
CASE REPORT**Multifocal Carcinoma of Oral Cavity: A Case Report***Anilkumar L Bhoweer^{1*}, Sudarshan Ranpise²*

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Abstract:

Oral Carcinoma is most common among several other cancers in our country (over 40%). The most causative factor is tobacco in various forms. It is very rare to have multiple foci or centres for cancer in oral cavity. The case presents a rarity, having multiple (about 4) cancer sites in the oral cavity.

Keywords: Multifocal Carcinoma, Toluidine Blue Staining, Field Cancerization.

Introduction:

Ever since Billworth in 1879 reported the occurrence of multiple primary malignant tumours [1], it has been no longer considered to be a curiosity. Multiple primary carcinomas at different locations in the body have been reported by quite a few workers and their incidence has been quoted to be from 1 to 7 percent by Mortel [2] and Kuehn [3]. Cade and Lee [4] reported the incidence of multiple malignancies as 4.1%, Eirch and Kregg [5] 8.8%, Mortel and Foss [6] 9.7%, Warne and Gates [7] about 3.7% and Slaughter [8] as high as 18%.

Multiple carcinomas associated with tumours of the lung, gastro-intestinal tract and urinary system frequently occurred in the head and face [9-11]. Oral cavity has been the site of many of these malignancies. Berg et al [12] found that respiratory and upper digestive tract cancers

occurred six times as often as expected in the patients with oral cancer. In their study, tongue cancer patients developed excess cancers never often than did the other mouth cancer patients with excessive number of laryngeal and lung cancers following floor of mouth cancer. Horowitz [13] studied the relationship of oral carcinoma to the other primary lesions in the body. He found, amongst 116 patients who had oral cancer, that about 19 of them had multiple carcinomas. Werthamer [11] and his colleagues, in the study of multiple primary lesions, laid down definite criteria for multicentric carcinoma. Lund [14], in the study of cancer of the buccal mucosa, reported that statistically the development of a second carcinoma of the same type in the mouth was approximately 15 times as common as would be expected by chance occurrence alone. Tan [15] and his associates described a case of carcinoma of right and left cheek and claimed the multicentric origin of the carcinoma.

It is still a rarity to have more than two different foci or centres in oral cavity alone. Though the incidence of oral carcinoma is as high as 40% in our country (India), multifocal carcinoma is rarely observed. The patient who reported to us had about four primary foci at different locations in the oral cavity, which is extremely rare.

Case Report:

A 45 year old male patient reported with the main complaint of a fairly large ulcerative lesion on the lower lip, which did not respond to the local application of various drugs and systemic antibiotics. He had no other serious complaint. The physical condition was normal. He was a chronic tobacco chewer for over 9 years. There was nothing significant about past and family history.

On examination, the patient was having a poor oral hygiene and all the teeth were heavily stained. The ulcerative lesion on the lower lip, for which the patient came for advice and treatment, was very extensive, involving more than 2/3rds of the lip (Fig.1). The ulcer was not very deep, but had indurated margins and it bled on the slightest provocation. The chronic nature of the lesion which failed to respond to the treatment by drugs, unhealthy appearance and the indurated edges of the ulcer, were indicative of a malignant nature and, therefore, it was clinically labelled as carcinoma of the lower lip. There was a small lesion present on the upper lip which again was indurated and therefore was also suspected to be malignant (Fig.1).



Fig 2: Multicentric Oral Cancer Image 2

Intra-oral examination then revealed an extensive lesion on the dorsum of the tongue which was hyperkeratotic, raised and had a pebbled surface. The lesion was ulcerated at places and was indurated (Fig. 2). This lesion was also suggestive of a malignancy. The patient did not bother about this lesion as it was not painful, though it was present for more than 6 months. Further examination then disclosed a large leukoplakic patch on the right buccal mucosa, which showed erythematous patches intervening the lesion. The patient had a little discomfort (burning) in this region since last two years, but he did not seek advice for it. This was also suggestive to be an early change of malignant nature in the leukoplakia (Fig.1).

Similarly, there was leukoplakia on the left cheek but without any evidence of ulceration and hence it was labelled as 'leukoplakia'.



