Abstract

This paper aims to describe a case report about total intrusive luxation of deciduous incisor. It emphasizes the clinical and radiographic follow-up until the eruption of the permanent successor teeth. The first radiographic exam showed total intrusive luxation of the tooth 62. After twelve months, the tooth 62 was wholly reerupted. After the eruption of permanent incisors, there was discoloration on the middle third of the crown of the tooth 22. The conservative approach is possible when the clinical and radiographic follow-ups are performed in an efficient and systematic way. However, we cannot ensure that successors will get out healthy.

Keywords: Intrusive luxation; Tooth injuries; Tooth avulsion

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Introduction

Traumatic injuries in primary teeth can interfere in the normal development of permanent teeth. These traumatic injuries can harm the successors' odontogenesis, due to the proximity between the primary tooth’s apex and the successor tooth’s germ [1]. Sequela severity depends on the age of the child at the time of injury, grade of the root resorption of traumatized deciduous tooth, type and extension of injury, and developmental stage of the successor at the time of injury [2]. According to the factors mentioned above, different malformations can occur in the successor [3-6].

Intrusive luxation of a deciduous tooth is one of the most harmful lesions for a permanent germ and one of the most frequent kinds of traumatic dental injuries [6-8]. During childhood, the majority of the traumatic dental injuries occur when adults do not watch children properly. In primary dentition, the greatest part of accidents happens at home and falls from their own height is the most common cause of accidents. It happens mainly in children between 1 and 4 years of age [2,9-11].

This paper aims to describe a case report about intrusive luxation of deciduous tooth. It emphasizes the conservative approach and the follow-up of the primary teeth until the eruption of the permanent teeth.

Case report

The patient R.B.B., male, sixty-two months old, was assisted at the Dental Trauma Clinic of the Pediatric Dentistry Clinic, three days after he suffered a dental trauma. During the anamnesis, the guardian told us the child fell from one’s own height and hit his mouth against the ceramic floor. Through a clinical exam, we realized there was bruising on the upper lip’s mucosa, front gum’s laceration, mobility of teeth 51 and 61, and enamel fracture of the tooth 52 (Figure 1). The first radiographic exam showed partial obliteration of root canal of the tooth 61 and total intrusive luxation of the tooth 62 (Figure 2). Three months after the accident, the patient was monitored through clinical and radiographic exams. This time, the following changed occurred: light color change of the tooth 51, gum’s retraction of the tooth 61 and the beginning of the tooth 62 reeruption (Figure 3). After twelve months of the trauma, teeth 51 and 61 had a normal root resorption and the tooth 62 was wholly reerupted (Figure 4). The follow-up of the patient through clinical and radiographic exams was carried out until the total eruption of the successors. After the eruption of the permanent incisors, discoloration on the middle third of the crown of the tooth 22 was observed (Figures 5 and 6). To mask the discoloration, the following procedures were performed: micro abrasion, acid etching, application of bonding agent and the A2 Opallis flow resin (FGM- Joinville, Santa Catarina, Brazil), as well as polishing (Figure 7). This study was approved by the local Ethics Committee for research (Number of the approved protocol: 748) and the guardians signed an informed consent form regarding all the procedures.

Discussion

A precise diagnosis and an efficient treatment to injuries caused by trauma in the primary dentition are achieved through the knowledge of aetiology, place and moment of the accident [12]. Some factors that hamper diagnoses and treatments of the traumatized teeth are: the negligence of a dentist at the first appointment, the slack demand for treatment after trauma and the lack of the periodic control of patients [5,9].

Sometimes, an extraction of the traumatized deciduous teeth is done with the intention of avoiding the post-traumatic complications. However, this conduct should be rethought once a conservative approach is viable [6]. It is necessary for a conservative approach to do clinical and radiographic follow-
ups of patients in an efficient and systematic way. Sometimes, it has not happened because of the inattention of professionals or the poor attendance of patients in the control appointments. Generally, this absence happens the guardians are not aware of the possible post-traumatic complications. When a follow-up is performed periodically, the cost for the guardians is low and the treatments for the possible complications of the deciduous teeth are carried out prematurely, reducing chances of the successor teeth’s sequelae [4,13]. It is very important to reduce malformations in the permanent teeth once they can induce aesthetic, physical and psychological damage among children [9]. Usually, delayed treatments demand complex multidisciplinary interventions [14].

In the clinical case described, the conservative approach was possible, because both the initial appointment and the follow-up occurred in a satisfactory way. The child was assisted only three days after the trauma and accompanied until the complete eruption of the successors for five years. In the initial x-ray, we realized there was partial obliteration of root canal of the tooth 61 that indicates us a previous trauma. Many times, when a bleeding or a dental displacement does not occur, the trauma is not realized by the guardians. So, they do not look for assistance at first. In the absence of clinical and radiographic signs that could suggest a presence of irreversible inflammations or pulp necrosis, the approach was to monitor the obliterated tooth until the eruption of it successor through clinical and radiographic exams [15].

Three months after the trauma, the gum’s retraction of the tooth 61 was observed, probably due to the gum’s laceration during the trauma. In this case, the patient was orientated regarding the sanitization’s technique of the damaged area to avoid others complications related to the accumulation of plaque [15]. The tooth 51 showed a light color change, without any pain, dental mobility, fistula and radiolucent lesion at a radiographic examination. Thus, neither the endodontic treatment nor the extraction was justified. As only color changes do not define a prognosis of a tooth and cannot be used a guide of a treatment, the clinical approach was again to apply clinical and radiographic controls until the complete eruption of the successor [16,17].

We chose to wait for the eruption of the tooth 62 because there was not a sign of a severe damage of the successor’s germ. During this phase, it is necessary the clinical and radiographic follow-up, since changes can happen with the intruded tooth [18,19]. After the eruption of the permanent incisors, discoloration on the middle third of the crown of the tooth 22 was observed. Faced with this happening, we cannot ensure that successors will burst healthy [4], even if a suitable approach of the traumatized deciduous tooth be carried out. Since, sequelae in the permanent teeth can occur either at the moment of a trauma or after one. The successor tooth’s prognosis after the deciduous tooth’s trauma.
is due to wideness of a trauma and not a treatment performed in the predecessor tooth [20]. However, the regular follow-up through clinical and radiographic exams and interventions at a proper moment can mitigate or avoid new harms in successors that are in development [14].

Therefore, it is worth pointing out that guardians should be informed of the importance of the immediate appointment after the trauma, the periodic follow-up of the traumatized tooth and oriented to observe signals of the possible complications after a dental trauma. Dentists should be motivated to treat, when it is necessary, and to monitor the traumatized deciduous tooth until the permanent’s eruption, purposing to diagnose and to treat complications that can induce damage to the successor tooth.

References