

Management of Dento Alveolar Trauma of the Lower Incisors in Children: A Case Report

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Abstract

Case Report

Dentoalveolar injuries represent a serious dental problem. The time from injury to treatment is a major factor in the outcome of many of these injuries. In this case report, we will describe the management of a dentoalveolar fracture of the lower incisors in a 9-year-old boy. Complete lingual displacement of the fractured fragment involving a three permanent lower incisors was observed clinically and confirmed by radiological examination. The fracture was reduced and stabilized using an acrylic splint under local anesthesia.

Keywords: Dento alveolar fracture, child, tooth.

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INTRODUCTION

Dento alveolar injuries include injuries of the tooth, supporting soft tissues and the alveolar bone housing the teeth. They are most common in children and teenagers [1].

Fractures involving the boney alveolus proper are treated in the clinic setting. They constitute dental emergencies due to a short window of opportunity to realign the fractured part.

The purpose of this case report was to present the emergency treatment and the management of this mandibular dento alveolar fracture.

CASE REPORT

A 9-year-old male patient presented urgently to the Pediatric Dentistry Department, Dentistry School of Monastir (Tunisia) with dento alveolar trauma of the lower incisor.

The history of the patient revealed that he was hit directly on the chin during a martial art training session. His medical anamnesis was unremarkable.

Intra oral examination (Figure 1) revealed a dark red ecchymosis which was spreading under the neck of the 31, 41 and 42 to the bottom of the vestibule.

A dento alveolar fracture of the 3 lower incisors was diagnosed with block displacement in the occlusal and lingual direction.



Fig-1: Intra oral view

The patient was in mixed dentition with a bad oral hygiene and a little distal carious lesion in the first lower left primary molar.

A low-side radiograph (Figure 2) was requested in order to exclude an eventual condylar neck

fracture. Similarly, a retro alveolar radiograph (Figure 3) and an occlusal bite (Figure 4) showed the absence of symphysis fracture; on the other hand, they confirmed the fracture of the alveolar bone in block without moving the teeth from their alveolus.



Fig-2: low-side radiograph



Fig-3: Retro alveolar radiograph



Fig-4: the occlusal bite

A gentle reduction with both fingers was performed under local anesthesia. Then, a semi-rigid

splints was put in place from the first right temporary molar to the first left temporary molar (Figure 5).

Dental splints were performed for three weeks. We prescribed an antibiotic (Amoxicillin) for one week and a mouth rinse solution for ten days. Rigorous

hygiene has been instituted with a soft diet to improve the prognosis of the treatment



Fig-5: Intra oral view after treatment

Splints was deposited after 3 weeks, we noted the regression of the ecchymosis. The teeth found their initial position with a slight mobility of the block (Figure 6) .No infectious complication was mentioned.

One year follow-up showed complete healing (Figure 7). Physiological mobility was found and the vitality test on the 3 incisors was positive.



Fig-6: After three weeks



Fig-7: After One year

DISCUSSION

Dento alveolar fractures are very common in children. In front of such a situation, several factors are considered in the definitive treatment: 1) age and cooperation of the patient; (2) duration between trauma and treatment; (3) location and extent of the injury; (4) nature of concerned teeth (primary or permanent); (5) stages of root development; (6) eventual fracture of alveolar bone; and (7) periodontal health of remaining teeth [2].

Treatment procedure

Treatment of fractures of the alveolar process involves reduction and immobilization of the involved segment and stabilization for at least 2 to 4 weeks [3].

Proper positioning of avulsed or luxated teeth along with repositioning fractured alveolar bone is often very challenging. Although every effort should be made to restore the original architecture, long-term success is often very limited [4].

In any alveolar fracture of the deciduous dentition, the parents should be informed that underlying tooth buds of the permanent teeth might have been injured. Long-term follow-up is required to watch for developmental disturbances in the permanent dentition [5].

According to several authors, the use of gutters for the restraint proves to be more beneficial than the realization of a bonded fixation and this for various reasons: the contour heights of the crowns of deciduous

teeth are below the gingival level, and circum dental wiring may result in extrusion of deciduous teeth. Resorption of roots, attrition of deciduous teeth, and incomplete root formation of permanent teeth in the mixed dentition phase make these teeth less helpful in securing arch bars in place [6].

Function and aesthetics

The dental occlusion of the patient is of prime importance for successful outcome. Proper understanding of the growing mandible is necessary to treat these fractures in an appropriate manner [7].

After splints deposing, a follow-up of permanent teeth placement was needed as well as orthodontic exam related to inter-incisal point shift.

Oral hygiene

Maintenance of oral hygiene poses a problem, particularly with children and more so with the splint in place. The child is advised to use regular mouth rinses containing 0.2% chlorhexidine. Alternately, parents are trained and advised to irrigate the oral cavity with warm saline in a 10-cc disposable syringe following any food intake.

Following removal of the splint, a careful examination of the teeth and the fractured fragment is carried out to confirm satisfactory healing of the fracture. It is also imperative to monitor such cases over a prolonged period so that future eruption of the permanent dentition can be closely observed.

CONCLUSION

Dento alveolar injuries represent a serious dental problem for the pediatric population. Treatment revolves around stabilizing the fracture for a sufficient period to allow for proper bony union.

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