

Original Article

A Comparative Study of flare ups in Single visit & multiple visit Root Canal Treatment

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ABSTRACT:

Background: Flare up is an acute exacerbation of an asymptomatic pulpal and or periradicular pathology is after the initiation or continuation of root canal treatment. The present study was conducted to evaluate the flare ups cases in single visit and multi- visit endodontics. **Materials & Methods:** The present study was conducted on 60 patients of both genders. Patients were divided into 2 groups. In group I teeth (45) single visit endodontics was performed and in group II teeth (45), 2 visits endodontics was performed. Visual analogue scale (VAS) scale was used which showed no pain; mild pain, moderate pain, flare-up, which was difficult to bear. **Results:** In group I, there were 35 patients with 45 teeth and in group II, there were 25 patients with 45 teeth. In group I, flare up was present in 6 cases and 10 in group II. Pain was present in 3 cases in group I and 7 in group II. The difference was significant ($P < 0.05$). **Conclusion:** Authors found that single visit endodontics had less flare up cases and less post operative pain as compared to two visit endodontics.

Key words: Endodontics, Flare ups, Root canal treatment

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INTRODUCTION

Flare-ups can occur after root canal treatment and consist of acute exacerbations of an asymptomatic pulpal and/or periradicular pathologic condition. The causative factors of inter-appointment pain encompass mechanical, chemical, and/or microbial injury to the pulp or periradicular tissues. Microorganisms can participate in causation of inter-appointment pain in the following situations: apical extrusion of debris; incomplete instrumentation leading to changes in the endodontic microbiota or in environmental conditions; and secondary intra-radicular infections.¹

Flare up is an acute exacerbation of an asymptomatic pulpal and or periradicular pathos is after the initiation or continuation of root canal treatment. Flare-ups can occur after root canal treatment and consist of acute exacerbations of an asymptomatic pulpal and/or periradicular pathologic condition.¹The causative factors of inter appointment pain encompass mechanical, chemical, and/or microbial injury to the pulp or periradicular tissues. Microorganisms can

participate in causation of inter appointment pain in the following situations: apical extrusion of debris; incomplete instrumentation leading to changes in the endodontic microbiota or in environmental conditions; and secondary intra radicular infections.²

Post-operative pain after an endodontic procedure is usually associated to the presence of periapical inflammation, which may be the result of over-instrumentation, over-filling, and passage of medicine or infected debris into the periapical tissues, damage of the vital neural or pulpal tissues or central sensitization.³ The present study was conducted to evaluate the cases of flare ups in single visit and two visit endodontics.

MATERIALS & METHODS

The present study was conducted in the Department of Conservative and Endodontics, Jaipur Dental College Maharaja Vinayak Global University Jaipur. It comprised of 60 patients of both genders. Ethical clearance was

obtained prior to the study. All patients were informed regarding the study and written consent was obtained. Inclusion criteria was teeth with radiographic evidence of apical periodontitis and a diagnosis of pulpal necrosis confirmed by negative response to hot and cold tests were considered.

Patients were divided into 2 groups. In group I teeth (45) single visit endodontics was performed and in group II

teeth (45), 2 visits endodontics was performed. Visual analogue scale (VAS) scale was used which showed no pain; mild pain, moderate pain, flare-up, which was difficult to bear. Cases with severe postoperative pain and/or the occurrence of swelling were classified as flare-ups and treated accordingly. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Patients	Group I (Single visit)	Group II (Two visit)
Number	35	25
Teeth	45	45

