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Case Report

Prosthetic rehabilitation of a patient with combination prosthesis

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ABSTRACT

Oral squamous cell carcinoma (SCC) is the most common malignant epithelial neoplasm affecting the oral cavity. Histopathology and correct surgical excision remain the gold standard for the diagnosis and treatment of SCC. During oral cancer treatment oral health management including function and hygiene need to be considered. The case report describes a detailed workflow involved in rehabilitating a patient with intra and extraoral defect due to excision of SCC lesion.

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1. Introduction

Squamous cell carcinoma (SCC) is the second most common cutaneous malignancy with an increasing incidence after basal cell carcinoma.¹ The chief causative factors for the occurrence of SCC is sun exposure in childhood and youth. It accounts for most nonmelanoma skin related metastatic disease; therefore, recognition and treatment of SCC is important for the prevention of neoplastic progression.^{2,3}

A group of neoplasms affecting any region of the oral cavity, pharyngeal regions and salivary glands are termed as oral cancers. However, it is used interchangeably with oral squamous cell carcinoma (OSCC). More than 90% of all oral neoplasms are OSCC.

OSCC often goes unnoticed in its early stages owing to its painless nature but it may develop a burning sensation or pain when it advances.

The greatest risk factor for oral cancer in the western world is the use of tobacco and alcohol.⁴⁻⁸ The risk factors, even if independent have a combined effect. Tobacco smoking is associated with 75% of all cases of oral cancer.

However their combination poses a fifteen-fold risk of oral cancer for users compared to non-users.⁹

The present case discusses the patient reported after hemimaxillectomy of right side with orbit enucleation i.e. Browns class IV of vertical classification.

2. Case Report

A 45 years old female patient operated for squamous cell carcinoma, visited the department of prosthodontics with a chief complaint of difficulty in eating, poor esthetic and food coming out of eye socket and nose. The patient had undergone hemimaxillectomy of right side with orbit enucleation. There was no significant past dental history. The patient was classified into Browns class IV of vertical classification (Figure 1).

Thorough case history was taken and diagnostic impressions were made (Figure 2). Various treatment options were discussed with the patient and then a tentative treatment plan was suggested to the patient. Out of the suggested treatment options Obturator with orbital prosthesis combined with magnets was considered as a better option considering various factors like dexterity, ease of maintaining hygiene, treatment outcome, prognosis and cost factor. The procedure was explained to the patient.

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The diagnostic maxillary cast was blocked and a temporary record base was fabricated using self-cure acrylic resin. Wax rim was made and a tentative jaw relation recorded. Face bow transfer was done on HANAU wide view articulator using a spring bow and casts were mounted. The maxillary cast was studied and surveyed and marked for mouth preparations to receive the rests. Combination clasp was planned in 14,15 and 16,17 and an I-bar was planned on 11. The required mouth preparations were done and impression was made. The planned metal framework was fabricated and tried in after which border molding, FI and pickup impression was done. Altered cast and wax rim was then fabricated to record the jaw relation followed by try-in and final prosthesis insertion (Figure 3a,b).

Simultaneously, impression of the orbit (Figure 4 a,b,c) was made followed by the fabrication acrylic record base for the orbit (Figure 5). Record base trial and eye shell customization (Figure 6) followed by centering was done (Figure 7). A dummy ocular prosthesis was fabricated using putty index (Figure 8). The maxillofacial prosthesis was fabricated using RTV along with intrinsic and extrinsic stains (Figures 9 and 10).

Both the prosthesis were tried in together and separately to eliminate the hinderance and the extension of denture base in the defect (Figure 11). It was followed by insertion of magnets in the denture base and the ocular prosthesis (Figure 12).

The prosthesis was then tried together (Figure 13) and post insertion instructions were given to the patient and regular follow up was done inorder to check for the prognosis and efficiency of the prosthesis in function.



