Effect of a leaflet given to parents on knowledge of tooth avulsion

ABSTRACT

Aim Parents can play an important role in improving the prognosis of avulsed permanent teeth if they are properly informed about the necessary dental first-aid steps at the time of an accident. The purpose of this study was to assess the knowledge of Shirazi parents in traumatic a simple leaflet on improving their knowledge about this topic.

Materials and methods One hundred and fifty parents of children receiving dental care at the Shiraz Dental School participated in this study. Half of the participants received an informative leaflet with the possibility of asking questions about it to an operator, while the other half did not receive any leaflets and served as a control group. Using a questionnaire and a scoring system, the level of knowledge of parents was measured in the following categories: general knowledge of tooth avulsion, knowledge of replantation and primary/ permanent teeth, knowledge of how to clean an avulsed tooth, knowledge of extra-oral time, and knowledge of storage, methods and transporting media.

Results The results showed that knowledge level was low among Shirazi parents. Improvements were observed in all the categories of knowledge as a result of reading the leaflet and answering the questions.

Conclusion A simple leaflet is a suitable tool to impart knowledge to parents and improve awareness about tooth avulsion.

Keywords Tooth avulsion; Dental trauma; Parents’ role.

Introduction

Dentoalveolar traumatic injuries are usually the result of sports and games, falls at home, car accidents and fights [Hill et al., 1985; Linn et al., 1986; Hayrinen-Immonen et al., 1990]. Maxillary incisors are the most commonly affected teeth because of their normal labial projection with respect to mandibular incisors [Andreason and Andreason, 1994]. Traumatic avulsion is a very serious injury to teeth and inflicts severe damage to pulp and periodontal ligament (PDL) tissues. The neurovascular bundles of the pulp rupture and the pulp undergoes necrosis. Damage will also result in the death of PDL cells [Boyd et al., 2000]. The prognosis of avulsed teeth depends on a prompt and adequate action at the moment of the accident: minimising the time the tooth remains outside its socket, use of an adequate storage and transportation medium, protecting the root surface and periodontal ligament from damage: factors which are usually out of the control of professionals [Boyd et al., 2000; Pohl et al., 2005a; Pohl et al., 2005b].

Research studies and clinical experience show that permanent teeth may survive for many years if replaced in their socket (replanted) shortly after avulsion [Andresson and Boldin, 1990]. In contrast, replantation of a permanent incisor after a long period in a dry environment results in a poor prognosis for the affected tooth [Andreason, 1981; Lindskog et al., 1985; Kinoshita et al., 2002].

Parents can play an important role in improving the prognosis of avulsed permanent teeth if they are informed about the necessary first-aid procedures at the time of accident. However, several studies have shown that parents have little knowledge in relation to the management of tooth avulsions [Raphaei and Gregory, 1990; Sanu and Utomi, 2005; Al-Jundi, 2006; Al-Jame et al., 2007]. Providing information is a way to increase knowledge of dental first aid. Brief information in the form of lectures or leaflets given to parents can increase their knowledge. However, it is necessary to learn more about how to inform parents and to improve the efficiency of the modes of information given to target groups.

The aim of this study was to evaluate knowledge of Shirazi parents in relation to tooth avulsion and first-aid procedures before and after giving them a leaflet.

Materials and methods

One hundred and fifty parents of children, receiving care at the Shiraz Dental School, Iran, took part in this study. Seventy-five parents were randomly placed in group A and were given an informative leaflet about tooth avulsion explaining the appropriate steps in the management of avulsed teeth and their replantation.
The leaflet was prepared by the academic staff of Shiraz Dental School (authors), written in simple Persian (Farsi) language with colorful pictures. During reading of the leaflet, if the participants had any questions, they were answered by a well-trained senior dental student.

Seven days after reading the leaflet, the parents were asked to fill a questionnaire. When they were reading the leaflet, they did not know that they were expected to fill a questionnaire in future.

The questionnaire was designed to assess the knowledge of dental first aid with particular focus on the following five categories.
1. General knowledge of tooth avulsion.
2. Knowledge of replantation and primary/permanent teeth.
3. Knowledge of how to clean an avulsed tooth.
5. Knowledge of storage methods and transportation media.

These five categories of knowledge level were described by Al-Asfour and Andresson [2008]. Three questions were included in each category and a score ranging from 0 to 3 was used to evaluate them, where 0 = no knowledge, 1 = limited knowledge, 2 = adequate but not complete knowledge and 3 = complete knowledge. A score of 0 or 1 indicated insufficient knowledge while scores 2 and 3 indicated sufficient knowledge to manage a situation of tooth avulsion. This scoring system was previously published [Al-Jame et al., 2007] and found to be suitable for studies like ours.

Another group of 75 randomly selected parents (group B) were not given the leaflet but were given the same questionnaire and served as controls.

**Results**

All the parents in both groups answered the questionnaire completely and were included in the study.

