Available online at www.ijpcr.com
International Journal of Pharmaceutical and Clinical Research 2015; 7(2): 148-150

ISSN- 0975 1556

Research Article

Flare Up in Endodontics: A Review

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Available Online: 26th February, 2015

ABSTRACT

An endodontic flare-up is a complication of endodontic treatment which is defined as an acute exacerbation of aymptomatic pulpal or periapical pathoses after the initiation or continuation of root canal treatment. Flare-up is a true complication where, within a few hours to a few days, after the endodontic procedure a patient has significant increase in pain or swelling or a combination of the two, wherein the patient must come in for an unscheduled visit, for emergency treatment. In this review article we underline the etiology, clinical conditions, causes, diagnosis, various treatment modalities for relief of pain and swelling in such cases and prevention of flare-up.

Keywords: flare up, endodontics

INTRODUCTION

Flare-up is described as the occurrence of pain, swelling or the combination of these during the course of root canal therapy, which results in unscheduled visits by patients[1]. Pain may occur soon after initiating endodontic treatment for an asymptomatic tooth or shortly after the initial emergency treatment or during the course of the treatment. It is suggested that the incidence of interappointment emergency associated with endodontic therapy was 4.2%[2].

Flare-ups may occur with the best of the therapy, but most flare-ups occur when improper treatment is rendered or when insufficient time is allowed for specific modalities in therapy according to Franklin S Weine[3]. Acute periapical inflammation is the most common cause of mid treatment pain and swelling. Mid treatment emergencies are related to irritants left within root canal system, iatrogenic factors under the control of the operator and host factors[4]. The occurrence of mild pain is relative.

ETIOLOGY

Dr Seltzer discussed a number of hypothesis thought to be related to the etiology of flareups[5]. These would include:

- Alteration of the local adaption.
- Changes in periapical tissue pressure .
- Microbial factors.
- Effects of chemical mediators.
- Changes in cyclic nucleotides.
- Immunological phenomena.
- Various psychological factors.

CLINICAL CONDITIONS

Common clinical conditions associated with flareups are Apical peridontitis secondary to treatment: A tooth which was symptomless before the initiation of endodontic treatment but becomes sensitive to percussion during the course of the treatment. Causes for this condition most frequently are over instrumentation or over medication or forcing debris into the periapical tissues.

Incomplete removal of pulp tissues during the initial appointment: In some instances due to lack of time factor the endodontic therapy may consist of incomplete pulpectomy after a diagnosis of acute or chronic pulpitis. This situation generally occurs when the radicular pulp is already inflamed.

Phoenix abscess: It is a condition that occurs in teeth with necrotic pulps and apical lesions that are asymptomatic . There is a exacerbation of a previously symptomless periradicular lesion. The reason for this phenomenon is thought to be due to the alteration of the internal environment of the root canal space during instrumentation which activates the bacterial flora[6] .

Recurrent periapical abscess: It is a condition where a tooth with an acute periapical abscess is relieved by emergency treatment after which the acute symptoms return. In some cases the abscess may recur more than once, due to microorganisms present.

Causes Of Flare-Ups: If during endodontic treatment the periradicular tissues are damaged during the manipulations in the root canal, then an acute inflammatory response, called a flare-up, begins. Even though the flare-up activates the defensive system of the body which starts fighting the infection, the flare-up brings also about undesirable effects for the patient – pain and swelling[7].

Clinical symptoms: The next factor determining the post-operative pain is clinical symptoms that were there before the treatment such as tooth pain when biting, chewing or by itself and sensitivity to percussion[8]. 80% of patients who feel tooth pain before the beginning of the treatment usually feel the pain and after[9, 10, 11] pain enhances the

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stress level in the body and effects immune function in a negative way therefore increasing the probability of a flare-up[12].

Tooth which is being treated: Glennon et al study results show that temporary pain is felt, 7 times more often when the canals of the molar teeth are treated compared to other teeth types. Higher frequency of pain in the lateral teeth type is determined by the complicated complex anatomy of the root canals and chemo mechanical preparation[13, 14, 15].

