

FLARE-UPS FOLLOWING SINGLE VERSUS MULTIPLE VISITS IN ENDODONTIC TREATMENT

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ABSTRACT

The purpose of this study was to analyze the incidence of post-obturation flare-ups in teeth following single visit versus multiple visits in Root Canal Treatment. Two hundred patients were assigned for single-visit versus multiple visits root canal treatment. For each tooth treated, the clinical factors and conditions existing before and after the completion of treatment were recorded. This data included patient's age, gender, type of tooth, pre-operative status of pulp and periapical tissues and recording pain and swelling (flare-ups) postoperatively after 1 day, 1 week and 1 month. Statistics analyzed by chi-square test, SPSS 19. Fifteen out of two hundreds cases showed flare-ups after treated single visit versus multiple visits appointments. All patients in this study suffered irreversible pulpitis 200 patients divided into two equal groups.

Group 1 Patients were obturated in single visit while group 2 patients were obturated in multiple visits appointments.

It was observed that out of total 15(7.5%) cases of flare-up, 6(40%) were visited multiple time and 9(60%) were visited single time.

It was concluded that the incidence of flare-up or post obturation pain is related to the number of visits and clinical experience of the dentist.

Key Words: Endodontic treatment, Flare-ups, Post-operative pain, clinical skills.

INTRODUCTION

Root canal therapy is the one of the most commonly used procedure to preserve the tooth, which is intended to provide the three dimensional seal without any discomfort for patient as well as to make circumstances for the healing of periradicular tissues.^{1,2} Despite of recent development from conventional endodontic to

rotary system, flare up still remains a major concern among endodontists. An acute exacerbation of pulp or periapical pathosis after initiation or continuation of endodontic therapy is known as endodontic flare-up.³ Flare-ups is a true complication characterized by occurrence of severe pain, swelling or both within few hours to days following endodontics intervention and requiring an unscheduled visit with active treatment.^{4,5} Many studies indicated post-operative pain as low as 0.39%⁶ and as high as 20%.⁷ Post-operative incidence of pain following the root canal treatment reported from 3% to 58%.⁸ Although the occurrence of flare-up is low, it's often having a severe impact on the patients and clinicians. From late 19th century, endodontic treatment completed in single visit protocol, while still single visit versus multi-visits endodontic treatment remains a concern of deliberation among clinicians.⁹ There is a lot of controversy over the completion of root canal therapy in one visit or multi-visits appointment. Many endodontists considered multi-visits approach ensure symptom free period prior to obturation.¹⁰ Studies showing the occurrence of pain were not higher in patients who treated in single visit versus those treated

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in multi-visit appointments.^{10,11} Whereas Incidence of flare up higher in single visit over multi-visit root canal treatment.¹² Therefore, the aim of present study was determine the incidence of post-obturation flare-ups following single visit versus multi-visits root canal treatment at our center.

METHODOLOGY

This Prospective study was conducted at Department of Operative Dentistry, Faculty of Dentistry, Liaquat University of Medical & Health Sciences, Jamshoro which is tertiary care hospital of District; Study was conducted from 1st October, 2014 to 30th March, 2015 (06 months) with sample size of 200 teeth. Out of 200 teeth 78 were anterior and 112 were posterior teeth. Written consent was taken from each patient. All the patients were assigned by port system for single Versus Multiple visits endodontic therapy. A local anesthesia was given prior to access opening; using the step-back technique to cleaned and shaped the root canals with manual K- files. Irrigation of the canals was done with sodium hypochlorite in between each K- file. Every canal dried with absorbable paper points. Finally, canals obturated by lateral condensation technique with Sealapex (Sybron Endo) root canal sealer. Endodontic flare-ups demarcated as either patient's complain of pain not controlled with medication and or increasing swelling.

Inclusion ceriteria: Either Gender, age group 11 to 60 years, no periapical radiolucency and no internal or external resorption.

Exculsion certeria: Medically compromised patient, mobile tooth, unrestorable tooth, tooth with bifurcation area involved and periodontally compromised tooth.

Statistics were analyzed by SPSS 19, Frequency and percentages were calculated for all variables. Chi square test was applied to evaluate association of flare-up with gender, visits, age groups, and sides. The association of flare-up was also observed according to visits by applying chi square test. P-value ≤ 0.05 was considered as significant in all analysis.

