*Quest Journals*
*Journal of Medical and Dental Science Research*
*Volume 2~ Issue 12 (2015) pp: 24-29*
*ISSN(Online) : 2394-076X ISSN (Print):2394-0751*
www.questjournals.org

**Research Paper**

# An Evil Blight of the Buccal Mucosa – Case Report with Review of Literature

Dr. Nadah Najeeb Rawther[1], Dr. Rajesh Raj P[2], Dr. Merlyin Ann Abraham[3], Dr. Siyad K.P[4], Dr. Giju Baby George[5]

[1]*2nd year postgraduate student, Department of Oral Medicine & Radiology, Mar Baselios dental College, Kothamangalam*
[2]*3rd year postgraduate student, Department of Oral Medicine & Radiology, Mar Baselios dental College, Kothamangalam*
[3]*Merlyin Ann Abraham, General Practioner, Al Saleh Dental Clinic, Martinsburg, USA*
[4]*Senior lecturer, Department of Periodontics, Indira Gandhi Dental College, Kothamangalam*
[5]*Professor, Department of Oral Medicine & Radiology, Mar Baselios dental College, Kothamangalam*

**R**eceived 20 November, 2015; **A**ccepted 23 December, 2015 

***ABSTRACT:-*** Oral cancer is considered as the sixth most common form of major cause of death and disease worldwide. As an archetype we have presented a case report of OSCC of the buccal mucosa with a review the literature of oral cancer. We have also aimed at a review of the various treatment modalities given for the different stages of oral cancer.

***KEYWORDS:-*** Betal quid, Buccal Mucosa, Early diagnosis, Oral Squamous cell carcinoma, TNM Staging

## I. INTRODUCTION

Tanaka et al[1] reported that 48% of the cancers occur in the oral cavity of which 90% are OSCC arising from the lining epithelium of the oral cavity. This is because of the constant renewal of the epithelium taking place. Oral squamous cell carcinoma of buccal mucosa is mostly found in parts of Southeast Asia which is considered a major form of oral cancer and rarely in Europe and American countries.[2] This aggressive malignant tumor formation takes place due to the direct exposure of high dose of carcinogens by betal quid and smokeless tobacco chewing to the buccal mucosa which is habitual in Asian countries.[3] High risk patients should be identified and provided with expert care with the advances in the preventive interventions. Recurrances are found to take place in 2year interval period.[5]

## II. CASE REPORT

A 82 year old male patient came to our Department with a chief complaint pain and swelling in the right buccal mucosa of the oral cavity. It had started around 5 months back and initially the swelling was small in size and asymptomatic. But since the last two to three months the patient had experienced a sharp radiating pain to the right temple region.

Medical history revealed that the patient was hypertensive and was under medication since the last two years.

Personal history revealed that the patient had a history of pan chewing since the last 3 years and smoking of over 40 bidis per day for the last 60 years. Area of pouching was usually the right side.

On extraoral examination, facial asymmetry was present due to the swelling on the right side of the face. Anteroposteriorly it extends almost 1 cm from the commisures of the lip to a line dropped from the outer cantus of the eyes. Superioinferiorly the swelling extends from the lower border of the zygoma to thelower border of the mandible.

*Corresponding Author: Dr. Nadah Najeeb Rawther[1]
[1]*2nd year postgraduate student, Department of Oral Medicine & Radiology, Mar Baselios dental College, Kothamangalam*

On palpation, all inspector findings were confirmed. The swelling was firm in consistency with diffuse borders. Induration of the surrounding areas of the cheek was present with tenderness. There was no colour change in the surrounding areas.

Right submandibular lymph nodes of approximate size 1x1 cms were palpable and firm in consistency. The middle cervical lymph nodes of approximate size 1x1 cms were also palpable.

On intraoral examination the right buccal mucosa revealed the presence of a swelling of approximate size 3.5 x 3.5 cms which was roughly oval in shape. It extended 2 cms from the right corner of the mouth to the retromolar pad region. Superioinferiorly it extended 1 cm from the upper vestibule to 1 cm of the lower vestibule. An ulcer proliferative lesion with infected floor and everted edges with no granulation tissue was present on the anterior border of the swelling.

On palpation all inspector findings were confirmed and firm in consistency. Tenderness was present especially on the floor of the ulcer and the surrounding areas.
Our provisional diagnosis was squamous cell carcinoma of the buccal mucosa. (T2 N2 M0)

The biopsy report after histopathological confirmation came as moderately differentiated squamous cell carcinoma of the buccal mucosa.
On further investigations OPG revealed no bony involvement.


