

Transitional Prosthodontic Management of a Growing Patient with Ectodermal Dysplasia: A Case Report

Kendall Buchan, DDS; Lisa Knobloch, DDS, MS; Paola Saponaro, DDS, MS, FACP

INTRODUCTION & PURPOSE

Ectodermal dysplasia is a genetic condition that can affect the development of ectodermal tissues, including hair, skin, nails, teeth, and sweat glands¹. Many patients with ectodermal dysplasia present with oligodontia, anodontia, or malformation of their dentition. It is important to learn how to manage these patients both during and after their growth. The purpose of this case report is to present transitional prosthodontic management of a growing patient with ectodermal dysplasia.

PATIENT BACKGROUND

- An 11-year-old male presented to the Graduate Prosthodontics clinic at The Ohio State University with the primary objective of improving shape of conical incisors and gaining masticatory function through prosthetic rehabilitation.
- The patient's medical history included ectodermal dysplasia and ADHD
- Patient presented with congenitally missing all permanent dentition except #3, 7, 8, 9, and 27, and conical shaped maxillary incisors
- The prosthodontic approach involved reshaping the maxillary incisors, fabricating a maxillary partial denture, and a mandibular tooth-supported overdenture.

REFERENCES

Masse JF, Pérusse R. Ectodermal dysplasia. Arch Dis Child. 1994 Jul;71(1):1-2. doi: 10.1136/adc.71.1.1. PMID: 8067785; PMCID: PMC1029900.

Figure 1

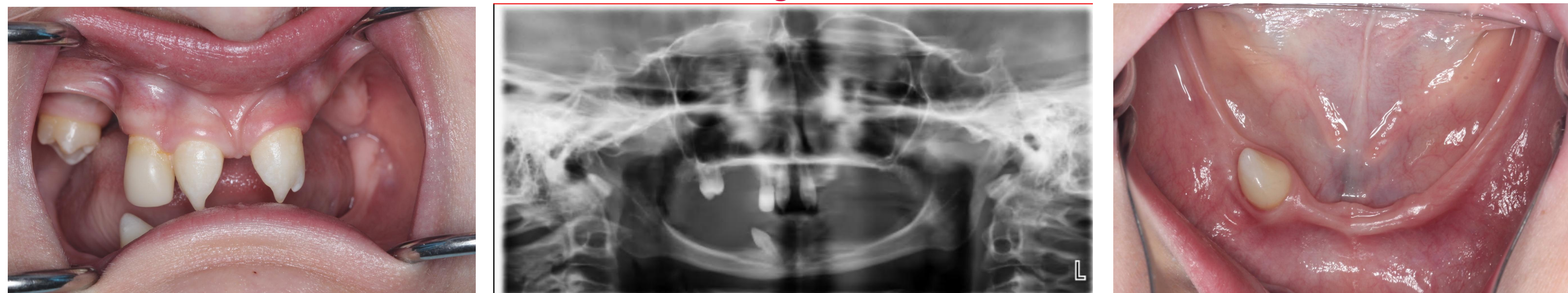


Figure 1. Patient's maxillary arch with conical central incisors (left). Patient's panoramic radiograph showing the absence of majority of his permanent dentition (middle). Patient's mandibular arch—#27 is the only present permanent tooth (right).

