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CASE REPORT

Oral squamous cell carcinoma of moderate differentiation category in relation to left bucco-alveolus region in a geriatric female with the habit of tobacco chewing for the past 30 years – A case report and review of literature

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ABSTRACT

Squamous cell carcinoma of the buccal mucosa has an aggressive nature. If cancers originating from the buccal mucosa invade adjacent anatomical structures, surgical tumor resection becomes more challenging. The present case describes the surgical management of a 65-year-old woman with persistent ulceration of the mucosal membrane due to tobacco chewing habit for the past 30 years and a mouth-opening limitation of 10 mm. Radiological investigations 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 to access the masticator space behind the maxillary sinus.

Keywords
Squamous cell carcinoma; buccal; oral; pathology; radiology; surgery.

CLINICAL RELEVANCE

We present the surgical approach to access the masticator space behind the maxillary sinus to treat a squamous cell carcinoma in oral mucosa.

INTRODUCTION

Buccal mucosa cancer primarily occurs along the occlusal plane. Clinical features include pain and ulceration and swelling. It accounts for approximately 10% of all oral cancers.[1] Buccal mucosa was reported to be the fourth most common site following the mandible, tongue and maxilla.[2] It grows more rapidly and penetrate well with a higher recurrence rate. Buccal mucosa is anatomically connected to the vestibule of the maxilla and mandible, retromolar trigone, and masseter muscle, often rendering surgical resection and reconstruction more challenging, particularly when the cancer invades the masticator space.[3] Here we present a case report regarding oral squamous cell carcinoma of moderate differentiation category in relation to left bucco-alveolus region in a geriatric female with the habit of tobacco chewing for the past 30 years.

CASE REPORT

A 65year-old woman was referred to our outpatient department with complaints of trismus and painful ulcerated wound in the leftt buccal mucosa that failed to heal since the past 1 year. Clinically, the maximum mouth opening was 11 mm, ulceration was observed in the left buccal mucosa, and a firm mass could be palpated on the soft tissue part of the left cheek (Figure 1).

Figure 1. Preoperative intraoral view depicting a malignan lesion extended to the hard palatal and retromolar region in the upper and lower jaw.

Computed tomography with contrast in neck region was done leading to a radiological impression of left bucco-alveolar mass with bilateral cervical lymphadenopathy. An incisional biopsy of the left buccal mucosa (Figure 2).

Figure 2. Specimen extracted.

Histopathological picture depicted infiltrating mass composed of squamous cells with nuclear pleomorphism, hyperchromatism and an increased mitotic activity (Figure 3).

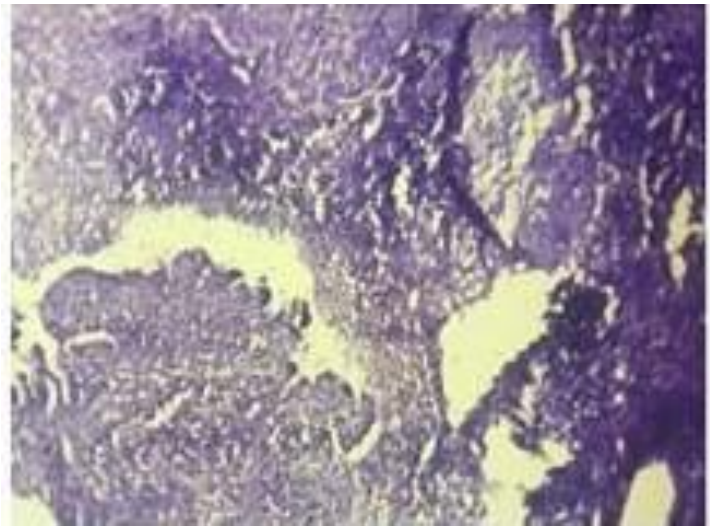

Figure 3. Histopathology depicting a squamous cell carcinoma 300X.

