

## CASE REPORT

# Carcinoma of Cheek with Mandible - A Case Report

Soundrapandian Karthikeyan<sup>1</sup>, S. Avinash Reddy<sup>2</sup>, Dr Sidhartha S. P. Behera<sup>3</sup>

## ABSTRACT

Squamous cell carcinoma of the buccal mucosa has an aggressive nature, as it grows rapidly and penetrates well with a high recurrence rate. The present case describes the surgical management of a 68-year-old man who presented with persistent ulceration of the mucosal membrane and a mouth opening limitation of 9 mm. Diagnostic imaging revealed a buccal mucosa tumor that had invaded the retroantral space upward with involvement of the anterior border of the masseter muscle by the lateral part of the tumor. In this report, we present the surgical approach and we used to treat buccal mucosa tumor.

**Keywords:** Buccal mucosa, Carcinoma of cheek, Oral cavity cancer, Squamous cell carcinoma, Stensen's duct mandible.

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## INTRODUCTION

Squamous cell carcinoma (SCC) of the buccal mucosa is rare and accounts for approximately 10% of all oral cancers.<sup>[1,2]</sup> In an investigation of the development sites of oral SCC, the buccal mucosa was reported to be the fourth most common site following the mandible, tongue, and maxilla.<sup>[3]</sup> Buccal mucosa SCC is known to grow more rapidly and penetrate well with a higher recurrence rate than oral SCCs at other sites. Therefore, buccal mucosa SCC requires careful treatment even at early stages.<sup>[4]</sup> The buccal mucosa is anatomically connected to the vestibule of the maxilla and mandible, retromolar trigone, and masseter muscle. Thus, buccal mucosa cancer can invade adjacent structures, such as

upper and lower jaws, masticatory muscles, and cheeks, often rendering surgical resection and reconstruction more challenging, particularly when the cancer invades the masticator space; furthermore, it is even more complicated when mouth opening is limited. Following surgical resection of the tumor, appropriate reconstruction is necessary to minimize functional and esthetic issues. Here, we present a case report to share our experience in the management of a patient with buccal mucosa SCC infiltrating into the masticator space. The written informed consent was obtained from the patient.

## CASE REPORT

A 68-year-old man was referred to our outpatient department with complaints of a gradually worsening trismus and painful ulcerated wound in the right buccal mucosa that failed to heal since the past 1 year. Clinically, the maximum mouth opening was 9 mm, ulceration was observed in the left buccal mucosa, and a firm mass could be palpated on the skin of the left cheek. No palpable cervical lymphadenopathy was observed. The patient underwent workup for suspected malignancy of the buccal mucosa. Following imaging tests, an incisional biopsy of the left buccal mucosa was performed, which confirmed the diagnosis of SCC. Computed tomography (CT) showed a buccal mucosa tumor that extended superiorly to the retroantral space and destructed the lateral wall of the maxillary sinus, inferiorly to the retromolar trigone, and laterally to the buccinator muscle and anterior border of the masseter muscle, with no evidence of cervical lymph node metastasis (no evidence of regional or distant metastasis was found based on positron emission tomography (PET)-CT and PET-magnetic resonance fusion other test results) [Figure 1]. Surgical strategy was as follows: Because the tumor extended to the masticator space behind the maxillary sinus and trismus was present, surgical approach to this restricted tumor became more challenging; thus, we used the mandibular swing technique combined with a modified Weber-Ferguson incision to approach the tumor. Accordingly, mandibulotomy was performed in the region between #33 and #34 after lower lip splitting, and the incision was extended to the left submandibular region. The upper lip incision was extended to the outer rhinotomy to a level of 1 cm below the left medial canthus. The skin

<sup>1</sup>Professor and Head, <sup>2</sup>Consultant, <sup>3</sup>Associate professor

<sup>1</sup>Department of Oral and Maxillofacial Surgery, KIMS Dental College, Amalapuram, Andhra Pradesh, India

<sup>2</sup>Department of Oral and Maxillofacial surgery, Apollo Cancer Hospital, Teynampet, Chennai, Tamil Nadu, India

