

Hypoplasia Management in permanent incisor caused by primary incisor intrusion- A case report

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Abstract:

Orofacial trauma is a serious orodental and general health problem that may have medical, esthetic and psychological consequences for children and their parents. When the root of the primary tooth is close to the unerupted permanent tooth, primary tooth trauma may result in developmental disturbances and pulpal reaction in that permanent tooth. We report a case in which injury to the primary dentition resulted in developmental disturbances in the underlying permanent tooth. Localized malformation of the crown and enamel hypoplasia was treated with a light-cured composite resin restoration.

Keywords: Composite restoration, Enamel hypoplasia, Esthetic restoration

Introduction

Injuries to primary dentition are among the most common traumas that occur in the maxillofacial region; 30%–40% of all children injure at least one of their primary teeth.^{1,2} Consequences of such trauma include colour changes, pulp necrosis, obliteration of the pulp canal, gingival retraction, tooth displacement, pathological root resorption, alterations in the process of normal root resorption and premature loss of the primary tooth.^{3,4} Sequelae in the permanent dentition after trauma to primary dentition are usually related to intrusive injury; either the coronal or root region, or the entire permanent tooth germ may be affected.^{5,6} In general, damage to the permanent teeth resulting from primary teeth trauma is due to the indirect effect of the traumatic force transmitted to the permanent tooth germs. However, in the following case report, a localized crown malformation along with enamel hypoplasia resulting from direct trauma of an intruded primary tooth is presented.⁷

Case report

A 10-year-old girl came to D.A.P.M.R.V Dental College, Bangalore, Karnataka with a chief complaint of the

discoloured upper left central and lower left lateral incisor. Patient gave history of fall at 3 years of age in which she had injured her primary maxillary central and mandibular lateral incisor during play at play school. After the injury, she had first aid that involved cleaning of the wound and systemic antibiotics were given at the hospital, but no professional dental treatment. Other medical records revealed that she had no general pathologic condition. Clinical examination revealed that the patient had an unerupted permanent maxillary right central incisor. Vitality test was done in mandibular lateral incisor which gave a positive response.

The treatment plan was developed for removal of the hypoplastic enamel and restoration of the teeth (Fig. 1). The maxillary left central and lower lateral incisor was restored with light-cured composite resin (Dentsply). Bonding procedure and occlusal adjustment was done. After the restoration, patient was followed up every 3 months. The patient had no clinical or radiographic evidence of any pathologic condition during 2 years of follow-up (Fig. 2).



Figure 1: Preoperative photograph of the patient showing hypoplastic left maxillary central incisor and hypoplastic left mandibular lateral incisor.



Figure 2: Intraoral view after restoration of the permanent maxillary left central and mandibular left incisor with a light-cured composite resin.

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Discussion

An injury to a young child's teeth can be physically and emotionally traumatic. The dentist must take time to carefully examine and analyze not only the damage itself, but also the possibilities of sequelae to the permanent tooth germ and the overall health of the child. For this reason, treatment of trauma in primary dentition must include long-term follow-up of sequelae in the permanent dentition.⁷ The age of the child at the time of trauma is right for such a crown malformation as enamel matrix formation had not been completed. As ameloblasts are irreplaceable and no further cell division occurs after completion of enamel formation, a localized arrest of crown development is likely to occur after trauma.^{8,9} The objectives of esthetic rehabilitation must be to provide the maximum improvements in esthetics with the minimum trauma to the dentition. Dentists and patients are fortunate at this particular time of interest in esthetic dentistry, since there are many materials and procedures available to patients and more are being developed all the time.¹⁰ In the case reported here, the intrusive orofacial trauma to the primary left incisor that occurred when the patient was 32 months of age likely disturbed the crown formation and enamel matrix of the underlying permanent tooth, and caused changes in its colour and shape. White discoloration is caused by the accelerated mineral deposition that result from trauma during the maturation stage of enamel development, whereas yellow-brown discoloration is caused by the incorporation of hemoglobin products from bleeding in the periapical area and enamel hypoplasia is caused by the destruction of ameloblasts in the active enamel epithelium. crowns has been performed although some cases exhibit pulpal or coronal anatomic features that prevent reshaping and require surgical removal with prosthetic replacement.⁷ Concrescence affects treatment only when the decision is made to remove one or both of the involved teeth because this condition complicates the extraction. But, in this case presented here, both had to be removed since both were impacted.

Conclusion

The case which has been reported here emphasizes on the importance of traumatic injuries to primary dentition because of their effects on the permanent tooth germ. The teeth which have been injured should be regularly followed as there is a high chance of undergoing pulpal necrosis. And care should be taken when doing the restoration as the scenario is completely different when done in non traumatized teeth.

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