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Knowledge About Management of Tooth Avulsion Among General Dental Practitioners In Dakshina Kannada: A Questionnaire Based Study

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ABSTRACT

INTRODUCTION

Avulsion is the total dislodgement of an intact tooth from its socket. The challenge is to maintain the vitality of periodontal cells, as prognosis of a replanted tooth is directly proportional to the viable periodontal cells. The prognosis of an avulsed tooth is very much dependent on its extra alveolar time, the procedures performed at the time of the avulsion injury, the storage media in which it is stored among other factors. The thorough knowledge of the general dental practitioners is very much necessary for the management of the avulsion of teeth. Therefore, this study was conducted to evaluate by means of a questionnaire, the knowledge about management of tooth avulsion among general dental practitioners in Dakshina kannada.

AIM

The aim and objective of this study was to assess the knowledge about management of tooth avulsion among general dental practitioners in Dakshina kannada.

MATERIALS AND METHODS

Questionnaire based survey was designed. All the Questions checks the knowledge of the general dental practitioners. Soft copies and hard copies of questionnaires was distributed among general dental practitioners belonging to Dakshina kannada.

RESULTS

Most [78.6%] of the respondents knew that the avulsed tooth should not be reimplanted immediately in all the cases. Most [92.9] of the respondents had knowledge about the important factors that determine the prognosis of the reimplanted avulsed tooth are extra alveolar time, storage media and amount of damage that has happened to the periodontal ligament. Most [92.3%] of the respondents knew that the extra alveolar time should not be more than 60 min for good prognosis of the reimplanted avulsed teeth. However, only few respondents [32.9%] knew that milk is the best storage medium. Only few [40%] of the respondent knew that flexible splints should be used for splinting, but, many of them [64.3%] knew that the ideal splinting time is 7 to 14 days. Many of the respondents [67.1%] knew that root canal treatment should not be done in all the cases and 71.4% of the respondents knew that administration of tetanus, antibiotics and antinflammatory drugs should be considered depending upon the severity of each case. Only few [21.7%] of the respondents knew that patient should be followed for 5 years after reimplantation.

CONCLUSION

Within the limitations of this study, the knowledge regarding avulsion and its management was found to be adequate among general dental practitioners in Dakshina kannada. However, it is seen that there is a relative lack of knowledge regarding storage medium, type of splinting and the duration of follow-up after replantation. Therefore, various seminars, continuous dental education or workshops should be conducted so as to increase their awareness in a proper prescribed management of tooth avulsion.

KEY WORDS: Avulsed tooth, Replantation, Knowledge, general dental practitioners.

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INTRODUCTION

Tooth avulsion is the complete dislodgement of a tooth from its alveolar socket, which can be due to accidental or non-accidental injury. Avulsion is the most serious form of dental trauma which is very common among children between 8 and 11 years old.¹ Based on studies, it is observed that about 10% of the population will have experience of dental trauma in their life, of which tooth avulsion accounts for 1-16% of cases with higher prevalence among boys and for maxillary incisors.^{2,3} The unavoidable consequence of the tooth avulsion is the damage of the attachment apparatus. Preserving and Maintaining of the periodontal ligament that is attached to the avulsed tooth is very critical for the good prognosis and success of the treatment.⁴ The prognosis of an avulsed tooth is very much dependent on its extra alveolar time, the procedures performed at the time of the avulsion injury, the storage media in which it is stored. In those cases, in which these factors are unfavourable, degeneration of periodontal ligament (PDL) and pulpal necrosis of the avulsed tooth will happen, resulting in root resorption or ankylosis, leading to subsequent loss of the avulsed tooth.⁵ The thorough knowledge of the general dental practitioners is necessary for the management of the avulsion of teeth. Therefore, this study was conducted to evaluate by means of a questionnaire, the knowledge about management of tooth avulsion among general dental practitioners in Dakshina kannada.

MATERIALS AND METHODS

The present study was a cross-sectional study questionnaire-based survey conducted among general dental practitioners in Dakshina kannada. A 9-item questionnaire were included in the study to assess knowledge of dental practitioners about management of tooth avulsion. The questionnaire was in English language and open ended and self-administered. The Ethical approval was obtained from the Ethics committee KVG dental college Sullia, Dakshina Kannada. Both hard and soft copies of the questionnaire will be used wherever feasible. Soft copies will be submitted to respondents via email. Copies will be posted online on a dedicated group of general dental practitioners in Dakshina kannada. A total of 70 responses were included in the study.