Figure 2

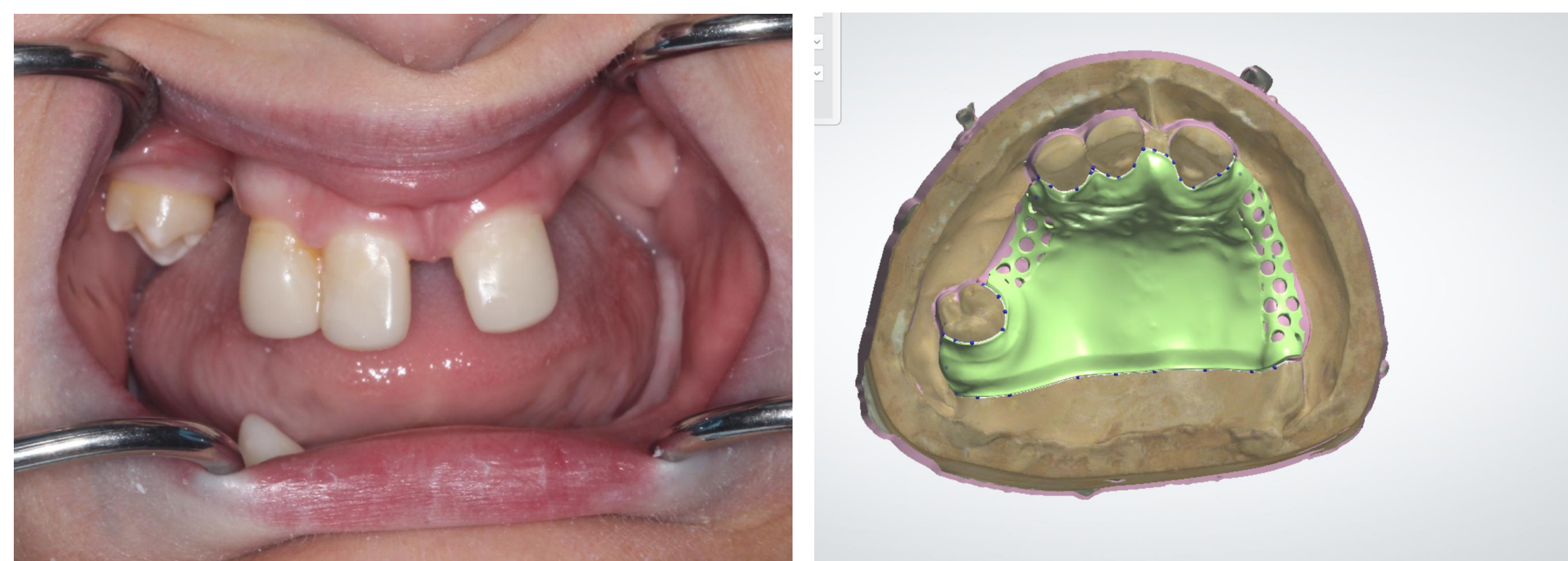


Figure 2. Maxillary central incisors after reshaping with composite (left). Maxillary partial denture framework design before being milled in acetyl resin (right).

Figure 3



Figure 3. Final tooth set-up after framework try-in and esthetic try-in.

Figure 4

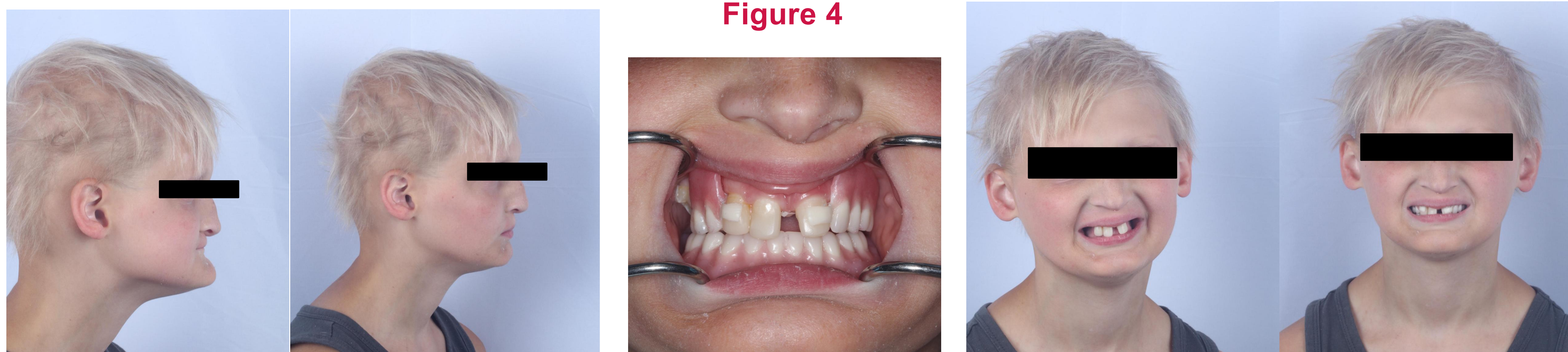


Figure 4. Profile picture showing the change in vertical dimension before and after treatment (left). Frontal photo of patient wearing both maxillary and mandibular final prostheses (middle). Frontal photo showing patient before and after treatment (right).

TREATMENT

- Initial impressions made with alginate and adjusted stock trays
- Maxillary incisors reshaped with composite using the putty technique
- Custom trays fabricated and final impressions made with putty and light body PVS
- Master casts were fabricated and scanned. Maxillary framework digitally designed using 3D CAD software. Framework was milled in acetyl resin
- Framework tried in and jaw relations recorded with wax-rims
- Denture teeth were set and an esthetic try-in was completed. Occlusion and festooning were finalized.
- Dentures were conventionally processed with acrylic resin and delivered
- Patient was seen for follow-up at 24-hour, 48-hour, 1 week, 1 month, and 3-month intervals.

OUTCOME

- Patient responded positively to treatment outcomes, requiring minimal adjustments at follow-up appointments
- Patient and patient's guardian reported significant improvement in quality of life with new prosthesis.
- Future treatment plan will include orthodontics and implant-supported prostheses.

CONCLUSION

Removable prostheses can be a successful treatment option when managing growing patients with missing teeth. Long-term treatment options often include fixed prostheses that require the patient to be done growing. Removable prostheses can improve esthetics and function throughout childhood.

