



Research Paper

“Metapex” – An Endodontic Boon in Healing Of Periapical Lesion a Case Report

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ABSTRACT

The aim of root canal treatment is to eliminate micro organisms and manage periapical lesions without invasive procedure. Though root canal instrumentation along with irrigation greatly reduces the number of bacteria in infected canals, it is difficult to obtain total disinfection of the canal in all cases. Intracanal medicaments serve as adjuvants along with cleaning and shaping of the canal, to reduce or inhibit the growth of microbes to prevent reinfection. The following case report shows miraculous healing of large periapical lesion using “metapex”, as intracanal medicament and shows why non surgical therapy should be considered as first line treatment option as it proves to be a more conservative approach.

Keywords: periapical lesions, intracanal medicaments, metapex, non surgical healing

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I. INTRODUCTION

Micro organisms exert great influence on development of endodontic lesions^[1]. Infection mediated necrosis and its subsequent spread to the periapical tissue leading to periapical lesion causing periapical granuloma, abscess or cyst are some of the sequelae of untreated infected tooth^[2]. Though the periapical lesion is defensive against microbial attack, they are not self healing^[3].

The ultimate goal of endodontic therapy is to eliminate all micro organisms, their by-products and pulpal remnants from infected root canal space so that the tooth can return to its normal form and function without surgical interventions. Studies have shown 94.4% total or partial resolution of periapical lesions of endodontic origin by simple non surgical treatment^[4].

Though root canal instrumentation along with irrigation easily reduces the number of bacteria in infected canals, it is difficult to obtain complete disinfection in all cases. Microbes, left behind after obturation can proliferate into the isthmuses, apical deltas and dentinal tubules causing reinfection of the root canal system and treatment to fail. Therefore, intracanal medicaments are placed in canals to control such microbes^[5]. Calcium hydroxide, along with various combinations, is the most popular intracanal medicament because of its antibacterial activity. Metapex, which contains 60% calcium hydroxide and 38% iodoform in silicone oil as a vehicle, is the frequently used combination.

II. CASE REPORT

A 19 year old male patient reported to the Department of Conservative Dentistry and Endodontics, in GDC & H, Chhtrapati Sambhajnagar with a chief complaint of pain in lower left back region of jaw, with a history of initiated root canal treatment one year ago. Clinical examination revealed access opening with 37 without any temporization. Intraoral periapical radiograph showed radiolucency involving enamel, dentin and pulp associated with a periapical radiolucency involving both roots of 0.8 to 1.5 mm in size. Based on clinical and radiographical examination and history given by the patient, the provisional diagnosis established was “

previously initiated root canal treatment with acute exacerbation of chronic lesion”. After obtaining patient’s consent, non surgical endodontic therapy with Metapex was planned.

After proper access opening with Endo Z bur, the canals were initially negotiated with # 10 endodontic K file. The distal and mesio buccal canals were easily negotiated, but a blockage in mesio lingual canal resisted further filing. The pre operative radiograph with 37 revealed small instrument separation in mesio lingual canal. The broken instrument in mesio lingual canal of 37 (figure A) resisted further filing of the canal with # 10 endodontic K file. The blockage was found at 15mm in mesio lingual canal which was bypassed with #8 endodontic K file following **bypass technique** as shown in figure B. The canal was further instrumented with # 10 K file and working length of all the three canals were determined using an electronic apex locator (SybronEndo). The canals were over instrumented 1-2 mm beyond the apical foramen to relieve pressure and establish drainage through the canals. The canals were irrigated with 3ml 2.5% sodium hypochloride followed by 1ml of normal saline solution in between instrumentation. The mesio buccal and mesio lingual canals were prepared upto F2 Protaper rotary files and distal canal was prepared upto F3 protaper rotary files (SuperEndo Niti flex). The canals were dried with sterile paper points. Intracanal medicament (Metapex) was injected through the canals using disposable navitips upto the working length (figure C). Temporary dressing was given and the patient was recalled immediately next day to evaluate any sign and symptom of pain and swelling, but the patient was completely asymptomatic and remained asymptomatic thereafter. The patient was recalled after 3 weeks, 5 weeks, 7 weeks and 11 weeks interval (figure D,E and F respectively). After healing of entire periapical lesion at the end of 11 week, metapex was completely removed by irrigating with 0.9% normal saline and intermediate instrumentation with #10 K file. Finally, the canals were obturated with gutta percha points and cavity sealed with cavit. Patient was recalled after 3 more days and temporary dressing was replaced with permanent restoration (figure G).

III. DISCUSSION

Necrotic pulp act as nidus for microbial growth. These organisms release their toxins in periapical region which triggers inflammatory reaction and bone resorption^[6]. Inflammatory lesions of endodontic origin may vary in size from 5 to 8 mm in diameter. Upto 10mm in size, the lesions are considered as granulomas, while larger ones as cysts. Different non surgical and surgical treatment modalities are used in treating the lesions of endodontic origin. Microbial eradication by cleaning and shaping and by placement of intracanal medicaments forms the basis of endodontic success. According to recent reports, 42 to 74% of periapical lesions, has been successfully treated by non surgical endodontic approach.