One and/or two visits during the treatment: Primary endodontic treatment when the pulp is viable or endodontic retreatment when there are no visible clinical symptoms related to the changes in periradicular tissues, chemomechanical preparation and filling of the root canal is done by one visit. If the pulp is necrotic and there are radiological changes in periradicular tissues, endodontic treatment is done by two visits: during the first visit the root canal is prepared chemomechanically, filled with intracanal medicaments for maximal root canal disinfection and the crown is hermetically sealed with temporary filling, while during the second visit the filling of the root canal is performed [16,17,18,19].Studies show that there is no direct link between manifestation of the post-operative pain and amount of the visits during the endodontic treatment[18,19]. However some studies show controversial results, i.e. that pain is more common after one visit endodontic treatment[20, 21]. Yold et al study summarizes that flare-up rate is 9 times higher after one visit endodontic retreatment compared to retreatment by two – visits[16].

DIAGNOSIS AND MANAGEMENT

Establishing the cause the flareup is an important step towards management of mid treatment pain. It is necessary to forewarn the patient that he may experience slight pain after the appointment and advise an over-the-counter analgesic. When patient experience moderate to severe pain after the first appointment , the clinican must review the diagnosis to ensure the tooth under treatment has been identified correctly as the source of pain . If so the periapical and pulpal status have to be reviewed to determine whether the patient has a inflammatory condition or acute infection

Pain associated with instrumentation: It can manifest as – Acute periapical peridontitis or as Phoenix abscess.*Acute periapical peridontitis* occurs due to overinstrumentation; extrusion of canal contents through the apex ,leaving the tooth in traumatic occlusion or placing too much of intracanal medicament . Absence of an apical stop and presence of blood in the apical portion of the root canal usually indicates overinstrumentation [4].Treatment constitutes of reopening the tooth, irrigation with a combination of irrigants such as sodium hypochlorite and chlorhexidine ,placement of a suitable intracanal medicament and relieving the tooth from occlusion. According to Seltzer, intracanal medication reduces the possibility of flareups due to the forcing of infected debris into the periapical tissues[22] .Cohen advocated relieving occlusion prior to root canal therapy to prevent post operative pain[23]. *Phoenix abscess* is a difficult condition to deal with and it occurs subsequent to initial instrumentation of the canal with a pre existing chronic periapical lesion. The sign and symptoms mimic that of acute periapical abscess. Treatment consist of irrigation , debridement of the root canal and drainage either through the canal or trephination depending on the intensity of the pain .Antibiotics and analgesics can be prescribed. the working length, complete removal of the remaining vital pulp tissue and relieving the tooth from occlusion.

Pain associated with pulpal necrosis: Studies suggest that the incidence of flare-ups is higher with necrotic pulp tooth than in vital tooth. Tayfun Alacam et al in his study found that the incidence of flare-ups in tooth with necrotic pulp is 7.17%[24].The best method of managing the necrotic pulp is to establish accurate working length of tooth and complete instrumentation of root canal in the first appointment . Removal of debris from the canal should be the goal. When there is a flareup the tooth should be reopened , observe for the presence of pus .If there is pus in the canal without soft tissue swelling it indicates an acute abscess in early stages, in such cases pain is more severe .If only pain is present copious irrigation should be used and all debris are removed . An intracanal medicament is placed and resealed. If pain is present along with swelling then drainage should be established either through the apex of the tooth or the soft tissue .It as been advocated that antibiotics and analgesics such as NSAIDS be prescribed. The use of antibiotics alone without establishing drainage is not considered appropriate. The concept of leaving the canal open for drainage is controversial.

Prevention Of Flareups : Flare ups causes a dilemma to the clinican when it is difficult for the patient to comprehend that they enter the office pain free, but experience a sustained increase or severe pain during or after treatment. Certain precaution that are taken by a clinican can prevent flare-ups in most instances.

Proper diagnosis: Identify the correct tooth causing pain. Ascertain whether tooth is vital or non vital. Identify if tooth is associated with periapical lesion.

Determine correct working length: By using Radiographs and Apex locaters. Complete extirpation of vital pulp.

Irrigation -Preferably with combination of irrigants such as sodium hypochlorite and chlorohexedine. Avoid filing too close to the radiographic apex.Preform apical trephination only if necessary.Reduce tooth from occlusion especially if apex is severely violated by over instrumentation. Placement of intracanal medicaments. Prescription of mild analgesics and antibiotics whenever condition warrants it.

