

# Bridging the Gap: Interim Prosthetic Rehabilitation for Oro-Cutaneous Fistula Post Cancer Surgery: A Case Report

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**Abstract:-** This abstract summarizes the use of a cheek prosthesis following surgical resection of buccal mucosa due to cancer. Squamous cell carcinoma, can lead to extensive tissue loss and functional impairment. Reconstruction with a cheek prosthesis plays a vital role in restoring facial aesthetics, preserving oral functions, and improving the overall quality of life for patients. This abstract highlights the benefits and challenges associated with the utilization of cheek prostheses, including their fabrication techniques, functional considerations, and patient satisfaction. The comprehensive management approach involving a multidisciplinary team is emphasized, ensuring successful rehabilitation and psychosocial support for individuals recovering from cancer surgery's.

**Keywords:-** Squamous cell carcinoma, buccal mucosa, orocutaneous fistula, interim cheek prosthesis, rehabilitation, case study.

## I. INTRODUCTION

Squamous cell carcinoma of the buccal mucosa is a common malignancy associated with tobacco and betel nut chewing habits. Surgical resection is often the primary treatment modality, aiming to achieve tumor clearance with adequate margins. However, extensive tissue loss can result from such surgeries, leading to functional and aesthetic challenges. The presence of orocutaneous fistulas following

cancer surgery of the buccal mucosa presents a significant challenge in terms of functional impairment and aesthetics<sup>(1,2)</sup>. In cases where a second surgical correction is not feasible, interim prosthetic rehabilitation becomes crucial in bridging the communication defect. This case study aims to present the treatment approach, materials used, and outcomes achieved in an interim prosthetic rehabilitation scenario for a patient with squamous cell carcinoma involving the buccal mucosa.

## II. CASE PRESENTATION

### A. Case 1

A 60-year-old male patient presented with a history of squamous cell carcinoma involving the buccal mucosa of right side (fig 1). The surgical resection resulted in an extraoral communication defect. Making a second surgical correction unfeasible at that time. In order to restore function and aesthetics patient was referred from surgical oncology department to dept of prosthodontics, Sri Aurobindo college of dentistry, Indore. An interim prosthesis was planned to be provided to the patient for a period of six months until further surgical intervention could be performed. The patient expressed concerns regarding both the functional impairment and the aesthetic appearance associated with the defect. After a comprehensive evaluation, it was determined that a cheek prosthesis would be the most appropriate solution for rehabilitation.



Fig. 1: Extra-oral photograph of the defect

### III. TREATMENT PROCEDURE

#### A. Impression Technique:

Impression of the defect site was made using addition silicone putty, ensuring accurate capture of the tissue

contours. Light body consistency addition silicone was used to record the remaining structures and ensure proper extension of the prosthesis. (fig 2)



Fig. 2: Impression of the Defect

### IV. CAST FABRICATION

The impression was poured with dental stone to obtain a cast representing the patient's oral and facial anatomy. (fig 3)



Fig. 3: Impression poured in dental stone in a flask

### V. PROSTHESIS FABRICATION

Heat cure acrylic material has been chosen as the ideal material for the cheek prosthesis due to its exceptional suitability as an interim solution until the surgical closure of the defect. This temporary prosthesis, designed to serve the patient for the next months and the acrylic material for the

cheek prosthesis enables convenient adjustments and modifications to accommodate the gradual shrinking of the defect over time Custom-mixed acrylic color pigments were added to match the patient's skin tone, ensuring a natural appearance. (fig 4)



Fig. 4: Finishing of the Cheek Prosthesis

The prosthesis was polished to achieve a smooth and aesthetically pleasing finish Retention for the acrylic cheek prosthesis is achieved through the utilization of undercuts present. These natural undercuts create mechanical interlocks between the prosthesis and the adjacent structures, ensuring a secure and stable fit.

**VI. FIT ASSESSMENT**

A water test was performed to identify any areas requiring adjustment. After ensuring a proper fit, the prosthesis was ready for insertion. (fig 5)



Fig. 5: Final Fitting of the Prosthesis

**A. Case 2**

A 57-year-old male patient was diagnosed with carcinoma of left buccal mucosa and underwent surgical resection.(fig 6) Unfortunately, the surgery resulted in the formation of an orocutaneous fistula, necessitating a second

surgical procedure for closure. In the interim period before the second surgery, the patient was referred to the prosthodontics department of Sri Aurobindo college of dentistry, Indore for interim prosthetic rehabilitation to improve oral function, aesthetics, and overall well-being.



Fig. 6: Extra-oral photograph and defect of the cheek

**VII. TREATMENT PROCEDURE**

**A. Impression Technique:**

Impressions was made using impression compound and wash impression was made with alginate, which captured the intricate contours and details necessary for precise prosthesis fabrication. (fig 7)



Fig. 7: Impression of the defect

**B. Cast Fabrication:**

Cast was poured in die stone. The natural undercuts were identified on the casts that can hinder the insertion and removal of the prosthesis. Used modelling wax to block

these undercuts by carefully placing and shaping the wax over the undercut areas on the casts. Ensured a smooth and flush surface without any excess wax.



Fig. 8: Cast poured with wax blockout

**C. Prosthesis Fabrication:**

The interim prosthesis was meticulously fabricated using a lightweight cold cure acrylic material, taking into consideration the significant size of the defect. To ensure a comfortable and manageable prosthesis, it was intentionally kept hollow, effectively reducing its weight without compromising its structural integrity.