Figure 1: Extraoral and intraoral pictures of the defect

3. Discussion

The most common cancer worldwide is oral and oropharyngeal cancer. This increase in the number of cases is mostly due to increased exposure to risk factors, especially in Asia.¹⁰ Surgical excision still remains the gold standard for the treatment in all the age groups. Conventional excision must ensure complete removal and therefore include a margin of clinically normal-appearing skin around the tumor and surrounding erythema.¹¹

However advancements in reconstructive surgeries have contributed greatly to the improvement in patients' quality

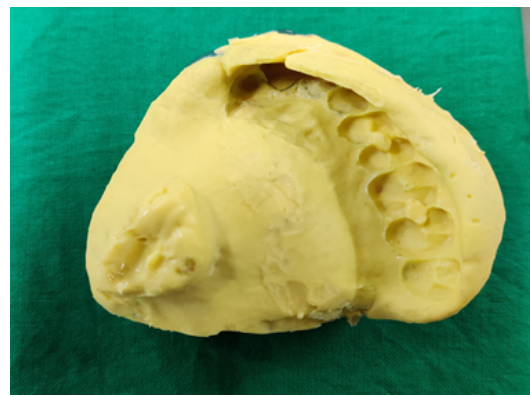


Figure 2: Intraoral diagnostic impression of the defect

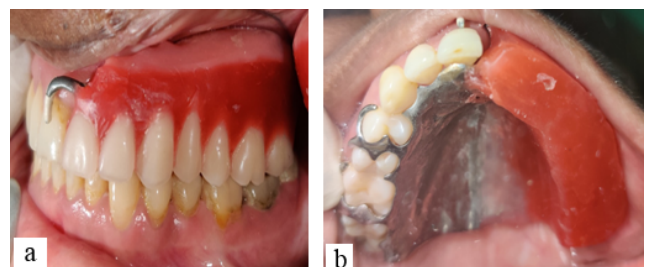


Figure 3: a,b: Try in of intraoral cast partial denture



Figure 4: a,b,c: Impression of extraoral defect

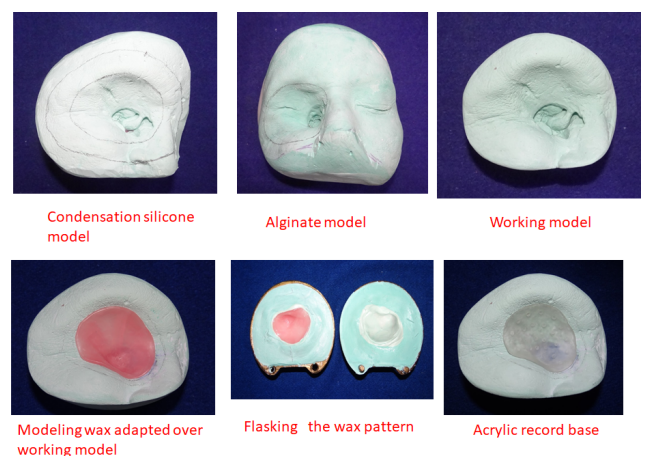


Figure 5: Making of models to fabricate acrylic record base for extraoral prosthesis



Figure 6: Record base trial and eye shell customization



Figure 9: Fabrication of ocular prosthesis and try in



Figure 7: Centering of the eye shell



Figure 10: Try in of the final extraoral prosthesis along with staining shell



Figure 8: Fabrication of dummy ocular prosthesis shell



Figure 11: Insertion of intraoral prosthesis



Figure 12: Attachment of magnet to the intraoral prosthesis



Figure 13: Final prosthesis in situ

of life.^{12,13}

While fabricating a definitive prosthesis, the dynamic nature of the defect should be taken into consideration. Fresh complications at the site should be checked and only when the it is dimensionally stable, the definitive prosthesis should be fabricated and delivered.¹⁴

For functional difficulties, nasal leakage of air and the voice can lead to difficulty in speech;¹⁵ the reflux of food and liquids into the nasal and sinus fossae can lead to disturbances in alimentation.⁹ It is often associated with chronic infections of the sinus cavities.^{16,17}

Following resection surgery, a definitive obturator prosthesis can only be used for 3 months to 1 year. The changes in the deffect approximately takes place for 1 year which are mostly limited to soft tissue than to bone tissue remodelling. Definitive rehabilitation is dependent on the size of the defect, tumour prognosis, mouth opening which must be sufficient, and the patient's edentulism. Absence of sequestrum and presence of a well re-epithelialized and uninfected excision cavity is considered as satisfied healing and in the.¹⁵

4. Conclusion

Inspite of the future development of advanced treatment modalities, surgical excision still remains gold standard. Therefore prosthetic rehabilitation of such defects will remain of prime importance. Rehabilitation of intra and extraoral defects aids the patient to carry out the functions well. However, there will always be requirement for

developing and advancing supportive care and rehabilitation methods to improve the quality of oral cancer treatment.

5. Source of Funding

None.

6. Conflict of Interest


None.


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