Digital Workflow in a Full Arch Rehabilitation for Patient with Ectodermal Dysplasia: A Case Report

Katherine S. Hanser, D.M.D; Mohamed Tarek A. Omran, B.D.S, M.S

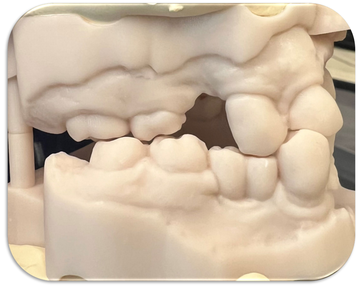
Junior Faculty at Southern Illinois University School of Dental Medicine

Introduction:

Ectodermal dysplasia comprises a spectrum of genetic syndromes marked by a congenital defect in two or more ectodermal structures. Among the frequently affected ectodermal structures, teeth stand out, with many ED patients exhibiting oligodontia (absence of 6 or more teeth). Oral rehabilitation for ED patients often involved the use of partial or complete removable prostheses. However, the evolution of root form dental implants have introduced an additional treatment modality for these patients and an implant-supported prosthesis often emerges as the preferred definitive restoration in these individuals. In this case report, A 26-year-old male with ectodermal dysplasia presented with a oligodontia, missing 18 permanent teeth. The case posed several challenges, including an uneven occlusal plane and insufficient mesio-distal space for esthetic and functional restoration.

Materials and Methods:

The case was scanned, mounted, waxed- up, and treatment planned digitally. Mounting and esthetics were confirmed intra-orally with baseplates and wax rims with teeth #8 and 9 set. The treatment plan included extraction of teeth #A, 6, 7, 11, 12, and the placement of six dental implants in sites 4, 6, 8, 9 , 11, and 13. Teeth #3 and 14 remain to preserve to maintain proprioception and vertical dimension of occlusion (VDO). Pt. is wearing an interim denture with the final prosthesis planned for a monolithic zirconia hybrid prosthesis. To correct the occlusal plane, #22 and #27 and implant crown #29 were re-crowned to achieve the desired occlusal plane.



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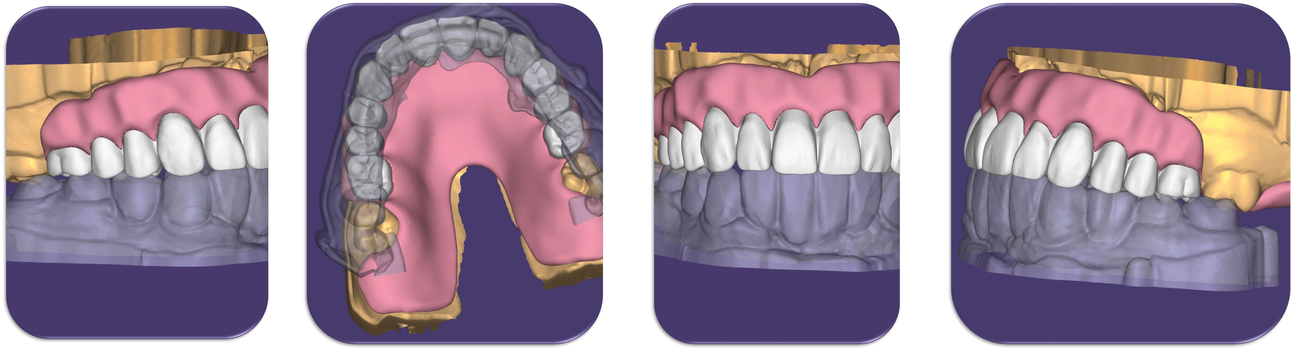
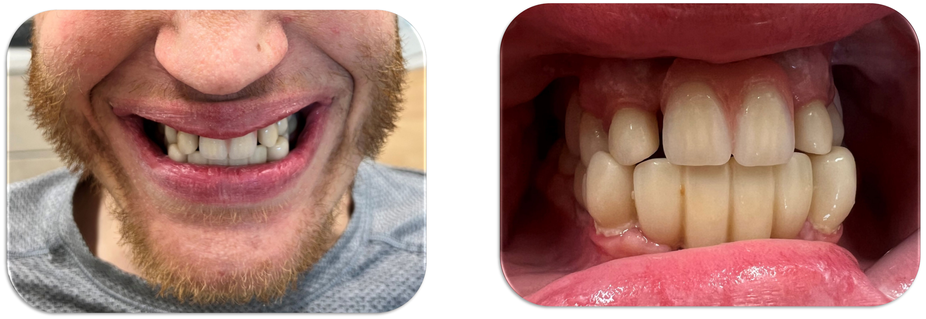
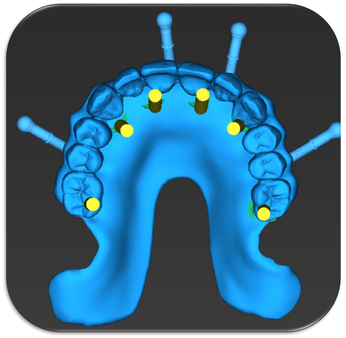
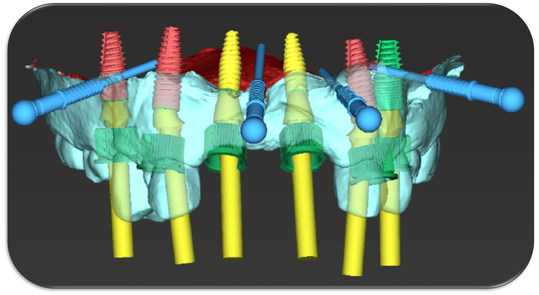


