

Mandibular Resection and Pmmc Reconstruction in Carcinoma Buccal Mucosa – A Case Report

Dr. Hitesh Solanki^{1*}, Dr. Ch.sasikanth², Dr. Shama Mohan³, Dr. Zeeshan Alam Rizwan Asar⁴, Dr. Murali.K⁵, Dr. Hemlata Solanki⁶, Dr. Rahul Vinay Chandra Tiwari⁷

¹Oral and Maxillofacial Surgeon, Observer at Hcg Cancer Hospital Ahmedabad, Ahmedabad Dental College and Hospital Gujarat India

²Consultant Oral and Maxillofacial Surgeon, Sanivarapupeta, Eluru, West Godavari, Andhra Pradesh India

³Consultant Oral and Maxillofacial Surgeon, Shyamam, Sivaji Nagar, Manali, Palakkad Kerala India

⁴BDS; MDS-OMFS, FICS, Asar Dental Clinic, Shop no 1st floor, Kadar Palace; Kausa Mumbra, Thane Maharashtra India

⁵Consultant Plastic Surgeon, Chennai, Tamil Nadu India

⁶Post Graduate Student, Department of OMFS, Surendera dental college and research institute Sriganganagar, Rajasthan India

⁷FOGS, MDS, Assistant Professor, Department of Oral and Maxillofacial Surgery, Sri Sai College of Dental Surgery, Vikarabad, India

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*Corresponding author: Dr. Hitesh Solanki

Abstract

Increased consumption of the tobacco, paan and gukta along with low awareness of its ill effects among the general population has significantly contributed to increased incidence of head and neck carcinoma in the Indian subcontinent over the past few decades. In this article we reported diagnosis and management of one such case of squamous cell carcinoma of the buccal mucosa in a 32 year old male patient.

Keywords: Resection, Reconstruction, Buccal Mucosa, PMMC, Oral Cancer.

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INTRODUCTION

Oral carcinoma constitutes to close to 25-35% of all the head and neck cancers. Smoking, pan chewing and alcohol consumption are some of the common risk factors contributing to oral cancer. Buccal mucosa carcinoma is the most common subsite with 60% prevalence rate, followed by tongue 20% and lower alveolus by 13%. Hamid *et al.* reported that carcinoma of the tongue was nearly preceded by the carcinoma of cheek and buccal mucosa. Due to reduced awareness, the detection of such lesions is often delayed; more than 70% of the cases were presented at advanced stage of the disease, contributing to the increased morbidity rates [1, 2].

Histologically, squamous cell carcinoma can be exophytic, ulceroinfiltrative or verrucous type. It is a fast growing, aggressive type of a lesion which involves the skin and muscles of the cheek [3]. Biopsy is the most definitive way to establish the diagnosis. Contrast-enhanced CT (CECT) and/or MRI of head and neck further determine the extent/nature of the disease, staging, bony invasion and vascular/neurological involvement [4].

Diagnosis, treatment planning and prognosis are done based on the histology, degree of

differentiation, perineural invasion, level and size of metastatic lymph node and mandibular invasion. Surgical excision is the first line of treatment for T1/T2 cancers, whereas for T3/T4 cancers, surgery is followed by pre or post operated radiotherapy [5].

In this case report we will discuss a case of surgical excision of buccal carcinoma, which was reconstructed with a pectoralis major myocutaneous flap (PMMC).

CASE REPORT

A 32 year old male patient reported to the department of oral surgery with a complaint of pain in the right back region of the jaw while chewing food and drinking water since 6 months. Pain was intermittent and often associated with bleeding from the same region. He was a gukta chewer for more than 10years.

On examination, a moderate sized, ill-defined lobulated ulcero-proliferative soft tissue mass was noted on the posterior and superior aspect of the right buccal mucosa. The lesion measured approximately 3.6x3.0x2.5cms in maximum dimensions [Figure 1]. On further palpation, multiple enlarged lymph nodes were noted in level 1-A, 1-B II and III of the right cervical region. Based on the clinical presentation, it was

provisionally diagnosed as squamous cell carcinoma of the buccal mucosa. Patient was advised CECT scan of the neck and the chest region to determine the extent of the lesion and rule out the metastatic lesions. No abnormality was detected in the visceral, carotid, post cervical and precervical spaces. Parapharyngeal fat planes and both parotid glands appeared normal. Chest CT showed moderate ill-defined area of necrotic and cavitary changes in the posterior segment of the right upper lobe. The adjacent lung parenchyma revealed multiple small sized nodular lesions. Small sized nodular lesions were detected in prevascular, precarinal and right hilar region of the mediastinum. These CT findings were suggestive of infective tuberculosis. Based on these findings, patient was advised surgical excision of right posterior segmental mandibulectomy, followed by reconstruction with PMMC flap.