Fig 1: Multicentric Oral Cancer Image 1



Fig 3: Multicentric Oral Cancer Image 3

Careful examination then further revealed an ulcerated growth, lesion of gingiva in 36, 37 region. The margins of the ulcer were swollen and indurated. There was leukoplakia all over the marginal gingiva on the left side. This lesion was also clinically suspected to be a possible carcinoma of the gingiva (Fig.3).

However, the floor of the mouth and palate did not reveal any abnormality and the overlying mucosa was normal. Oro-pharyngeal examination did not disclose any lesion. Examination of the neck for any enlarged nodes was negative. There was no indication of any growth elsewhere in the body.



Fig. 4: Staining Process with Toluidine Blue



Fig. 5: Post Staining



Fig.6: Pre Staining



Fig.7: Post Staining

All the lesions in the oral cavity were subjected for 'Toluidine blue' [16, 17] test clinically and all of them which were clinically suspected to be malignant gave positive reaction (Fig. 4, 5, 6, 7). Since toluidine blue staining over the tongue surface is not very reliable because of roughness and debris and opening of mucous glands, the stain does not go with even mild acetic acid solution. Therefore, only staining is not considered as a reliable method for early detection of cancer. Hence, biopsy of the suspected lesion is mostly recommended.

The clinical impression was of multiple malignant lesions in the oral cavity. Biopsies were performed from all these lesions to confirm the clinical impression. Proper labelling was done for the site of the biopsy. Blood chemistry showed haemoglobin percentage as low as 9gm%. V.D.R.L. test was negative.

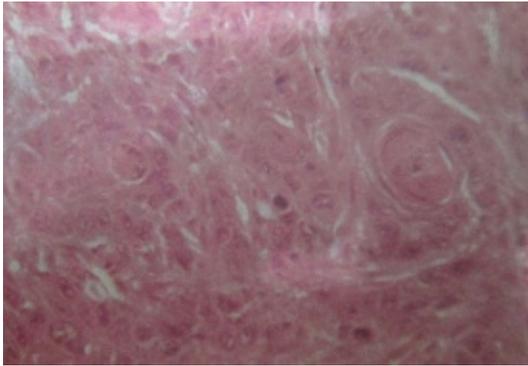


Fig.8: Moderately Differentiated Malignant Squamous Cells forming Keratin Pearls in Lower Lip

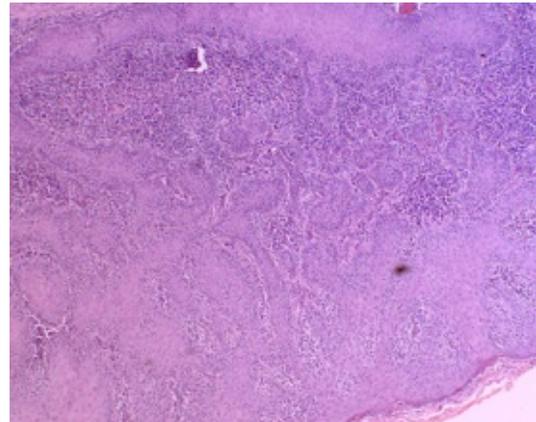


Fig. 11: Gingival Squamous Cell Carcinoma with Moderate Nuclear Atypia, Keratinization and Pearl Formation Inflammatory Cells in Gingiva.

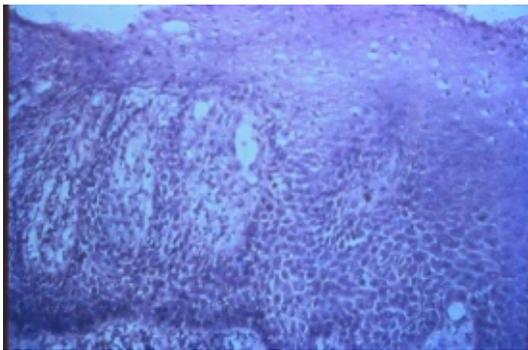


Fig.9: Section shows Intraepithelial Malignant Transformation in Cheek. Active Infiltration within Underlying Connective Tissue is not Evident, Carcinoma-in-Situ

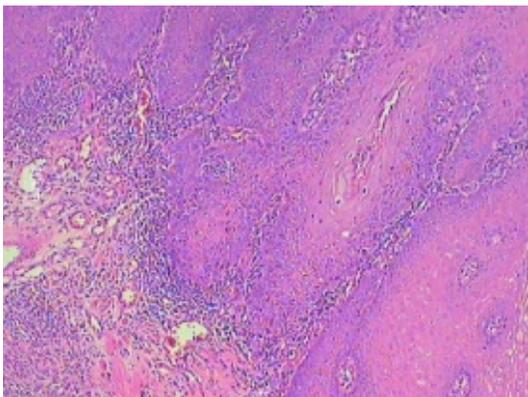


Fig. 10: Section shows Overlapping Features of Pseudoepitheliomatous Hyperplasia and Squamous Carcinoma, Well Differentiated with Early Invasion in Tongue.

