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Knowledge and Attitude of General Dentists towards Management of Avulsed Tooth.

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ABSTRACT

Trauma to a primary or permanent tooth is a very serious problem and needs to be treated. Avulsion is one of the main dental injuries that not a lot of dentists are aware of and therefore are not able to give the correct diagnosis and treatment. There are very few studies that have been taken regarding the knowledge and attitude of dentists towards avulsion. To assess the knowledge and attitude of General Dentists regarding Avulsion in Poonamallee, Chennai. A cross-sectional questionnaire based study which was conducted among 100 dentists. A validated self-administered questionnaire was distributed to the dentist in Thiruvalluvar district, Chennai. Out of 100 participants in the survey all of them responded, of whom 50 were female and 50 male. Considering the factors that may influence outcome of replantation, (54%) considered all three factors (extra-alveolar period, storage medium, injury to the periodontal ligaments); while 46% considered only one factor. To conclude the General dentists are very aware and have adequate knowledge towards avulsion. The best treatment for tooth avulsion is re-implantation with excellent long-term retention. Since they have enough knowledge on this subject, there is no need of education programs in this field to improve the quality of life of patients with dental trauma.

Keywords: avulsed tooth, dental injury, dental trauma

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INTRODUCTION

Facial appearance plays an important role in human activities, such as social interactions and the overall personality in life [1]. Since the face is most noticeable and crucial feature to human appearance and function. Facial injuries can result in disfigurement and loss of function of the face and can further cause damage to the respiratory tract and therefore the respiratory system. Dental trauma is one of the most common types of facial injuries. Dental trauma is trauma to the teeth and peridontium and nearby soft tissues. Avulsion is an example of a dental injury, a tooth when it completely comes out of its socket in the alveolar bone after an injury.

Facial aesthetics and function can be disabled by the prognosis of avulsion [2]. The avulsion percentage of all dental injuries is 1-16% [3]. The permanent teeth are erupting between 8-9 years, and the teeth more likely to be avulsed is the central and lateral incisors [4,5]. The anterior teeth play an important role in facial aesthetics [6].

The main reason to prevent Avulsion is to preserve the surrounding periodontal cells [4]. So replantation of this avulsed tooth is the best accepted treatment [6]. It restores the lost tooth and aesthetics and function of the patient and improves their self-esteem [2,5]. Other studies showed that 83.3% had no knowledge and attitude towards avulsed tooth [4].

Therefore, this study was conducted in order to assess the knowledge and attitude of general dentists towards avulsion in Poonamallee, Chennai.

METHOD

This study was conducted as a cross sectional study with a sample of 100 dentists in Thiruvalluvar district in Tamil Nadu. The participants were chosen according to their willingness and also who volunteered. Ethical clearance and consent were taken before the start of this study.

The materials used were a questionnaire in English. It consisted of medical based questions mainly on the treatment and diagnosis of avulsion, this was done to evaluate the knowledge and attitude of dental staff and post graduates in case of having to undergo an emergency of avulsion.

It is a self-administered questionnaire study with only one investigator to collect the data. The questions from the questionnaire were asked during lunch breaks and free hours when there were no patients around.

The results were collected during the month of January and February, 2016. Using the excel sheet the final data was entered.

