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Original Research

Retrospective assessment of profile of patients undergoing endodontic treatment

[1]Nida Mehmood, [2]Karishma Pathak

[1,2]PG student, Department of Conservative Dentistry and Endodontics, Kothiwal Dental College and Research Centre, Moradabad, Uttar Pradesh, India

ABSTRACT:

Background: Dental caries still remains a global public health problem, although a substantial decline in prevalence in subjects in many parts of the world has been observed. The present study was conducted to assess profile of subjects undergoing endodontic treatment. **Materials & Methods:** 100 subjects more than 18 years of age who underwent endodontic treatment of both genders were recruited in the study. Parameters such ad type of endodontically treated tooth, reasons for endodontic treatment and type of endodontic treatment given was recorded. **Results:** Out of 100 subjects, 40 were boys and 60 were girls. Etiology for endodontic treatment was dental caries in 52 and dental trauma in 48 subjects. The difference was non- significant (P> 0.05). **Conclusion:** Most common etiology for endodontic treatment was dental caries. Most common tooth involved was permanent lateral incisors and most common procedure performed was pulpotomy.

Key words: Dental caries, Permanent lateral incisors, Pulpotomy

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Corresponding Author: Nida Mehmood, PG student, Department of Conservative Dentistry and Endodontics, Kothiwal Dental College and Research Centre, Moradabad, Uttar Pradesh, India

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INTRODUCTION

Functional dentition is an important factor in the process of growth and development of the child patient, therefore preservation of both permanent and permanent teeth in a functional state are a major task in achieving good oral health in subjects.[1] Many risk factors have been found to affect the health of dental pulp and consequently cause pulpal infection. Of these factors, dental caries, periodontal disease and dental trauma have been generally reported to be the major and the commonest causes of pulp necrosis and periapical periodontitis.[2,3,4]

Endodontic treatment is fairly predictable in nature with reported success rates up to 86–98%. However, there has not been a consensus in the literature upon a consistent definition of "success" criteria of endodontic treatment. Likewise "failure" has variable definitions. It has been defined in some studies as a recurrence of clinical symptoms along with the presence of a periapical radiolucency. An endodontically treated tooth should be evaluated clinically as well as radiographically for its root canal treatment to be deemed successful. Patient should be scheduled for follow ups to ascertain that the treatment is a success and the tooth in question is functional. Myriad of factors have been implicated in the failure of endodontic treatment.[3- 8] The present study was conducted to assess profile of subjects undergoing endodontic treatment.

MATERIALS & METHODS

The present study comprised of 100 subjects more than 18 years of age who underwent endodontic treatment of both genders. Parental consent was obtained. Ethical clearance was also obtained before starting the study.

Data such as name, age, gender etc. was recorded. Parameters such ad type of endodontically treated tooth, reasons for endodontic treatment and type of endodontic treatment given was recorded. Data obtained were analyzed using SPSS Version 20.0. P value less than 0.05 was considered significant.

RESULTS

Table I shows that out of 100 subjects, 40 were boys and 60 were girls. Table II shows that etiology for endodontic treatment was dental caries in 52 and dental trauma in 48 patients. The difference was significant (P> 0.05). Pulpectomy was performed on 20 permanent central incisors, 17 permanent lateral incisors, 28 permanent first molar and 35 permanent second molars. The difference was non- significant (P> 0.05).

