



Multiple Trauma in a 5 Years Child with a Longitudinal Follow Up

Luciana Reichert da Silva Assunção¹, Karina Gerhardt Bianco¹, Pedro Ivo Santos Silva³, Carla Oliveira Favretto¹ and Robson Frederico Cunha^{2*}

¹Post doctoral student, School of Dentistry of Araçatuba, - UNESP - Univ Estadual Paulista, Araçatuba, São Paulo, Brazil

²Adjunct professor, Department of Pediatric and Social Dentistry, School of Dentistry of Araçatuba, - UNESP - Univ Estadual Paulista, Araçatuba, São Paulo, Brazil

³Post doctoral student in the Department of Surgery, School of Dentistry of Araçatuba, - UNESP - Univ Estadual Paulista, Araçatuba, São Paulo, Brazil

Abstract

Dental-alveolar trauma in the primary dentition associated with intra-cranial injuries is not common. This article reports the management of a complex trauma involving cranial trauma and multiple luxations and avulsions of primary teeth in a five-year old boy as a consequence of a horse kick. The treatment, including the hospital intervention and dentistry procedures, is described. The clinical outcomes are reported at a 5-year follow-up.

Keywords: Trauma; Orthodontics; Radiology

Introduction

Many studies concerning trauma in primary teeth report the involvement of only one tooth as the most common event. Episodes involving extensive trauma in permanent teeth have been widely reported, but there are not many reports involving extensive trauma to primary teeth [1]. The etiologic factor of the trauma involving many primary teeth are variable and of particularly high seriousness, with necessary hospital intervention in some of the cases.

Luxation injuries are widely described in the primary dentition, as they are related to the resilience of the alveolar bone and the supporting structures in young children. Avulsion occurs in a prevalence varying from 7% to 13% in the primary dentition and children aged 48-60 months are the most affected [2].

This article reports the diagnosis and management of a complex trauma involving cranial trauma and multiple luxations and avulsions in primary teeth. The treatment strategies are reported up to the 5 years-follow up and the clinical approaches are discussed.

Case Report

A 5-year-old boy, who resides in a rural area, arrived at the Hospital of Araçatuba, Brazil, on July, 2003, after suffering trauma caused by a horse kick on the same day. Clinical and radiographic examinations were performed. Brain concussion with loss of consciousness (Glasgow coma scale=11) was diagnosed. The clinical examination revealed edema and contusion in the upper lip and multiple abrasion injuries in face. Bleeding from the nose and mouth was also observed. The intra-oral examination revealed multiple dentoalveolar traumas with teeth avulsions (51, 52, 53, 54, 61, 62, 74, 84). Tooth 41 also suffered avulsion but could not be reimplanted because it was lost at the location of the accident. Lateral luxation were observed in teeth number 71, 72, 73, 82 and 83.

Radiographic and tomography examinations were performed to detect the presence of bone fractures. These tests revealed no fractures of facial bones, only a dentoalveolar bone injury and soft tissue injury. The surgery was performed under general anesthesia using orotracheal intubation. We extract the teeth with severe mobility and part of the alveolar process. The soft tissue wounds were repaired. The patient remained hospitalized for nine days until neurological recovery.

The child was then referred to the Department of Pediatric Dentistry of Araçatuba Dental School of São Paulo State University for postoperative clinical follow-up. The intra-oral examination showed

an adequate postoperative situation. The sutures were removed and periapical radiographs of the involved regions were taken. The parents were instructed about oral hygiene of the child.

Twelve months later, teeth 75 and 85 teeth were banded and a lingual arch was applied. At this time, a panoramic radiograph was taken to observe the position of the succedaneous permanent teeth.

Bimonthly clinical monitoring and radiographic follow-up was done to observe the eruption of permanent teeth. Five years and three months after the accident, the anterior superior and lower permanent teeth had completed their eruption, presenting an adequate position in the arch. White discoloration of enamel with hypoplasia was detected in teeth 11, 12, 14 and 22. A panoramic radiography revealed satisfactory eruption of the remaining permanent teeth.

Discussion

This case report described the management of a multiple dentoalveolar trauma in a 5 year-old boy as well as the five year follow up after the accident.

There are no reports describing the occurrences of dental-alveolar trauma in the primary dentition associated with intra-cranial injuries, being these cases mostly associated with trauma in permanent dentition [3].

Motorcycles, bicycles and pedestrians accidents account for 50% of the skull-brain trauma in children [4]. Injuries with animals associated incidents are not frequent, especially those affecting primary teeth. The initial diagnosis in the current report was skull-brain trauma with loss of consciousness, with the etiologic factor of a horse kick which affected the face and the head of the child [5]. This report involved multiple luxations and avulsions of primary teeth, as well as the avulsion of the

***Corresponding author:** Dr. Robson Frederico Cunha, Department of Pediatric Dentistry, Faculdade de Odontologia de Araçatuba UNESP – Univ Estadual Paulista R. José Bonifácio, 1193, CEP: 16.015-050 Araçatuba, São Paulo, Brazil, Tel: 55 18 3636-3235; E-mail: cunha@foa.unesp.br

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lower right permanent central incisor which had already erupted prior to the accident. No permanent tooth was lost after the impact.

The follow up period, including the installation of an orthodontic appliance, was important in avoiding disturbances during eruption of the succedaneous teeth. The lingual arch was applied to preserve low arch space. As the child presented an age next to the permanent teeth eruption stage, there was no need of an esthetic space maintainer in both the superior and inferior arches.

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