QUESTIONNAIRE

%, n (number of responses)

1. Should an avulsed tooth be Immediately replaced back to its alveolar socket?
 - a. Never 0%, n=0
 - b. Yes, in all the cases 21.4%, n=15
 - c. Not in all the cases* 78.6%, n=55
 - d. No idea. 0%, n=0
2. What are the factors that may influence the prognosis of replanted avulsed tooth?

- a. Extra alveolar period 1.4%, n=1
 - b. Storage medium 2.9%, n=2
 - c. Injury to the periodontal ligament 2.9%, n=2
 - d. All of the above* 92.9%, n=65
3. What is the best storage medium that the avulsed tooth be stored with?
- a. Milk* 32.9%, n=23
 - b. Patient's saliva 18.6%, n=13
 - c. Hank's balanced salt solution 48.6%, n=34
 - d. Physiological saline solution 0%, n=0
4. What is the ideal time that an avulsed tooth can be kept out of the alveolar socket?
- a. Less than 1 hour* 92.9%, n=65
 - b. Between 1 hour and 2 hours 7.1%, n=5
 - c. Between 2 hour and 3 hours 0%, n=0
 - d. Not sure 0%, n=0
5. Type of splinting to stabilize the avulsed tooth?
- a. Rigid splints 54.3%, n=38
 - b. Flexible splints* 40%, n=28
 - c. No need for splinting 2.9%, n=2
 - d. No idea 2.9%, n=2
6. Ideal splinting duration for good prognosis?
- a. Less than 7 days 4.3%, n=3
 - b. 7 to 14 days* 64.3%, n=45
 - c. 14 to 21 days 27.1%, n=19
 - d. 1 month 4.3%, n=3
7. Should root canal therapy be done to the avulsed tooth?
- a. Yes, in all cases 30%, n=21
 - b. Not in all cases* 67.1%, n=47
 - c. Never 1.4%, n=1
 - d. No idea 1.4%, n=1
8. What should be the ideal systematic medication prescribed to the patient?
- a. Anti-inflammatory drugs 1.4%, n=1
 - b. Anti-inflammatory and antibiotic drugs 25.7%, n=18
 - c. Anti-inflammatory and antibiotic drugs and tetanus prevention* 71.4%, n=50
 - d. No medication required 1.4%, n=1

9. Ideal number of years the patient should be clinically and radiographically followed up?
- a. 1 year 53.6%, n=37
 - b. 2 years 16%, n=12
 - c. 3 years 8.7%, n= 6
 - d. 5 years* 21.7%, n=15

*Best answer from the choices provided

RESULTS

Some important observations are presented with the help of pie charts. Most [78.6%] of the respondents knew that the avulsed tooth should not be reimplanted immediately in all the cases. Most [92.9] of the respondents had knowledge about the important factors that determine the prognosis of the reimplanted avulsed tooth are extra alveolar time, storage media and amount of damage that has happened to the periodontal ligament. Most [92.3%] of the respondents knew that the extra alveolar time should not be more than 60 min for good prognosis of the reimplanted avulsed teeth. However, only few respondents [32.9%] knew that milk is the best storage medium.

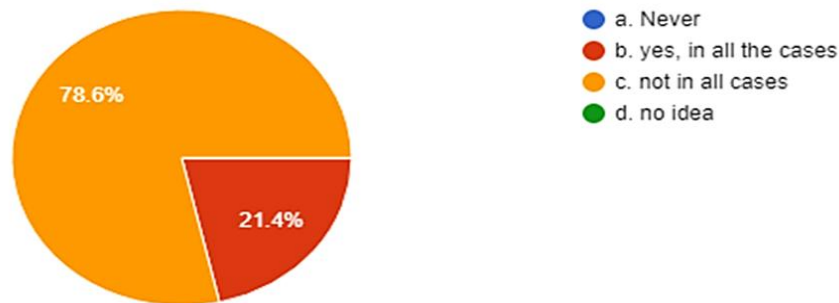


Figure 1: Replanting avulsed tooth immediately back to its alveolar socket.

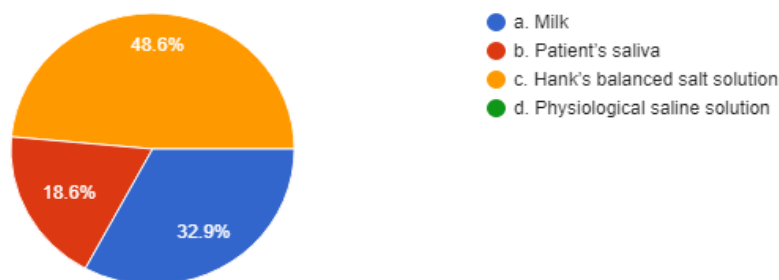


Figure 2: Best storage medium for avulsed tooth.

