



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1478707>Available online at: <http://www.iajps.com>

Research Article

**EVALUATE THE TECHNICAL QUALITY OF ROOT CANAL
TREATMENT RADIOGRAPHICALLY DONE BY THE HOUSE
SURGEONS*****Dr. Hira Qaisrani, *Dr. Um E Rubab, *Dr. Anam Shahzad**
*De' Montmorency College of Dentistry, Lahore**Abstract:**

Objective: The aim of this study was to evaluate the technical quality of root canal treatment by house surgeons in a dentistry hospital.

Study Design: A Pilot Study.

Location and duration: In the Dental Department of Lahore Medical and Dental College, Lahore for one year duration from September 2016 to September 2017.

Methods: To determine the adequacy of the treatment, radiographic recordings of 64 teeth treated with root canal were analyzed. The last sample consisted of 60 teeth. Root treatment was considered to be sufficient if the apical length of the filling was 0 to 2 mm from the radiographic apex and there was no clearance on the radiograph.

Results: Of the 60 teeth, 27 (45%) were classified as adequate. Accurate radiographic apical length (<2 mm) 35 (58.3%), 44% (73.3%) on radiography was not found any gap. There were 5 teeth fracture due to instruments and this was significantly correlated with more than 20 ° channel curvature ($p = 0.01$). There was no correlation between the adequacy of the treatment and the type of the tooth or the adequacy of the treatment and canal curvature.

Conclusion: Sufficient root treatment assessed by radiography was performed in only 45% of the treated teeth.

Key words: radiographic technical quality, root canal fillers.

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Please cite this article in press Hira Qaisrani et al., Evaluate the Technical Quality of Root Canal Treatment Radiographically Done By the House Surgeons., Indo Am. J. P. Sci, 2018; 05(11).

INTRODUCTION:

In Pakistan, the awareness of the preservation of natural dentists has increased and, as a result, more and more people seek endodontic treatment to protect their natural teeth, rather than extracting pain to alleviate pain and treat excessively decayed teeth. In Lahore Medical and Dental College, Lahore, preclinical endodontics are taught during a two-month rotation in the third month. Last year, students are expected to perform endodontic treatments on patients in hospital under supervision. During mandatory one-year housework, patients are expected to perform endodontic treatments once more. If necessary, they can get help from the faculty. The quality of root canal treatment carried out by home surgeons reflects the level of treatment offered to the community, especially since older supervisors cannot be guided. When done correctly, endodontic treatment is very successful, with reported success rates between 85% and 95% (Orstavik et al., 1987) when performed by experts, but decreased by 65% to 75% when performed by experts and general dentists (Eriksen 1991). Friedman 1998). This can be the cause of the standard when working in an experimental environment. Endodontic treatment is much higher. In other configurations, this may not be the case. Boltacz-Rzepkowska and Pawlicka (2002) found that 71% of root-treated teeth were not properly filled in dentistry departments in the Lodz region of Poland. Teeth with sufficient root fill are more likely to have a healthier periapical condition than inadequate fullness (Kirkevang et al., 2000). The gaps in the channel filling and inadequate lateral sealing are also associated with periapical disease in endodontically treated teeth (Chugal et al. 2003, Kirkevang et al. 2000, Dugas et al 2003). Broken instruments have also been shown to result in higher rates of endodontic failure (Crump et al., 1970). Our hypothesis is that root canal treatment is more likely to have a root curvature of at least 20 ° in the teeth and roots, and that molar root canals are performed in a weaker, more independent way. Presence or absence of curvature of the root.

MATERIALS AND METHODS:

This Pilot Study was held in the Dental Department of Lahore Medical and Dental College, Lahore for one year duration from September 2016 to September

2017. 64 teeth of patients with 119 roots were included in the study. These were the first 64 root canals that were completed. It was carried out by assistant surgeons in the Department of Operative Dentistry of the Lahore Medical and Dental College, Lahore. The poor quality of radiographs represented 4 excluded cases. Therefore, 60 teeth with 112 roots were included in the study. The cases performed by other surgeons were pulpal and periapical diseases, elective endodontics and withdrawal. The length of the study was determined by radiographic method. Radiographs were explained with information technology. The channel was prepared using the back-closure method using stainless steel K-files (Mani). The filler was caused by the cold lateral condensation of gutta-percha and the filler used was endomethasone (Septodont). EDTA was used when the pulp chamber was found in the pulp chamber or suspected in the root canals, otherwise irrigation was limited to normal saline use. The following x-ray films were analyzed retrospectively using a magnifying lens (x 2 and x 4) and an X-ray image examining radiographs in a dark room. For measurements, a transparent scale was used with 0.5 mm calibrations. The curvature of the root canal was determined by measuring the internal angle generated by the intersection of two lines through which one draws from the coronal portion of the hole to the hole and the other to the apical part of the apex. Suitable root canals were defined as those in which the apical fill length was <2 mm in the radiographic apex and did not have visible cavities in filling the canal or adjacent to the walls. Inadequate fillings are fillers >> 2 mm below the apex or extended beyond the radiographic apex. The presence of a gap between the filler or the channel wall and the fill made the filling insufficient. The results were analyzed using SPSS. The chi-square test was used to determine whether there was a significant relationship between the fracture instruments, the adequacy and curvature of the treatment, and the adequacy of the channel against the tooth type. Significance was determined at a value of 0.05.

