Research Article

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Retrospective Assessment of Survival of Post and Core Cases

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ABSTRACT

Background: Endodontically treated teeth have been reported to have shorter survival time than vital teeth. Numerous techniques and materials have been proposed for the restoration of endodontically treated teeth. Hence; the present study was undertaken for assessing the survival patients with post and core.

Materials & methods: Data records of all the patients who underwent post and core treatment in the past one year was evaluated. Data of a total of 100 post and core patients included. All the patients were segregated according to the type and arch of tooth. Follow-up records of all the post and core cases were obtained. Segregation of all the teeth was done based on the prognosis. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

Results: Mandibular first premolar was the most common tooth in which post and core treatment was done. Successful post and core treatment based on the follow-up radiographic and clinical records was obtained in 74 percent of the patients, while failure occurred in 26 percent of the patients.

Conclusion: Under proper technique and postoperative care, post and core treatment have good follow-up.

Keywords: Post and core, Prognosis.

INTRODUCTION

Endodontically treated teeth have been reported to have shorter survival time than vital teeth. This is believed to reflect that endodontically treated teeth are often structurally compromised because of a series of events: caries or trauma, endodontic therapy, and preparation for restorative procedures. Thus, to minimize the negative influence on longevity, the restorative procedure of endodontically treated teeth calls for careful consideration of treatment alternatives.[1-3]

Numerous techniques and materials have been proposed for the restoration of endodontically treated teeth. Metallic prefabricated and cast posts have been utilized for decades. More recently, in response to the request for tooth-coloured posts, several non-metallic dowels have been marketed.[4-6] Hence; the present study was undertaken for assessing the survival patients with post and core.

MATERIALS & METHODS

The present study was conducted with the aim of assessing the survival patients with post and core. Ethical approval was obtained from institutional ethical committee and written consent was obtained from all the patients after explaining in detail the entire research protocol. Data records of all the patients who underwent post and core treatment in the past one year was evaluated. Data of a total of 100 post and core patients included. All the patients were segregated according to the type and arch of tooth. Follow-up records of all the post

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and core cases were obtained. Segregation of all the teeth was done based on the prognosis. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Chi- square test was used for assessment of level of significance.

Table 1: Gender-wise distribution

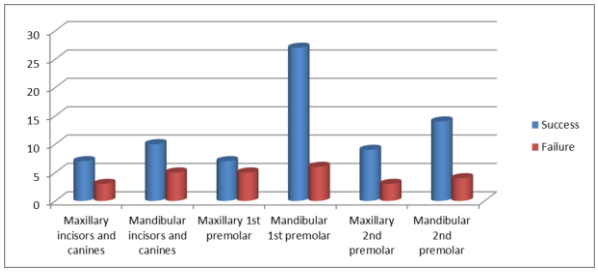
Gender	Value
Males	74
Females	26

Table 2: Tooth type

Tooth type	Value
Maxillary incisors and canines	10
Mandibular incisors and canines	15
Maxillary 1st premolar	12
Mandibular 1st premolar	33
Maxillary 2nd premolar	12
Mandibular 2nd premolar	18

Table 3: Prognosis

Tooth type	Success	Failure	Total
Maxillary incisors and canines	7	3	10
Mandibular incisors and canines	10	5	15
Maxillary 1st premolar	7	5	12
Mandibular 1st premolar	27	6	33
Maxillary 2nd premolar	9	3	12
Mandibular 2nd premolar	14	4	18



Graph 3: Prognosis

RESULTS

Data of a total of 100 patients were enrolled in the present study. Mean age of the patients of the present study was 43.5 years. There were 76 males and 24 females in the present study. Mandibular first premolar was the most common tooth in which post and core treatment was done. Successful post and core treatment based on the follow-up radiographic and clinical records was obtained in 74 percent of the patients, while failure occurred in 26 percent of the patients.