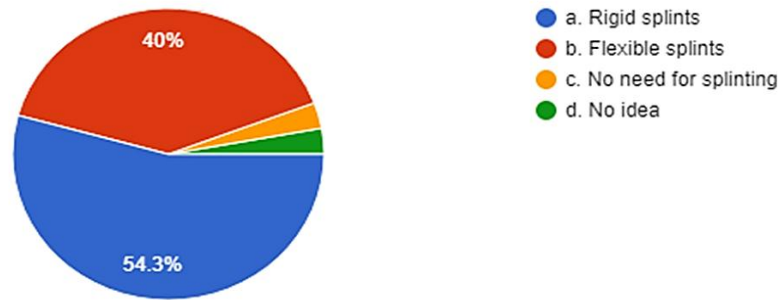


Figure 2 : Type of splinting to stabilize the avulsed tooth.

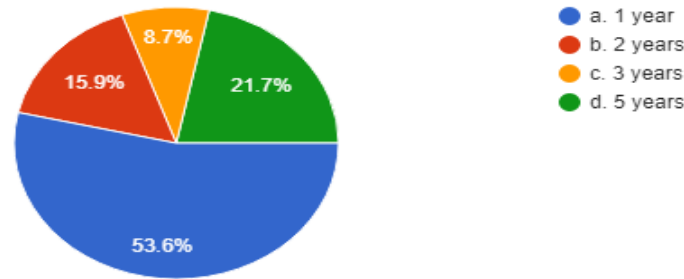


Figure 3: Ideal number of years the patient should be followed up.

Only few [40%] of the respondent knew that flexible splints should be used for splinting, but, many of them [64.3%] knew that the ideal splinting time is 7 to 14 days. Many of the respondents [67.1%] knew that root canal treatment should not be done in all the cases and 71.4% of the respondents knew that administration of tetanus, antibiotics and anti-inflammatory drugs should be considered depending upon the severity of each case. Only few [21.7%] of the respondents knew that patient should be followed for 5 years after reimplantation.

DISCUSSION

The present survey collects data on knowledge about management of tooth avulsion among general dental practitioners in Dakshina kannada. In this study, 78.6% of the respondents knew that the avulsed tooth cannot be reimplanted in all the cases like in severe caries or periodontal disease, in severe cardiac conditions and immunosuppressed patients.⁶ The determining factors for a favourable prognosis of replantation of avulsed tooth are minimal time of the avulsed tooth outside the socket, the storage and transportation medium of the avulsed tooth, and injury to the periodontal ligament.⁵ In this study 92.6 % of the respondents had these knowledge of the important factors.

The best storage medium is milk.² However, Hanks balanced storage medium (HBSS), tissue culture media, physiological saline can also be used. Only 32.9% of the respondents chose milk in this study. According to 2012 International association of dental traumatology [IADT] guidelines for the management of avulsed tooth, after a dry time of 60 min or more, all periodontal ligament (PDL) cells are nonviable.⁶ In this study, 92.3% of the respondents were of the same opinion.

54.3% of the respondents opted for rigid splints which is against the recommended international guidelines, which says flexible splints to be used for splinting for 7 to 14 days.⁶ Endodontic treatment is needed only for teeth with closed apex within 14 days after reimplantation. Teeth with open apex has the chances of revascularizing, hence, endodontic treatment should not be recommended in tooth with open apex unless diagnosed infected.^{6,10} Many of the respondents [67.3%] were of the same opinion.

In this study, 71.4% of the respondents supported administration of antibiotics, tetanus prevention and antiinflammatory drugs. This was in accordance with study conducted by Westphalen VP et al.⁴ Follow-up treatment of replanted teeth via clinical and radiographic examination is recommended for a period of 5 years.¹¹ In this study, only 21.7% of the respondents were of the same opinion.

CONCLUSION

It is very important to save the avulsed tooth as it can affect the social, mental and physical health of the patient. Within the limitations of this study, the knowledge regarding avulsion and its management was found to be adequate among general dental practitioners in Dakshina kannada. It is seen that there is a relative lack of knowledge regarding storage medium, type of splinting and the duration of follow-up after replantation. Therefore, various seminars, continuous dental education or workshops should be conducted so as to increase their awareness in a proper prescribed management of tooth avulsion.

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