

Knowledge and Attitude of Mothers with Regards to Emergency Management of Dental Avulsion

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ABSTRACT

Traumatic injuries to the teeth and their supporting structures are frequent in children. Among the traumatic injuries, dental avulsion results in the major functional and esthetic disturbances for patients.

Purpose: The present study's aim was to assess the mothers' level of knowledge and attitude concerning dental avulsion.

Methods: A questionnaire contained 6 objective questions for the assessment of the mothers' knowledge and attitude regarding the management of dental avulsion and emergency procedures.

Results: A total of 242 mothers participated in the study. A lack of technical information was observed among the mothers.

Conclusion: This study showed the need of a more effective communication between dental professionals and mothers to better handle dental emergencies. Educational campaigns and preventive programs on dental trauma must be organized to improve the emergency management of dental avulsion. (*J Dent Child* 2007;74:200-2)

KEYWORDS: ATTITUDE, AVULSION, DENTAL TRAUMA, EMERGENCY, PATIENT EDUCATION

Children suffer many accidents in their usual activities, such as running, skating, and bike riding. Many accidents occur at home and can result in dental trauma. This type of traumatic injury remains one of the most important oral health problems in childhood, resulting in pain and distress. Thus, it is important to provide immediate emergency care to reduce such outcomes.^{1,2}

Among dental traumatic injuries, avulsion results in major functional and esthetic disturbances for patients.¹⁻⁵ The incomplete radicular formation of central incisors and the lack of resiliency of the periodontal ligament at those ages may explain the dislocation of the tooth from its alveolus even with light horizontal impacts.¹ Walker and Brenchley (2000)⁵ observed that 16% of dental injuries led to tooth

loss, causing alterations in the child's facial development as well as psychological changes, among other complications.

The prognosis of traumatized teeth depends on prompt and appropriate treatment, which often relies on knowledge of nonprofessional people, who usually are present at the site of the accident, prior to the initial professional dental care.¹ As 41% of dental injuries occur at home, family members are frequently required to provide prompt and proper action.³ Therefore, this study's purpose was to evaluate, through questionnaires, the knowledge and attitude of mothers about the emergency management of avulsed permanent teeth (Figure 1).

METHODS

A questionnaire was designed and distributed to all mothers of children between 7 and 11 years of age (N=400) who were attending 3 different elementary schools in Bauru, São Paulo, Brazil. All the children had their own dentist of record.

The questionnaire contained objective questions for the assessment of the mothers' knowledge and attitude regar-

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ding the management of dental avulsion and emergency procedures (Figure 1). Mothers who agreed to participate in the research were interviewed and received informative material on the subject.

Results were expressed as a percentage of respondents for each question. Microsoft Excel, Microsoft Corp, Redmond, Wash) was used for analysis and presentation.

Dental avulsion of permanent teeth is when a tooth comes out of its socket as a result of a traumatic injury.

1. What would you do if the tooth was in child's mouth, however out of place?

- ☐ put the permanent tooth back into its alveolus
- ☐ let the tooth inside the mouth
- ☐ remove the tooth from the child's mouth

2. If the tooth was out of the child's mouth, what would you do?

- ☐ save the avulsed permanent tooth
- ☐ not save the avulsed permanent tooth

3. Where would be the first place you would seek treatment?

- ☐ emergency hospital or physician's office
- ☐ dentist's office
- ☐ other place

4. You would seek professional treatment

- ☐ immediately
- ☐ the next day
- ☐ call the dentist
- ☐ would do nothing

5. What would you do with the tooth?

- ☐ wash it with water or other liquid
- ☐ clean it with a tissue or a paper
- ☐ not clean it

6. If you did not reimplant the permanent tooth, how would you transport it to the dentist?

- ☐ keep it wrapped in paper or gauze
- ☐ keep it on ice
- ☐ keep it in water
- ☐ keep it in milk
- ☐ keep it in saline solution
- ☐ keep it in saliva
- ☐ keep it in alcohol
- ☐ other approach

Figure 1. Questionnaire distributed to the mothers for the assessment of their knowledge and attitude regarding management

RESULTS

A total of 242 mothers agreed to participate in the study. The answers received for question 1 were:

- a. 39% of the mothers reported that they would put the permanent tooth back into its alveolus
- b. 32% of them would leave the tooth inside the mouth
- c. 29% would remove the tooth from the child's mouth

For question 2:

- a. 90% would save the avulsed tooth
- b. 10% would not

For question 3:

- a. 93% and 6% of the mothers would take the child to a dentist's or physician's office, respectively
- b. 1% would take the child to another place

For question 4:

- a. 98% and 1% of the mothers would seek a dentist immediately or the day after the dental avulsion, respectively
- b. less than 1% would just call the dentist
- c. less than 1% would do nothing

For question 5:

- a. 53% of the mothers would wash the tooth with water or other liquid
- b. 16% would clean the tooth with a tissue or a paper
- c. 31% would not clean the tooth

For question 6 (more than one alternative could be chosen):

- a. 45% would keep the tooth wrapped in paper or gauze
- b. 10% would maintain it on ice
- c. 9% would maintain it in water
- d. 10% would maintain it in milk
- e. 18% would maintain it in physiological saline solution
- f. 5% would maintain it in saliva
- g. 2% would maintain it in alcohol
- h. 5% would maintain it in other solutions (Figure 2)

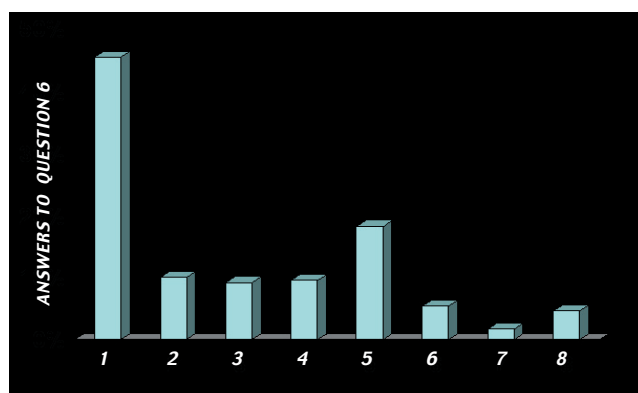


Figure 2. Distribution of the answers to question 6 of the survey ("If you did not reimplant the permanent tooth, how would you transport it to the dentist?").