RESULTS:

64 teeth with 119 roots were evaluated. 4, there were X-rays that were not of sufficient quality to be tried, so they were not included. Finally, 60 teeth were

evaluated. There were 112 roots. Of the 60 teeth, 27 (45%) were adequate and 33 (55%) were inadequate.

TABLE 1: RADIOGRAPHIC ADEQUACY OF ROOT CANAL TREATMENT ACCORDING TO TOOTH TYPE

		Adequate	Inadequate
Maxillary	28	15	13
Incisor	5	3	2
Canine	5	4	1
Premolar	10	4	6
Molar	8	4	4
Mandibular	32	12	20
Incisor	2	2	0
Canine	1	0	1
Premolar	12	6	6
Molar	17	4	13
Total	60	27	33

Of the 60 teeth, 35 were placed correctly, taking into account the apical length of the obstruction. Therefore, 58.33% of all teeth were satisfactorily filled according to the apical length criteria of occlusion. 16 (26.7%) were short and 9 (15%) were filled.

TABLE 2: APICAL LENGTH OF OBTURATION

Length of Obturation	Teeth Fre- quency	%	Roots Fre- quency	%
> 2mm from radiographic apex	16	26.7	27	24.1
0-2mm from radiographic apex	35	58.3	66	58.9
Over obturated	9	15	19	17
Total	60	100	112	100

Of the 112 roots, 66 (58.9%) were accepted within 0-2 mm of the radiological apex, 27 (24.1%) were placed below, and 19 (17%) were overdosed. Data on the teeth treated according to the presence or absence of gaps in the filling.

TABLE 3: VOIDS IN THE OBTURATION

Length of Obturation	Teeth Frequency	%	Roots Frequency	%
Uniform density of obturation	44	73.3	91	68.8
Void present in obturation	16	26.7	21	25.0
Total	60	100	112	100

DISCUSSION:

This study consisted of 60 teeth of all types with straight and root canals. 45% of all teeth were considered acceptable. The success criteria were 0-2 mm roots from the radiographic apex without gaps. Most of the studies have used the radiographic criteria of the technical quality radiographic criteria 0-2 mm to demonstrate the appropriateness (E. Boltacz-Rzepakowsky and H Pawlicka (2003) peak). 2005) Lambriadis Eleftheriadis license treated by students of 620 dental records were obtained and 55.3% when the apical filling level evaluation reported that sufficient quality seal, roots and holes .. radiographic apex 0-2 mm and leisure 82.6% stake others, for the license in Turkey A similar criterion was added to the continuation of shrinkage. Root filling The resultant qualification rate was 33%, 69% had apical filling, 53.2% had sufficient radioizite and 68.3% had a gradual decrease. a) 6% 4 is filled appropriately in the Dental Institute. The seniority of the operator has not been discussed, so it may have been made by students, assistants and senior professors. The criterion for adequate obturation was only the apical length of the obturation, which could have increased the percentage of teeth that were considered adequate compared to other studies. The gaps in the channel filling material were not used as a criterion for adequate treatment. In this study, 58.9% of the roots and 58.33% of the teeth were filled with 2 mm of radiographic vertex unless the gaps in the filling were taken into account. These results are very similar. While Hayes et al. (2001) believed that more specialized endodontists were needed to improve treatment standards, Dugas et al. (2003) found that specialist training did not significantly improve the

clinical success rate. However, more people need to be included in the study to confirm the results, he said. Although the quality of radiographic technique is considered to affect the clinical outcome, other factors also play a role. For example, debridement and reduction of the bacterial population, placement of an appropriate coronal seal (Eriksen et al., 2002).

CONCLUSION:

Within the limitations of this study, it was found that 45% of all teeth could be considered in an acceptable way when evaluated radiologically. This study did not show a tendency to inadequate obturation in curved roots compared to smooth roots.

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