NON SURGICAL MANAGEMENT OF AN ENDO-PERIO LESION: A CASE REPORT

Syed Gufran Ali,* Mulay Sanjyot,** Athavale Uma,*** Aggarwal Shalini****

An endo-perio lesion can have a varied pathogenesis which ranges from quite simple to relatively complex. The endo-perio lesion may be the most complex, recalcitrant localized problem we encounter. This case report brings to light that there can be a simple solution to a grave looking problem.

Keywords: Endo-Perio lesion, Non surgical root canal treatment, Crown-down technique, Calcium hydroxide.

The relationship between periodontal and pulpal disease was first described by Simring and Goldberg in 1964. Endo-perio lesion is a complex lesion that involves a two way septic highway of mutual reinfection which involves noxious communication through the tooth. In fact, the endo-perio lesion may be the most complex, recalcitrant localized problem we encounter. In resolution of the endo-perio lesion, more troublesome is the endodontic problem.

Knowledge of any disease processes is essential in coming to the correct diagnosis. This enables the construction of a suitable treatment plan where unnecessary, prolonged or even detrimental treatment is avoided.

CASE REPORT

A 27 year old man reported to the Department of Conservative Dentistry, Endodontics and Aesthetic Dentistry with chief complaint of pain and mobility in right lower posterior region of mouth. On clinical examination mandibular right first molar was found to be carious and grade II mobile. Pockets were present on the mesio-buccal and mesio-lingual aspect of the tooth measuring upto 5 mm. Tooth was tender to vertical percussion. No furcation involvement was seen clinically. General oral hygiene was poor.

Radiographic examination revealed a radiolucent area involving enamel, dentin and pulp suggesting of deep occlusal caries. Furcation area was devoid of bone. Angular bony defect was seen in intraradicular area. Distal surface of mesial root had 100 % bone loss and mesial surface of distal root had approximately 60 % bone loss (Fig. 1).

The tooth was relieved from occlusion. The endodontic treatment was initiated by opening the root canal of 46. The working length was determined and the root canals were cleaned and shaped using crown-down technique with *ProTaper instruments. Mesial canals enlarged till **F2** and distal till **F3**.* Intermittent copious irrigation with 3 % Sodium hypochlorite was done. Calcium hydroxide was used as an intracanal medicament. Calcium hydroxide closed dressing was given once for 10 days. The canals were obturated with 6% gutta percha points using resin based sealer. Temporary restoration was given for 55 days. Follow up radiograph was taken 2 months after obturation. Healing with bone formation can be distinctly noted in Fig. 2. Than the chamber was filled with amalgam to maintain a good coronal seal (Fig. 3).

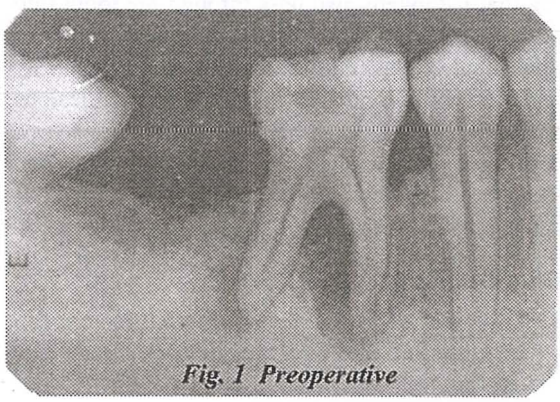


Fig. 1 Preoperative

*PG student, **Prof, Guide & HOD, ***Prof, ****Prof, Department of Conservative Dentistry, Endodontics and Aesthetic Dentistry, Dr. D. Y. Patil Dental College and Hospital, Pimpri, Pune 411 018.