After completing the pre-operative procedure, modified crile incision was given. Subplatysmal flap was reflected to expose the underlying structures and to excise the submandibular gland along with fibrofatty tissue. Mucosal cuts were given anteriorly and superiorly, were further deepened upto buccinators. The initial modified crile incision was extended. Enbloc dissection of the tumour was completed [Figure 2]. After the resection, the defect was measured for reconstruction with a PMMC flap. The skin paddle of appropriate size sufficient to reach and cover the defect without tension was marked [Figure 3]. Flap was reflected and sutured to cover the dissected site.[Figure 4][Figure 5]. Post-operative healing was asymptomatic.



Fig-1: Pre-operative showing the lesion in the buccal mucosa



Fig-2: Segmental mandibulectomy along with the tumour lesion



Fig-3: Surgical marking of the donor site



Fig-4: Post-operative image of the buccal mucosa after PMMC flap



Fig-5: Post-operative image of the donor site after PMMC flap

DISCUSSION

Carcinoma of the buccal mucosa is the most common form of carcinoma of the oral cavity. A study by Zaidi SH and Parkin *et al.* has reported that cancer of the mouth and pharynx is the second most cancer in the developing world [6]. In India, paan and betel (areca) nut chewing are the most common etiological factors, which are more fatal amongst the low socioeconomic status and malnourished population. Some contrasting international studies have reported smoking and alcohol as the possible risk factors for squamous cell carcinoma. The disease is more prevalent in the middle age grouped population; however a study by Musani *et al.* has reported increased prevalence in the younger age group i.e below 30 years of age. Some studies conducted in the Indian subcontinent reported a higher incidence among females whereas some international studies reported a male dominance [7].

Factors affecting the choice of treatment can be categorized into tumour factors, patient factors and physician factors. The tumor factors that affect the choice of initial treatment of oral cancer are primary site, size (T Stage), location (anterior versus posterior), and proximity to bone (mandible or maxilla), status of cervical lymph nodes, previous treatment, and histology (type, grade and depth of invasion). Several patient related factors are the patient's age, general medical condition, and tolerance of treatment, occupation of the patient, acceptance and compliance by the patient, lifestyle (smoking and drinking) and other socioeconomic considerations. The management of an oral cancerous lesion requires a multi-disciplinary approach and technical capabilities and support services from various disciplines such as radiotherapy, chemotherapy, rehabilitation services, dental and prosthetic support, and psycho-social support are essential for a successful outcome [4, 8].

PMMC flap is considered the workhorse for head and neck reconstruction was first described by Ariyan in 1979. In 1984, a variant of the flap called

pectoralis major myofascial (PMMF) flap, without the skin paddle overlying the muscle was introduced. It was intended to reduce the thickness and bulkiness of the original flap, has been described mainly for the reconstruction of hypopharyngeal and oropharyngeal defects. PMMF variant is indicated for reconstruction mucosal defects whereas; PNMC is more suitable for reconstruction involving skin defects. PNMC is most suitable for reconstruction of the oropharynx, partial pharyngeal reconstruction after pharyngolaryngectomy, mandibular reconstruction, cervical skin defects, dead space filler, to provide cover for the major vessels such as carotid artery exposure in the neck following radical neck dissection in post irradiated cases and reconstruction of full thickness defects of the cheek [9, 10].

Pectoralis major flap is preferred for its multiple advantages such as ease of accessibility in the same surgical field, robust and reliable vascular anatomy; excellent survival rate following radiation therapy and minimal requirement for specialized instruments and training. However this flap comes with certain limitations such as excessive bulk, restricted superior reach, limited manoeuvrability and contouring problems. Marginal necrosis of the skin paddle leading to wound dehiscence and; and delayed neck contracture [11].

To overcome these limitations, in patients with full thickness cheek defects bipaddled PM flaps can be used for reconstruction. The bipaddled PM flap has an inner and outer lining, thus improving patient's comfort during the post-operative healing phase [12].

CONCLUSION

Surgical approach is the mainstay of management of a majority of neoplasms arising in the head and neck area. A surgeon holds the responsibility of initial clinical diagnosis, assessing the extent of the tumor for proper staging and obtaining tissue by biopsy for confirmation of histologic diagnosis. Surgical expertise is required for endoscopic evaluation of lesions of the pharynx, larynx, nasal cavity and sinuses, and a high degree of technical skill and judgment are required for major head and neck surgical procedures.

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