

## Treatment of Gingival Recession of Mandibular Primary Incisors Caused by Dental Trauma

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**Abstract:** This case presentation documented the trauma and follow-up care of luxation associated with extrusion of the lower central and lateral incisors in three-years-old patient. The teeth were repositioned by finger pressure and fixed by self-cured adhesive resin (Super-bond, Japan). Then, occlusion adjustment was carried out for smooth anterior guidance. Seven years clinical and radiographic follow-up after the injury showed sound eruption of permanent incisors and normal gingival tissue attachment adjacent to the teeth. No sign of dental trauma was observed in permanent dentition.

**Key words:** trauma, lower incisors, X-ray, long-term follow-up, gingival line

### Introduction

Dental traumatic injuries in infants and young children are so frequent and most often related to fall while learning to walk, playing in kinder garden or house<sup>1)</sup>. As the bone surrounding the primary teeth is resilient, the majority of injuries are tooth luxations, which is high percentage in such traumatic injuries<sup>2,3)</sup>. The maxillary central incisors are the most frequently and commonly affected teeth, compared with lower incisors<sup>2,4)</sup>.

Several researchers demonstrated injuries of young children with respect to the occurrence of a luxation in deciduous dentition. The frequency of injuries in the reports are different each other by the type of injury, ages of children or methods of investigation. General speaking, a luxation is associated with laceration of the adjacent gingival tissue.

### Case report

A three years and four months girl had sustained injury in the region of the chin in the horizontal direction after hitting against to a head of the other girl while playing in a kinder garden. The child was in good general health and had no other problems. Mother told us that at the time she hit her anterior teeth, child's oral cavity showed bleeding and lower anterior teeth were loosing and slightly moving after suffering trauma. However, they had difficulties to visit to our hospital with traffic convenience. There was a few means of transportation because of living in the country.

One month after suffering dental trauma, she was introduced to the Hokkaido University Dental Hospital, Pediatric Dentistry. The

intra-oral clinical examination revealed no discoloration of dental crowns and no pain around the injured teeth. A slight inflammation in the area was noted. However, the mandibular anterior teeth presented moderate mobility and extensive gingival tissue recession adjacent to the teeth. Teeth roots were exposed. X-ray examination showed extensive alveolar bone loss around incisor roots. It was particularly remarkable in the left lateral incisor (Fig. 1). The germs of the successors seemed not to be damaged by trauma with X-ray photograph. Then anterior lower teeth were gentle repositioned by finger pressure and fixed with self-cured adhesive resin (Super Bond, Sun-Medical, Tokyo) for functional occlusion. The family was instructed regarding oral hygiene and returned for follow-up care.

In the way of long observation and maintenance, lower anterior left incisor was fallen out and fixation was came off at the same time. It was one year and two months from first visit. Gingival line was not recovered. The teeth were re-fixed by adhesive resin and observed until following permanent teeth erupted. (Fig.2).Clinical and radiographic follow-up were performed periodically to monitor teeth development.

After seven years after injury, mandibular and maxillary permanent incisors were properly erupted and occluded. Gingival line adjacent to lower incisors was recovered to the level of normal anatomy (Fig. 3).

### Discussion

When examining a child who suffered a dental trauma, the dentist



Fig. 1. Radiographic aspects of mandibular incisors when patients at first visit to our clinic.



Fig. 2. One year and 2 months clinical follow-up of traumatized area was presented. Anterior lower left incisor was automatically fallen out. Teeth were repeatedly fixed by adhesive resin for function and aesthetic purposes.



Fig. 3. Clinical aspects of anterior teeth and gingival lines attached to teeth after 7 years from first visit of patient.

should consider the details concerning the incident as well as a complete meticulous examination of the hard and soft tissues. Also, it is important to have in mind the maintenance of injured primary teeth in function of its importance because the premature loss of primary teeth may lead to an unfavorable dentition development. In our case, several factors influenced our decision to reposition and fixation by self-cured adhesive resin toward 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.

In this case, we were worrying about the gingival recession and root exposure of the teeth. We wondered if permanent teeth erupted

whether the gingival line was normally attached to the teeth. Courageously, following permanent teeth were normally erupted and occluded. Gingival line showed no sign of issues.

We were surprised at greatness of spontaneous cure of oral tissues. Moreover, treatment recommendations for luxations includes repositioning and fixation of the injured tooth when occlusal interference is not an issues, no treatment is often a good option, followed by monitoring and radiographic follow-up<sup>5)</sup>.

### Conclusion

Present case clearly showed 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.

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