International Journal of Early Childhood Special Education (INT-JECSE)
DOI:10.9756/INTJECSE/V14I5.295 ISSN: 1308-5581 Vol 14, Issue 05 2022

CRITERIA FOR A SINGLE CROWN POST ENDODONTIC TREATMENT IN A HOSPITAL SET-UP STUDY.

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ABSTRACT:
The ideal dentistry is not just to restore the function but also associated with aesthetics and comfort of the patients but it has been observed that in an rct treated teeth, extent of destruction is important for fracture prognosis of the tooth. The loss of the marginal ridge resulted in a tremendous decrease in tooth stability. Thus, it becomes important to restore the tooth to preserve its remaining structure and increase the survival of the teeth. Single teeth crown or rightfully called the full veneer crowns post an endodontic therapy are always a choice but there are criterias to arrive at a single tooth crown treatment planning. In the present study we focused on the coronal structure remaining and the defective walls for 48 patients who underwent single crown post rct.

KEY WORDS: Single crown, Mandibular molars, Endodontic therapy, Remaining tooth structure.

INTRODUCTION

It has been observed that in an RCT treated teeth, the extent of destruction is important for fracture prognosis of the tooth (1). The loss of the marginal ridge resulted in a tremendous decrease in tooth stability, whereas a mere endodontic procedure weakened tooth stiffness by about 5%, a two-third decrease in cuspal strength after preparation (2).

In an intensive root canal treatment it becomes important for a tooth to be restored for its further treatment protocol like the teeth acting as an abutment to bear the entire load of mastication. Total tooth restorability index is one such important criteria to decide whether or not the tooth can be restored (3). To the best of our knowledge, a general classification for different degrees of tooth destruction in endodontically treated teeth referring to all tooth types has, till date, not been published (4).

In the present study we focused on OP patients who underwent single tooth crowns treatment at a hospital in southern part of India, chennai and the criterata the clinical followed to come up with the conclusion of single crown for an endodontically treated tooth.Our team has extensive knowledge and research experience that has translated into high quality publications(5–24).

MATERIALS AND METHODS

The present cross-sectional study was done on about 48 single tooth crown patients. The study was performed in a university setting at Saveetha dental college and hospitals. The patients reported were

of the same ethnicity. Ethical approval was obtained to use the data for the study by the Institution ethics board.Data collection was done from the patient list of a particular clinician to rule out clinical error and difference in perspectives. The data was verified using photographs and two external reviewers thus eliminating the sampling bias. Inclusion criteria for the study included patients who underwent single tooth crown placement in relation to the mandibular posteriors.The archives of all the single tooth crown placement done at Saveetha dental college was obtained from an online patient management software. Post data verification the non-specific datas were all excluded from the study group. The tabulated data was statistically analyzed. The results were represented using graphs and tables.

RESULTS:

The data verifications resulted in most of the patients who underwent single tooth crowns in the male population that was about 56% of the population and females being about 44% (**Graph 1**). This can be due to the reason that females pay more attention to their hygiene and appearance. They get early dental checks to prevent further complicating the treatment (4,25).

When looked at the age criteria the age group between 19-29 years [48%]were more likely to undergo single tooth crown which also indicated their high frequency of caries risk leading to rct.
The least to be affected were between 50-59 [4%]then 40-49[12%]and 30-39[35%] (**Graph 2**). The above results can be evidently quoted because younger aged populations are more likely to get caries teeth and with increased age the patient gets edentulous (26).

Since our study included the lower posteriors for assessment it was observed that among the 1st and 2nd mandibular molars it is the 1st molar more receiving the single crown 36[41%], 46[29%], 37[15%], 47[15%] (**Graph 3**) (27).

Finally the criteria chosen for evaluating the single crown included the defective walls. In most cases the crowns were given to a single wall defect in the crown 68%, about 23% of the crown included had no defect and 8% tooth with 2 defective walls (**Graph 4**). This indicated that increased surface for restoration with good support walls was prioritized to increase treatment success (28).

There was no such correlation between the gender and tooth. But a sure correlation between the tooth affected and the age groups.

