



METAPEX – A NEW GENERATION OBTURATING MATERIAL??- A CASE REPORT

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ABSTRACT

The complex interrelationship between the endodontic and periodontal lesion has always lead to controversies, confusion and debate. The pulpal infection can spread and cause a periodontal lesion or vice-versa. Detecting the origin of the infection is crucial. Thus, a careful investigation of the history, symptoms, clinical and radiographic features should be done to reach a definitive diagnosis and treatment plan. An interdisciplinary approach to such cases gives a higher success rate. The present case report deals with the management of an endo-perio lesion with an unforeseen double file separation. The novelty in this case lies in the management of the double file separation in a single canal using metapex.

KEYWORDS : Metapex, Periodontal abscess, File separation, Periodontitis, Nonvital tooth.

INTRODUCTION:

The common ecto-mesenchymal origin closely relates dental pulp and the periodontium. The relationship between periodontal and pulpal disease was described by Simring and Goldberg in 1964¹.

For diagnosis and successful management various aids like visual examination, palpation, percussion, mobility, periodontal probing, pulp testing, radiographs, fistula tracking are used². The endo-perio lesion require cleaning of the canals and debridement of the periodontal lesion³.

Metapex as an intra-canal medicament, eliminates the infection, as the calcium hydroxide creates an alkaline environment where the hydroxyl ions damage the bacterial DNA⁴.

This paper illustrates the management of an "endo-perio" lesion with iatrogenic file separation.

CASE HISTORY:

A 45year old male patient reported to Maratha Mandal Nathajirao G. Halgekar swelling in the lower right back tooth region since two days with a non-contributory medical history. Intra oral examination revealed a swelling in relation to the buccal aspect of 46 (Figure 1) without carious lesion. On palpation, the swelling was soft, fluctuant with a sinus opening. The buccal aspect of the tooth had 8mm probing depth with grade III furcation involvement. 46 was tender on percussion with grade I mobility.



Figure 1: Intra Oral Picture Showing Abscess In Relation To 46.

Electric pulp testing indicated non-vital tooth, radiographic examination revealed horizontal bone loss distal to 46. Radiolucency extended till the apical one third on the mesial aspect and in the furcation area. Gutta Percha (GP) tracing revealed the lesion to be of periodontal origin.

Endodontic therapy was initiated with 46 as the tooth was nonvital. Access cavity was prepared and working length radiograph was taken after initial identification of three canals with #10 K-files under rubber dam isolation. During the glide path preparation, calcification was observed in the apical third of mesial and distal canals. Cleaning and shaping of the root canals were performed by using Nickel-titanium protaper rotary files under copious irrigation with saline, 5% sodium hypochlorite solution and 17% EDTA. During the biomechanical preparation, S2 file separated at the apical third of the mesio-buccal canal. Attempt was made to retrieve the file, failing which the file was bypassed till #15k file. Another S2 files separated during the bypass, obliterating the canal for further preparation (Figure 2).



Figure 2: Radiograph Showing Two Protaper S2 File Separation In Mesiobuccal Canal Of 46.

Canals were dried and an interappointment dressing, calcium hydroxide was placed in all the canals. Next appointment, metapex intracanal medicament was placed in mesio-buccal canal. The mesio-lingual and distal canals were obturated with gutta-percha cold lateral condensation technique. Periodontal surgery was planned with respect to 46 as the lesion was primarily periodontal in nature.

After administering 2% lidocaine with 1:80,000 epinephrine and achieving complete anaesthesia, buccal and lingual intra crevicular incisions were given and full thickness muco-

periosteal flaps were reflected including one adjacent tooth on either sides of 46. Meticulous degranulation and root planning were carried out with copious saline irrigation. Muco-periosteal flaps were repositioned and secured using 3-0 non restorable black silk sutures. Coe pack was placed and post-operative instructions were given. Suture removal was done after one week. Post-surgical follow up was weekly for one month and after 3 and 6 months of surgical procedure. The patient was trained to maintain his oral hygiene using interproximal aids with proper brushing techniques.

Radiographs after 6 months revealed partial bone fill with respect to mesial aspect of 46 and in the furcation area. The temporary restoration was substituted with Type II glass ionomer cement. The follow up was done every 6 months.

DISCUSSION:

Iatrogenic errors can occur during the process of root canal treatment. In this case report, we found a protaper file fracture in relation to right mandibular first molar. Wu L et al stated the prevalence of protaper rotary file fracture is more in molars than in premolars and anteriors⁵.

Choksi et al mentioned that stainless steel instruments usually fail by excessive amounts of torque and NiTi instruments break due to the combined action of torsional stress and cyclic loading. In our case, NiTi instruments were used for canal preparation. The presence of calcifications in the canal, created excessive torsional stress leading to the fracture of the protaper file⁶.

In the present case, Metapex was used in the mesio-buccal canal. Kawakami et al did a histological study, using calcium hydroxide and iodoform and found new bone formation at the apical foramen⁷. Razak et al has studied the effect of iodoform as an adjunct to periodontal therapy and has concluded iodoform resists the infection and is also an antiseptic and analgesic⁸. Hence the use of Metapex in the present case was validated.

Metapex was placed in the mesio-buccal canal and found that there was no resorption of the material even after 2 year follow up. The patient is asymptomatic and healing/ bone fill is also seen radiographically. (Figure 3).

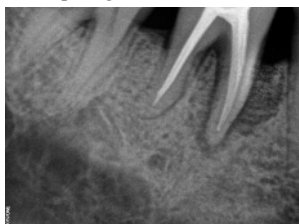


Figure 3: Radiograph Showing Bone Fill Post 2year Follow-up.

Alaçam et al mentions the reason for the longevity of Metapex in the canals is attributed to the presence of BaSO₄ and iodoform in the paste³.

Thus it makes us wonder, if now there is actually a requirement for extirpation of the metapex, re-cleaning of the canal and obturation with gutta percha points??

CONCLUSION:

Endo-perio lesions have a complex pathogenesis and require intra-canal medicaments to neutralise the canals and help in regeneration.

In the present report we found metapex had contributed in the healing and sealing of the canal completely. In the two year follow up, we found there was bone fill, the patient was asymptomatic after treatment and there was no resorption of the metapex.

With the present findings are we to say that obturation with gutta percha is not mandatory in all cases?? Well, the mystery is yet to be solved, but the present case report has certainly opened our minds and encouraged us to study and reconsider the applications of Metapex for the management of endo-perio lesions.

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