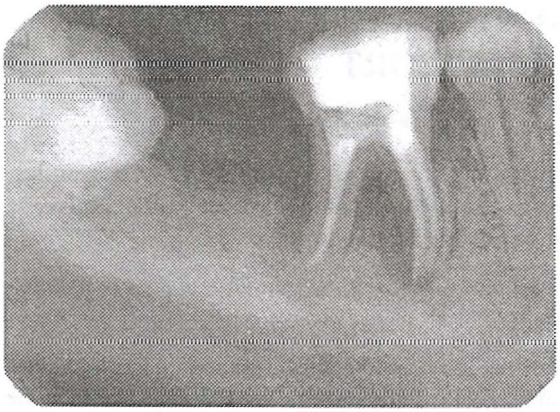


Fig. 2 After 2 months

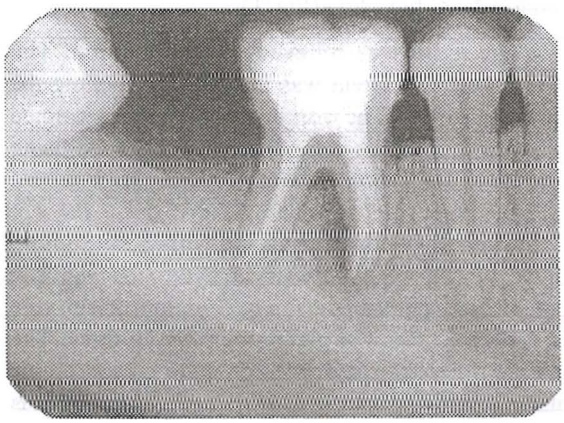


Fig. 3 After 4 months

DISCUSSION

Dental caries is the most common cause for endo-perio lesion. Researchers are increasingly speculating that pathogens also pass through the tooth into periodontal ligament via cracks, accessory canals or open tubules. This cross-infection would explain why endodontically-treated teeth with periapical lesions are particularly susceptible to localized bone loss. And it may also explain why severe periodontal lesions may be followed by chronic pulpitis or inexplicable death of the pulp.

Classification of Endo-Perio lesions

- **Oliet and Pullock 1968 -** Endo-perio lesions can be classified into three different treatment categories.
- **Weine's classification 1982** – Endo-perio lesions can be classified into four types based on clinical presentation of cases and offered treatment strategies for each.
- **Willium H. Hiatt's classification 1977** – Endo-perio lesions can be classified based on the common pulpo-periodontal lesions.
- **Simon J.H., Glick D.H. and Frank A.L. 1972** – Endo-perio lesions can be classified based on etiological factors and spread through anatomical pathways.
- **Stock 1988** modified Simon et al's classification an omitted class V of the classification. He argued that both class II and class IV lesions in advanced stage can become combined lesions and therefore a separate class to describe them was not necessary.

1) Primary endodontic lesions.
2) Primary endodontic lesions with secondary periodontal involvement.
3) Primary periodontal lesions.
4) Primary periodontal lesions with secondary endodontic involvement.
5) True combined lesions

Even hopeless cases can be treated successfully with minimal intervention. Periodontal surgical treatment and expensive bone augmentation may not be needed if the case is handled with endodontic expertise, as this case report illustrates. Modern endodontics, newer materials, innovations have made such type of treatments possible

These cases should be handled endodontically in a multiple appointment scenario, if at all possible. This allows for placement of intracanal medicaments, like calcium hydroxide paste. As it is bactericidal, anti-inflammatory and proteolytic it inhibits resorption and favors repair. It also inhibits periodontal contamination of instrumented canals via patent channels connecting the pulp and periodontium before periodontal treatment removes the contaminants.

Molven and Halse have said it best: "Success depends on the elimination of root canal infection present when treatment starts and the prevention of both contaminations during treatment and re-infection later. So success rates reflect the standard of the cleaning, shaping and filling of root canals"[2]

For primary endodontic lesions conventional endodontic therapy alone will resolve the lesion. A review 4-6 months post-operatively should show healing of the periodontal pocket and bony repair.[4] Surgical endodontic therapy has been shown to be unnecessary even in the presence of large periradicular radiolucencies and periodontal abscesses.[5] Invasive periodontal procedures should be avoided as this may be traumatic psychologically and may possibly delay healing.[3] For patients it would be additional financial burden.

If primary endodontic lesions persist despite extensive endodontic treatment it should arouse suspicions of an incorrect diagnosis. The lesion may have secondary periodontal involvement or be a true-combined lesion.

There are well over 50 studies attempting to delineate how successful treatment procedures are and what the prognosis is for a particular form of treatment.[1] All in all, the studies that have been done suggest the following generalizations:

1. The more extensive and severe the endodontic pathosis, the poorer the prognosis. In other words, the highest percentage of success is with teeth with vital pulps and the worst prognosis is for those with large, long-standing periradicular lesions.
2. The more dental treatment that is done, the poorer the prognosis. In other words, good nonsurgical endodontic treatment has the best prognosis. The worst prognosis lies with teeth that have been retreated nonsurgically and then re-treated surgically once or twice more.

CONCLUSION

With proper case selection and perfect endodontic treatment i.e., if the canal is well cleaned, shaped, disinfected and obturated, with the coronal structure properly restored, the ultimate outcome should be successful. Meticulous treatment procedure and patient compliance with a follow up period is necessary.

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-- Chief Editor