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Case Report Article

Successful dental treatment using case for carpule as a distraction technique during local anesthesia: a case report

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Abstract

Introduction: Dental anxiety is described as a feeling of apprehension followed by some fear that something might happen during dental treatment, and most of the time it is also accompanied by fear. During pediatric dental care, dental anxiety is common and can be controlled through behavioral management of the child, using traditional techniques such as "tell-show-do", cards, videos, music, imitation, voice control and distraction**. Objective:** To report a clinical case of a child with Down's Syndrome and a negative history of previous dental treatment, in which behavioral management was successfuly carried out with the distraction technique, using a case in the carpule syringe. **Case report:** The guardian of a child 7-year-old male patient with Down's Syndrome and a negative history of previous dental treatment sought for dental treatmant. During the interview, the guardian reported the child's negative experience due to the drastic use of restraint measures. The clinical examination revealed the presence of biofilm, active caries and an indication for extractions. As the child was resistant to treatment, behavioral management sessions were carried out. Due to the various needs for more invasive procedures, preparation for anesthesia was carried

out. For this stage, an alligator-type visual distraction device was used, which acts as a cover for the carpule syringe. After correct management, the child was more receptive to treatment, which was carried out without the need for drastic physical restraint measures. **Conclusion:** The use of the case to camouflage the carpule proved to be effective as a behavioral management technique in improving the child's behavior, reducing fear and decreasing anxiety.

Introduction

Dental anxiety is described as a feeling of apprehension that something might happen during dental treatment and is most often accompanied by a sense of loss of control [6]. Children who have dental anxiety tend to be less cooperative, which requires more treatment time and they may show more aggressive behavior, which results in a stressful and unpleasant experience during dental treatment, both for patients and for the professional team [2].

Negative experiences with dental treatment, especially those related to pain, can develop fear and anxiety, which in turn postpone further treatment, whether preventive or therapeutic [13, 16]. It is important to note that the management of dental fear and anxiety is essential for the quality and optimization of pediatric dental practice [5-7]. Children with exacerbated dental fear and anxiety tend to have higher expectations in relation to painful sensations [3, 13, 21, 23].

For this reason, there are behavioral management techniques for children and their families to control fear and anxiety, which are widely disseminated and used according to the age of the child and the acceptance of those responsible [1, 4, 16]. According to the American Association of Pediatric Dentistry, management techniques are divided into Techniques with non-pharmacological effects such as "tell-show-do", modeling, passive distraction, positive reinforcement, protective stabilization and voice control, videos, music are well accepted by children [1, 15]. Pharmacological techniques use conscious and unconscious drug sedation to optimize management for dental practice, but are used in very specific cases [1].

Non-pharmacological techniques are very simple and safe, as well as being preferred by parents and professionals [8, 19]. Passive visual distraction, in particular, aims to divert the patient's attention away from something that might be considered unpleasant during the procedure [4]. It is reported in the literature that the local anesthesia procedure is one of the procedures that has a great influence on the causes of fear and anxiety in dental practice [7, 12, 20].

To reduce fear and anxiety about local anesthesia, using the passive distraction technique, a device was developed to cover the carpule syringe and the needle, called a "little alligator" (Angie by Angelus®, Londrina, PR, Brazil). The case, in the playful shape of a toy alligator, is made of flexible, autoclavable rubber and covers the syringe and hides the needle during anesthesia [4].

Studies using carpule syringes are still very limited. The aim of this study was to report a successful clinical case using the "little jacare" device as a passive visual distraction during the non-pharmacological behavioral management of a child with Down's Syndrome who was resistant to dental treatment.

