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RESEARCH ARTICLE

PREFERRED ENDODONTIC MATERIALS AND TECHNIQUES EMPLOYED BY GENERAL DENTISTS AND ENDODONTISTS – A QUESTIONNAIRE SURVEY

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Key words:-

General dental practice; questionnaire;
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Abstract

Aim: The aim of this survey was to gather information on the materials and methods employed in root canal treatment by endodontists and general dental practitioners in Chennai.

Materials and Methods: The questionnaire was distributed to a total number of 500 dentists. The structured questionnaire comprised of 13 questions with multiple-choice answers with an option for "other". Space was provided below the questions to add any additional comments, in case any treatment modification was not adequately covered by the given choices. The questionnaire included demographic information and questions about the materials and techniques that are typically used in endodontic therapy.

Results: A total of 486 completed questionnaires were collected, representing a response rate of 84.64%. Only 13.5% of GDPs reported using rubber dam. Over 78.6% of the practitioners reported using formocresol for pulpotomies. More than 50% of the dentists participating in the current research reported using conventional radiography in determination of WL. The step-back method was used by 36.6% of the respondents. In the current survey, over 45% of the participants were using CH as an intracanal medicament. In the current study, the lateral condensation of gutta-percha significantly surpassed the other obturation techniques.

Conclusion: It is noted that a group of dentists, irrespective of the time since graduation, relies on techniques and use products and materials which are currently favored by expert opinion. Unfortunately, it was also noted that some of the practitioners are still not using rubber dam as an isolation method. Thus, the standard of care for endodontics can be improved by increasing general dental practitioner interest in pursuing postgraduate education.

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Introduction:-

Economic, functional, aesthetic and physiological advantages of saving natural teeth, have increased the importance of endodontic treatment. However, root canal treatment (RCT) is considered to be a tedious procedure for general dental practitioners (GDPs). It has been shown that more than 50% of teeth do not receive acceptable well-qualified RCT and approximately 30-50% of them develop some radiographic signs of apical periodontitis. The outcome of endodontic therapy is highly dependent on maintenance of treatment standards.

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However, several studies in different parts of the world, have reported the majority of dentists not being in compliance with quality assurance guidelines. Moreover, epidemiological studies suggest that the endodontic failure rate is distinctly higher for teeth treated by non-specialist dentists. Despite the importance of the subject, only one published study has been carried out in Iran that investigated the current opinions of the GDPs regarding fundamental aspects of routine endodontic treatment.

As the attitudes and approaches of GDPs toward endodontic therapy reflect the quality of the treatment and little information is available on how far the changes in endodontic technique have been incorporated into daily practice, the purpose of this study was to gather information on the materials and methods employed in RCT by GDPs in Chennai.

Materials and Methodology:-

This cross-sectional study was approved by the Research Ethics Committee at Saveetha dental college. The questionnaire for data gathering in this research was a modified version of some previous similar studies.

The questionnaire was distributed to a total number of 500 dentists. The structured questionnaire comprised of 13 questions with multiple-choice answers with an option for "other". Space was provided below the questions to add any additional comments, in case any treatment modification was not adequately covered by the given choices. The questionnaire included demographic information and questions about the materials and techniques that are typically used in endodontic therapy.

The participants were selected through simple random sampling technique. Respondents were assured of the anonymity and confidentiality of their responses. Respondents were asked to return the completed questionnaires within half an hour. The questionnaire staff did not wait near the participants while they were answering questions.

The data was processed using the SPSS software (SPSS version 17.0, SPSS, Chicago, IL, USA). For the analysis, the chi square test was used and the level of significance was set at 0.05. The results were then calculated as absolute frequencies and valid percentages. The participants could have more than one answer.

Results:-

A total of 486 completed questionnaires were collected, representing a response rate of 84.64%.

According to the guidelines of the European Society of Endodontology (ESE), RCT procedures should be carried out only when the tooth is isolated by rubber dam, however, only 13.5% of GDPs reported using rubber dam. Over 78.6% of the practitioners reported using formocresol for pulpotomies.

Successful outcome in endodontic treatment essentially depends on establishing a proper WL. More than 50% of the dentists participating in the current research reported using conventional radiography in determination of WL.

Most GDPs were using hand instrumentation and were not inclined to use more advanced engine driven techniques for shaping the root canal. It seems that new developments are slowly being incorporated into daily practice.

The step-back method was used by 36.6% of the respondents. This finding emphasizes on the need for continuing endodontic training courses for GDPs.

CH is recommended as the gold standard intracanal medicament in RCT. In the current survey, over 45% of the participants were using CH as an intracanal medicament.

In the current study, the lateral condensation of gutta-percha significantly surpassed the other obturation techniques.