Table I Distribution of patients

Total- 100		
Gender	**Boys**	**Girls**
Number	40	60

Table II Etiology for endodontic treatment

Etiology	Number	P value
Dental caries	52	0.01
Dental trauma	48	

Table III Endodontic treatments done on deciduous teeth

Tooth	Pulpectomy	P value
Permanent central Incisors	20	0.12
Permanent lateral incisors	17	
Permanent first molar	28	
Permanent second molars	35	

DISCUSSION

Dental caries is defined as a progressive, irreversible microbial disease of multifactorial nature affecting the calcified tissues of the teeth characterized by demineralization of the inorganic portion and destruction of the organic portion of the tooth.[7,8] It is a disease of civilization. Almost all people are affected by dental caries, only the severity differs.[9] There is interplay of three principal factors, the host, the micro flora and the substrate or diet in the occurrence of dental caries. In addition, the fourth factor time must be considered in any discussion regarding etiology of caries. For caries to occur conditions related to each of these factors must be favourable.[10] Dental caries can be prevented by applying suitable measures, hence it is very important to identify those individuals who are most likely to develop dental caries through caries risk assessment, and provide them the required preventive measures to interrupt the disease process.[11,12]

Table I shows that out of 100 subjects, 40 were boys and 60 were girls. Table II shows that etiology for endodontic treatment was dental caries in 52 and dental trauma in 48 patients. J W Field et al determined retrospectively the clinical and radiographic success rate of single-visit root canal treatment performed in a busy endodontic practice using contemporary techniques of canal cleaning, shaping and obturation. Seven hundred and sixty-eight single-visit cases, of which 223 presented for a re-examination appointment ranging from 6 months to 4 years from the day of treatment, were considered. Four endodontists provided examinations for both root canal treatment and re-examinations. Clinical and radiographic data were used to form an overall impression of the outcomes for each case at the time of re-examination. Available demographics and treatment information of these 223 cases were compiled for comparison. The number of treatment visits was not determined by a pretreatment diagnosis or a re-assessment of the pulp status upon entry into the tooth; therefore both vital and necrotic cases, as well as those with and without periradicular pathosis, were included. Statistical analysis was carried out using Chi-square tests and considered variations in failure rates based on gender, provider, tooth type, position and arch. A t-test was used to evaluate data on age. The overall success rate was 89.2%. No statistically significant differences were seen based on gender, age, arch or provider. Statistically, anterior teeth were more successful than posterior teeth.[12]

The difference was significant (P> 0.05). Pulpectomy was performed on 20 permanent central incisors, 17 permanent lateral incisors, 28 permanent first molar and 35 permanent second molars. The difference was non- significant (P> 0.05). Bartols A et al assessed the clinical impact of non-surgical root canal treatments (NSRCT) performed with different treatment protocols on the probability of tooth survival without untoward events and to identify predictors influencing the outcome. 5,858 patients were identified in which 9,967 NSRCTs were performed. The treatments were followed up and divided into three groups. In Group 1 root canal treatment was performed with hand instruments, in Group 2 with multiple file rotary instruments and passive ultrasonic irrigation (PUI), and Group 3 was treated with Reciproc instruments and PUI. Untoward events were defined as orthograde retreatment, apicoectomy or extraction of the tooth after initial treatment. Weibull regression was used to analyse the data. A total of 9,938 cases could be included into the analyses. The results showed 5-years predicted survival rates without untoward events of 73.9% (95% CI [71.7%–76.1%]), 75.1% (95% CI

[71.7%–78.0%]) and 78.4% (95% CI [75.1%–81.4%]) for study group 1 (N = 5,580), 2 (N = 1,700) and 3 (N = 2,658), respectively. The differences between Group 1 and 3 were statistically significant ($p < 0.006$). Higher age of the patient (per year increase) and number of earlier NSRCTs (per unit increase) reduce the survival without untoward events statistically significant (both $p < 0.02$), while treatment of premolars had a statistically significant lower hazard ratio [0.89 (95% CI [0.79–0.99]; $p = 0.030$)] compared to treatment of molars and anterior teeth. A higher number of supportive periodontal treatments (per unit increase) improved tooth survival without untoward events highly significant ($p < 0.0001$). More recent endodontic treatment protocols involving reciprocating instruments and PUI appear to be associated with higher tooth survival rates without untoward events compared to hand instruments.[13]

CONCLUSION

Authors found that most common etiology for endodontic treatment was dental caries. Most common tooth involved was permanent lateral incisors.

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