Case report

A 7-year-old male patient with Down's Syndrome was seen at the pediatric dentistry clinic of the Federal University of Alfenas, Minas Gerais, Brazil. In the anamnesis, the guardian reported that the teeth broke easily, as well as greater sensitivity in the front teeth. As a result, she took the child for dental treatment at another clinic, but they performed the protective stabilization inappropriately, holding him by force, without the proper commands and handling techniques. The clinical examination revealed the presence of biolfime, active caries, indication for tooth extraction, as well as restorations. The informed consent form was signed by the mother and guardian and dental treatment began.

With the child's negative experience of dental treatment and especially anaesthesia, traditional management sessions were carried out, using "tell-show-do" techniques, visual distraction with the use of the little jacare (figure 1), voice control and imitation in order to avoid contentive protective stabilization (figure 2).

After the management sessions, preparation for anesthesia was carried out, due to the child's various treatment needs. As an aid for this stage, an alligator-type visual distraction device was used, which functions as a cover for the carpule syringe (Angei de Angelus®, Londrina, Paraná, Brazil).

The patient was more receptive and the dental treatment was carried out without the need for drastic physical restraint (figure 3). The visual distraction device made a positive contribution to the child's management.

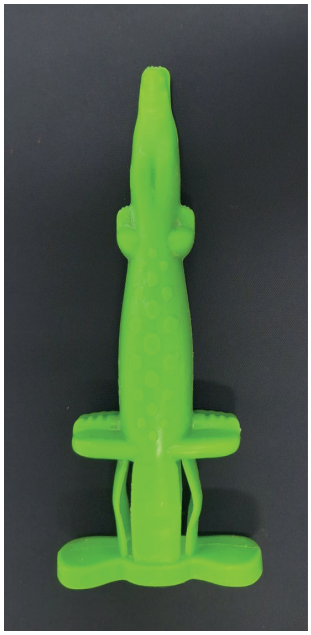

Figure 1 – Alligator case for carpule

Figure 2 – Behavioural management of children under local anaesthesia: A) the child looking at the alligator case for the first time; B) playing with the case; C) simulation of local anaesthesia

Figure 3 – Anesthesia procedure with the alligator case for the carpule as a passive distraction technique

Discussion

Fear and anxiety most often permeate pediatric dental treatment and up to 36.5% of children between the ages of 3 and 18 worldwide have dental anxiety [10]. Children's feelings of pain, fear and anxiety arise due to a lack of understanding of dental care and exposure to sounds, stimuli and procedures arising from the dental treatment itself [11].

According to Shetty *et al*. [17], in the past, the main focus of pain and anxiety management was centered on pharmacological treatments, which is currently used in very specific cases [1]. Since then, various non-pharmacological interventions have been used, such as positive reinforcement strategies, calming breathing exercises and distraction [3]. The non-pharmacological behavioral management technique used in this case report is called distraction, which is a technique based on the notion of the patient's limited attention span. But these distraction techniques vary, from passive to active interventions, based on the fact that the more interactive they are, whether involving visual, auditory or tactile stimuli, the greater the distraction potential in relation to pain, and are the most popular for pediatric patients undergoing dental treatment [9].

Wang *et al*. [22] reported that patients with higher levels of anxiety may not respond well to distraction techniques. In this case report, the child arrived for dental treatment with a previous history of pain and drastic behavioral management, such as contentious stabilization.

During the administration of a local anesthetic, anxious patients may experience more intense pain and a longer duration than less anxious patients [5]. The syringe used for the technique is considered a threatening instrument, especially for children. Therefore, camouflated the syringe is an effective distraction option that can alleviate dental fear and anxiety [4, 14].

The literature on camouflage is very limited, but it is possible to suggest its applicability in the behavioral management of children with fear and anxiety in dental practice, since this technique can positively influence the behavior of pediatric patients.

Conclusion

The use of the case to camouflage the anesthesia syringe has proven to be effective as a behavioral management technique in improving the child's behavior, reducing fear and decreasing anxiety, and is therefore recommended as an alternative to the use of conventional syringes for local anesthesia.

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Conflict of interest

The authors declare that there is no conflict of interest.

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