates that a link between apical and marginal periodontitis exists, with approximately 5.7% of individuals aged 40-45 showing signs of both conditions simultaneously.¹These lesions could arise because of the intimate anatomical proximity between endodontic (dental pulp) and periodontal (gum and supporting tissues) structures, facilitating the spread of infections between the root canal and the gum tissue surrounding the tooth.²A strong correlation has been documented between the occurrence of apical and marginal periodontitis.

According to Simon et al.'s traditional classifications³, primary endodontic lesions are clinically characterized by potential discharge from the gingival sulcus and swelling in the attached gingiva. A necrotic pulp might lead to a sinus tract that extends from the root apex along the root surface and exits near the gum line. In teeth with multiple roots, the sinus tract may discharge into the area where the roots divide, accompanied by radiographic signs of periodontal involvement such as bone loss visible as a radiolucent area along the root.

Plaque buildup at the gum line can lead to marginal periodontitis. If the initial endodontic condition is not

treated, it can cause additional damage to the periodontal tissues. Simon referred to this situation as primary endodontic lesions with secondary periodontal complications.⁴

However, there is considerable debate regarding the traditional classification systems and how these conditions should be subdivided further as the pathology evolves. Tsesis et al.⁵ proposed a categorization scheme for endodontic-periodontal lesions, consisting of three components, which classify the pathology based on its primary etiological factor and clinical presentation:

1. Purely endodontic lesion: when the pulp is necrotic and infected and there is a draining sinus tract coronally through the periodontal ligament into the gingival sulcus.
2. Purely periodontal lesion: when a deep periodontal lesion involves most of the root surface and the dental pulp is vital.
3. Endodontic-periodontal lesion: when the pulp is necrotic and infected and there is a deep periodontal pocket.

When diagnosing an endo-perio lesion, both endodontic and periodontal treatments may be necessary. The prognosis of the tooth primarily hinges on the effectiveness of the endodontic treatment, supplemented by appropriate periodontal therapy. This manuscript aimed to showcase clinical cases of successfully treated endo-perio lesions using advanced endodontic techniques.

Material and method

A 32 year old male patient came at Department of conservative Dentistry and Endodontics with chief complaint of persistent pain and discomfort in his left mandibular molar 36. The patient reported previous history of root canal treatment 3 months back. Intra oral examination shows composite restoration. The tooth exhibited tenderness on percussion with probing depth within normal limits that is less than 2 mm. clinical examination shows sinus opening and traced with the help of gutta percha.

Radiographic examination shows widening of periodontal ligament.

Endodontic diagnosis

Pulpal diagnosis: Irreversible pulpitis.

Periapical diagnosis: symptomatic and Apical periodontitis.

Primary endodontic and secondary periodontal lesion.

Periodontal diagnosis

Localised periodontitis

Treatment

After consulting the patient about treatment options, it was decided to proceed with endodontic treatment as the initial step in a thorough treatment plan, with periodontal treatment to follow. Clinical examination shows sinus tract. Treatment was performed under local anesthesia (2% lidocaine with 1:100000 epinephrine). The old restoration was removed and the appropriate access cavity refined. Removal of gutta-percha was done with Hyflex remover (Coltene), 5.25% sodium hypochlorite and saline was used as irrigant. Cleaning and shaping of the root canal was done using Protaper Gold (Dentsply). The working length determination was done using J Morita Root ZX Mini apex locator. Root canal obturation was done AH Plus sealer (Dentsply Sironia). The endodontic restoration was restored with composite material. Periodontal therapy followed the endodontic treatment.

Follow up

Clinical examination shows that the tooth is asymptomatic and periodontal pocket depth is less than 2mm.



Fig 1: Pre-operative radiograph



Fig 2: Pre-operative photograph (sinus tract)



Fig 3: sinus tracing with gutta percha



Fig 4: Obturation after GP removal

Discussion

The manuscript highlights the successful resolution of case involving both apical and marginal pathology through a combined approach of endodontic and periodontal procedures. This multidisciplinary approach is crucial for diagnosing and managing conditions where both the tooth's root and the surrounding gums are affected, aiming to achieve the best possible treatment outcomes. It emphasizes the importance of

integrating both endodontic and periodontal treatments to effectively address these complex cases. Correct diagnosis in endodontics, based on a thorough dental history, clinical examination, and radiographic evaluation, is pivotal in determining the prognosis and formulating an effective treatment plan for endodontic-periodontal lesions.

Conclusion

A perio-endo lesion can have a varied pathogenesis which ranges from quite simple to relatively complex one. The endodontic treatment can be completed before periodontal treatment is provided when there is no communication between the disease processes. However, when there is a communication between the lesions of the two diseases, then the root canals should be medicated until the periodontal treatment has been completed and the overall prognosis of the tooth has been reassessed as being favourable.

The importance of good oral hygiene and regular professional care cannot be overstated in managing perio-endo lesions. These practices are essential for controlling infection, preventing disease progression, and promoting long-term dental health.

References

1. Czarnecki RT, Schilder H. A histological evaluation of the human pulp in teeth with varying degrees of periodontal disease. *J Endod* 1979;5(8): 242–53.
2. Adriaens PA, De Boever JA, Loesche WJ. Bacterial invasion in root cementum and radicular dentin of periodontally diseased teeth in humans. A reservoir of periodontopathic bacteria. *J Periodontol* 1988;59(4):222–30.
3. Langeland K, Rodrigues H, Dowden W. Periodontal disease, bacteria, and pulpal histopathology. *Oral Surg Oral Med Oral Pathol* 1974;37(2):257–70
4. Simon, J.H.; Glick, D.H.; Frank, A.L. The Relationship of Endodontic-Periodontic Lesions. *J Periodontol* 1972; 43: 202–208.
5. Solomon C, Chalfin H, Kellert M, Weseley P. The endodontic-periodontal lesion: a rational approach to treatment. *J Am Dent Assoc* 1995;126(4):473–9.