The report of the biopsies from the lower lip (Fig. 8), tongue (Fig.10) and gingiva (Fig.11) were all differentiated squamous cell carcinoma and that from the cheek was parakeratotic lesion with atypia of the cellular elements and hyperchromatic nuclei with numerous blood vessels. No infiltration into the deeper structure was evident (Fig.9). This was compatible with carcinoma *in situ*. The patient was then referred to the cancer centre for treatment where he was treated with telecobalt radiation therapy.

Discussion:

An unusual case having primary malignant lesions at four sites in the oral cavity, i.e. lower lip, dorsum of the tongue, right buccal mucosa and the gingiva in the region of the left mandibular molar is described. The cases so far reported in the literature had two primary lesions and none had more than three different malignant centres in the oral cavity. It seems to be really very unusual to have four primary foci in the oral cavity.

In the case described the lesions were so widely separated from each other, there was no doubt that these were different foci or centres for malignancy

to evolve. The intervening mucosa was absolutely normal. The lesion on the upper lip was not considered to be a separate primary focus because this could be explained as the effect of "kissing" or "transplantation" from the lower lip due to continuous contact.

The fact that the patient was a chronic tobacco chewer for a period of more than 9 years and the possibility of tobacco extract mixed with saliva spreading all over the mouth and acting as a carcinogenic stimulant at different sites in the oral cavity cannot be denied.

Horowitz and Chromat [13] used the word multicentric when referring to carcinoma arising in a single organ such as oral cavity since it has been shown that dysplastic changes cannot be found in the tissue surrounding the clinically observed cancer. In the case presented, the intervening mucosa between the lesions was absolutely normal clinically and it did not pick up toluidine blue stain.

Cancer generally spreads by multiplication of pre-existing cancer cells by invasion and destruction of surrounding tissues. This concept has been challenged by several investigators [6, 19-21] who believed that there are other mechanisms involved in the growth and spread of carcinoma. They believe that there is a process of "field cancerization" involved, in which a whole area of epithelium undergoes malignant degeneration at multiple points and it is not just a single or isolated small group of cells that is involved. It must be really true as, in the case described, there were four lesions in the mouth, very well separated from each other and the intervening mucosa was normal. This is a good example of "field cancerization" since the entire mucosa appeared to be susceptible for malignant change and the

malignant changes were observed at four different sites in the oral cavity, i.e. lower lip, tongue, cheek, gingiva and the upper lip.

Slaughter [20] and his associates, Willis [21] and Brunschwing [22] and his colleagues have submitted clinical and microscopic evidence to support such a concept of multicentric origin of carcinoma and its spread by lateral cancerization. The lesions are usually not very deep, but their surface extension is quite wide. In our case also, the lesions were flat but very extensive on the surface.

It is widely accepted that the patient who has one malignancy has a greater than average chance of having a second malignancy in an adjacent or a separate area. This was explained by Mortel [6], Lund [15] and Chierici [23]. Therefore it is necessary to have a probing detailed history whether the patient had cancer at any site in his body in the past or not. These patients have over average tendency to have a second primary lesion, possibly in the oral cavity. Hence, all cancer patients must be observed carefully at frequent intervals so that an early detection of cancer in the oral cavity could be made which can have a better prognosis. The patients who were treated for oral cancer previously must be thoroughly checked often as the second lesion in the oral cavity may occur subsequently.

Conclusion:

An unusual case of multiple carcinomas of oral cavity having primary lesions at four different sites has been described. A possible explanation of "field cancerization" and tobacco extract mixed with saliva serving as a carcinogenic stimulant at different centres in the oral cavity is discussed. The need of detailed history and careful examination is stressed.

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