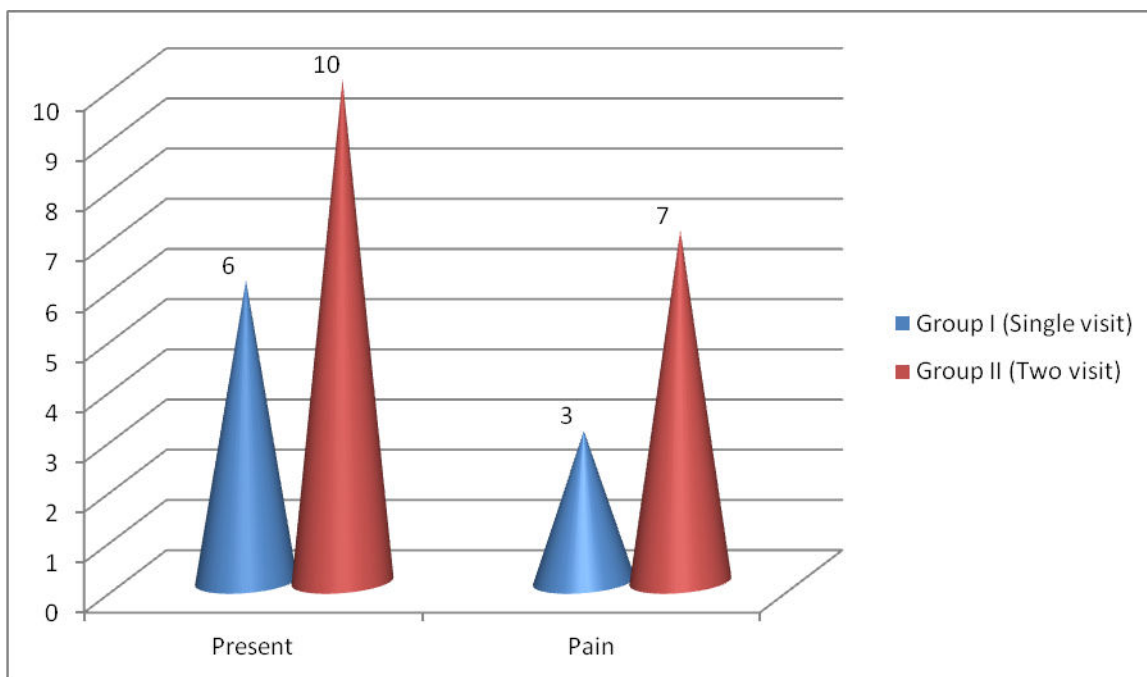
Table I shows that in group I, there were 35 patients with 45 teeth and in group II, there were 25 patients with 45 teeth.

Table II Endodontic flare ups in both groups

Flare up	Group I (Single visit)	Group II (Two visit)	P value
Present	6	10	0.01
Pain	3	7	0.02

Table II, Graph II shows that in group I, flare up was present in 6 cases and 10 in group II. Pain was present in 3 cases in group I and 7 in group II. The difference was significant (P< 0.05).

Graph I Endodontic flare ups in both groups



DISCUSSION

Flare-up is swelling and/or pain, within a few days following an endodontic appointment, which requires an unscheduled emergency visit by patients to relieve the symptoms. Flare-ups are undesirable, as it requires an unscheduled visit and causes great discomfort to patient due to pain and swelling. Although the exact reasons for flare-up are not clearly understood, it is most definitely multifactorial. The prevalence of flare-ups has been examined with respect to patients'

age, gender, tooth position, pulp and periapical conditions, preoperative signs and symptoms, operator skills, number of appointments and treatment protocol, and a positive correlation has been found.⁴ In present study we evaluated flare ups in single visit and two visit endodontics.

In present in group I, there were 35 patients with 45 teeth and in group II, there were 25 patients with 45 teeth. Nair et al⁵ conducted a study in which a total of 1725 patients who were treated during the time period of 2009–2014 by the same endodontist were reviewed. Incidence of flare-up, patients' age, gender, status of pulp, tooth position, number of roots, and treatment provided were taken from their dental records. Relationship between these factors and flare-ups was examined. A total of 2% incidence of endodontic flare-ups was seen out of 1725 cases. Patient's age, gender, and diagnosis had a significant effect on the development of flare-ups ($P < 0.05$). Tooth type, position of tooth, number of root canals, number of visits, and treatment modality had no significant effect on flare-up incidence.

In present study, in group I, flare up was present in 6 cases and 10 in group II. Pain was present in 3 cases in group I and 7 in group II. Mattscheck et al⁶ conducted a study on 46 single-visits, 51 two visits teeth. The occurrence of a flare-up was positively associated only with the treatment of previously symptomatic teeth with periradicular lesions. There was a significant difference regarding the occurrence of flare-ups when comparing treatment cases with retreatment cases. There was also no difference regarding the incidence of postoperative pain between treatment and retreatment ($p > 0.01$). Some level of post operative pain occurred in 25.45% of the cases 23.76% of the treated teeth and 30% of the retreated teeth. Postoperative pain was significantly associated with previously symptomatic teeth and apical periodontitis.

Some studies show that development of the flare-up is caused by two groups of risk factors after extensive procedure: 1) risk factors depending on a patient such as demographics, general state of health, condition of the pulp

and apical periodontal tissue, clinical symptoms, tooth which is being treated, 2) risk factors associated with therapeutic procedures that are one and/or several visits during the treatment, primary endodontic treatment/retreatment and intracanal medicaments. Microorganisms in the root canal system take part in the pathogenesis of asymptomatic apical periodontitis and together with virulent factors they are able to enter periradicular tissues.^{7,8} Glennon et al⁹ study results show that temporary pain was felt six 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 chemomechanical preparation.

CONCLUSION

Single visit endodontics had less flare up cases and less post operative pain as compared to two visit endodontics.

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