## III. DISSCUSSION

Anatomically, buccal mucosa is defined as a lining mucosa of the inner aspect of the cheeks and lips extending from the line of attachment of the upper and lower alveolar ridges to the pterygomandibular raphae.
The most common etiology associated with the OSCC of the buccal mucosa is the betal quid chewing followed by other risk factors like the other forms of tobacco consumption and alcohol intake ( more than 4 drinks per day).[2] Betel Quid releases reactive oxygen species. Aracanut containing aracolone stimulates the fibroblastic proliferation & collagen synthesis while the flavinoids, catechin & tannins stabilize these collagen fibrils preventing degradation by collagenase.[6] Elderly men especially those of the low socioeconomic background were at an increased risk. HPV infections and chronic irritating factore like the ill-fitting dentures and sharp tooth were also a contributing factors.[7]Our patient was a chronic smoker for the past 60 years and a pan chewer which aggrevated the lesion to the present state.

Buccal mucosa SCC usually occurs in men between 50 -80 years.[2] Our patient is a 82 year old male patient.
Invasions can also take place to the alveolar ridges due to the close proximity anatomically. Choice of the treatment depends upon the site of the cancer, extend of metastasis, expected side effects, aesthetics, ability to restore the important functions like speech, swallowing and patient's current health status . [4] Surgery with more than 4-5 mm beyond the radiographic margin or radiotherapy is nowadays considered the most suited treatment modality for early stage lesions whereas a combination of both the treatment procedures is used for the treatment of advanced stage lesions.[2] Recently chaemoradiotherapy is also used .[3] Some doctors give chemotherapy as the first treatment, followed by chemoradiation and then surgery if needed. But such an approach is not widely accepted.[4]

With nodal involvement selective or radical neck dissection was recommended for T2 – T4 lesions. If positive lymph nodes are identified during surgical procedures then post operative radiotherapy is recommended for the same.[2] Contra lateral neck involvement in case of OSCC of the buccal mucosa is a rare feature but if it occurs neck dissection is done accordingly.[2] in such cases the prognosis is also considered as poor.[8]

Clinically we had given a staging of T2 N2 M0 for our patient. This is because the size of the tumor in our patient was almost 3.5x3.5 cms (T2- tumor size is between 2-4 cms), N2 was given as multiple lymph nodes on the same side was involved and since there was no metastasis M0 was being given. Hence the patient was graded as Stage 1V.

In our patient, surgical therapy was done followed by lymph node dissection. Since the patient was aged he was then provided with chaemotherapy for palliation.
Risk of recurrences occur when there is regional lymph node metastasis with poorly differentiated tumor formation which manifested a negative impact on the survival rate of the victim.[2] Studies have shown that such

recurrences occur since there is no barrier except the buccinators for the spread of the tumor to the buccal pad of fat and in those who continued with the dissolute habits. Survival rates were also hampered when there was involvement of the maxillary bone. This shows that an aggressive treatment of the tumor in its early stages is paramount.[2]

## IV. THE TNM STAGING SYSTEM[4]

The staging system is a standard way and the most common system for doctors to describe the extent of cancers in the oral cavity. The TNM system was given by AJCC- American Joint Committee on Cancer for describing 3 key pieces of information:

**T** indicates the size of the main **tumor**

**N** describes the extent of spread to nearby or regional lymph **nodes**

**M** indicates whether the cancer has spread or **metastasized** to other organs of the body. (The most common sites of spread are the lungs, the liver and bones

**TX:** Primary tumor cannot be assessed; information not known
**T0:** No evidence of primary tumor
**Tis:** Carcinoma in situ. This means the cancer is still within the epithelium
**T1:** Tumor is 2 cm across or smaller
**T2:** Tumor is larger than 2 cm across, but smaller than 4 cm
**T3:** Tumor is larger than 4 cm across
**T4a:** Tumor is growing into nearby structures and is more than 4 cm. This is known as *moderately advanced local disease*.

The nearby structures includes the cortical bones of the jaw , deep muscle of the tongue, skin of the face, or the maxillary sinus, the inferior alveolar nerve , the floor of the mouth, or the skin of the chin or nose.

**T4b:** The tumor has grown through nearby structures and into deeper areas or tissues. This is known as *very advanced local disease*.

This my include the tumor is growing into other bones, such as the pterygoid plates and/or the skull base , the internal carotid artery, masticator space or the lateral pterygoid muscle.

