Avulsion of a maxillary primary first molar in a 19-month-old child

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Introduction

According to Andreasen,[1] only 0.5% of injuries occurring in preschool children involve the primary molars. Cases in the literature involving primary molars emphasize the chin or face as the site of trauma.[2,3] Single or multiple fractures of the primary molars are the usual sequelae.[2,3]

Most attention involving avulsion of primary teeth has been limited to anterior teeth.[4] The purpose of this article is to present a case of a primary molar avulsed due to trauma.

Case Report

A 19-month-old Caucasian male was referred by a general dentist for evaluation and possible treatment of an avulsed tooth. Earlier in the day, the child was hit in his face by a swing. The child's medical history was noncontributory.

The clinical exam revealed a child in no apparent distress, with an abrasion just below the cheekbone on the left side of the face. The abrasion was rectangular, measuring 1x4 cm. No lacerations were present and swelling was minimal.

An injury site was present where the maxillary left primary first molar had been located (Fig 1). A small abrasion was present on the buccal mucosa adjacent to the avulsion site but all other intraoral soft tissues were normal. The maxillary left primary canine and second molar were unerupted. No other primary teeth appeared traumatized.

Radiographs were not exposed because the tooth was avulsed intact and due to the child' size and immaturity. The apical portions of the root appeared undeveloped (Fig 2). Parents were informed that primary molars rarely were avulsed, that reimplantation was not indicated, and a space maintainer would be needed in the future.

Fig 1. Site of the maxillary left primary first molar avulsion.

Discussion

Andreasen[4] has reported that 7–13% of all trauma to the primary dentition involves exarticulation. The maxillary central incisors are the teeth most frequently avulsed.[4] This case appears to be the first reported involving avulsion of a primary molar. The incomplete root formation and the resiliency of the alveolar bone may have been contributing factors. The most likely explanation for the avulsion would be a descending blow into the side of the face striking the tooth from the buccal with a force to the lingual and/or occlusal.

Previous cases involving trauma to primary molars were reported as single or multiple fractures of the crown and root.[2,3] The initial area of impact in these cases was the chin.[2,3] Another reported case cited a BB shot to the side of the face as the cause of a fractured molar.[5]

Several complications need to be addressed with the avulsion of a primary molar. Andreasen[6] states that 50% of all exarticulations will lead to a malformation of the permanent dentition. The maxillary first premolar usually starts to calcify between the ages of 1-1/2 to 2 years.[7] The parents were informed that hypoplastic enamel or a dilacerated crown could appear on the developing tooth.

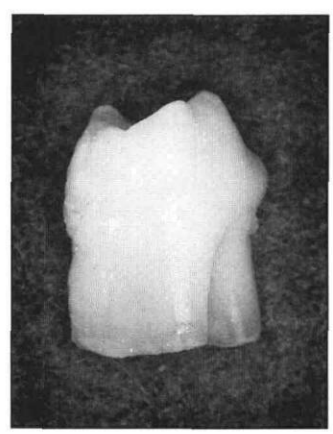

Fig 2. The maxillary left primary first molar showing incomplete root formation.

The premature loss of a primary anterior tooth following avulsion usually doesn't cause space loss in the permanent dentition,[4] but early loss of a primary first molar will block out the maxillary permanent canine.[8] The space maintainer could be made once both the maxillary second molar and cuspid had erupted. A radiographic examination would be indicated at that time.

Even with minimal root formation, no thought was given to replanting the tooth. It would have been very hard to stabilize the tooth with adjacent teeth unerupted. Pulpal therapy would have been questionable as to the timing, the prognosis, and its effects on the formation of the developing premolar.

Trauma involving the cheek can lead to a malar bone fracture.[9] Periorbital edema and ecchymoses, and conjunctival hemorrhage are outward signs of a malar bone fracture.[9] Based on the clinical findings of this case, we believed additional radiographs would provide no further required information.

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