



Evaluation of endodontic treatment in three specialized private clinics in Baghdad (retrospective study)

Dr. Firas Saddam Oglah B.D.S., M.Sc.

Dr. Baidaa Mohammed Zeidan B.D.S., M.Sc.

Dr. Mohammed Kassim Gholam B.D.S., M.Sc.

Abstract

To evaluate the prevalence of root canal treatment in a three specialized private clinics in Baghdad and to determine the reasons for carrying out root canal treatment.

A total number of 593 case sheets of patients were selected irrespective of their age, gender, type of tooth treated and cause of endodontic treatment. The data were categorized as follows: the total number of maxillary and mandibular teeth; the number of each individual tooth group treated; the number of teeth treated in each age group (8-25, 26-49, 50-67 years); the total number of treatments performed in males and females patients as well as the causative factor for endodontic treatment.

The maxillary teeth showed higher percentage (55.986%) of root canal treatment than mandibular teeth (44.013%), while mandibular molars show higher percentage (23.102%) in the treated cases than other teeth groups. The highest incidence of root canal treatment was found in the age group twenty-six to forty-nine (49.915%). The female patients were more frequent (67.116%) than male patients. The dental caries was the most causative factor.

The sequel of dental caries was responsible for the majority of the treated cases in which the female patients and maxillary teeth were more frequent.

Key words: root canal treatment, causative factors, age group.

Introduction

Several risk factors may affect the dental pulp. One of the most injurious agents of the dental pulp is caries disease, caused by oral microorganisms ⁽¹⁾. In addition, pulp damage can be caused by infection consequent to trauma, or infection as a result of operative procedure ⁽²⁾. Root canal treatment is one of the most technically demanding procedures and a very specialized aspect in restorative dentistry requiring high level of technical skills ⁽³⁾. The main objective

of root canal treatment is to make the affected tooth or root of a tooth, a proper functional unit which is free from symptoms and pathosis and biologically compatible ⁽²⁾. Information on reasons for and pattern of a treatment are necessary for understanding disease pattern, performance of previous treatment, determination of cost effectiveness and devising future facilities based on patient need ⁽⁴⁾. Boykin et al, found that the most common self reported

reasons for dental visits in which a root canal treatment occur were tooth ache, abscess and dental sensitivity, while dental abscess or tooth ache were the main reasons for root canal treatment⁽⁵⁾. A cross sectional study done by Augusto et al examined the prevalence of endodontically treated teeth in Brazilian adults, found that endodontic treatment was most frequent in maxillary premolars and molars, whereas mandibular incisors showed the lowest prevalence. Also they found that most endodontically treated teeth in people aged 46 to 60 years and females showed a higher prevalence of teeth with root fillings than males⁽¹⁾.

The aim of this retrospective study was first; to evaluate the prevalence of root canal treatment in a three specialized private clinics in Baghdad with respect to the age, gender and type of tooth. Second; to determine the frequencies of various reasons for carrying out root canal treatment.

Material and methods

The present retrospective study was restricted to patients who treated endodontically in the private clinics of the authors between January 2010 to June 2010. A total number of 593 case sheets of patients were selected irrespective of their age, gender, type of tooth treated and cause of endodontic treatment.

The data were categorized as follows: the total number of maxillary and mandibular teeth; the number of each individual tooth group treated; the number of teeth treated in age groups (8-25, 26-49, 50-67 years); the total number of treatments performed in males and females patients as well as the causative factor for endodontic treatment. The case sheets that have no information about one variable were excluded. Also we exclude case sheets with rare cause for endodontic

treatment. Data were analyzed using SPSS version 12.0. Frequency and percentage were calculated for the study variables.

Results

The treatment frequency of each tooth group is presented in Table 1. In relation to the dental arch, maxillary teeth showed higher percentage (55.986%) than mandibular teeth (44.013%). The lower molars were more involved (23.102%) than other teeth groups in both dental arches followed by upper premolars (22.596%); upper incisors (15.851%); lower premolars (13.659 %); upper molars (11.973%); upper canine (5.564%); lower canine (4.047%) and lower incisors (3.204%).

Table 2 shows that the greatest percentage (49.915%) was undertaken for patients with the ages ranging from twenty-six to forty-nine years followed by age groups eight to twenty-five years (33.895%) and fifty to sixty-seven years (16.188%). From the same table it appears that female patients presented higher percentage (67.116%) of treated cases than male patients (32.883%).

Regarding the reasons for root canal treatment, table 3 reveal that dental caries was the cause in 79.426%, while trauma identified in 8.6003% of the cases and the failure of previous endodontic treatment in 11.973%.

Discussion

Epidemiological data on the frequency and distribution of endodontically treated teeth may reflect attitudes toward such treatment as well as the need and demand for it⁽⁶⁾. In this study, root canal treatment was more frequently undertaken in maxillary teeth than mandibular teeth.

