



Dental Management of a Child with Ectodermal Dysplasia

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INTRODUCTION

Ectodermal Dysplasia is an inherited disorder that affects hair, teeth, nails, and sweat glands. These structures are all formed from the ectoderm, which is the outermost germ layer of a developing embryo. Common clinical features include sparse hair, inability or decreased ability to sweat, missing or abnormal teeth, and brittle nails. Dental manifestations are often among the most noticeable features, with patients frequently presenting with hypodontia (missing teeth), conical or peg-shaped teeth, and delayed eruption. The condition can be inherited in X-linked, autosomal dominant, or autosomal recessive patterns, which influences its severity and familial occurrence.

CASE REPORT

This presentation discusses a now 13-year-old male who initially presented to Rainbow Babies and Children's Hospital in July 2019 with chief complaint of missing teeth. This 13-year old's medical history is significant for mild intermittent asthma and allergic rhinitis. His medications include Albuterol, Zyrtec, Flonase and a daily multivitamin. The patient has no known drug allergies and allergies to tree and shrub pollen. At this initial appointment, mother reported hypodontia, sparse hair, dry, skin, anhidrosis and nail growth with breakage. The patient never completed genetic testing but had an extensive family history of diagnosed ectodermal dysplasia including his father, paternal half brother, paternal aunt and paternal cousin.

Upon initial clinical exam, the patient presented with only 12 erupted teeth instead of the expected 20-24 based on age. These included primary canines, primary second molars, and permanent first molars. The patient was lost to follow-up for 2 years and returned in 2021 with the same clinical presentation. At this time, the family requested removable partial prostheses to improve function and esthetics. The fabricated partials were tried in but were not delivered due to fit and the patient was lost to follow-up again until December 2024. The patient now had erupted permanent second molars and dental caries requiring composite restorations. Restorative treatment was planned to remove and restore caries prior to fabricating new removable partials. Composite restorations were placed on #14-DO and #R-F. Upon the radiographic exam completed in June of 2025, the patient was noted to have localized periodontal disease around the remaining primary molars. Teeth #J, K, and T were scheduled for extraction prior to scanning the maxillary and mandibular arches for fabrication of new partial prostheses. The partials were subsequently delivered in March 2026.

CLINICAL AND RADIOGRAPHIC PRESENTATION



Figure 1: Panoramic radiograph obtained December 2024. Noted in this radiograph are the 17 congenitally missing permanent teeth and retained primary canines with composite restorations placed.



Figure 2: Clinical photos and intraoral radiographs taken day of last recall exam, June 2025. Localized bone loss noted around primary permanent molars #J, K and T, previously placed composite restoration tooth #14. Delivered maxillary and mandibular partials.

DISCUSSION

Ectodermal dysplasia presents multiple considerations for the dental practitioner regarding both the timing and methods of treatment. Patients may exhibit a wide range of variations in the presence and development of both primary and permanent dentition, and treatment planning must therefore be carefully tailored to the patient's stage of growth and development. Key management goals include stabilizing the oral environment and addressing existing caries, while also optimizing chewing function, swallowing, speech, and esthetics. Conical shaped incisors can be restored with composite build-up or temporary crowns for improved esthetics. In addition, clinicians must be mindful of minimizing potential negative psychosocial impacts associated with missing teeth and altered facial appearance. Education of both the patient and parents regarding the importance of routine dental recall visits and long-term maintenance is essential. Successful prosthetic rehabilitation often requires multiple clinical visits for the fabrication and delivery of partial dentures, which can be more challenging in patients with knife-edged alveolar ridges due to reduced support and retention. Because pediatric patients continue to grow, periodic refabrication or adjustment of prostheses is typically necessary to accommodate changes in the developing dentition and craniofacial structures. Implant-supported prostheses may be considered as a treatment option in some cases; however, not all patients are ideal candidates, particularly during periods of active growth. Finally, coordination of care with other dental and medical specialists is critical in order to maintain optimal conditions for current and future treatment modalities and to ensure comprehensive, multidisciplinary management of the patient.

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