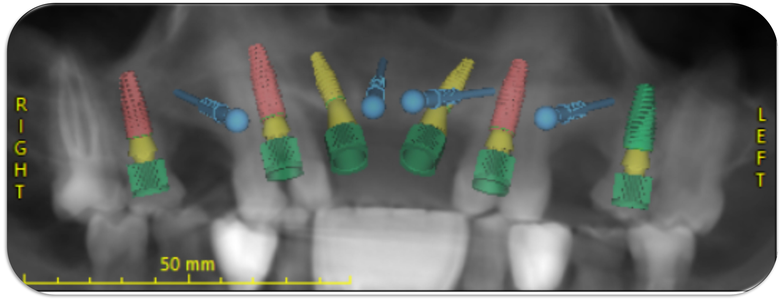
Digital Wax-Up

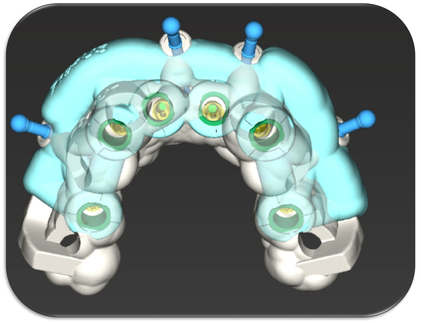


Mounting & Wax-Up Verification









Surgical Plan

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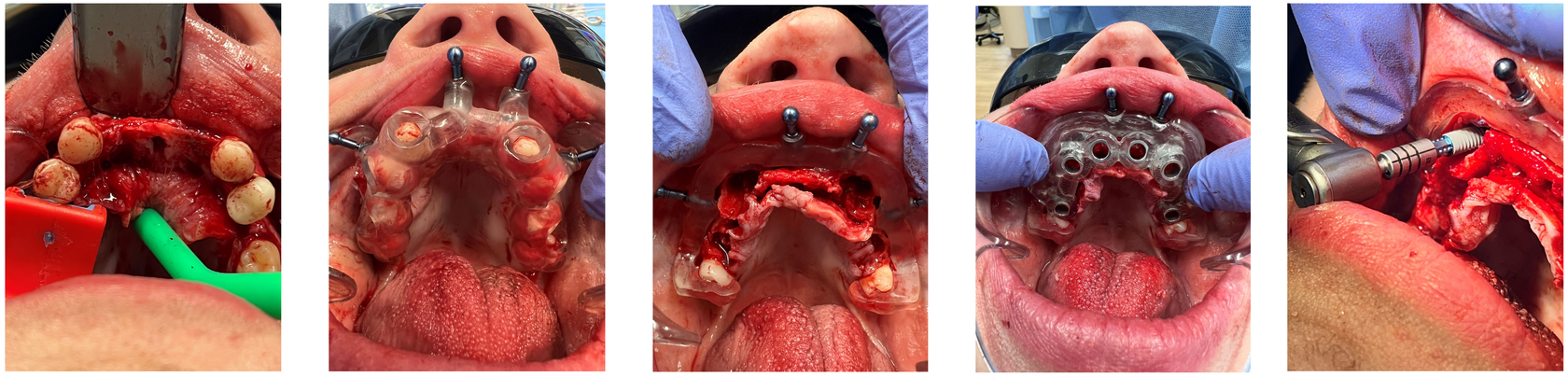
Results:



Implant Surgery

This case outlines one approach to the restoration of patients with ectodermal dysplasia, manifesting oligodontia and various occlusal challenges. The integration of digital technologies facilitated precise implant placement and a provisional restoration resulting in the correction of both functional esthetic challenges. This cases highlights the effectiveness of a multidisciplinary approach in complex dental rehabilitation of patients with ectodermal dysplasia using digital workflows to provide predictable, efficient treatment solutions.