

Awareness and Attitude of Parents toward Avulsed Permanent Tooth of their Children and its Emergency Management in Jammu Population

Nanika Mahajan¹, Shivani Jandial², Ritesh Gupta³, Bhanu Kotwal⁴, Sharad Kharyal⁵, Vinod Sachdev⁶

¹Lecturer, Department of Pedodontics and Preventive Dentistry, Indira Gandhi Government Dental College, Jammu, Jammu and Kashmir, India, ²Consultant Dental Specialist, Department of Prosthodontics, Indira Gandhi Government Dental College, Jammu, Jammu and Kashmir, India, ³Dental Surgeon, Department of Orthodontics, Indira Gandhi Government Dental College, Jammu, Jammu and Kashmir, India, ⁴Lecturer, Department of Periodontics, Indira Gandhi Government Dental College, Jammu, Jammu and Kashmir, India, ⁵Private Practitioner, Jammu, Jammu and Kashmir, India, ⁶Principal, ITS Center for Dental Studies, Ghaziabad, Uttar Pradesh, India

Abstract

Aim: The aim of the present study is to determine the awareness and attitude of parents toward avulsed permanent tooth of their children and its emergency management in Jammu population.

Materials and Methods: A total of 823 parents were selected for the study who accompanied their children, aged between 6 and 12 years, for receiving dental care for the first time in the Department of Pedodontics in Indira Gandhi Government Dental College and Hospital, Jammu, between June 2015 and September 2015. The participants were asked to complete a questionnaire which was a modified form of questionnaire used by Raphael and Gregory in their study. The questionnaire consisted of two parts with first part containing the demographic data and the second part containing questions to assess the knowledge, attitude, and previous experience of the participant regarding emergency care of avulsed permanent tooth. Completed questionnaire was collected and tabulated and statistical analysis was done using SPSS version 20.0.

Results: 52.7% of males and 47.3% of females were analyzed educational status (with majority of the subjects having educational qualification up to elementary school - 50.7%) and geographical background (58.2% of subjects were residents of urban areas). The various responses to questions regarding knowledge (K), attitude (A), previous information (P) of parents regarding emergency management of avulsed permanent tooth. 55.9% of subjects had knowledge about the possibility of reimplantation, and 28.31% of the subjects were having knowledge about self-reimplantation. Majority of the subjects (25.4%) responded for immediate reimplantation in Question K3. In Question K4, 30.62% of the subjects chose saline as the cleaning media. 31.9% responded for water as a transport media in Question K5. 69.1% of the subjects were not having previous information regarding the emergency management of avulsed teeth. 39.24% chose books as a source of information. 81.4% of the subjects were having a positive attitude for saving permanent tooth. Majority of the subjects (67.8%) chose dentist as the first place of contact. 59.1% of the subjects were having a previous experience of avulsion in their children.

Conclusion: It can be concluded that there is limited awareness regarding emergency management of the avulsed permanent teeth and various awareness programs should be conducted to educate parents about dental trauma and timely referral to the concerned professional.

Key words: Avulsion, Dental trauma, Reimplantation, Awareness

Access this article online



www.ijss-sn.com

Month of Submission : 10-2017

Month of Peer Review : 11-2017

Month of Acceptance : 11-2017

Month of Publishing : 12-2017

INTRODUCTION

Various epidemiological studies have reported dental trauma to be a significant problem which is expected to overshoot the incidence and prevalence of dental caries in young children.^[1] Dental trauma in young children is often seen to occur accompanying trauma of orofacial

Corresponding Author: Dr. Nanika Mahajan, Department of Pedodontics and Preventive Dentistry, Indira Gandhi Government Dental College, Jammu, Jammu and Kashmir, India. E-mail: drnanikamahajan@gmail.com

region with varying range of complexities. This could vary from simple concussion to extensive maxillofacial damage involving periodontal structures or avulsion of teeth.^[2] Among the dental injuries, avulsion of tooth is considered to be the most severe form of injury with a wide array of consequences affecting the dental and overall development of child, thus demanding prompt organized approach.

Dental avulsion is defined as complete removal of the tooth out of its socket. It causes severe damage to pulp and periodontal ligament tissues with or without fracture of the alveolar bone. Most common causes of dental trauma in children include fall during sports and leisure activities.^[2,3]

An estimate of 0.5–16% of avulsions is seen in permanent dentition and 7–13% in primary dentition.^[4-6]

Maxillary central incisors are most commonly affected with avulsion, both in primary and permanent dentition. These injuries are more common among boys when compared to girls as boys participate more in outdoor activities and sports.^[7-11]

Andreasen modified the WHO classification of avulsion as an injury of periodontal tissues, as well as extrusive, lateral, or intrusive luxation.^[12,13]

The prognosis of avulsed tooth is determined by adequate action taken immediately, which involves minimizing the time the tooth remains outside its socket, use of adequate storage and transportation medium and protecting the root surface and periodontal ligament from damage.