DISCUSSION

Several clinical studies have pointed out that the most frequent failure mode of fibre post retained restorations is post debonding. Since fibre posts are passively retained into the root canal, the effectiveness of the adhesive cement and the luting procedure plays a relevant role in the overall clinical performance of the restorations. Nevertheless, achieving stable adhesion to intraradicular dentine, particularly at the apical level, remains a clinical challenge, due to the negative influence of several intervening factors.[6- 9]

In the present study, data of a total of 100 patients were enrolled in the present study. Mean age of the patients of the present study was 43.5 years. There were 76 males and 24 females in the present study. Mandibular first premolar was the most common tooth in which post and core treatment was done. Balkenhol M et al examined the survival time of custom-fabricated, cast post and cores and to evaluate, which covariates influence the risk of failures over a period of up to 10 years based on a large patient collective. The files of 565 patients, who had been fitted with a total of 802 custom-fabricated, cast post and cores using a standardised technique, were analysed. The following parameters were used in the evaluation: age of the post and cores, fabrication technique (direct, indirect), type of prosthetic restoration, location (upper, lower jaw), type of tooth (anterior, premolar, molar), number of root posts, luting material, post and core alloy and cause of failure. The average survival time of the post and cores was 7.3 years. The cumulative failure rate was 11.2%. The most common complication was loss of retention of the post and cores. High-gold-content posts had a lower risk of failure than posts made from semi-precious alloy.

The type of restoration fitted had a significant influence on the survival probability. Post and cores custom-fabricated using a standardised fabrication technique have a good long-term prognosis.[10]

In the present study, successful post and core treatment based on the follow-up radiographic and clinical records was obtained in 74 percent of the patients, while failure occurred in 26 percent of the patients. Gómez-Polo M et al compared the cumulative survival rate of teeth restored with prefabricated posts and with cobalt-chrome cast post-cores. 112 endodontically treated teeth restored with prefabricated post and cobalt-chrome cast post-and-cores were evaluated. Teeth were considered as failures when were objective or radiologic sign of endodontic failure, post or root fracture, or when they had been extracted at the moment of the evaluation. 93 of the posts were still in function without clinical or radiographic signs of failure at the time of the examination resulting in a survival rate of 83.03% after a mean follow-up period of 10.08 years. When comparing the two techniques, prefabricated posts showed a slightly higher survival rate: 84.6% versus 82.6%.Focusing on tooth-type, maxillary premolars (n=30) had the highest failure rate (30%) and also the lowest mean lifetime, with 6-and-a-half years. Maxillary incisors (n=20) showed the highest success rate (5%) with only one case of failure. The results showed no significant difference between both groups after a 10-year average follow-up.[11]

CONCLUSION

From the above results, the authors concluded that under maintaining proper technique and postoperative care, post and core treatment have good follow-up.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

REFERENCES

1. Leary JM, Aquilino SA, Svare CW. An evaluation of post length within the elastic limits of dentin. J Prosthet Dent.1987; 57:277–281
2. Qualtrough AJ, Mannocci F. Tooth-colored post systems: a review. Oper Dent 2003; 28: 86– 91.
3. Newman MP, Yaman P, Dennison J, Rafter M, Billy E. Fracture resistance of endodontically treated teeth restored with composite posts. J Prosthet Dent 2003; 89: 360– 367.
4. Asmussen E, Peutzfeldt A, Sahafi A Finite element analysis of stresses in endodontically treated, dowel-restored teeth. J Prosthet Dent.2005; 94:321–329
5. Holmes DC, Diaz-Arnold AM, Leary JM. Influence of post dimension on stress distribution in dentin. J Prosthet Dent.1996; 75:140–147
6. Isidor F, Brøndum K Intermittent loading of teeth with tapered, individually cast or prefabricated, parallel-sided posts. Int J Prosthodont. 1992; 5:257–261
7. Ferrari M. Introduction. In: M Ferrari with L Breschi, S Grandini. Fiber posts and endodontically treated teeth: a compendium of scientific and clinical perspectives. Wendywood: Modern Dentistry Media, 2008: 9–13.
8. Fokkinga WA, Kreulen CM, Vallittu PK, Creugers NH. A structured analysis of in vitro failure loads and failure modes of fiber, metal, and ceramic post-and-core systems. Int J Prosthodont 2004; 17: 476– 482.
9. Balkenhol M, Wöstmann B, Rein C, Ferger P. Survival time of cast post and cores: a 10-year retrospective study. J Dent. 2007; 35:50–58
10. Balkenhol M1, Wöstmann B, Rein C, Ferger P. Survival time of cast post and cores: a 10-year retrospective study. J Dent. 2007 Jan;35(1):50-8. Epub 2006 Jun 5.
11. Gómez-Polo M1, Llidó B, Rivero A, Del Río J, Celemín A. A 10-year retrospective study of the survival rate of teeth restored with metal prefabricated posts versus cast metal posts and cores. J Dent. 2010 Nov;38(11):916-20.