



A QUESTIONNAIRE BASED SURVEY ON PERCEPTION OF SINGLE VISIT ENDODONTICS AMONG DENTISTS

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Conflicts of Interest: Nil

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Abstract:

Background: Single visit endodontics versus multiple visit endodontics have always been a topic of debate among the clinicians. Since the advancement of new technologies in dentistry, dentist is now opting for single-visit endodontics depending on status of the endodontic lesion.

Aim: The main aim and objective of this study to survey the dentist's point of view regarding single visit endodontics and also the reason on which their choices were made.

Material and Methods: A simple questionnaire was distributed among 260 dentists, out of which 184 respondents participated in the study. They were inquired about the type of the treatment they preferred depending on the status of the pulp and periradicular region of the tooth. In the last part participants were investigated about the reasons to choose multiple visits and single visit root canal therapy.

Results: The dentist's choice for the type of treatment was based on the status of pulp and periradicular area. 51.63% of the participants takes 2 visits even when there is no periapical lesion present and 46.73% of them takes 3 or more visits in case of necrotic pulp with periapical lesion. Most of the dentist (50%) who performed root canal treatments gave the reason of pulp being vital for single-visit endodontics.

Conclusion: It was concluded that dentist's in Jammu preferred both single-visit and multi-visit endodontics, depending on the type of case and patient's corporation.

Keywords: Root canal; Single-visit endodontics; Questionnaire; Necrotic pulp

1. Introduction

The health of pulp and periradicular tissue is the major concern of any endodontic treatment. The retention of infected tooth is also guarded by root canal treatment, which might have had to be extracted due to more severe endodontic problems [1]. Since root canal treatment is a skillful procedure, so a thorough knowledge is required for a dentist to practice such treatment [2]. The dentist might face problem like indirect vision, controlling the high-speed burs and vigorous use of endodontic instruments during preparation of the tooth [3].

Earlier endodontic treatment procedures were performed in numerous visits with the objective to completely remove the microbes from the root canal of the tooth. It was considered to be safer and a common procedure [4]. Recently with the invention of newer technologies in the field of rotary endodontics, single visit appointment has been more suitable for the dentist as well as the patients [5]. The single visit endodontics can have other advantages including timesaving, cost- effective to the patients and less chances of infection which might occur between the appointments. The single visit endodontics might be a preferred choice of treatment among the patients due to the less number of appointments and also to avoid reparative postoperative pain [6]. On the contrary, dental practitioners favors multiple- visit root canal therapy [4,7].

The use of intra-canal medicament into the canal is the key to the multi-visits endodontics [8]. Some of the factors like tooth type and tooth position in the dental arch may cause challenges during the treatment of endodontic diseased tooth [2]. However, single-visit therapy has also adverse effects like incidence of flare-ups and long-term success rate [9,10].

The past 10-15 years has changed the way the root canal therapies were performed. The advances in nickel-titanium files with rotary engines and the newer generations of apex locators, have led to a better treatment outcome with least amount of procedural errors [11]. Regardless of these advancements growing today the question arises weather the dentists are adopting these into their everyday endodontic practice [12].

The objectives of this study were:

- To investigate the view of single-visit endodontics among the general dentists in Jammu
- And also, to identify the factors on which their decision was made.

2. Material and Methods

A questionnaire was sent to 260 dental practitioners in Jammu who were registered with Jammu and Kashmir state dental council, regardless of their dental specialty. The questionnaire was distributed personally or through e-

mail. The purpose of the study was briefed to the participants.

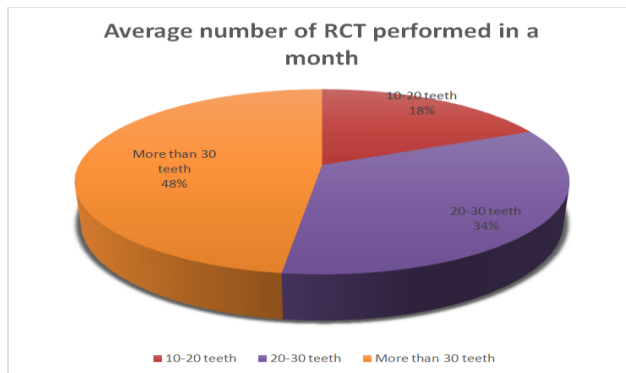
The questionnaire was divided into three sections:

- The first part investigated the age, gender, years of dental practice and high academic degree.
- The second part consists of questions regarding dentist's preferences for single-visit or multi-visit endodontics.
- The third part inquired about the reasons to choose the treatment option.

The data was recorded and then analyzed statistically using SPSS version 24 (SPSS Inc., Chicago, IL, USA).

3. Result

Out of the 260 questionnaires 184 (70.76%) were returned. 57.60% were males and 42.39% were females. 55 (29.89%) of the participants had a master degree. The average number of root canal treatment (RCT) accomplished in a month is more than 30 teeth for 47.82% of the participants (Graph 1).



Graph 1: Average number of Root Canal Treatment performed in a month by the dentist

Regarding the time taken to complete the root canal treatment, participants stated that when the pulp is necrotic and a periapical lesion is present 46.73% of dentist preferred 3 or more visits to complete the procedure. Only 23.36% elected for single-visit endodontic procedure (Table 1). When the biological status of the pulp is necrotic with no periapical lesion, 95 (51.63%) of the participants opted for two-visit therapy and 30.97% of them picked up single-visit endodontics.