The International Association of Dental Traumatology, in 2012, published guidelines for the management of avulsed teeth, highlights the evidence-based approach to emergency care and is of great help for a dentist, health-care professionals, and parent in decision-making.^[14]

Although there are various modalities to replace a lost tooth, the role of immediate reimplantation is still the most preferred and desired by parents, child, and clinicians.^[15]

The reported success rate in immediate reimplantation ranges from 85% to 97% depending on the stage of root development. However, the success rate is dependent on factors such as extra-alveolar time in turn viability of periodontal ligament, storage and transport media, type of splinting, time of endodontic intervention, and oral and general health status.^[16]

In case of an emergency of avulsed teeth, parents of the children are the first people to attend and make decisions. Awareness and knowledge of the parents in the handling of these emergency situations of avulsed teeth influence the prognosis of the teeth.

Parents can play a major role in improving the prognosis of avulsed permanent teeth of children if they are informed about the first aid steps to be taken at the time of an accident. Before planning information campaigns, it is important to assess the knowledge level of parents. The present study is, therefore, aimed to determine the awareness and attitude of parents toward avulsed permanent tooth of their children and its emergency management in Jammu population.

MATERIALS AND METHODS

The study sample included of 823 parents who accompanied their children, aged between 6 and 12 years, for receiving dental care for the first time in the Department of Pedodontics in Indira Gandhi Government Dental College and Hospital, Jammu, between June 2015 and September 2015. A written informed consent form according to the ethical guidelines was subsequently obtained from the participating parents.

The participants were asked to complete a questionnaire which was a modified form of questionnaire used by Raphael and Gregory^[17] in their study. The questionnaire was provided in both simple English and Hindi language. The questionnaire consisted of two parts with first part containing the demographic data and the second part containing questions to assess the knowledge, attitude, and previous experience of the participant regarding emergency care of avulsed permanent tooth. Completed questionnaire was collected and tabulated and statistical analysis was performed using SPSS version 20.0. This was followed by distribution of information leaflets and health education regarding emergency management of avulsed young permanent teeth to the participants.

RESULTS

Table 1 presented the demographic distribution of the subjects according to their gender (52.7% males and 47.3% females), educational status (with majority of the subjects having educational qualification up to elementary school - 50.7%), geographical background (58.2% of subjects were residents of urban areas). Table 2 showed various responses to questions regarding knowledge (K), attitude (A), and previous information (P) of parents regarding emergency management of avulsed permanent tooth. 55.9% of subjects had knowledge about the possibility of reimplantation, and 28.31% of the subjects were in favor of self-reimplantation. Majority of the subjects (25.4%) responded for immediate reimplantation in Question K3. In Question K4, 30.62% of the subjects chose saline as the cleaning media. 31.9% responded for water as a transport media in Question K5. 69.1% of the

subjects were not having previous information regarding the emergency management of avulsed teeth. 39.24% chose books as a source of information. 81.4% of the subjects were having a positive attitude for saving permanent tooth. Majority of the subjects (67.8%) chose dentist as the first place of contact. 59.1% of the subjects were having a previous experience of avulsion in their children. The male participants showed more positive response toward knowledge and emergency management of avulsed teeth.

DISCUSSION

The aim of the present study was to determine the awareness and attitude of parents toward avulsed permanent tooth of their children and its emergency management in Jammu population.

The findings of our study showed that male participants were having more awareness toward the possibility of reimplantation of avulsed permanent teeth which is in accordance with various other studies.^[18-24]

71.7% of the parents were not in favor of self-reimplantation. Similar results were obtained by the studies done by Shashikiran *et al.*, Namdev *et al.*, Loo *et al.*, Abdellatif and Hegazy, Santos *et al.*, Ayodele *et al.*, Al-Jame *et al.*, Ozer *et al.*, and Jain *et al.*^[18-25] However, the results of our study are not in agreement with the studies done by Raphael and Gregory as they reported that about 75% of participants were willing for attempting self-reimplantation.^[17]

The findings of our study showed that 30.62% of the participants chose saline, followed by water (25.8%),

Table 1: Demographic data

Variables	Frequency (%)
Gender	
Male	434 (52.7)
Female	389 (47.3)
Education status	
Illiterate	73 (8.9)
Elementary School	417 (50.7)
Higher Secondary	227 (27.6)
Graduation and above	106 (12.9)
Geographical Background	
Rural	344 (41.8)
Urban	479 (58.2)

Table 2: Response of parents regarding emergency management of avulsed permanent tooth

