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Combined endodontic surgery associated with intra canal medicament (calcium hydroxide) is necessary for chronic periapical lesions - A case report

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Abstract

The Periapical lesions are the result of an inflammatory response to bacterial infection within the root canal. Conventional nonsurgical endodontic treatment has a high degree of clinical success, but in certain cases surgical intervention becomes necessary. A non-surgical method involves cleaning and disinfecting the root canal system which reduces the bacteria and creates an environment in which periapical healing can occur. On the other hand surgical method may required in selected dental cases such as bacteria colonizing the periapical tissues, cysts and foreign body reactions. This article describe the case of combined endodontic surgery (endodontic treatment followed by Apicoectomy) with 2 years follow-up. In view of the clinical case follow-up, we can conclude that in teeth with persistent periapical lesions after having undergone an appropriate combined endodontic surgery associated with using intracanal medicament (calcium hydroxide) can be an efficient option in there solution of the infection and periapical tissue repair.

Keywords: Periapical lesions, Combined endodontic surgery, Apicoectomy

1. Introduction

It has been reported that bacteria lodged in the root canal system plays an important role in the development and maintenance of periapical lesions. Thus, the elimination of these bacteria is of great importance for apical and periapical healing after endodontic treatment^[1, 2]. Periapical lesions resulting from an inflammatory response in front of a bacterial infection can be prevented or resolved by combined endodontic surgery^[3]. The failure of endodontic treatment may be related to complications in the execution of endodontic technique, leading to contamination or allowing the persistence of microorganisms in the root canals^[4]. Considering the complex anatomy of root canals, and that certain areas are not accessible during mechanical preparation, the use of a root canal dressing has been recommended in teeth with chronic periapical lesions to reach areas not accessible by instrumentation^[5]. Calcium hydroxide has been recommended because of its antibacterial and biological properties, which have been exhaustively studied. However, literature is deficient on the length of time the dressings should remain in the root canal^[6-7].

This article describes a clinical case of root canal treatment complemented by an Apicoectomy using intracanal medicament (calcium hydroxide) with a 2 years follow-up.

2. Case report

A 26-year-old (female) patient reported to the department of Oral and Maxillofacial Surgery of Sapporo Dental College and Hospital, Dhaka with the complaints of chronic pus discharge (sinus formation) from the apical area of upper left lateral incisor for the last 6 month. She also complaints of painless swelling from the apical area of upper left side of the jaw for the last 1 years. On clinical examination presence of grossly carious destruction on upper left central and lateral incisor. Clinically dark grayish in color. The apical area of the tooth was exposed with discharging pus but no significant mobility was found. Radiograph showed well defined radiolucent area (bone resorption) at the apex of upper left central and lateral incisor. Based on the history, clinical examination, and radiographic examination, provisional diagnosis was chronic periapical lesions on upper left lateral incisor.

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Treatment

The treatment plan of the symptomatic tooth was to manage the chronicperiapical lesion by combined endodontic surgery associated with using intracanal medicament (calcium hydroxide).

After taking consent from the patient, On 02.09.2012 (In the first step of the treatment) endodontic treatment was initiated on upper left central and lateral incisor. As the upper lateral incisor remain non vital so pulp chamber kept open and upper central incisor remain vital so pulp chamber kept closed using devitalizing agent. After 24 hour later, chemical and mechanical cleaning of upper left lateral incisor was done and after 1week later, chemical and mechanical cleaning of the upper left central incisor was performed. Calcium hydroxide medication associated with saline solution was placed in the upper lateral incisor and replaced after 15 days later. For upper lateral incisor tooth, this procedure was performed at least sixth month by using calcium hydroxide at 15 days regular interval and also preoperative radiograph was performed to see the prognosis of the case.

After sixth month of the permanence of this intracanal medication with calcium hydroxide it was clinically observed the repair of the sinus and the absence of exudates and swelling. The tooth was obturated by lateral condensation technique with gutta-percha and zinc oxide and eugenol based sealer.

(In the second step of the treatment) after mouth preparation, local anesthesia was administered at the surgical area. Then trapezoidal type of flap design was prepared. After reflection of full thickness muco periosteal flap, a surgical window was made. Then apical lesion was removed associated with root resection of lateral incisor was done. After proper homeostasis and irrigation, wound was closed by layers.

After 1years and 6monthof the root filling, normal contour of gingiva was achieved. Radio graphically, slight presence of radiolucency at the apex of upper lateral incisor and absence of radiolucency at the apex of upper left central incisor. Collecting of the material from the periapical region for histopathological examination confirming the case of a chronic periapical lesion. In the follow-up after surgery it was observed that the tooth had no signs and symptoms of infection and it was noticeable the healing of the periapical region of upper left central and lateral incisor. After than permanent restoration was done by glass ionomer filling.

After 2years follow up, the offending tooth was accepted both functionally and aesthetically.



