

Management of First Permanent Molar Ectopic Eruption with Halterman Appliance: A case report



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Abstract

Ectopic eruption of the first permanent molars is a local eruption disturbance. The frequency of ectopically erupted first permanent molars predominantly affects the maxilla. Interceptive treatment for irreversible ectopic eruptions should be initiated early to prevent space loss and the impaction of the second premolars. Herein, we report the case of a ten-year-old girl with irreversible ectopic eruption of the unilateral maxillary first permanent molar treated with Halterman appliance. The maxillary first permanent molar was successfully distalized after seven months of treatment. The Halterman appliance satisfies not only the clinical aspects of treatment but also promotes the patient's well-being.

Introduction

Ectopic eruption (EE) of the first permanent molar characterized by the permanent tooth being locked under the distal contour of the second primary molar, is a local eruption disturbance. Currently, EE is understood as a multifactorial pathological disorder, including genetic and local factors. Ectopic eruption can cause many problems such as premature loss of the second primary molars and subsequent loss of dental arch length, mesial tipping or rotation of the first permanent molars, supra-eruption of the opposite molar and unfavorable occlusion. Thus, early initiation of interceptive treatment for irreversible ectopic eruptions should be undertaken to prevent more complicated malocclusions.

Case Report

A ten-year-old female presented to the pediatric dental clinic of Tufts University School of Dental Medicine with ectopic eruption of the maxillary left first permanent molar, causing resorption of the distal root of maxillary left primary second molar. Radiographs confirmed the diagnosis. The treatment plan included the extraction of maxillary left primary second molar and placing a Halterman appliance to distalize the maxillary left first permanent molar. Follow-up visits every four weeks ensured proper appliance adjustments. After seven months, the position of the maxillary left first permanent molar was corrected, creating adequate space for the maxillary left second premolar to erupt.



Fig.1 Facial front picture



Fig.2 Facial profile



Fig.3 Intraoral front photograph



Fig.4 Intraoral right photograph



Fig.5 Intraoral left photograph



Fig.6 Occlusal maxillary, mandibular photographs



Fig.7 Left Bitewing radiograph showing Ectopic Eruption



Fig.8 Panoramic radiograph



Fig.9 After Seven months, Position of tooth #14 is corrected and there is enough space for tooth #13 to erupt. Steel tie done to maintain the position of the tooth.



Fig.10 Three months follow up, and removal of the appliance



Future Treatment Plan

Patient is ready for phase II Orthodontic Treatment to correct class II malocclusion.

Maintenance phase:

Due to patient's low caries risk, recommended periodic exam, prophylaxis, and fluoride varnish application every 6 months.



Conclusion

Early diagnosis and intervention for irreversible ectopic eruption of the first permanent molars are crucial to avoid more complicated malocclusions in the future. This case highlights the efficacy of the Halterman appliance in managing ectopic first permanent molar eruption. It underscores the importance of individualized treatment planning and regular follow-up to ensure optimal outcomes in pediatric orthodontics.

References

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