RESULTS

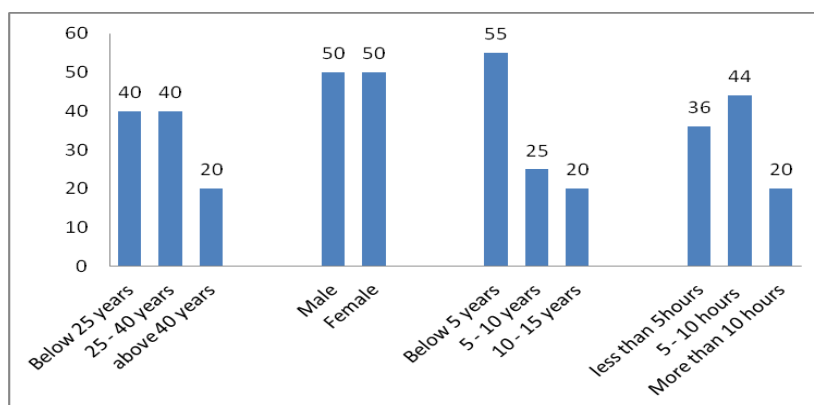


Figure1: Demographic status

Table 1: Distribution of the responses to the questions involved

	Valid Percent
Should an avulsed permanent tooth be replaced in its socket	
Yes, in all cases	58
No, in all cases	35
Never	7
Factors that may influence the outcome of replantation of the avulsed tooth	
Storage medium	10
Extra-alveolar period	20
Injury to periodontal ligament	16
All of the above	54
Best storage medium	
Patients saliva	19
Milk	11
Physiological saline solution	10
Hanks balanced solution	60
Ideal extra- alveolar time	
Less than 30 minutes	22
30 minutes to 1 hour	62
More than 1 hour	11
Tooth management before replantation	
Hold the crown and wash with antiseptic solution	31
Hold the crown and wash with physiological saline solution	20
Hold the crown and wash with tap water	34
Hold the root and wash with physiological saline solution	15
Types of splinting	
Flexible splints	39
Rigid splints	58
No need of splinting	3
Splinting duration	
Less than 7 days	30
7-14 days	61
More than 14 days	9
Endodontic treatment	
Pulpectomy and root canal filling after 15 days	22
Depends on extra-alveolar	61
Depends on extra-alveolar time and stages of root formation	17
Immediate pulpectomy and calcium hydroxide therapy	17

Systemic medication

Anti-inflammatory drugs only	27
Antibiotics, anti inflammatory and tetanus prevention	60
No medication required	13

Follow up by Clinical and radiography examination

1 year	59
3 year	34
5 year	7

Out of 100 participants in the survey all of them responded, of whom 50 were female and 50 male (Figure 1). Considering the factors that may influence outcome of replantation, (54%) considered all three factors (extra-alveolar period, storage medium, injury to the periodontal ligaments); and only one factor was considered by 46%. All of the results are characterised in table 1.

DISCUSSION

This study gives a clear outline on the knowledge and attitude towards avulsion of general dentists in Poonamallee. This is the questionnaire used in this study.

More than half of the current dentists are aware of the basic procedures to be followed in case of dental avulsion of deciduous and permanent teeth without gaining exquisite knowledge from their professional experience.

58% of the participants, a very high percentage reported that avulsed tooth should be re-implanted. In another study conducted by Westphalen et al., [7] reported that 100% of participants considered replantation, among them (67%) regarded replantation after extra-alveolar time, this coincides with the result of this study showing that most dentists suggested dental replantation. [7,8]. In a study conducted by Nabil M. Al-Zubair in Yemen, A very high percentage of participants (44%) reported that avulsed tooth cannot be replanted. Whereas our study had a higher percentage of participants in favour of implantation after a tooth avulsion. This increase can be due to a lot of reasons, such as; self-education by reading books and articles, continuing educational courses and more information is taught to the students during dental school.

Tooth management before replantation, 34% of dentists chose to wash their teeth with tap water than saline solution. Almost half less of the participants chose saline solution (15%). This could be due to the confusion whether these procedures could be performed in site of accident.

Even though re-implantation is the best treatment for avulsed teeth, it is not approachable for various reasons, such as; the people present at the site of accident will not do it or will not be able to do it as they will not be dental healthcare workers and in case of multiple teeth avulsion or any other complications, people will not know which tooth will go into which socket [9].