RESULTS

Out of total 200 study subjects, 89 were male and 111 were females. Among the study subjects 100 subjects visited single time and other 100 visited multiple times. The age groups showed that age of 48 patients was 11-20 years, 52 patients were 21-30 of age, Age of 47 subjects was 31-40 years, age of 38 patients was 41-50 years and rest of the 15 subjects were 51-60 years of age. Anterior was involved in 88 patients and posterior was involved in 112 cases. Flare Up was observed in 15 cases (Fig 1). Overall frequency distribution is presented in Table 1.

The observation of flare-up was evaluated according to visits, gender, age groups, and sides by applying chi-square test and p-value ≤ 0.05 was considered as significant. It was observed that out of total 15(7.5%) cases of flare-up, 6(40%) were visited multiple time and 9(60%) were visited single time. The association was not statistically significant (p=0.421). 6(40%) were male patients and 9(60%) were female patients. The association was not statistically significant (p=0.209), 4(26.7%) cases were aged 11-20 year, 5(33.3%) cases were aged 21-30 years, 3(20.0%) cases were aged 31-40 years, 2(13.3%) cases were aged 41-50 years and rest

TABLE 1: FREQUENCY DISTRIBUTION OF GENDER, VISITS, AGE, SIDES, AND FLARE-UP

	(n = 200)	Frequency (n)	Percentage
Gender	Male	111	55.5%
	Female	89	44.5%
Visits	Single	100	50.0%
	Multiple	100	50.0%
Age groups	11-20	48	24.0%
	21-30	52	26.0%
	31-40	47	23.5%
	41-50	38	19.0%
	51-60	15	7.0%
Sides	Anterior	88	44.0%
	Posterior	112	56.0%
Flare-up	Yes	15	7.5%
	No	185	92.5%

TABLE 2: ASSOCIATION OF FLARE-UP WITH GENDER, VISIT, AGE GROUPS AND SIDES

	(n=200)	Flare-Up n=15 n (%)	No Flare-Up (n=185) n(%)	P-Value
Gen-der	Male	6(40.0%)	105(56.8%)	0.209**
	Female	9(60.0%)	80(43.2%)	
Visits	Single	9(60.0%)	91(49.2%)	0.421**
	Multiple	6(40.0%)	94(50.8%)	
Age Groups	11-20	4(26.7%)	44(23.8%)	0.966**
	21-30	5(33.3%)	47(25.4%)	
	31-40	3(20.0%)	44(23.8%)	
	41-50	2(13.3%)	36(19.5%)	
	51-60	1(6.7%)	14(7.6%)	
Sides	Anterior	3(20.0%)	85(45.9%)	0.052**
	Posterior	12(80.0%)	100(54.1%)	

**Not Significant at 0.05 Levels

TABLE 3: ASSOCIATION OF FLARE-UP WITH GENDER, VISIT, AGE GROUPS, AND SIDES AMONG SINGLE TIME VISITED PATIENTS

(n=200)		Flare-Up n=9 n (%)	No Flare- UP (n= 91) n(%)	P- Value
Gen- der	Male	3(33.3%)	91(100.0%)	0.000**
	Female	6(66.7%)	0(0.0%)	
Age Groups	11-20	3(33.3%)	44(48.4%)	0.000*
	21-30	0(0.0%)	47(51.6%)	
	31-40	3(33.3%)	0(0.0%)	
	41-50	2(22.2%)	0(0.0%)	
	51-60	1(11.2%)	0(0.0%)	
Sides	Anterior	3(20.0%)	85(45.9%)	0.052**
	Posterior	12(80.0%)	100(54.1%)	

*Highly Significant at 0.01 Levels

TABLE 4: ASSOCIATION OF FLARE-UP WITH GENDER, VISIT, AGE GROUPS, AND SIDES AMONG MULTIPLE TIMES VISITED PATIENTS

(n=200)		Flare-Up n=9 n (%)	No Flare- UP (n= 91) n(%)	P- Value
Gen- der	Male	3(50.0%)	14(14.9%)	0.060**
	Female	3(50.0%)	80(85.1%)	
Age Groups	11-20	1(16.7%)	0(0.0%)	0.000*
	21-30	5(83.3%)	0(0.0%)	
	31-40	0(0.0%)	44(100.0%)	
	41-50	0(0.0%)	36(100.0%)	
	51-60	0(0.0%)	14(100.0%)	
Sides	Anterior	0(0.0%)	0.0(0.0%)	—
	Posterior	6(100.0%)	94(100.0%)	

