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Management Of Inter-Appointment Flare Up- A Case Report

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Abstract

Background: Flare-ups are commonly encountered problem during and after endodontic therapy. Flare-ups are defined by the occurrence of pain, swelling, or both, either during or after the root canal procedure. Their prevalence causes discomfort among patients.

Purpose: The purpose of this reports is to manage flare up during interappointment endodontic treatment.

Methodology: The case reports in question seem to address this gap by discussing the management of an interappointment flare-up and post endodontic treatment. This occurred while carrying endodontic therapy, patient reported to the department of conservative dentistry and endodontics for endodontic treatment. During the RCT sessions, patient presented with considerable pain. After re-evaluation, the flare-up was managed through careful re-debridement of the root canal, application of an intracanal medicament, and reinforcement of postoperative care. The treatment led to a successful resolution of symptoms, with the patient reporting complete relief of pain and no further complications during subsequent visits.

Result: After meticulous management of the cases, patient was found to be completely asymptomatic, with no further complications in follow-up visits.

Conclusion: This case effectively establish the fact that timely and systematic management of flare-ups can alleviate symptoms and help in reducing additional complications in endodontic treatment. These findings also put focus on the critical role played by thorough preoperative assessment, meticulous technique, and educating patients in minimising the risk of flare-ups. There is still a need for further research and development to manage such conditions in more efficient fashion.

Keywords: Flare-up, Inter-appointment, Root canal treatment, Pain, Swelling

Introduction

Root canal therapy (RCT) aims to eliminate or at least entomb bacteria from an infected root canal. Flare up is one of serious encountered during and after endodontic therapy. AAE defines flare-up as an acute exacerbation of an asymptomatic pulp/ or periapical pathosis after the initiation or continuation of root canal treatment". (1) The term "flare-up" is commonly used to describe the occurrence of notable pain and/or swelling that can occur as

soon as a few hours later or as late as a few days later. Morse et al reported an incidence of approximately 20% flare-ups where swelling was the only criteria, after treating asymptomatic teeth with pulp necrosis and chronic apical periodontitis. [(2)] In contrast, Barnett and Tronstad in a retrospective study determined an incidence of approximately 5.5% flare-ups, where pain and/or swelling were the criteria, in patients with a similar diagnosis of pulp necrosis with asymptomatic periapical lesion, but 1.4% in all patients regardless of diagnosis. [(3)] Several factors may lead to periapical inflammation, including mechanical factors such as instrumentation (hand files or rotary), chemicals such as medicament that are introduced into the periapical area, or the extrusion of debris at the apex. These factors depend mainly on the type of tooth, root canal system configuration, periapical lesions status, sinus tract existence, tooth vitality, and intracanal medications. [(4)] Additionally, research has demonstrated that those with periapical lesions are more likely to experience discomfort and flare-up episodes compared to those without these clinical abnormalities. [(5)] The body's protective mechanism launches a combat response when this damage occurs, causing discomfort and swelling.

Case Report

A 38 year old male patient presented to the Department of Conservative Dentistry and Endodontics, Sharda School of Dental Sciences, Greater Noida with a complaint of severe pain from tooth #14. Tooth #14 was tender to percussion with no mobility, slightly sensitive to palpation and no associated pockets were found related to that tooth. In orthopantomogram (Fig 1) shows class 2 caries and widening of pdl. The concluding diagnosis was chronic irreversible pulpitis with symptomatic apical peridontitis. After discussing this with the patient, the treatment decision was to do an RCT. After giving local anesthesia to the patient, the caries were excavated under rubber dam isolation and removed. The access cavity was then troughed to the proper outline with full deroofing, and root canals were identified. Working length was determined using an apex locator (fig 2). Biomechanical preparation was completed using hand instruments with a crown down technique using protaper gold upto #F2 under copious irrigation with 5.25% sodium hypochlorite solution followed by 2 mL of saline. A closed dressing of zinc oxide eugenol temporary restoration was applied in the access cavity, an intra-canal medication based on calcium hydroxide was placed, and an occlusion check was performed to conclude the initial session. Two days after the first appointment, the patient reported with pain and swelling on the left side of the face, extending to his right cheek (fig 3). The temporary restoration was removed and the canals were re-irrigated with copious amounts of normal saline and no instrumentation was done. Antibiotics and analgesics were prescribed for the patient for five days. After explaining the issue, the patient was instructed to apply cold packs for 15 minutes, take them off for another 15 minutes, and then apply a warm pack to help relieve and lessen the swelling. After seven days, the swelling had subsided completely and the patient became asymptomatic (fig 6). Obturation of the root canal was completed using cold lateral compaction of the gutta-percha (fig 5). The access cavity was subsequently restored with composite resin. Patient was monitored and kept for follow up for any unusual sign and symptoms and was asked to report in case of any symptoms. Follow up was done till 3 months after which tooth was provided with full coverage restoration.