Initial radiology Diagnostic radiology Final radiology Par operative radiology (04.04.2013)



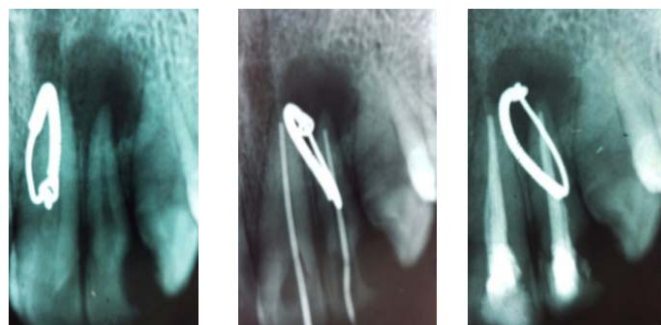
Post-operative radiology (12.04.2013)



1st follow up after 1month (12.05.2013)

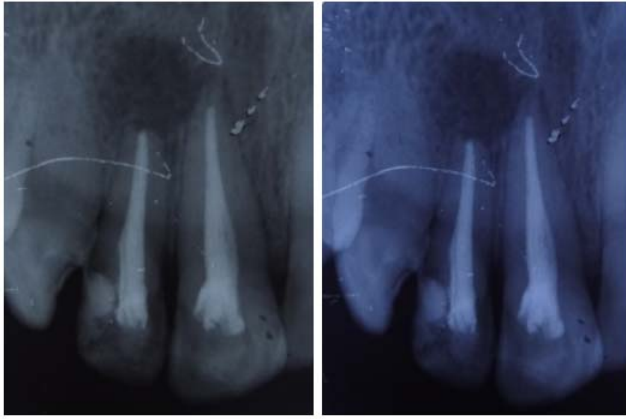


2nd follow up after 3month (12.07.2013)

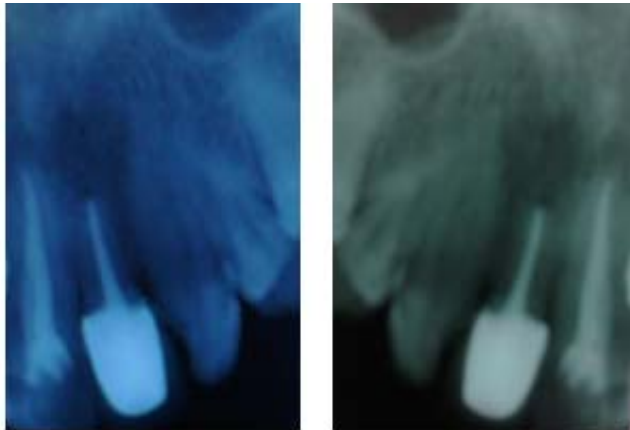


Initial radiology Diagnostic radiology Final radiology

Pre-operative radiology (02.09.2012)



3rd follow up after 6 month (14.10.13)



4th follow up after 2year (14.05.15)

3. Discussion

Calcium hydroxide has shown clinical efficiency in reducing exudates due to its hygroscopic properties and in stimulating apical and periapical repair, with no discomfort [8]. Calcium hydroxide intracanal medicament can facilitate periapical healing in nonvital teeth with periapical lesion. Intracanal medicaments are advocated to eliminate remaining bacteria after chemo mechanical instrumentation, even in the inaccessible areas of the root canal system, reduces inflammation of the periapical tissues, dissolves remaining organic material and counteracts coronal micro leakage. In the case presented here, calcium hydroxide intracanal medicament created a more favorable environment leading to healing of periapical lesion in the left central incisor [9].

4. Conclusion

Based on results found in literature and in the follow-up of this clinical case, we can conclude that combined endodontic surgery associated with calcium hydroxide as intracanal medicament might be a viable approach for promoting periapical healing and success in root canal treatment in non-vital teeth associated with periapical lesion.

5. References

1. Byström A, Sundqvist G. Bacteriologic evaluation of the efficacy of mechanical root canal instrumentation in endodontic therapy. *Scand J Dent Res.* 1981; 89:321-328.
2. Tronstad L, Barnett F, Riso K, Slots J. Extraradicular endodontic infections. *Endod Dent Traumatol* 1987; 3:86-90.
3. Ng YL, Mann V, Gulabivala K. A prospective study of the factors affecting outcomes of nonsurgical root canal treatment: part 1: periapical health. *Int Endod J.* 2011;

44(7):583-609.

4. Nair PNR. On the causes of persistent apical periodontitis: a review. *Int Endod J.* 2006; 3(4):249-81.
5. Byström A, Claesson R, Sundqvist G. The antibacterial effect of camphorated paramonochlorophenol, camphorated phenol and calciumhydroxide in the treatment of infected rootcanals. *Endod Dent Traumatol* 1985; 1:170-175.
6. Byström A, Claesson R, Sundqvist G. The antibacterial effect of camphorated paramonochlorophenol, camphorated phenol and calcium hydroxide in the treatment of infected root canals. *Endod Dent Traumatol* 1985; 1:170-175.
7. Torneck CD, Smith JS, Grindall P. Biologic effects of endodontic procedures on developing incisor teeth. *Oral Surg Oral Med Oral Pathol* 1973; 35:541-554.
8. Leonardo MR, Silva LAB, Leonardo RT, Utrilla LS, Assed S. Histological evaluation of therapy using a calcium hydroxide dressing for teeth with incompletely formed apices and periapical lesions, *J Endodon.* 1993; 19:348-352.
9. Gutmann JL, Fava LR. Periradicular healing and apical closure of a non-vital tooth in the presence of bacterial contamination. *Int Endod J.* 1992; 25:307.