To enhance the aesthetic appeal and natural appearance of the prosthesis, a custom-made lid was created using a mixture of cold cure acrylic blended with carefully selected colors to match the patient's unique skin tone.

Recognizing the importance of optimal fit and stability, all undercuts were effectively blocked during the earlier stages of fabrication. Subsequently, the prosthesis underwent a relining procedure using a soft liner material. This additional step ensured a precise and snug fit, providing the patient with enhanced comfort and stability. Water test was performed to check the fit of the prosthesis. The fabrication process successfully provided the patient with a comfortable and functional solution during the interim period before the planned second surgery to close the defect. (fig 9)



Fig. 9: Try-in and delivery of interim cheek Prosthesis

### VIII. POST-INSERTION HYGIENE INSTRUCTIONS AND FOLLOW-UP MAINTENANCE PHASE

- Following the successful insertion of the both prosthesis, proper post-insertion hygiene instructions and regular follow-up appointments are crucial to ensure the longevity and optimal function of the prosthesis.
- The patient should be educated on the importance of maintaining oral hygiene and prosthesis care to prevent complications and ensure a healthy oral environment. The following instructions and maintenance phase are recommended:

**A. Oral Hygiene Instructions:**

- Emphasized the need for regular brushing and flossing of the remaining natural teeth to maintain oral health and prevent any potential infection.
- Instructed the patient to clean the prosthesis after each meal to remove food debris and plaque accumulation. A soft-bristle brush or a denture brush can be used for this purpose.
- Encouraged the use of a non-abrasive denture cleanser or mild soap to clean the prosthesis. Avoid using abrasive

substances, such as toothpaste, as they may scratch the prosthesis surface.

#### B. Prosthesis Care Instructions:

- Educated the patient on the proper handling of the prosthesis during insertion and removal to avoid any accidental damage.
- Advised against exposing the prosthesis to excessive heat or direct sunlight, as it may cause warping or discoloration.
- Encouraged the patient to report any discomfort, looseness, or signs of damage observed in the prosthesis for timely intervention.

#### C. Regular Follow-Up Appointments:

- Advised patient for regular follow-up visits with the prosthodontist to monitor the fit, function, and overall condition of the prosthesis.
- During follow-up appointments, assess the integrity of the prosthesis and make any necessary adjustments or repairs. Andoral health, including the remaining dentition, to identify and address any potential issues that may impact the prosthesis.

#### D. Long-Term Maintenance:

- Educated the patient about the lifespan of the prosthesis and the potential need for periodic adjustments or replacement due to normal wear and tear.
- Discussed the importance of regular professional cleaning and examination to ensure the health of the remaining oral structures and the prosthesis.
- By providing comprehensive post-insertion hygiene instructions and implementing a structured follow-up maintenance phase, the patient can effectively care for the acrylic cheek prosthesis and maintain optimal oral health. Regular monitoring and timely intervention by the prosthodontist contribute to the long-term success and satisfaction of the patient in their rehabilitation journey.

## IX. RESULTS

The acrylic cheek prosthesis provided an acceptable aesthetic outcome, closely resembling the patient's natural facial contours and skin tone. The prosthesis effectively restored the patient's facial symmetry and eliminated the extraoral communication, allowing for improved speech and masticatory function. The patient reported enhanced confidence and overall satisfaction with the rehabilitation. Regular follow-up appointments were scheduled to monitor the prosthesis fit, make necessary adjustments, and ensure optimal comfort and function.

## X. CONCLUSION

It is important to note that the acrylic cheek prosthesis served as an interim solution until flap surgery could be planned to close the defect. The prosthesis effectively restored the patient's facial aesthetics and oral functions during this interim period, enhancing their quality of life.

As the patient awaits flap surgery for definitive closure of the defect, the acrylic cheek prosthesis continues to provide functional and aesthetic benefits. Regular evaluation of the prosthesis and timely adjustments or repairs, if needed, ensure its optimal performance<sup>(3)</sup>.

This case report emphasizes the importance of prosthetic rehabilitation in cases of extraoral communication resulting from surgery of squamous cell carcinoma of buccal mucosa. The successful utilization of an acrylic cheek prosthesis demonstrates its effectiveness in restoring facial aesthetics and improving oral functions during the interim period before definitive surgical closure.

Future studies and long-term follow-up are warranted to evaluate the outcomes of flap surgery and the overall rehabilitation success of patients who receive acrylic cheek prostheses in similar clinical scenarios.<sup>(4,5)</sup>

In addition, it is noteworthy to mention that acrylic, the material used in the fabrication of the cheek prosthesis in this case, is relatively inexpensive compared to silicone. The affordability of acrylic makes it a cost-effective option for prosthetic rehabilitation, particularly in cases where patients may have limited financial resources or when an interim prosthesis is needed before definitive surgical intervention. However, it is important to consider that the choice of material should always be based on a comprehensive evaluation of each patient's unique clinical circumstances, including factors such as durability, aesthetics, and patient comfort, in addition to cost considerations. The selection of acrylic in this case was determined to be appropriate based on these factors, providing a satisfactory outcome for the patient while considering the economic aspect of the treatment.

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