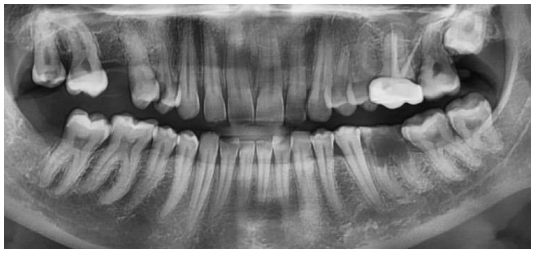

Fig:1 Pre-Operative OPG

Fig 2: WORKING LENGTH DETERMINATION

Fig 3: SWELLING ON RIGHT SIDE OF THE FACE

Fig 4: MASTER CONE

Fig 5: POST OPERATIVE

Fig 6: FACIAL SWELLING SUBSIDED

PICTORIAL AND RADIOGRAPHICAL IMAGES OF CASE REPORT

Discussion

The target of endodontic treatment is to eradicate harmful microorganisms, but because the root canal system is so intricate, this can be challenging to achieve. If access to the root canals is possible, nonsurgical endodontic retreatment is usually preferable when dealing with situations where the endodontic treatment fails. [6] Pain and swelling are the most common sign and symptom that can occur during flare-up. An "alteration of the local adaptation syndrome" could be the reason of this. A new irritant, such as medication, irrigating solutions, or chemically modified tissue proteins, may be introduced into the granulomatous lesion during endodontic therapy. [7] This may cause a violent reaction that results in liquefaction necrosis, which is an indication of an alteration and demonstrates that the local tissue has adapted to the applied irritants. Chemicals used in endodontic treatments, like as sealers, irrigation solutions, and intracanal medications, have the potential to be toxic and cause irritation and flare-ups if they come into touch with the tissues around the teeth. [8] When considering microbial causes as etiological factors, recurrent caries—a fresh microbial invasion in a location where coronal repair has already been undertaken but not fully sealed—are a significant consideration. The reestablishment of microorganisms within the root canal system can be caused by the presence of bacteria, and the subsequent migration of bacteria and debris to adjacent tissues can cause pain and inflammation. The apico-coronal seal is therefore the main source of worry since it can be disrupted, which allows bacteria to proliferate and cause a periradicular lesion to form or worsen. [9] In general, the defence mechanisms of the host and bacteria are in equilibrium. This equilibrium is upset in favour of microbial aggression, which results in acute periradicular inflammation. Debris may unintentionally be extruded during the surgery, the root canal microbiota may alter, or the environment may have an impact. Facultative bacteria can proliferate as a result of inadequate chemical and mechanical preparations, subsequent intraradicular infections, and elevated oxidation-reduction potential within the root canal. [10] Numerous elements, including as pathogenic strains, virulent clonal types, cell count, and microbial interactions, influence the onset of discomfort related to endodontic infections. According to certain research, some bacterial species are more frequently linked to peri-radicular illnesses. Prevotella and Peptostreptococcus species produce acute clinical signs, while Porphyromonas species are more frequently linked to peri-radicular lesions and abscessed teeth. Peptostreptococcus, Eubacterium, Porphyromonas endodontalis, P. gingivalis, and Prevotella species were the most often found bacteria that caused discomfort when percussion was applied. According to a number of studies, acute abscesses and other chronic endodontic infections are frequently caused by Gram-negative anaerobic. [11] Treatment options have been proposed, such as occlusal relief before endodontic therapy to prevent postoperative pain. In conjunction with localized treatment approaches, including re-instrumentation, placement of intracanal medicaments, and drainage establishment, they are employed to manage flare-ups because they lead to improved outcomes and fewer postoperative complications. [12]

Conclusion

In endodontic treatment, controlling flare-ups is essential to getting good outcomes. Flare-ups may occur as a result of pre-existing infections, intraoperative complications, real-time monitoring, and prior therapies. There are careful methods that can reduce the likelihood of flare-ups. To avoid and manage any possible issues, a patient's education and postoperative care are crucial. Numerous factors affect flare-up occurrence, and management and prevention of flare-ups require adherence to a specific treatment strategy. More research will be necessary to establish such a procedure.

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