CONCLUSION

The occurrence of mild pain and discomfort following endodontic treatment is common even when the treatment rendered is of the highest standard. It is the duty of the clinican to explain it to the patient. Prompt and effective treatment of flareups is an essential part of the overall endodontic treatment .

REFERENCE

1. Gerald W Harrington,Eugene Watkin.Mid treatment Flareups.DCNA; 36:1992 409-423.
2. Mor C, Rotstein I, Friedman S.Incidence of interappointment emergency associated with endodontic therapy.J Endod ;18:10,1992 509-511.
3. Franklein S.Weine .Endodontic Therapy Fifth Edition,Mosby;203-237.
4. Mahmoud Torabinejad , Richard E. Walton, Managing endodontic emergencies.JADA. 1999; 122:99 103.
5. Samuel Seltzer, Irving J. Naidorf . Flareups in endodontics.1 Etiological factors. J Endod .2004;30:476-481.
6. P.Carrotte.Endodontic Part 3. Treatment of endodontic emergenies. BDJ .2004 ;197:299-305
7. Siqueira JF, Barnett F. Interappointment pain: mechanisms, diagnosis and treatment. Endod Topics 2004;7:93- 109.
8. Walton RE. Interappointment fl are-ups: incidence, related factors, prevention, and management. Endod Topics 2002;3:67-76.
9. Sathorn C, Parashos P, Messer H. The prevalence of postoperative pain and fl are - up in a single- and multiple – visit endodontic treatment: a systematic review. Int Endod J 2008;41:91-9.
10. Marshall JG. Consideration of steroids for endodontic pain. Endod Topics 2002;3:41-51.
11. Glennon JP, Ng YL, Setchell DJ, Gulabivala K. Prevalence of and factors affecting postoperation pain in patients undergoing two - visit root canal treatment. Int Endod J 2004;37:29-37.
12. Walton R, Fouad A. Endodontic interappointment fl are - ups: a prospective study of incidence and related factors. J Endod 1992;18:172-7.
13. Glennon JP, Ng YL, Setchell DJ, Gulabivala K. Prevalence of and factors affecting postoperation pain in patients undergoing two - visit root canal treatment. Int Endod J 2004;37:29-37.
14. Naoum HJ, Chandler NP. Temporization for endodontics. Int Endod J 2002; 35:964-78.
15. Ng YL, Glennon JP, Setchell DJ, Gulabivala K. Prevalence of and factors affecting post - obturation pain in patients undergoing root canal treatment. Int Endod J 2004;37:381-91.
16. Sathorn C, Parashos P, Messer H. The prevalence of postoperative pain and fl are - up in a single- and multiple – visit endodontic treatment: a systematic review. Int Endod J 2008;41:91-9..
17. Alonso-Ezpeleta LO, Gasco-Garcia C, CastellanosCosano L, Martín-González J, López-Frías FJ, SeguraEgea JJ. Postoperative pain after one - visit root – canal treatment on teeth with vital pulps: comparison of three different obturation techniques. Med Oral Patol Oral Cir Bucal 2012;17:e721-7.
18. Undoye CI, Jafarzadeh H. Pain during root canal treatment: an investigation of patient modifying factors. Contemp Dent Pract 2011;12:301-4.
19. Figini L, Lodi G, Gorni F, Gagliani M. Single versus multiple visits for endodontic treatment of permanent teeth: a Cochrane systematic review. J Endod 2008;34:1041-7
20. Ghoddusi J, Javidi M, Zarrabi MH, Bagheri H. Flare – ups incidence and severity after using calcium hydroxide as intracanal dressing N Y State Dent J. 2006;72:24-8.
21. Seltzer S, Naidorf IJ. Flare - ups in endodontics: II. Therapeutic measures. J Endod 2004;30:482-8
22. Gotler M, Bar-Gil B, Ashkenazi M. Postoperative pain after root canal treatment: a prospective cohort study. Int J Dent 2012;2012:310467
23. Shah SI, Qayyum Z, Shah SA, Khan S, Pasha F. Prophylactic use of antibiotics to prevent fl are - up in endodontic treatment. Pakist Oral Dental J 2011;31:427-31.
24. Pasqualini D, Mollo L, Scotti N, Cantatore G, Castellucci A, Migliaretti G, et al. Postoperative pain after manual and mechanical glide path: a randomized clinical trial. J Endod 2012;38:32-6.