Questions	Answers	Male (%)	Female (%)	Total (%)	P
K1 possibility of reimplantation	Yes	243 (29.5)	217 (26.4)	460 (55.9)	0.9891
	No	191 (23.21)	172 (20.9)	363 (44.1)	
K2 self-reimplantation	Yes	107 (13.0)	126 (15.31)	233 (28.31)	0.0139
	No	327 (39.7)	263 (31.96)	590 (71.7)	
K3 timing of reimplantation	Immediately	113 (13.73)	96 (11.7)	209 (25.4)	0.7049
	As bleeding stops	87 (10.6)	74 (8.9)	161 (19.6)	
	Within 1 h	98 (11.9)	83 (10.1)	181 (21.9)	
	Within 24 h	59 (7.2)	67 (8.1)	126 (15.31)	
	After 5 days	77 (9.4)	69 (8.4)	146 (17.7)	
K4 cleaning media	Water	117 (14.22)	96 (11.7)	213 (25.8)	0.6301
	Saline	139 (16.89)	113 (13.7)	252 (30.62)	
	Milk	48 (5.8)	51 (6.2)	99 (12.01)	
	Saliva	71 (8.6)	67 (8.14)	138 (16.77)	
	Nothing	59 (7.2)	62 (7.5)	121 (14.7)	
K5 transport media	HBSS	25 (3.03)	23 (2.8)	48 (5.8)	0.8819
	Water	147 (17.9)	116 (14.1)	263 (31.9)	
	Saline	87 (10.6)	83 (10.1)	170 (20.7)	
	Milk	83 (10.1)	82 (9.9)	165 (20.04)	
	Nothing	39 (4.7)	38 (4.6)	77 (9.4)	
K6 previous information	Yes	147 (17.9)	107 (13.0)	254 (30.9)	0.0485
	No	287 (34.9)	282 (34.3)	569 (69.1)	
K7 source of information	Books	174 (21.14)	149 (18.10)	323 (39.24)	0.0558
	Media	127 (15.4)	103 (12.5)	230 (27.9)	
	Newspaper	39 (4.7)	59 (7.2)	98 (11.9)	
	Web	94 (11.4)	78 (9.5)	172 (20.9)	
A1 necessary for saving permanent tooth	Yes	379 (46.1)	291 (35.4)	670 (81.4)	0.0000
	No	55 (6.6)	98 (11.9)	153 (18.6)	
A2 first place of contact	Dentist	337 (40.9)	221 (26.9)	558 (67.8)	0.0000
	Hospital	39 (4.7)	71 (8.6)	110 (13.4)	
	General practitioner	58 (7.0)	97 (11.8)	155 (18.8)	
P1 previous experience of avulsion	Yes	279 (33.9)	207 (25.2)	486 (59.1)	0.0013
	No	155 (18.8)	182 (22.1)	337 (40.9)	

whereas only 12.01% of the subjects preferred milk for cleaning a soiled avulsed tooth, which were in accordance with the findings of Jain *et al.* Similarly, Abdellatif and Hegazy and Al-Jame *et al.* concluded that there was a lack of knowledge regarding cleansing medium.^[20,23]

In the present study, when asked about appropriate transport media, majority of the subjects (31.9%) chose water, followed by saline (20.7%) and milk (20.04%). In our study, the number of subjects choosing milk and saline were almost equal which is not similar to the previous study done by Jain *et al.*^[25] A very less number (5.8%) of the respondents have chosen hanks' balanced salt solution (HBSS) as the appropriate media.

30.9% of participants gave a positive response when asked about the previous information regarding tooth avulsion which is similar with the findings of Jain *et al.* and Shashikiran *et al.*, who reported that most of the parents did not receive any previous information about emergency management of avulsed permanent tooth.^[25,26]

The limitation of the present study is that knowledge and attitude of the subjects toward the management of avulsed permanent teeth based on their educational qualification and geographic area were not considered although majority of the subjects were having educational qualification up to elementary school and were residing in urban areas.

CONCLUSION

It can be concluded that there is limited awareness regarding emergency management of the avulsed permanent teeth and various awareness programs should be conducted to educate parents about dental trauma and timely referral to the concerned professional.

REFERENCES

1. Caldas AF Jr., Burgos ME. A retrospective study of traumatic dental injuries in a Brazilian dental trauma clinic. *Dent Traumatol* 2001;17:250-3.
2. Naidoo S, Sheiham A, Tsakos G. Traumatic dental injuries of permanent incisors in 11-to 13-year-old South African school children. *Dent Traumatol* 2009;25:224-28.
3. Wilson S, Smith GA, Preisch J, Casamassimo PS. Epidemiology of dental trauma treated in an urban paediatric emergency department. *Paediatr Emerg Care* 1997;13:12-5.
4. Andreasen JO. Etiology and pathogenesis of traumatic dental injuries. A clinical study of 1,298 cases. *Scand J Dent Res* 1970;78:329-42.
5. Gelbier S. Injured anterior teeth in children. A preliminary discussion. *Br Dent J* 1967;123:331-5.

