Dental Traumatology 2005; 21: 54–56

DENTAL TRAUMATOLOGY

Case Report

Treatment of a severe dental lateral luxation associated with extrusion in an 8-month-old baby: a conservative approach

Cunha RF, Delbem ACB, Vieira AEM, Pugliesi DMC. Treatment of a severe dental lateral luxation associated with extrusion in an 8-month-old baby: a conservative approach. Dent Traumatol 2005; 21: 54–56. © Blackwell Munksgaard, 2005.

Abstract – This case report documents the trauma and follow-up care of lateral luxation associated with extrusion of the lower central incisors in an 8-month-old patient. The teeth were repositioned by digital pressure and stabilized using proximal sutures. Clinical and radiographic follow-up 40 months after the injury showed alterations in both incisors, but both remained functional and free of pathology.

Robson Frederico Cunha, Alberto Carlos Botazzo Delbem, Ana Elisa de Mello Vieira, Daniela Maria Carvalho Pugliesi

Department of Pediatric Dentistry, School of Dentistry at Araçatuba, Paulista State University (UNESP), São Paulo, Brazil

Key words: dental injuries; trauma; primary teeth; luxation injuries

Robson Frederico Cunha, Faculdade de Odontologia de Araçatuba, UNESP, Disciplina de Odontopediatria, Rua José Bonifácio 1193, Araçatuba, SP, Cep 16015-050, Brasil
Tel: +55 18 6203235; Fax: +55 18 6203332
e-mail: cunha@foa.unesp.br

Accepted 11 November, 2003

Dental traumatic injuries in infants and young children are common and most often related to falls while learning to walk and explore surroundings (1). Because of the resilient bone surrounding the primary teeth, the majority of injuries are tooth luxations, composing 62–69% of such traumatic injuries (2, 3). The most commonly affected tooth is the maxillary incisor, with the central incisors being involved the most frequently (2, 4).

With respect to the occurrence of lateral luxation in deciduous dentition, Cunha et al. (5) analyzed 399 injured teeth, with lateral luxation corresponding to 1.3% of all cases. Borum & Andreasen (6) observed this type of injury in 34.1% of 545 deciduous teeth. Schatz & Joho (7), in a sample of 252 injured deciduous teeth, reported that lateral luxation corresponded to 10.3% of all traumas. Normally, lateral luxation is associated with laceration of the adjacent gingival tissue. Treatment recommendations for lateral luxations include repositioning and fixation of the injured tooth, extraction, or when occlusal interference is not an issue, no treatment is often a good option, followed by monitoring and radiographic follow-up (8).

Case report

An 8-month-old girl was referred to the Baby Clinic of the Dental School at Araçatuba, UNESP, 20 min after suffering dental trauma. The grandmother reported that the child had sustained injury in the region of the chin in the horizontal direction after falling against the stroller. The child was in good general health and had no neurologic problems.

The intraoral examination revealed lateral luxation in a labial direction, associated with extrusion of the mandibular central incisors and extensive laceration of the adjacent gingival tissue (Fig. 1). Palpation showed partial dislocation of the labial bone in this area. No involvement of the maxillary central incisors was observed.

The area was treated with topical anesthesia for approximately 3 min, followed by local infiltrative anesthesia, and the teeth were repositioned in a lingual direction by digital pressure (Fig. 2). The traumatized region was irrigated generously with physiologic saline, and tissue closure was completed using proximal suture of the teeth involved. The family was instructed regarding oral hygiene.

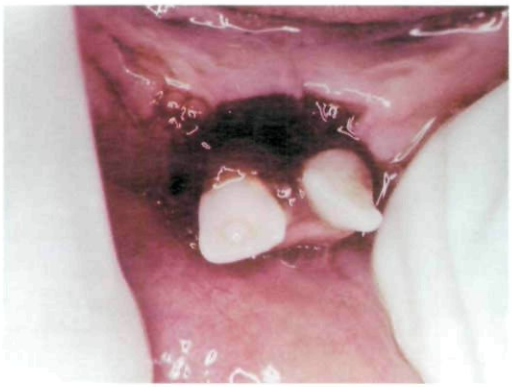

Fig. 1. Immediate clinical aspect of the traumatized area.

Fig. 2. Immediate repositioning of the laterally luxated teeth by digital pressure.

The patient returned for follow-up care after 1 week for suture removal (Fig. 3). A slight inflammation in the area was noted, and the teeth presented a mild mobility. Radiographic examination revealed no pathologic changes.

Clinical and radiographic follow-up were performed periodically to monitor teeth development. Six months after injury, the mandibular right central incisor revealed a slight mobility and a premature root resorption; the mandibular left central incisor showed progressive pulp canal obliteration (PCO) (Figs. 4 and 5). Radiographic aspects

Fig. 3. Containment of the repositioned teeth by means of suture – seventh postoperative day.