Discussion:-

The current study evaluated the preference and selection of the materials, methods, and current trends used during RCT by a selected population of Indian GDPs. We targeted GDPs for our study because epidemiological studies suggest that the failure rate is distinctly higher for teeth treated by non-specialist dentists. Moreover, it seems that GDPs provide the majority of dental treatments in India.

According to the guidelines of the European Society of Endodontology (ESE), RCT procedures should be carried out only when the tooth is isolated by rubber dam, however, only 13.5% of GDPs reported using rubber dam. Anyway, this level of rubber dam usage is higher than the frequency reported in the surveys by Slaus and Bottenberg, Ravanshad et al., Unal et al., and Kaptan et al. However, a survey amongst American GDPs showed that 59% of respondents always used rubber dam [12]. Practitioners may equate rubber dam use with extra cost, additional chair time, lack of adequate skills or training, underestimation of its benefits, absence of patient's acceptability or inadequate education in the undergraduate teaching curriculum.

Regarding emergency pulpotomies, it is shown that pain relieving action of dry cotton pellet is as much as pellets moistened with Cresatin, camphorated monochlorophenol, eugenol or saline. Concern has been expressed about formocresol, as it has been classified as a probable carcinogen. Notwithstanding, Over 78.6% of the practitioners reported using formocresol for pulpotomies. The results emphasize the need for continuing dental education programs for practitioners to update their knowledge.

Successful outcome in endodontic treatment essentially depends on establishing a proper WL. More than 50% of the GDPs participating in the current research reported using conventional radiography in determination of WL. On the other hand, new generations of EAL have powerful microprocessors and are able to give accurate readings of WL. According to the existing data, the most precise determination of WL is in combination with radiographs and EALs. Almost 35% of the participants reported using this combination method.

In the current study, the lateral condensation of gutta-percha significantly surpassed the other obturation techniques. It may be due to the fact that it is a relatively simple and versatile technique that does not require expensive equipment. Similar results were observed in many other studies. The reticence to choose some other obturation techniques including injection of warm gutta-percha, carrier-based techniques and continuous-wave method, might be due to possible mishaps during obturation, complexity of the techniques, relatively high initial cost and the need for more equipment compared to simplicity of the lateral compaction technique. On the other hand, in most universities lateral compaction is the principally taught obturation technique.

It was interesting to note that 43.2% of the respondents were still using zinc oxide eugenol root canal sealers. Whereas in studies conducted in Flanders and Turkey, resin based root canal sealers were the most popular ones.

Conclusion:-

It is noted that a group of dentists, irrespective of the time since graduation, relies on techniques and use products and materials which are currently favored by expert opinion. Unfortunately, it was also noted that some of the practitioners are still not using rubber dam as an isolation method. Thus, the standard of care for endodontics can be improved by increasing general dental practitioner interest in pursuing postgraduate education.

References:-

1. Ravanshad S, Sahraei S, Khayat A. Survey of endodontic practice amongst Iranian dentists participating restorative dentistry congress in Shiraz, November 2007. *Iran Endod J.* 2008;2(4):135.
2. Unal GC, Kaya BU, Tac AG, Kececi AD. Survey of attitudes, materials and methods preferred in root canal therapy by general dental practice in Turkey: Part 1. *Eur J Dent.* 2012;6(4):376.
3. Raoof M, Heidaripour M, Shahravan A, Haghani J, Afkham A, Razifar M, Mohammadizadeh S. General dental practitioners' concept towards using radiography and apex-locators in endodontics. *Iran Endod J.* 2014;9(4):277-82.
4. Weiger R, Axmann-Krcmar D. Prognosis of conventional root canal treatment reconsidered. *Dent Traumatol.* 1998;14(1):1-9.
5. Akhlaghi N, Nourbakhsh N, Khademi A, Karimi L. General Dental Practitioners' Knowledge about the Emergency Management of Dental Trauma. *Iran Endod J.* 2014;9(4):251-6.
6. Weisleder R, Yamauchi S, Caplan DJ, Trope M, Teixeira FB. The validity of pulp testing: a clinical study. *J Am Dent Assoc.* 2009;140(8):1013-7.
7. Kaufman AY. An enigmatic sinus tract origin. *Dent Traumatol.* 1989;5(3):159-61.
8. Loest C. Quality guidelines for endodontic treatment: consensus report of the European Society of Endodontology. *Int Endod J.* 2006;39(12):921-30.

9. Slaus G, Bottenberg P. A survey of endodontic practice amongst Flemish dentists. *Int Endod J.* 2002;35(9):759-67.
10. Al-Omari WM. Survey of attitudes, materials and methods employed in endodontic treatment by general dental practitioners in North Jordan. *BMC oral health.* 2004;4(1):1.