There were 57 females and 18 males, with a mean age of 38.7 years in group A. In group B there were 51 females and 24 males, with a mean age of 40.2 years. Table 1 shows details of the scores for each of the five categories of knowledge levels.

**Score of general knowledge of tooth avulsion**

Among the parents, 86.7% of those in group A and 9.3% of parents in group B showed sufficient knowledge to manage an emergency situation (scores 2 and 3) (Fig. 1).

**Score of knowledge of replantation and primary/permanent teeth**

Sufficient knowledge to manage an emergency situation (scores 2 and 3) was found in 89.3% of parents in group A and 41.3% in group B (Fig. 1).

**Score of knowledge about how to clean an avulsed tooth**

In group A, 70.6% of the parents demonstrated sufficient knowledge (scores 2 and 3) about how to clean an avulsed tooth compared to 16% of parents in group B (Fig. 1).
Score of knowledge of extra-oral time
Sufficient knowledge (scores 2 and 3) was seen in 73.3% of parents in group A and 13.3% of parents in group B regarding the importance of extra-alveolar time before replantation (Fig. 1).

Score of knowledge of storage methods and transportation media
Both parents in group A and group B, respectively 86.7% and 18.7%, showed sufficient knowledge (scores 2 and 3) of a suitable storage medium for an avulsed tooth (Fig. 1).

Discussion
It is well documented that prompt replantation increases prognosis of avulsed teeth [Andersson and Boldin, 1990] and delaying replantation or keeping the teeth in a dry environment results in poor prognosis of the affected teeth [Andreason, 1981; Lindskog et al., 1985]. People present at the site of injury such as parents, teachers and coaches can play an important role in improving the prognosis of avulsed teeth if they are informed about the necessary first-aid procedures at the time of accidents. However, numerous studies from different countries have shown that the knowledge level of parents [Al-Jundi, 2006; Al-Jame et al., 2007; Shashikiran et al., 2006] and teachers [Caglar et al., 2005; Chan et al., 2001; Perunski et al., 2005; Panzannini et al., 2005] is low in relation to correct management of tooth avulsions. It appears there are only a few studies on how knowledge of lay persons can be raised to a higher level in the community [Al-Asfour and Andersson, 2008; Asfour et al., 2008].

The results of this study showed that knowledge about tooth avulsion and first-aid procedures in this respect is low in parents who were not given leaflets (control group), which is consistent with the results of other studies in different countries [Al-Jundi, 2006; Al-Jame et al., 2007; Shashikiran et al., 2006].

This study showed that a simple leaflet is able to improve parents’ knowledge considerably in 70.7–89.7% of parents. Although a variation was seen between different categories of knowledge, information given by a simple leaflet apparently increased the knowledge level considerably in all the categories of knowledge. A previous study has shown that a simple leaflet is sufficient to increase the level of knowledge considerably [Al-Asfour and Andersson, 2008].

In this study, parents’ knowledge of first aid for tooth avulsion was evaluated using standardised questions. This method of assessing knowledge has been tested and found appropriate in several studies [Al-Asfour and Andersson, 2008; Asfour et al., 2008; Anderson et al., 2006]. An advantage of this method is the possibility to compare knowledge level between two groups of people (e.g., people who are given information and those who are not). Furthermore, it is possible to compare efficacy of different methods of informing the public to determine the most suitable method for the community. A leaflet, as an information tool, gives parents only the most basic knowledge; therefore, it is possible that some readers of leaflet face some difficulties in understanding all its content. Because of these limitations, in this study a well-trained dental student answered the questions of parents, if any, in group A. It is not surprising that opportunity for questions and answers is more effective than a leaflet alone.

In a similar study in Kuwait [Al-asfour and Andresson, 2008] a leaflet was used as an informative tool without opportunity for questions and answers. The leaflet improved all the categories of knowledge (47–74%); however, in the present study improvement was higher (70.7–89.3%). One may argue that the parents in the present study may have had a higher knowledge than parents in the study carried out in Kuwait, but this was not the case. In the study carried out in Kuwait the knowledge level of the parents who did not receive the leaflet was higher than that of the control group of the present study.

Regarding cleaning of an avulsed tooth and time (categories 3 and 4), improvements in knowledge level were 70.7% and 73.3%, respectively, while in other categories the improvement was at least 86.7%. Therefore, modifications should be considered in developing leaflets in the future in relation to cleaning and time. To enhance the knowledge level further, other tools of information can be used. Using a similar evaluation method, a study in 2008 showed that a short lecture raised the knowledge levels of the same five categories of knowledge in school teachers [Asfour et al., 2008]. Although lectures are efficient ways of giving information, they are exclusive and expensive, requiring many lectures to reach out to the whole community, while distribution of informative leaflets is more practical.

In conclusion, knowledge level is low among parents in Shiraz in relation to how to manage an avulsed tooth. A simple leaflet and a better understanding of its contents through the assistance of a knowledgeable operator can considerably raise the knowledge level.

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