DISCUSSION:

As observed an increased cuspal deflection when there is an increase in the cavity size. Maximum deflection can be observed in case an extra access cavity preparation was to be performed (29). A complex interaction among the architectonic structure of the radicular-coronal part is supposed to impact the survival rate of the tooth in the further future even post a good treatment protocol (30)

Studies prove that the coronal aspect of the remaining hard tissue and even the wall thickness, the remaining wall structure and the coronal part of the teeth plays an important role in supporting the prosthesis (31). But there is a lack of adequately designed studies to deal with the type of restoration, its criteria for a single crown following endodontic therapy can be found (32)(33). The most widely

accepted and known scale for tooth destruction relating to the amount of the carious spread was advised by Black in 1891 (34) and followed till date, though we wait for further advancement to be made for more precise criteria of a single crown(35)

TABLE:

AGE	GENDER	TEETH	CRITERIA
24	Female	36	0
37	Female	36	0
27	Female	37	0
38	Female	37	0
20	Female	46	0
30	Female	46	0
40	Female	46	0
24	Female	36	1B
48	Female	37	1B
46	Female	36	1D
22	Female	36	1D
34	Female	36	1D
19	Female	36	1D
32	Female	36	1D
26	Female	37	1D
50	Female	46	1D
24	Female	46	1D
34	Female	46	1D
26	Female	36	1M
44	Female	36	1M
45	Female	46	1M
36	Female	47	2BD
30	Male	36	0
36	Male	46	0
21	Male	47	0
23	Male	47	0
26	Male	46	1B
25	Male	36	1D
27	Male	36	1D

33	Male	36	1D
35	Male	36	1D
38	Male	37	1D
32	Male	46	1D
28	Male	46	1D
37	Male	46	1D
32	Male	47	1D
51	Male	47	1D
21	Male	36	1L
29	Male	36	1L
26	Male	36	1L
28	Male	37	1L
42	Male	47	1L
20	Male	36	1M
36	Male	36	1M
28	Male	37	1M
27	Male	47	2BD
34	Male	46	2BL
27	Male	46	2DL

**__note__: 2DL(2 wall defect including disto-lingual), 2BL(2 wall defect including bucco-lingual), 2DB(2 wall defect including disto-buccal), 1M(only mesial wall defect), 1L(only lingual wall defect), 1D(only distal wall defect), 1B(only buccal wall defect), 0(no defect).*

PICTOGRAPH:

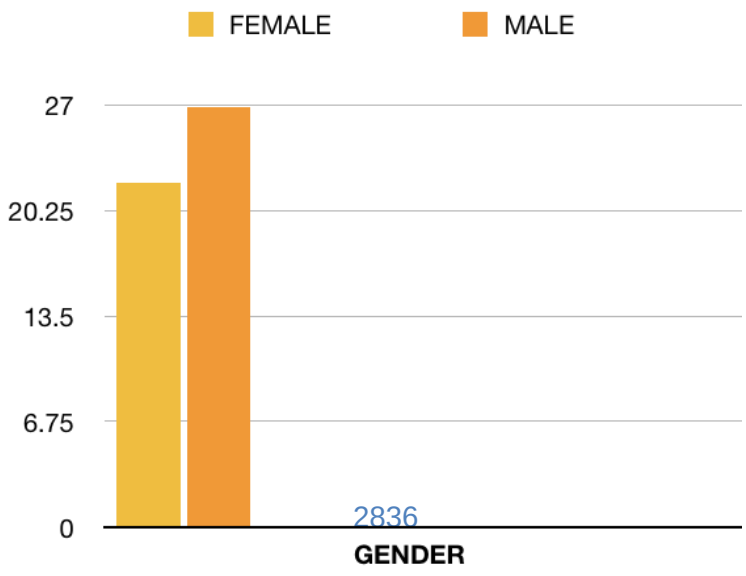

Fig 1. Shows the gender distribution among the study population.