Considering factors that may influence outcome of replantation, (54%) considered all three factors; while 46% considered only one factor, which also reflects the increased quality of their graduation courses. A previous research has shown that three factors contribute to the success of re-implanted avulsed teeth: The physiologic status of the storage medium, the remaining periodontal ligament (PDL) cells on the root surface, and the length of extra-oral time. [9,11]

60% of the dentists chose hanks balanced salt solution as storage medium than patients saliva (19%), even though hanks solution might be more appealing and better than patients saliva, it is a bad choice for various reasons, such as; It is often not available at accident scenes such as car accidents, hospital operating rooms, schools, and playgrounds and it is a very expensive medium to use and so not readily available for all the dentists.

For the question regarding Ideal extra-alveolar period, 62% of the participants chose the incorrect extra-alveolar period as 30 minutes to 1 hour while 22% suggested the correct answer which is within 30 minutes. Which reveals that there is about three out of five who responded with inadequate attitude and knowledge regarding the most important factor to be considered in avulsion treatment. An avulsed permanent tooth should be replanted as soon as possible. If the tooth cannot be replanted within five minutes it should be stored in a medium that will maintain life of periodontal ligament fibres.

The suggestion for the type of splinting was not the same as the recent published articles, which established the use of flexible splinting for 2 weeks. In the current study the majority selected rigid splinting and 39% suggested flexible splinting. The semirigid splint allows some mobility to the traumatised teeth and is recommended for teeth that has both closed and open apex.

The years of working experience of dentists was recorded in this study. It showed that not only the dentists with more than 5 years of experience have knowledge but even the ones with below 5 years have adequate knowledge, since the majority have below 5 years of experience.

The majority of participants (61%) were about the splinting period, saying it should be between 7-14 days. The lowest was of 9% that selected more than 30 days. International Association for Dental Traumatology (IADT) suggested up to two weeks splinting for an avulsed tooth decrease the risk for ankylosis.[5,10,11]

As a conclusion to this study, we can suggest that the knowledge of general dentist about the emergency management of dental avulsion in Thiruvalluvar district is adequate. However, attending CDE programs by the practicing dentist will help in updating their knowledge towards recent developments.

Knowledge and attitude of general dentists with regard to avulsion

1. Age
2. Sex
3. Years of experience
4. Working hours

5. Should an avulsed permanent tooth be replaced in its socket?
 - a) Yes, in all cases
 - b) Not in all cases
 - c) Never

6. Factors that may influence the outcome of replantation of the avulsed tooth
 - a) storage medium
 - b) extra-alveolar period
 - c) Injury to periodontal ligament
 - d) All of the above

7. Best storage medium
 - a) Patients saliva
 - b) Milk
 - c) Physiological saline solution
 - d) Hanks balanced salt solution

8. Ideal extra-alveolar period
 - a) <30 minutes
 - b) 30 minutes to 1 hour
 - c) 1 to 2 hours

9. Tooth management before replantation
 - a) Hold the crown and wash with any antiseptic solution

- b) Hold the crown and wash with physiological saline solution
 - c) Hold the crown and wash with tap water
 - d) Hold the root and wash with physiological saline solution
10. Type of splinting
- a) Flexible splints
 - b) Rigid splints
 - c) No need of splinting
11. Splinting duration
- a) Less than 7 days
 - b) 7 to 14 days
 - c) 30 days
12. Endodontic treatment
- a) Pulpectomy and root canal filling after 15 days
 - b) Depends on extra-alveolar period and stage of root formation
 - c) Immediate pulpectomy and calcium hydroxide therapy
13. Systemic medication
- a) Prescribe anti-inflammatory drugs only
 - b) Prescribe antibiotics, anti-inflammatory drugs and tetanus prevention.
 - c) No medication required.
14. Follow-up by clinical and radiographic examination
- a) 1 year
 - b) 3 years
 - c) 5 years

CONCLUSION

To conclude the General dentists are very aware and have adequate knowledge towards avulsion. The best treatment for tooth avulsion is re-implantation with excellent long-term retention. Since this is an emergency treatment, they do have enough knowledge on this subject, But there are still a few that haven't got adequate knowledge on this subject, so for them there is a need of education programs in this field, to improve the knowledge and ability to treat trauma or injury leading to an avulsed tooth and make the quality of the lives of dental patients better.

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