Fig. 4. Clinical aspects after 6 months.

Fig. 5. Radiographic aspects after 6 months.

of the mandibular right central incisor after 24 months revealed signs of accelerated physiologic root resorption (Fig. 6). After 40 months, the clinical examination revealed no discoloration of dental crowns, no pain, and slight mobility. The mucosa presented normal characteristics (Fig. 7). Radiographically, the alterations (root resorption and PCO) were more pronounced (Fig. 8).

Discussion

When examining a child who suffered a dental trauma, the dentist should consider the details concerning the incident as well as a complete

Fig. 6. Radiographic aspects after 24 months.

Fig. 7. Clinical aspects after 40 months.

Fig. 8. Radiographic aspects after 40 months.

meticulous examination of the hard and soft tissues (8). Also, it is important to have in mind the maintenance of injured primary teeth in function of its importance, as reported by Kotsiomiti et al. (9) and Weiger & Heuchert (10), because the premature loss of primary teeth may lead to an unfavorable orofacial development. In our case, several factors influenced our decision to reposition the traumatized teeth. These included the timing of seeking care, the anxiety of the family in maintaining the erupting teeth, the type of trauma and direction of the dislocation, and the patient's age.

The time elapsed between dental trauma and seeking treatment has a decisive influence on the prognosis of the injured tooth (11), with the chances of success being greater when the patient receives care within the first 30 min after injury. For very young patients, this time is critical as factors such as parental anxiety and the emotional state of the child should be taken into consideration.

In most cases of lateral luxation, tooth dislocation occurs in a lingual direction and can often be left untreated as tongue pressure will reposition it (8). In the present case, dislocation occurred in a labial direction, which was decisive for adopting the approach of immediate repositioning. In view of the young age of the patient and the absence of adjacent teeth, splinting was not possible and the teeth were contained by means of sutures. It is important to emphasize here the difficulty in obtaining satisfactory containment of the luxated teeth in these patients, especially in cases of pain and laceration of the soft tissue, and the consequent true risk of aspiration or deglutition.

According to Borum & Andreasen (6), PCO frequency is high (35.9%) in the primary dentition for teeth with luxation. It appears that the most decisive factor for the development of PCO is displacement of the tooth at the time of injury; this could explain the PCO developed by the mandibular left central incisor in this case report. Relative to the mandibular right central incisor, the final radiograph reveals signs of accelerated physiologic root resorption. It cannot be ruled out that the accelerated physiologic root resorption can be a result of the intensity of the trauma. The follow-up intervals were of great importance for the establishment of the diagnosis for this tooth, as no clinical signs suggestive of pulp necrosis were detected during 40 months.

An interesting finding after 40 months of follow-up was the observation of distinct radiographic alterations, demonstrating different aspects in teeth that suffered the same type of trauma. This clearly shows the influence of a variety of factors that should be taken into consideration when assessing traumatic dental injuries for the establishment of a prognosis and for a successful treatment.

References

1. Joho JP, Marechaux SC. Trauma in the primary dentition: a clinical presentation. J Dent Child 1980;47:167–74.
2. Andreasen JO. Etiology and pathogenesis of traumatic dental injuries. Scand J Dent Res 1970;78:329–42.
3. Andreasen JO. Epidemiology of traumatic dental injuries to primary and permanent teeth in a Danish population sample. Int J Oral Surg 1972;1:235–9.
4. Luz JGC, Di Mase F. Incidence of dentoalveolar injuries in hospital emergency room patients. Endod Dent Traumatol 1994;10:188–90.
5. Cunha RF, Pugliesi DMC, Vieira AEM. Oral trauma in Brazilian patients aged 0–3 years. Dent Traumatol 2001;17:210–2.
6. Borum MK, Andreasen O. Sequelae of trauma to primary maxillary incisors. Part I. Complications in the primary dentition. Endod Dent Traumatol 1998;14:31–44.
7. Schatz JP, Joho JP. A retrospective study of dento-alveolar injuries. Endod Dent Traumatol 1994;10:11–4.
8. Mackie IC, Blinkhorn AS. Dental trauma. Part 1. General history, examination and management of trauma to the primary dentition. Dent Update 1996;23:69–71.
9. Kotsiomiti E, Arapostathis K, Kapari D, Konstantinidis A. Removable prosthodontic treatment for the primary and mixed dentition. J Clin Pediatr Dent 1999;24:83–9.
10. Weiger R, Heuchert T. Management of an avulsed primary incisor. Endod Dent Traumatol 1999;15:138–43.
11. Cunha RF, Pugliesi DMC, Correa MG, Assuiti DM. Early treatment of an intruded primary tooth: a case report. J Clin Pediatr Dent 2001;25:199–202.