Modified Weber-Ferguson incision was planned to approach the tumor. Mandibulotomy was performed in the region between #33 and #34 after lower-lip splitting. Incision was extended to the left submandibular region whereas an upper-lip incision was extended to the outer rhinotomy to a level 1 cm below the left medial canthus. Skin incision was continued into an intraoral vestibular incision, meanwhile the upper and lower cheek flaps were elevated after subperiosteal dissection in the maxilla and mandible.

Figure 4. Intraoperative view of access to the retroantral space upward with involvement of the anterior border of the masseter muscle by the lateral part of the tumor.

Wide exposure of the infratemporal space was obtained. En bloc resection was performed with a 1-cm safety margin due to extension of buccal mucosal tumor to the retroantral space, retromolar trigone, and masseter muscle beyond the buccinator muscle, with involvement of the subcutaneous layer of the cheek. The through-and-through defect of the orofacial region was reconstructed using a double paddled latissimus dorsi free flap (Figure 4).

No postoperative complications were reported. No issues related to pronunciation or mastication were noted. Trismus was resolved with a maximum mouth opening of 30 mm. The postoperative radiotherapy was performed.

DISCUSSION

Squamous cell carcinoma of buccal mucosa is known to be aggressive in nature.[4] The recurrence rate of buccal mucosa SCC is 30% to 80%.[5] When positive margins are reported in the subcutaneous tissue, wide resection including the skin should be performed. 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 passes through this space, and the internal maxillary artery with its branches runs through this space and enters the pterygopalatine fossa.[6] The Weber-Ferguson incision and its modifications have been introduced as an anterior approach to the maxilla. The Conley's lateral approach of extending the preauricular incision to the neck with a second submandibular incision has been proposed.[7]

Castro et al revised this method and published an approach to malignant tumors of the masticator space through a preauricular incision and transcervical incision. Dingman and Conley introduced an inferior approach through the submandibular incision that included midline lip splitting and posterior extension to the mastoid process.[8] Spiro et al reported that the mandibular "swing" approach, including lip-splitting incision extended to the mentum-to-mastoid portion, and median mandibulotomy with paralingual extension enables adequate exposure for the resection of oropharyngeal tumors.[9]

In our case a modified Weber-Ferguson incision was made with no lateral eyelid extension in the maxilla along with lower-lip splitting that extended down to the submandibular region using a continued intraoral vestibular incision. After performing mandibulotomy, the upper cheek flap of the maxilla and the lower cheek flap of the mandible were elevated outward.

This allowed complete surgical resection with an adequate safety margin, reduced operation time, and better ability to control bleeding from the internal maxillary artery and its branches or pterygoid plexus.

The latissimus dorsi free flap is a richly vascularized muscle with the largest potential surface area, providing adequate bulk and coverage for any defect in the oral and maxillofacial region. Parotid gland and duct injuries are typically managed by repair of the injury, putting a stent into the duct, and placing a pressure dressing. Deygles et al reported insertion of an intravenous catheter into the parotid duct and activating salivary drainage for 1 week after surgical resection of a right buccal mucosal fibroepithelial hyperplasia. Longo et al reported an insertion of an angiocatheter and removed at 10 days.

Mehta et al reported that sialocele and parotitis were reduced by intravenous catheter cannulation and rerouting of the parotid duct after surgical resection of buccal mucosa cancer.[10] We advise including a process to preserve parotid function during the surgical planning stage if the resection margin of the buccal mucosa includes the parotid duct.

CONCLUSION

Squamous cell carcinoma of buccal mucosa is aggressive, grows rapidly, and has a high recurrence rate. If a tumor of ≥T2 is identified, prophylactic neck dissection is recommended, and postoperative radiotherapy may be helpful. In the present case, the modified Weber Ferguson incision of the maxilla combined with the mandibular swing approach facilitated adequate exposure of the lesion in the masticator space due to its time-saving nature and provided acceptable esthetic outcomes.

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