

Original Research

Assessment of post- operative pain in single versus multiple sitting root canal treatment- A clinical study

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ABSTRACT:

Background: The present study was conducted to compare single versus multiple sitting endodontics. **Materials & Methods:** The present study was conducted on 40 mandibular first premolar teeth of both genders. Teeth were divided into 2 groups of 20 each. In group I, single sitting root canal therapy and in group II, multiple visit RCT was done. Post operative pain was evaluated using VAS scale after 6 hours, 12 hours, 12 hours, 24 hours and 48 hours. **Results:** Out of 60 patients, males were 35 and females were 25. The mean VAS after 6 hours in group I was 6.5 and in group II was 7.4, at 12 hours in group I was 5.2 and in group II was 6.7, at 24 hours in group I was 3.8 and in group II was 4.5, at 48 hours in group I was 2.3 and in group II was 3.8. The difference was significant ($P < 0.05$). **Conclusion:** Authors found that there was a less incidence of pain in single visit group than multiple visit one.

Key words: Multiple visit, Pain, Root canal treatment

Received: 02/06/2020

Accepted: 18/07/2020

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This article may be cited as: Sonakshi, Mogla S. Assessment of post- operative pain in single versus multiple sitting root canal treatment- A clinical study. J Adv Med Dent Scie Res 2020;8(8):196-198.

INTRODUCTION

The goal of root canal therapy is thorough disinfection and obturation of the root canal system in all its dimensions.¹ Root canal treatment can be done using two approaches; first, completing the treatment in multiple-visits where residual bacteria are eliminated or prevented from repopulating the root canal system by introducing an intracanal medicament during the root canal treatment, and second, removing the remaining bacteria by entombing them in a complete three-dimensional obturation, completing the treatment in one visit.²

One debated issue in the subject of endodontics is whether to do RCT in one or multiple visits, each of them having their own pros and cons. Inflammation and periradicular tissue destruction due to bacteria result in apical periodontitis, which is due to a dynamic process

involving microbe and host defenses at junction of infected root pulp and periodontal ligament.³ This causes periapical tissue destruction and hard tissue resorption, leading to periapical lesions. The management of apical periodontitis includes complete elimination of microbes and also preventing re-infection by sealing the root canal (RC) space.⁴

Single-visit RCTs take less time, cost-effective, prevent RC contamination and/or bacterial regrowth, less stressful to patient regarding anesthesia, and instrumentation related to treatment. Other problems are leakage between visits and loss of temporary seal. Its main disadvantage is that there is no possibility for checks, such as culture and reevaluation of tissue response after treatment procedure.⁵ The present study was conducted to compare single versus multiple sitting endodontics.

MATERIALS & METHODS

The present study comprised of 40 mandibular first premolar teeth of both genders. All were informed regarding the study and written consent was obtained. General information such as name, age, gender etc was noted. Teeth were divided into 2 groups of 20 each. In group I, single sitting root canal therapy and in group II, multiple visit RCT was done. The common procedure was access cavity preparation. Canal patency was checked with a size 15 K file. Then orifice openers taper 0.12 and 0.10 were used for enlarging the coronal and middle third of the canal. They were used at speed

of 350 rpm with a slow gentle in and out movement. RC-Prep was used as a lubricant and 2.5% NaOCl, saline as irrigants. Then the working length was determined with K-file using apex locator and confirmed by a periapical radiograph. Biomechanical preparation was done followed by obturation by gutta percha. Post operative pain was evaluated using VAS scale after 6 hours, 12 hours, 12 hours, 24 hours and 48 hours. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

	Total- 60	
Gender	Males	Females
Number	35	25

Table I shows that out of 60 patients, males were 35 and females were 25.

Table II Distribution of teeth

Groups	Group I	Group II
Procedure	Single visit RCT	Multiple visit RCT
Number	30	30

