“Fabricating a Maxillary Gasket Obturator: A Case Report for a Patient with History of Radiation Therapy”

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Introduction

Patients with remaining dentition and history of radiation therapy can be challenging to rehabilitate. To restore a complex partially edentulous patient with history of multiple prior treatments for Squamous Cell Carcinoma, an analog workflow was utilized as the treatment of choice.

Case Report

DM is a 70-year-old who presented to UNC Graduate Prosthodontics (Chapel Hill, NC) with a history of Squamous Cell Carcinoma and maxillary resection. The patient’s chief concern was their inability to produce intelligible speech. The patient has never worn a removable prosthesis.

The obturator prosthesis was fabricated utilizing conventional processing techniques. Preliminary casts were made using alginate and a custom tray fabricated with light-cure tray material. Wax spacer in relief areas and around remaining tooth #6 was added for space for impression material. The custom tray was border-molded with greenstick compound and final impression made with elastomeric polyvinyl siloxane (PVS) impression material. A master cast was made from Type III microstone, maxillomandibular records captured with record base, and casts were articulated.

A wax try-in was performed after setting Ivoclar Vivadent SR PHONARES II teeth. Phonetics and esthetics were determined. Adjustments to occlusal plane, incisal edge, midline, etc. were made. Final wax-up was sealed to master cast, festooned, and flasked.

At insertion appointment, areas of overextension and interferences were adjusted and occlusion was equilibrated. The window for tooth #6 was widened to allow for passive path of insertion for the obturator. The acrylic surface was treated with GC Reline II Primer and GC Reline II was added around the window of tooth #6 to engage the undercuts. Excess was trimmed.

Fig 1. Initial Presentation

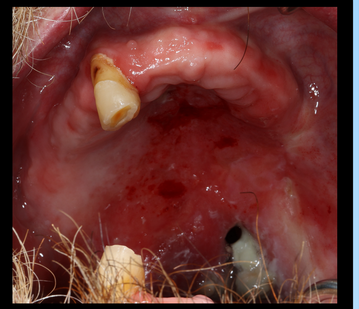
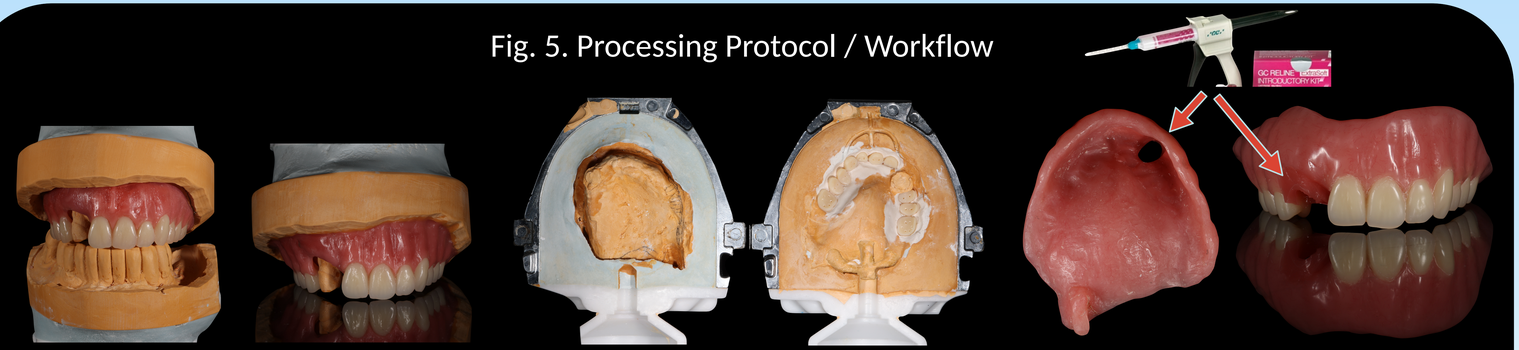


Fig 2. Initial Presentation

Fig. 3. Wax Try-In

Fig. 4. Insertion

Fig. 5. Processing Protocol / Workflow



Articulated Set-Up → Final Wax Set-Up → De-Flasked Maxilla → De-Flasked Denture Teeth with Diatorics → Intaglio of Processed Obturator with Gasket → Final Gasket Obturator Prosthesis

Discussion

The use of soft liners to fabricate gasket or Cu-Sil prostheses has positive benefits, such as delaying or eliminating the need for surgical extractions and increasing the retention of the prosthesis that would otherwise have decreased retention due to a palatal defect. With this patient and their history of radiation therapy, extractions were not advised due to risk of osteoradionecrosis.

Fig. 6. Delivery Final Prosthesis

References:

1. Rudrax Jindal. The windowed partial denture: eliminating the soft liner- case series. Clinical dentistry, Nov 2016.
2. Saranya S K., Venkatesh, N., Kumar, A. Use of soft liners to aid in the retention of windowed partial dentures - A case report. Impressions Vol. 9, No. 2, Jun 2019.

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