**NX:** Nearby lymph nodes cannot be assessed; information not known
**N0:** The cancer has not spread to nearby lymph nodes
**N1:** The cancer has spread to one lymph node on the ipsilateral side of the head or neck and this lymph node is no more than 3 cm across
**N2** includes 3 subgroups:
**N2a:** The cancer has spread to one lymph node on the ipsilateral side and the lymph node is between 3 cm and 6 cm
**N2b:** The cancer has spread to multiple lymph nodes on the same side as the primary tumor, but none are larger than 6 cm across
**N2c:** The cancer has spread to contralateral lymph nodes also , but none are larger than 6 cm across
**N3:** The cancer has spread to a lymph node that is larger than 6 cm across

**M0:** No distant spread
**M1:** The cancer has spread to distant sites

### STAGE GROUPING AND PROPOSED TREATMENT PLAN[4]

Once the T, N, and M categories have been assigned to the patient lesion according to the AJCC, this information is then combined by a process called *stage grouping* to assign an overall stage.

| ***STAGING*** | ***STAGE GROUPING*** | ***SITE*** | ***PROPOSED THERAPY*** | ***RECURRANCES*** |
|---|---|---|---|---|
| Stage 0 | Tis ( carcinoma in situ)<br>N0 M0 | | - Cessation of habit<br>-Surgical stripping<br>- Follow up | Adjuvant Radiation |
| Stage 1 | T1 N0 M0 | | Surgery<br>-Radiation<br>-Chaemotherapy + radiation<br>-Brachytherapy<br>- Moderate doses of retinoic acid | |
| | | Small lip cancers | 1-Mohs surgery<br>2-Radiation | |
| Stage 11 | T2 N0 M0 | Large or deep lip cancers | -Reconstructive surgery | If recurrance after radiation – surgery |
| | | If there is increased thickness of tumor | lymph node dissection | |
| | | Floor of the mouth, dorsum of tongue, buccal mucosa, gingiva, hard palate | 1-surgery + lymph node dissection<br>2-If patients are unfit for surgery-then radiation | -Radiation + chaemotherapy |
| | | Posterior 1/3 of tongue, soft palate, tonsils, | 1-radiation therapy<br>2-surgery with lymph node dissection | Radiation with chaemotheray |
| Stage 111 | T3 N0 M0<br>T1 N1 M0<br>T2 N1 M0<br>T3 N1 M0 | floor of the mouth, anterior 2/3 of the tongue, buccal mucosa, gingiva, hard palate | Combination of surgery with lymph node dissection followed by radiation | |
| Stage 1V a | T4a N0 M0<br>T4a N1 M0<br>T1 N2 M0<br>T2 N2 M0<br>T3 N2 M0<br>T4a N2 M0 | posterior | combination of | Surgery + lymph node dissection |

| | | | | |
|---|---|---|---|---|
| | | 1/3tongue, soft palate, and tonsils | radiation and chemo (chemoradiation), cetuximab<br><br>or<br><br>surgery followed by chaemoradiation | |
| Stage 1V b<br><br><br><br><br><br><br><br><br><br>Stage 4 c | T4b N0 M0<br>T4b N1 M0<br>T4b N2 M0<br>T4b N3 M0<br><br><br>T1 N3 M0<br>T2 N3 M0<br>T3 N3 M0<br><br><br><br>An y T Any N M1 | | Chemo, cetuximab, or both<br><br><br>Radiation to relieve the symptoms | |
| Recurrances | | | Radiation followed by surgery<br><br>If there is lymph node involvement there surgery with nodal dissection is considered first followed by radiation | |

More recent forms of therapy includes photodynamic therapy, immunotherapy & gene therapy.[8]

## V. CONCLUSION

Screening should always be aimed at the high risk group of individuals. Patients should be advised to avoid such deleterious habits. Hence it is solely the responsibility of a dental surgeon for the early & accurate diagnosis of such deadly lesions which is critical even for cure. So as the saying goes Prevention is always better than cure.

## REFERENCES


[1]. Tanaka et al (2001)-oral cancerogenesis & oral cancer chaemoprevention : A review ,Pathology Research International
[2]. Fang et al(2013) -Squamous cell carcinoma of the buccal mucosa : Analysis of the clinical presentation, outcome & the prognostic factors, Molecular & clinical oncology, 1: 531-534
[3]. Bachar et al – buccal mucosa squamous cell carcinoma: treatment outcomes,Laryngoscope122, 2012
[4]. American cancer society – Oral & Oropharyngeal cancers
[5]. Watanabe et al 2015, Preneoplasia and carcinogenesis of the oral cavity, Vol 3
[6]. BK Venkataraman, Diagnostic Oral Medicine
[7]. Philip et al, Currant concepts in oral Cancer, Australian dental Journal,1999,44(3),147-156
[8]. Khan et al,Currant molecular concepts of oral carcinogenesis & invasion,2010,Vol 22 No.1,Medicine Today