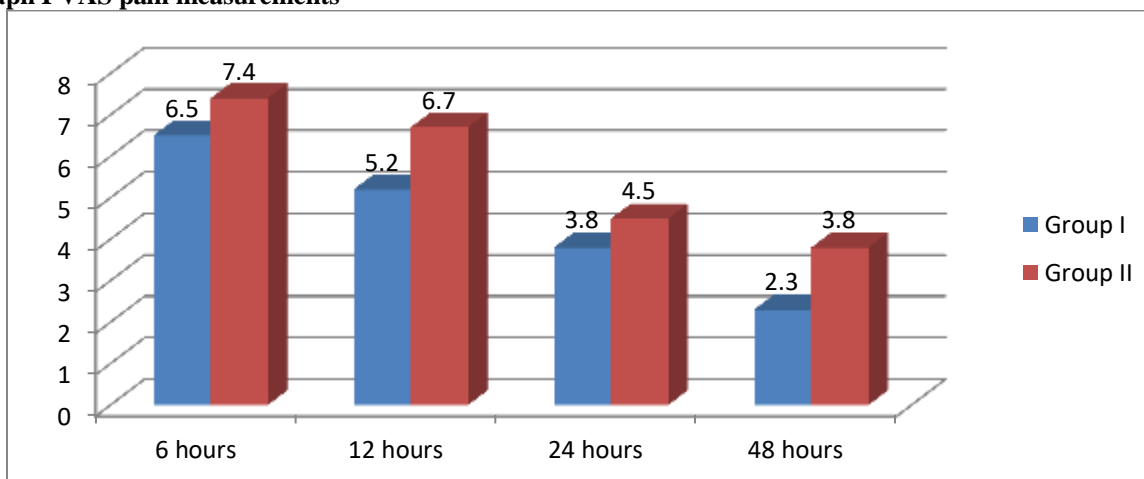
Table II shows that in group I, single visit and in group II multiple visit RCT was done.

Table III Assessment of pain (VAS) in both groups

Interval	Group I	Group II	P value
6 hours	6.5	7.4	0.01
12 hours	5.2	6.7	
24 hours	3.8	4.5	
48 hours	2.3	3.8	

Table III, graph I shows that mean VAS after 6 hours in group I was 6.5 and in group II was 7.4, at 12 hours in group I was 5.2 and in group II was 6.7, at 24 hours in group I was 3.8 and in group II was 4.5, at 48 hours in group I was 2.3 and in group II was 3.8. The difference was significant (P< 0.05).

Graph I VAS pain measurements



DISCUSSION

Endodontists favor to carry out RCT of vital teeth in a single visit. There is a dilemma and controversy whether to carry single- or multiple-visit therapy in pulpal necrosis cases with or without apical periodontitis.⁶ The primary reason in such cases is that bacteria spread into dentinal tubules, lateral canals, and apical deltas, thus causing difficulties in their elimination by chemico-mechanical means of preparation. It is believed by many endodontists that in such cases, intracanal medicament should be placed for longer periods as to lessen or eliminate bacteria resulting in better healing.⁷ The present study was conducted to compare single versus multiple sitting endodontics.

In present study, out of 60 patients, males were 35 and females were 25. In group I, single visit and in group II multiple visit RCT was done. Patil et al⁸ in their study thirty three patients were allotted to group A where endodontic treatment was completed in single visit while 33 patients were allotted to group B where endodontic treatment was completed in two visits. One patient dropped-out from Group A. Hence in Group A, 32 patients were analysed while in Group B, 33 patients were analysed. After 6 hours, 12 hours and 24 hours of obturation, pain was significantly higher in Group B as compared to Group A. However, there was no significant difference in the pain experienced by the patients 48 hours after treatment in both the groups.

We found that mean VAS after 6 hours in group I was 6.5 and in group II was 7.4, at 12 hours in group I was 5.2 and in group II was 6.7, at 24 hours in group I was 3.8 and in group II was 4.5, at 48 hours in group I was 2.3 and in group II was 3.8. Alomaym et al⁹ carried study on 400 successive patients who needed root canal treatment. They were randomly categorized into two groups of 200 each. First group underwent single-visit treatment and the other group underwent multiple-visit therapy. Visual analog scale was employed to evaluate pain preoperatively and postoperatively at 6, 12, 24, and 48 h after obturation. There was a male predominance (235; 60.26%). Of 390 cases, 167 were vital and 223 were nonvital. There was an insignificant difference between the preoperative and postoperative pain levels of vital and nonvital teeth of both the groups at different time intervals.

Single visit root canal treatment has become a common practice and offers several advantages both for patient

as well as dentist. These are reduced number of visits, increased patient acceptance, lesser postoperative flare-ups, reduced chairside time, and practice management considerations. But simultaneously, single visit procedure removes few controls available in the multivisit treatment like culturing.¹⁰

CONCLUSION

Authors found that there was a less incidence of pain in single visit group than multiple visit one.

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