6. Hedegård B, Stålhane I. A study of traumatized permanent teeth in children 7-15 years. I. *Sven Tandlak Tidsskr* 1973;66:431-52.
7. Ravn JJ. Dental injuries in Copenhagen schoolchildren, school years 1967-1972. *Community Dent Oral Epidemiol* 1974;2:231-45.
8. Andreasen JO. *Traumatic Injuries of the Teeth*. St. Louis: The CV Mosby Co.; 1972. p. 6.
9. Andreasen JO, Borum MK, Jacobsen HL, Andreasen FM. Replantation of 400 avulsed permanent incisors 1. Diagnosis of healing complications. *Endod Dent Traumatol* 1995;11:51-8.
10. Andreasen JO, Borum MK, Jacobsen HL, Andreasen FM. Replantation of 400 avulsed permanent incisors 2. Factors related to pulpal healing. *Endod Dent Traumatol* 1995;11:59-68.
11. Andreasen JO, Borum MK, Andreasen FM. Replantation of 400 avulsed permanent incisors 3. Factors related to root growth. *Endod Dent Traumatol* 1995;11:69-75.
12. Lin S, Zuckerman O, Fuss Z, Ashkenazi M. American association of endodontists, international association of dental traumatology, royal college of surgeons of England. New emphasis in the treatment of dental trauma. *Dent Traumatol* 2007;23:297-303.
13. Gupta N, Singh K, Ahuja R, Saxena T. Knowledge of mothers with different education levels about the emergency management of avulsed tooth. *Oral Health Dent Manag* 2014;13:792-97.
14. Andersson L, Andreasen JO, Day P, Heithersay G, Trope M, Diangelis AJ, *et al.* International association of dental traumatology guidelines for the management of traumatic dental injuries: 2. Avulsion of permanent teeth. *Dent Traumatol* 2012;28:88-96.
15. Borum MK, Andreasen JO. Therapeutic and economic implications of traumatic dental injuries in Denmark: An estimate based on 7549 patients treated at a major trauma centre. *Int J Paediatr Dent* 2001;11:249-58.
16. Dali M, Naulakha D, Rajbanshi L. Knowledge, attitude and practice in emergency management of avulsed tooth among medical doctors in Nobel Medical College, Biratnagar, Nepal: A cross sectional survey. *Int J Dent Health Sci* 2014;1:3-12.
17. Raphael SL, Gregory PJ. Parental awareness of the emergency management of avulsed teeth in children. *Aust Dent J* 1990;35:130-3.
18. Namdev R, Jindal A, Bhargava S, Bakshi L, Verma R, Beniwal D. Awareness of emergency management of dental trauma. *Contemp Clin Dent* 2014;5:507-13.
19. Loo TJ, Gurunathan D, Somasundaram S. Knowledge and attitude of parents with regard to avulsed permanent tooth of their children and their emergency management – Chennai. *J Indian Soc Pedod Prev Dent* 2014;32:97-107.
20. Abdellatif AM, Hegazy SA. Knowledge of emergency management of avulsed teeth among a sample of Egyptian parents. *J Adv Res* 2011;2:157-62.
21. Santos ME, Habecost AP, Gomes FV, Weber JB, de Oliveira MG. Parent and care taker knowledge about avulsion of permanent teeth. *Dent Traumatol* 2009;25:203-8.
22. Ayodele A, Elizabeth O, Vincent U, Akinwale A. Knowledge of first aid measures of avulsion and replantation of teeth in Nigerian school children. *Internet J Dent Sci* 2009;7:31.
23. Al-Jame Q, Andersson L, Al-Asfour A. Kuwaiti parents' knowledge of first-aid measures of avulsion and replantation of teeth. *Med Princ Pract* 2007;16:274-79.
24. Ozer S, Yilmaz EI, Bayrak S, Tunc ES. Parental knowledge and attitudes regarding the emergency treatment of avulsed permanent teeth. *Eur J Dent* 2012;6:370-5.
25. Jain A, Kulkarni P, Kumar S, Jain M. Knowledge and attitude of parents towards avulsed permanent tooth of their children and its emergency management in Bhopal city. *J Clin Diagn Res* 2017;11:40-4.
26. Shashikiran ND, Reddy VV, Nagaveni NB. Knowledge and attitude of 2000 parents (urban and rural-1000 each) with regard to avulsed permanent incisors and their emergency management, in and around Davangere. *J Indian Soc Pedod Prev Dent* 2006;24:125-30.

How to cite this article: Mahajan N, Jandial S, Gupta R, Kotwal B, Kharyal S, Sachdev V. Awareness and Attitude of Parents toward Avulsed Permanent Tooth of their Children and its Emergency Management in Jammu Population. *Int J Sci Stud* 2017;5(9):172-175.

Source of Support: Nil, **Conflict of Interest:** None declared.