1=keep it wrapped in paper or gauze; 2=keep it on ice; 3=keep it in water; 4=keep it in milk; 5=keep it in saline solution; 6=keep it in saliva; 7=keep it in alcohol; and 8=other approach

DISCUSSION

The questionnaire used in the present survey was short, with simple, direct, and closed questions. Similar studies in the literature surveyed the knowledge of parents and teachers concerning the management of avulsed teeth.^{4,6-8} This study demonstrated that most mothers answered the questions based more on an intuitive basis than on previously acquired knowledge. Questions that required a more technical answer were often answered inadequately.

Some procedures must be followed to optimize the treatment of the avulsed tooth. The quality of the dental

emergency procedures will directly affect the long-term prognosis. Many reports indicate that adults likely to be present at emergency sites lack knowledge regarding the immediate management of dental trauma.^{3,4,6,9,10}

One of the main requisites for the treatment of dental avulsion is tooth reimplantation as soon as possible, thus keeping periodontal cells viable for healing and a possible pulp revascularization.^{1,6,11} In the present study, immediate reimplantation was mentioned by less than half of the mothers. According to a 2006 study by Al-Jundi, 89% of the mothers answered they would not reimplant the tooth.

Prior to its reimplantation, there is a primary need for cleaning and maintaining the tooth in a storage medium.^{1,4,9} Cleaning of avulsed permanent teeth must be performed with saline solution just when visible dirt is observed. For this purpose, mothers should be advised to have at home a small vial containing saline solution, which is commercially available. Most authors report that the cleaning should be carried out by holding the crown and washing the tooth gently with sterile saline until no more macroscopic dirt is seen on the root surface; rubbing of the root must not be performed.^{1,6,11} Unfortunately, most of the mothers answered this question incorrectly.

It is well established that the best storage method is the tooth's own alveolus. When the immediate reimplantation is not performed, other methods that can result in pulpal and periodontal healing are milk, sterile saline solution and saliva. Saliva and milk are considered easy-to-obtain storage methods for the avulsed tooth,⁶ while saline solution can be easily purchased in drugstores, for example. In this study, the mothers would immediately seek a dentist using inappropriate transport methods, however, which decreases the rate of success after reimplantation. Other authors also reported the use of inadequate storage medium, revealing that 97% of the teachers⁶ and 95% of dental therapists¹⁰ demonstrated the lack of knowledge on this issue.

In summary, mothers should reimplant an avulsed tooth immediately after cleansing with saline solution when visible dirt is present and seek a dentist.

If the tooth is not reimplanted, it should be stored in milk, saline solution or saliva, and a dentist should then be seen as soon as possible. The lack of experience and knowledge expressed by the parents answering the questionnaire concerning dental trauma reflects the need of more effective communication between dental professionals and parents in order to enable them to act correctly when facing a case of dental avulsion. Additionally, educational campaigns and preventive programs on dental trauma must be organized to improve care-givers emergency knowledge and management of dental avulsion.

REFERENCES

1. Andreasen JO, Andreasen FM. Essentials of Traumatic Injuries of the Teeth. 2nd ed. Copenhagen, Denmark: Munksgaard; 2000.
2. Flores MT, Andreasen JO, Bakland LK, Feiglin B, Gutmann JL, Oikarinen K, et al. Guidelines for the evaluation and management of traumatic dental injuries. *Dent Traumatol* 2001;17:193-8.
3. Al-Jundi SH. Dental emergencies presenting to a dental teaching hospital due to complications from traumatic dental injuries. *Dent Traumatol* 2002;18:181-5.
4. Blakytyn C, Surbutts C, Thomas A, Hunter ML. Avulsed permanent incisors: Knowledge and attitudes of primary school teachers with regard to emergency management. *Int J Paediatr Dent* 2001;11:327-32.
5. Walker A, Brenchley J. It's a knockout: Survey of the management of avulsed teeth. *Accid Emerg Nurs* 2000;8:66-70.
6. Pacheco LF, Filho PF, Letra A, Menezes R, Villoria GE, Ferreira SM. Evaluation of the knowledge of the treatment of avulsions in elementary school teachers in Rio de Janeiro, Brazil. *Dent Traumatol* 2003;19:76-8.
7. Al-Jundi SH, Al-Waeli H, Khairallah K. Knowledge and attitude of Jordanian school health teachers with regards to emergency management of dental trauma. *Dent Traumatol* 2005;21:183-7.
8. Al-Jundi SH. Knowledge of Jordanian mothers with regards to emergency management of dental trauma. *Dent Traumatol* 2006;22:291-5.
9. Panzarini SR, Pedrini D, Brandini DA, Poi WR, Santos MF, Correa JP, et al. Physical education undergraduates and dental trauma knowledge. *Dent Traumatol* 2005;21:324-8.
10. Loh T, Sae-Lim V, Yian TB, Liang S. Dental therapists' experience in the immediate management of traumatized teeth. *Dent Traumatol* 2006;22:66-70.
11. Rocha MJ, Cardoso M. Traumatized permanent teeth in Brazilian children assisted at the Federal University of Santa Catarina, Brazil. *Dent Traumatol* 2001;17:45-9.