Table 1: Number of visits for completion of root canal treatment (RCT) depending upon the condition of the periapical area of the tooth

Condition of the pulp	1 visit (%)	2 visits (%)	3 or more visits (%)
Necrotic pulp with periapical lesion	43 (23.36%)	55 (29.89%)	86 (46.73%)
Necrotic pulp without periapical lesion	57 (30.97%)	95 (51.63%)	32 (17.39%)

When the participants were questioned about the reason for their choice of treatment as multi-visit endodontics, most common reason stated was due to a periapical lesion or a retreatment case (57.60%). At the same time, when queried about the reason for single-visit endodontic therapy, 50% of the dentist answered that vital pulp can be performed in a single day (Table 2).

Table 2: Reasons to perform multi-visit or single-visit root canal therapy

Reasons to perform multi-visit RCT		n (%)
Retreatment Case/ periapical lesion		106 (57.60%)
Hot tooth		93 (50.54%)
Anatomic variations like extra root, calcification, ledge etc.		57 (30.97%)
Uncooperative patients		89 (48.36%)
Others		15 (8.15%)
Reasons to perform single-visit RCT		n (%)
Vital pulp		92 (50%)
Patient's choice		69 (37.5%)
Normal and patent root canal		35 (19.02%)
Non-vital tooth with sinus tract		27 (14.6%)
Others		10 5.43%)

3. Discussion

For a reasonable and authentic study to be conducted, questionnaire- based survey are carried out these days to gathers information from a number of people in very short duration [13]. It is one of the most cost-effective manner to study [14]. In this study, dental practitioners of Jammu were selected. The questionnaire was distributed either by mail or in person. Due to different means opted for distribution, high response rate (70.76%) of the participants was noted. Thus, multimode approach of communication is a better way to perform study [15]. Another strong advantage for this high response to our survey was because of simple and concise questionnaire. The response rate is said to decrease in case the questionnaires are too lengthy [16].

Initially in order to perform a good endodontic treatment the dentist's aim was to establish a proper biomechanical prepared root canal, fine three dimensional obturation. To achieve these objectives, the root canal treatment used to take a number of appointments [17]. However, today the dentist believed that giving so many appointments for a root canal therapy can give rise to a poorly disinfected root canal due to contamination and flare-ups in-between the scheduled appointments [18]. Eventually there was a shift from multi-visit to single-visit endodontics which aimed at complete chemo-mechanical preparation and obturation at a single visit [19]. With the advancement in the field of dentistry, more refined rotary driven NiTi files are used, dental operative microscopes and digitally enhanced radiography, newer generations of apex locators, all these

factors make single visit endodontics more acceptable treatment modality. Multiple visit root canal treatment versus single visit root canal system has always been a question of debate among the dentists. The long term clinical result, control of microorganism and pain, all these have been the issues which are controversial and unresolved [4].

This questionnaire was divided into three section, the first section revealed that the dentist practicing in Jammu were of both the genders but only 29.89% of the participants had a master degree which might have a disapproving respond towards single-visit endodontics. The is quite similar to a study conducted by Lawson NC et al [20]. In the second part when the participants were inquired about the number of visits planned for the patients, it was seen that depending upon the status of periapical disease the visits were planned. Single visit endodontics was well accepted procedure for a tooth without periapical disease but at the same time 51.63% of dentist opted for 2 visit dentistry due to fear of postoperative pain or unavoidable flare-ups. Necrotic pulp with periapical lesion were treated in 3 or more visits by 46.73% of the participants may be due to use of intra-canal medicaments to prevent recurrence of the disease. These results were relatable to the study performed by Araujo Filho et al [21] who stated that dentist opted more for multiple visit therapy in necrosis with or without periapical lesion. On the other hand, a study showed that success rate of single visit root canal treatment was high irrespective of the status of pulp or periradicular disease. They accessed that out of 223 available cases 199 cases showed clinical and radiographic success [22]. In the third section the participants were questioned about the reasons for their choice made on single or multi-visit root canal treatments. The major listed problem for performing multiple appointments was due to presences of periapical disease or retreatment case which accounted for 57.60% of the participants, this might be due to use of intracanal medicaments in between the appointments. According to reports intracanal medicament like calcium hydroxide promotes better healing when compared to single-visit therapy [10]. Another prime reason for not performing single-visit endodontics was "Hot tooth" which is generally referred to irreversible pulpitis with spontaneous and moderate to severe pain [23]. However, when answers about reason for performing single-visit endodontics were analyzed, we noted that 50% of the dentist believed that vital pulp root canal treatment is well-accepted single visit therapy. This fact might be due to fear of inter-appointment contamination of the root canal which might lead to failure in RCT [24]. Other studies have also agreed that coronal seal is of great importance for a better long-term success of root canal therapy [25,26].

There is no valid reason in literature to avoid single-visit endodontic therapy. On the contrary, if the root canal space is left open in between appointments there might be chances of bacterial growth leading to mid-treatment flare-ups [27]. A systemic review also quoted that post-operative pain was more after multi-visit endodontics as compared to single-visit endodontics [6].

Although from the above findings it is noted that no pattern of choice of treatment is seen during root canal procedure. Single- visit endodontics or multi-visit endodontics is dependent on clinicians as well as patient's choice.

4. Conclusion

Within the results of this study, it can be concluded that most of the Jammu dental practitioners performed single-visit root canal treatment in vital pulp endodontics. More number of the participants opted for multi-visit therapy even when there was no periapical lesion seen to avoid post-operative pain or flare-ups. With the emerging of new technologies in dentistry, the clinicians are adopting the concept of "maximum dentistry in minimum time".

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