This was in agreement with the findings of Ingle and Taintor ⁽⁷⁾ who reported an occurrence of 68% of treated maxillary teeth and 32% for mandibular teeth. This could be related to the aesthetic reason, as the upper teeth appear more prominent than the lower teeth during smile, making the patient more interested to preserve the upper teeth.

The most frequent tooth group in this study was the mandibular molars.

This agrees with the findings of Ridell and Sundin ⁽⁸⁾. The most probable reason was that, the mandibular first molar is the first tooth to erupt in the oral cavity; hence it was more prone to caries. In addition, the mandibular molars are more susceptible to food stagnation than the maxillary molars. This indicates to the fact that preventive measures for lower molars are extremely necessary.

The percentage of endodontic treatment was higher in premolars than incisors in both arches. This could be related to the anterior position of the incisors in the oral cavity; hence the caries can be easily determined by the patient in the early stage.

The present study shows that the twenty-six to forty-nine age group had the highest incidence of root canal treatment, closely followed by the younger group (eight to twenty-five years). This is in agreement with the results of Farrel and Burk ⁽⁹⁾ who showed the highest incidence of endodontic treatment was for patients between twenty-one to thirty years. Also agree with the findings of Saunders and Saunders ⁽¹⁰⁾ who reported fewer endodontic treatments for patients younger than twenty-five and over fifty years.

Women have been very passionate and interested about their oral health, they were found to attend dental services more often for various treatments ⁽¹¹⁾. Thus in our study we

found that a larger proportion of the cases were females.

Dental caries was the cause for endodontic treatment in 79.4% of total cases which is consistent with the findings of Serene and Spolsy ⁽¹²⁾ who found that dental caries and their after-effect were responsible for the majority of the treated cases.

Within the restriction of the present study, we can conclude that:

- 1- Maxillary teeth showed higher percentage of endodontic treatment than mandibular teeth with higher incidence in lower molars than other teeth groups.
- 2- The age between twenty-six to forty-nine years have higher percent of root canal treatment than other ages with higher frequency in female than male patients.
- 3- Dental caries and their after-effects were responsible for the majority of the root canal treatments.

References

- 1- Augusto CB, Ana HG, Cytia DE. Prevalence of endodontically treated teeth in a Brazilian adult population. *Braz. Dent. J.* 2008; 19(4): 313-317.
- 2- Osama K, Alia A, Adil S, Qasim J. Reasons for carrying out root canal treatment-A study. *Pak oral and dent J.* 2009; 29(1): 107-110.
- 3- Ismail NM, Ismail AR. Root canal treatment in hospital university Sain Malaysia dental clinic, a 5-years retrospective study. *Archives of Orofacial Sci.* 2008; 3(1): 23-28.
- 4- Mahmood S, Al-Yahya A, Saad AH, Hussain KA. Reasons for root canal treatment in students and interns clinics in College of Dentistry, King Saud University, Saudi Arabia. *J Pak Dent Assoc.* 2003; 12: 33-6.
- 5- Boykin MJ, Gilbert GH, Tilashalski RR, Shelton BJ. Incidence of endodontic treatment: a 48 month prospective study. *J Endod.* 2003; 29: 8-9.
- 6- Molven O. Tooth mortality and endodontic status of a selected population group: observations before and after

- treatment. Acta Odontol Scand. 1976; 34: 107-16.
- 7- Ingle JI, Taintor JF. Endodontics. 2nd ed. Philadelphia: Lea & Febiger, 1976.
 - 8- Ridell K, Sundin B, Mattson L. Endodontic treatment during childhood and adolescence. Swed Dent J. 2003; 27: 83-89.
 - 9- Farrel TH, Burke FJT. Root canal treatment in General Dental Service, 1948-1987. Br Dent J. 1989; 166: 203-208.
 - 10- Saunders WP, Saunders EM. Endodontics and the elderly patient. Restorative Dent. 1988; 4: 4- 9.
 - 11- Nuttal NM, Steele JG, Pine CM, White D, Pitts NB. The impact of oral health on people in the UK in 1998. Br Dent J. 2001; 190(3): 121- 126.
 - 12- Serene TP, Spolsky VW. Frequency of endodontic therapy in a dental school setting. J Endod. 1981; 7: 385-387.

Table 1: incidence of Endodontic treatment related to the tooth type.

Tooth Types	593 Patients	
	N	%
Maxillary	332	55.986%
Upper Incisors	94	15.851%
Upper Canines	33	5.564%
Upper Premolars	134	22.596%
Upper Molars	71	11.973%
Mandibular	261	44.013%
Lower Incisors	19	3.204%
Lower Canines	24	4.047%
Lower Premolars	81	13.659%
Lower Molars	137	23.102%

Table 2: Incidence of root canal treatments related to age and gender.

Age			Gender	
8 – 25 N %	26 – 49 N %	50 -67 N %	Female N %	Male N %
201 33.895%	296 49.915%	96 16.188%	398 67.116%	195 32.883%

Table 3: Reasons for the endodontic treatment.

Reasons	N	%
Dental caries	471	79.426%
Trauma	51	8.6003%
Failure of the endodontic treatment	71	11.973%