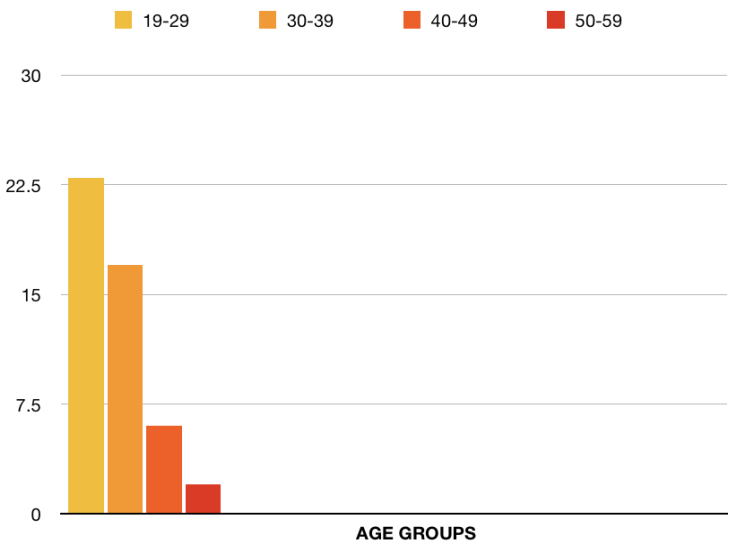

Fig 2. Shows the age distribution among the study population.

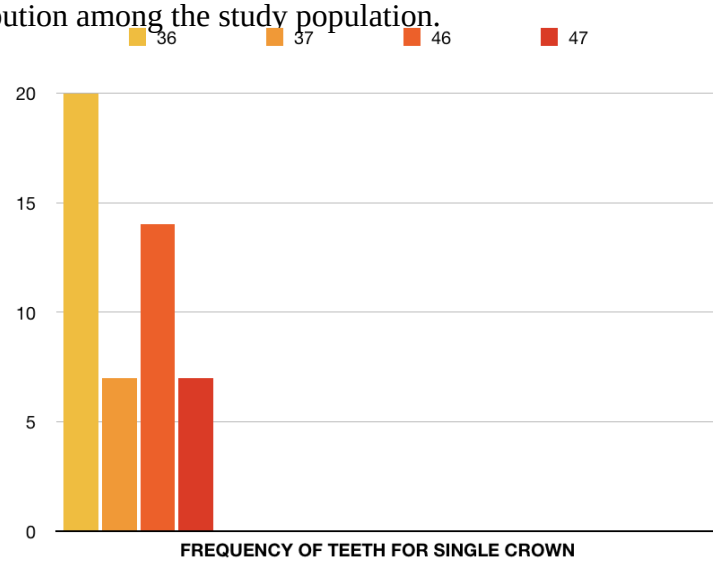

Fig 3. Shows the distribution of frequency of mandibular posteriors underwent for single crown post endodontic therapy.

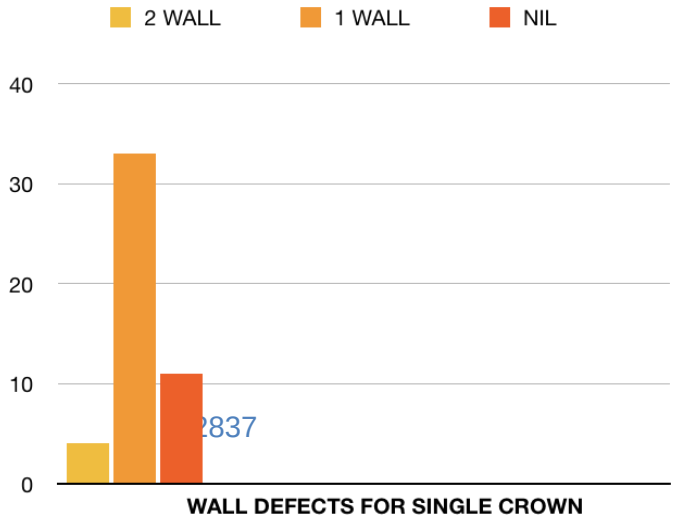

Fig 4. Shows the criteria of wall defect.

CONCLUSION

In the above study only the criteria for the defective walls was taken into account which also limits the other protocols like the amount of dentine thickness, the tooth diameter, its periodontal health and patient complications. Newer advancement to be made for a better outcome to improve the treatment quality for the patient is needed and further study of other factors for a crown selection to be done.

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