Metapex which is a combination of calcium hydroxide and iodoform paste in an oily vehicle has shown its positive effects to kill the most resistable bacterial species of *E. faecalis*. This bacteria is found in significantly higher numbers at a depth of 250um into the dentinal tubules, where only calcium hydroxide paste was unable to penetrate. But, its combination with silicone oil, as a vehicle, helps it to penetrate to a deeper depth of 250um into the dentinal tubules and show its lethal action on *E. faecalis* which cannot resist a pH above 11.5. The synergistic action of all the three ingredients in Metapex, increases its antimicrobial spectrum of action. More so ever, not only the iodoform is effective as a medicament, it has also been shown to be host-tissue friendly and hence often used as a resorbable medicament in primary pulpectomies also^[7].

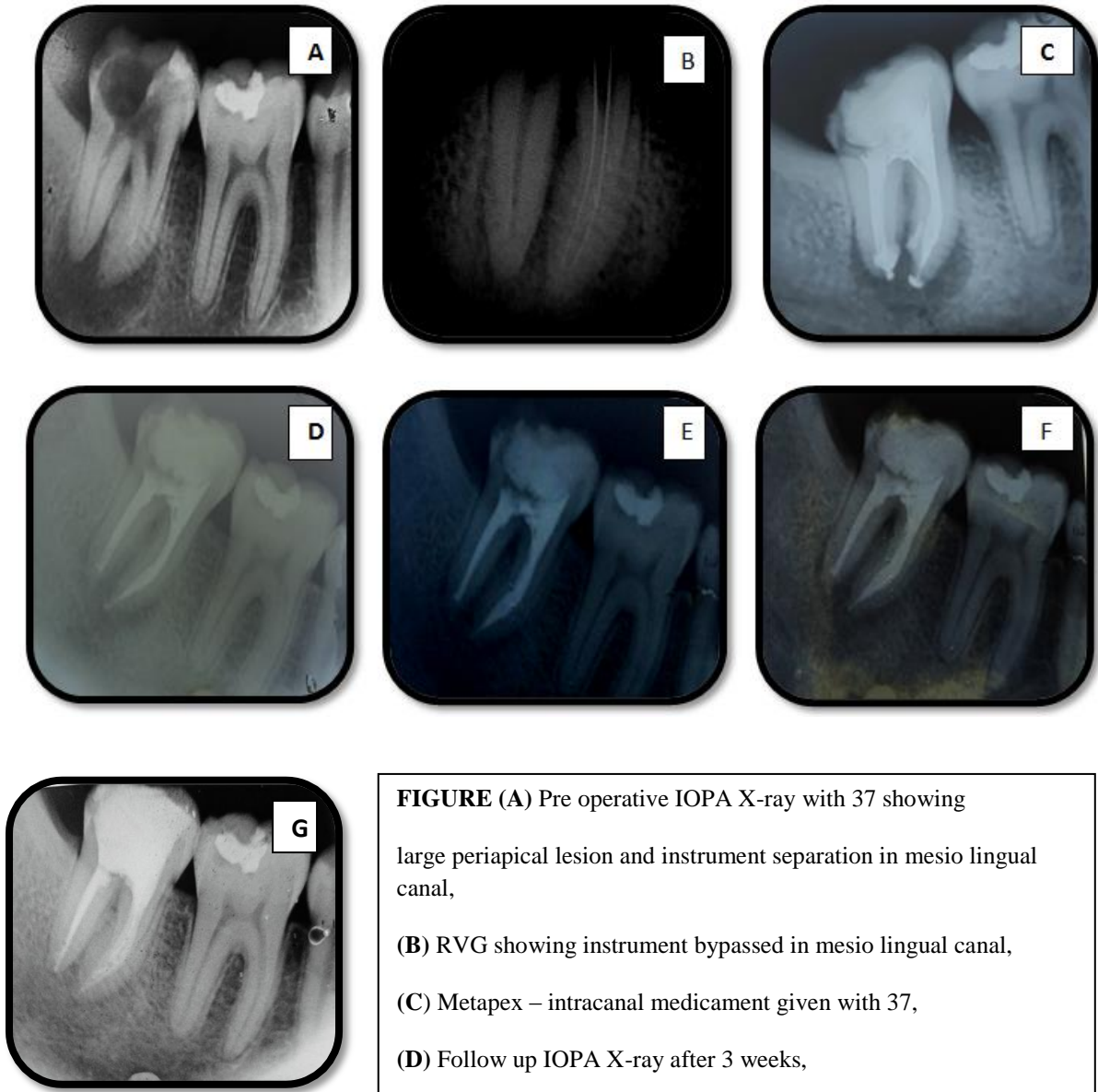


FIGURE (A) Pre operative IOPA X-ray with 37 showing large periapical lesion and instrument separation in mesio lingual canal,
(B) RVG showing instrument bypassed in mesio lingual canal,
(C) Metapex – intracanal medicament given with 37,
(D) Follow up IOPA X-ray after 3 weeks,
(E) Follow up IOPA X-ray after 5 weeks,
(F) Follow up IOPA X-ray after 7 weeks,
(G) Post operative radiograph after 11 weeks showing obturated 37 and completely healed periapical lesion.

IV. CONCLUSION

When the root canal is extensively infected, there is a merit in using an intracanal medicament as a part of controlled sepsis. Metapex has been widely used in weeping canals, apexification, internal and external resorption, to heal large periapical lesions, as root canal filling for deciduous teeth, etc. The above case proves that even extensive periradicular lesions can be healed non surgically using metapex as intracanal medicament. Also, giving us a moral that the canal should never be kept empty when interappointment time periods are too long.

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