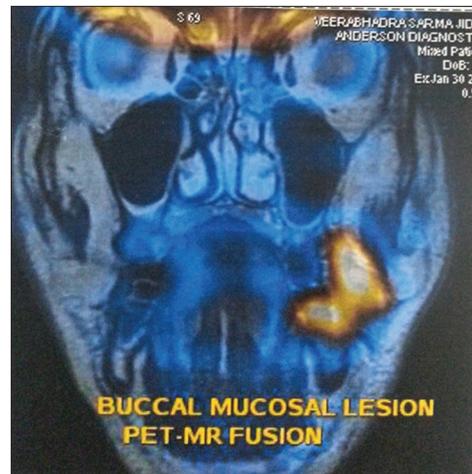
<sup>3</sup>Department of prosthodontics, Kims Dental college, Amalapuram, Andhra Pradesh

**Corresponding Author:** Soundrapandian Karthikeyan, Professor and Head, Department of Oral and Maxillofacial Surgery, KIMS Dental College, Amalapuram, Andhra Pradesh, India

incision was continued into an intraoral vestibular incision, and the upper and lower cheek flaps were elevated after performing subperiosteal dissection in the maxilla and mandible. Using this approach, wide exposure of the infratemporal space required for surgical resection was obtained. *En bloc* resection was performed with a 1-cm safety margin because the buccal mucosal tumor extended to the retroantral space, retromolar trigone, and masseter muscle beyond the buccinator muscle, with suspicious invasion of the subcutaneous layer of the cheek. The regions of the maxillary sinus adjacent to the tumor from the coronoid process of the mandible to the lower region of the retromolar trigone and the cheek skin were included in the single mass. The patient showed good post-operative course without any abnormal clinical and laboratory findings [Figure 2].

## DISCUSSION

Buccal mucosa SCC is known to be aggressive in nature compared with oral cancers at other sites. It has been reported to have poor local control and 5-year cause-specific survival rates in early stage carcinomas compared with those in the oral cavity, tongue, and mouth floor. The reported recurrence rate of buccal mucosa SCC is 30–80%.<sup>[5-10]</sup> Thus, acquiring an adequate surgical resection margin is crucial during surgical resection. In early stages, when the cancer is limited to the buccal mucosa and submucosal region, it is recommended to include the buccinator muscle in the resection margin. If the lesion invades beyond the submucosal region to the buccinator muscle, resection including the buccinator space should be considered. When positive margins are reported in the subcutaneous tissue, wide resection including the skin should be performed. Prophylactic neck dissection is recommended, even for 2–4 cm sized tumors because advanced mucosal cancers are more likely to develop latent metastasis even with no clinical regional lymph node metastasis.<sup>[11]</sup> Local control has been reported to improve with post-operative radiotherapy in the early stage of buccal mucosal cancers.<sup>[12]</sup> The masticator space contains the medial and lateral pterygoid muscle, masseter muscle, temporalis muscle, vertical ramus, and temporomandibular joint. The third division of the trigeminal nerve and its branches pass through this space, and the internal maxillary artery with its branches runs through this space and enters the pterygopalatine fossa.<sup>[13]</sup> Several spaces are in contact with the masticator space such as the buccal and retroantral spaces anteriorly, parapharyngeal space medially, and parotid space laterally. Several surgical approaches have been introduced for the resection of tumors in this space.



**Figure 1:** Positron emission tomography magnetic resonance fusion test of buccal mucosal lesion



**Figure 2:** Patient showed good post-operative course

## CONCLUSION

Buccal mucosa SCC is aggressive, grows rapidly, and has a high recurrence rate; therefore, careful treatment is required even if the cancer is at an early stage. If a tumor of  $\geq T2$  is identified, prophylactic neck dissection is recommended, and post-operative radiotherapy may be helpful for local control. Nevertheless, it is also necessary to consider the preservation of parotid glandular function due to damage to the Stensen's duct during surgery due to buccal mucosal cancers by performing a simple Stensen's ductoplasty procedure.

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