*Highly Significant at 0.01 Levels

**Not Significant at 0.05 Levels

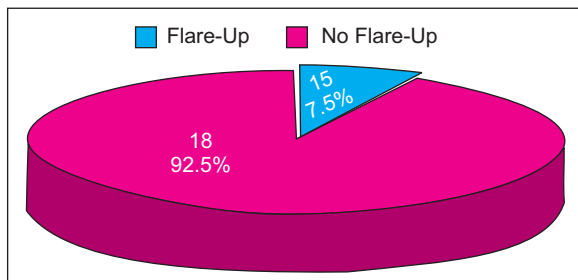


Fig1: Overall Percentage of Flare-Up

of the 1(6.7%) case was belonged to age group 51-60 years. The association was not statistically significant (p=0.966). 3(20.0%) Anterior and 12(80%) posterior were observed flare-up. The association was not statistically

significant (p=0.052). The detailed results are presented in Table 2.

The analysis was also performed according to visits. The chi-square test was again applied and p-value ≤ 0.05 was considered as significant to observed associations. The results showed that among total 9 patients who visited single time and observed flare-up, 3 were males and 6 were females. 3 patients of age 11-20 years, no patient of age 21-30 years, 3 patients of age 31-40 years, 2 patients of age 41-50 years and 1 patient belonged to age 51-60 years. 3 patients observed in anterior and 6 observed in posterior sides. Among 6 patients who visited multiple times and observed flare-up, 3 were males and 3 were females. 1 patient belonged to age 11-20 years, 5 patients of age 21-30 years, and no patients of age 31-40 years, no patients of age 41-50 years and no patients belonged to age 51-60 years. No patient observed in anterior and all 6 were observed in posterior sides. The analysis revealed that association of flare-up among single visited patients according to gender, age, and sides was statistically significant at 0.01 levels. It was also observed that association of flare-up among multiple times visited patients was statistically significant at 0.01 levels according to gender, age, and sides. The detailed results are presented in Table 3 and Table 4.

DISCUSSION

After endodontic treatment, Postoperative pain and discomfort are an upsetting event for the both patients as well dentists and it indicates long term success is poor.¹³ However endodontic therapy requires skill and experience. In the present study, the incidence of post-operative flare-up was observed¹⁵, high rate frequency of flare up influences when root canal was done in single visit. Despite negative aspect many endodontists preference root canal treatment completed in single visit instead multi-visits, while it is not as much of time consuming and majority of people insist to complete root canal therapy in single visit. In current decade, the debates on single and multi-visits endodontic treatment have getting consideration.^{14,15} Hence no consensus has accomplished till to day, many endodontists do not favor to completing endodontic therapy in single visit in that way to avoid possible post-obturate flare-ups. Present study result showed that, out of 100 patients who obturated in a single visit, 9 patients backed with the complaint of severe pain within 24 hours, whereas 6 patients who obturated in multi-visits out of 100 patients with complained of severe pain within 24 hours.

Therefore more flare-ups observed in single visit than in the multi- visits, which showing difficulty to do for single visit root canal therapy. Post obturation pain after conventional endodontic Treatment has reported range from 3% to more than 50%^{17,18}, Other

studies reported small numbers occurrence for endodontic flare-ups such as Walton and Fouad reported occurrence of flare-up 3.17%.⁵ Hence, when endodontic therapy is done by scientific based methods and skillful endodontists then frequency of endodontics flare-ups overall expected could be low.

In present study, incorporated fresh graduates or house officers performed root canal therapy about 200 patients. This is clear specifying that clinical experience is also a subject of matter in taken place of flare-up, thus the higher flare-up occurrence rate must not be manifested as a main factor for the single visit root canal treatment, however concern the fact by understand the essential principles of endodontic is significant in allowing on an individually intended for everyone case prior to create a choice as either or not it could be done in single visit.¹

CONCLUSION

It was concluded by the results of present study that postoperative pain after successful endodontic therapy is mainly related to the preoperative pain. Moreover, it shows that single visit is more prone to flare-up than multi-visit treatment protocol and also higher frequency rate revealed in female than male in respect to the incidence of postoperative pain.

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CONTRIBUTION BY AUTHORS

Naveen Khawaja:	Data collection and abstract.
Irfan Ali:	Introducing writing.
Suneel Kumar Punjabi:	Results and methodology.
Abdul Qadir Dal:	Discussion and conclusion.
Saifullah Qureshi:	Proof reading and editing.