



# Field Cancerization in Oral Cavity, Case Report and Review of Literature. Oncologic Program Salud Integral Hospital, Managua, Nicaragua

**Medrano FJ<sup>1\*</sup>, Castro AC<sup>2</sup>, Padilla R<sup>3</sup>, Matus R<sup>4</sup>, Quezada CM<sup>5</sup> and Ubilla V<sup>6</sup>**

<sup>1</sup>Head and Neck surgeon, Oncologic Program Salud Integral Hospital, Nicaragua

<sup>2</sup>Oral Pathologist and Oral Surgeon, Chairman Linda Vista Medical Clinic, Nicaragua

<sup>3</sup>Maxillofacial Surgeon and Prosthetic Rehabilitation, Staff Oncologic Program Salud Integral Hospital, Nicaragua

<sup>4</sup>Radiologist, Chairman of X ray Medical Centre, Nicaragua

<sup>5</sup>Hematopathologist, Chairman of Pathology Department, Salud Integral Hospital, Nicaragua

<sup>6</sup>Dentist, Staff Linda Vista Medical Clinic, Nicaragua

**\*Corresponding author:** Medrano FJ, Head and Neck Surgeon, Oncologic Program Salud Integral Hospital, Managua, Nicaragua, Email: fmedranos@hotmail.com

## Case Report

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## Introduction

Oral cancer is the most common in India [1]. Europe and United State data systems reported an increase for two decades [2]. Goldemberg reported a new trend of tongue cancer epidemiology in Brazil [3] such as was reported prior by Jia Hui, et al [4]. Tobacco products are generally involved as risk factor in oral cancer [5,6].

Human papilloma virus (HPV) infection may be associated with oropharyngeal cancer and oral cavity [7-9]. Several premalignant lesions maybe develop a cancer [10-13]. The knowledge of molecular and genetic aspects has allowed us to define a new term: Oral Potentially Malignant Disorders (OPMD) [14] Oral cancers are typically preceded by OPMD.

Different methods assessment, have been used to identify the risk of progress of OPMD to cancer. Since clinical inspection, to advanced technologic methods [15-18]. The genetic loss of heterozygosity (LOH) is the better biomarker for this, but the high cost avoids the use into day to day [19-21]. Slaughter in 1953 proposed the field cancerization. This hypothesis was reproduced by several experimental models

[22,23].

The main is to describe a patient with multiples oral premalignant lesion and squamous cell carcinoma areas concomitant and review of literature.

## Case Report

A 74-year-old female reported a burning sensation and pain of superior left gingiva for three years ago, followed by a new ulcer formation near of gingiva in the same location an ulcer.

She visited a doctor and received treatment without relief and appear a new lesion in mucosa of cheek and behind of the third molar. She has no history of tobacco and alcohol, but she suffers from diabetes disease for 30 years. She weighs 53.8 Kgs and she is 1.63 meters tall.

Intraoral examination: Erythroplasia lesion involving right and left buccal mucosa, upper left gingiva and ulcer in cheek (1.5 x 2 cm) she has retromolar trigone lesion Figure 1-4.



**Figure 1:** Upper Left Gingiva.



**Figure 2:** Ulcers in Cheek.

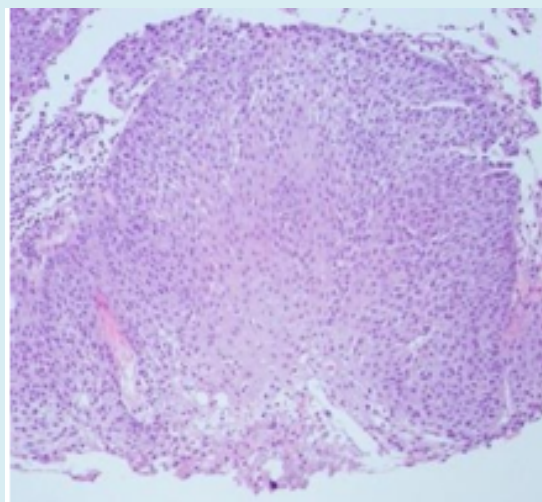


**Figure 3:** Left Retromolar Trigone on the Right Side, Erythroplasia Extended from Above to Below the Vestibule and the Cheek.

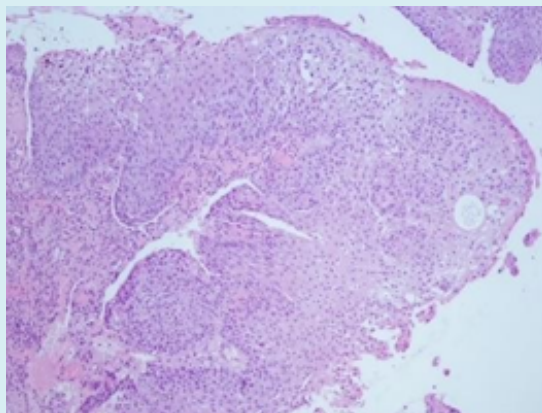


**Figure 4:** Erythroplasia Lesion in Lower and up Vestibule.

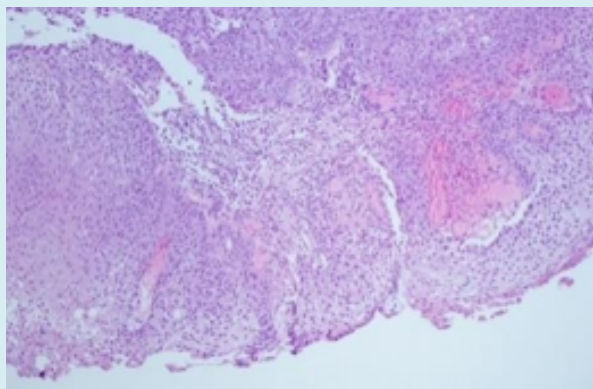
Routine blood investigations revealed normal tests and HIV was negative. Radiologic assessment with CT scan, chest radiograph and abdominal ultrasound reported as normal. The incisional biopsy was done of left mucosa and retromolar area. Invasive squamous cell carcinoma of oral mucosa and field cancerization was diagnosed. Figure 5-7 HPV P16 was negative.



**Figure 5:** Erythroplasia Dysplasia of the Oral Mucosa.



**Figure 6:** Squamous Cell Carcinoma of Oral Mucosa.



**Figure 7:** Severe Dysplasia Close of Squamous Cell Carcinoma Oral Mucosa.

## Discussion

The oral cancer is relationship with tobacco [24,25]. However, several papers have reported that other agents are really protooncogenic that the end did not permit the grow cell control.

There are patients with specific conditions that predispose them to this alteration; to mention a few **Examples:** the spoilage of the immune system as it occurs during aging, chronic diseases and biologic agents, rheumatological disease. Our patient has no tobacco history but she belongs to the elderly. The constant stimulation of some agents can generate to loss of adequate inflammatory responses to them [26]. The loss of this balance can lead to the development of autoimmune diseases, infectious and cancer [27-29].

Another aspect related to the spoilage of immunity due to aging is the natural involution of the thymus. A decrease in the production of immune system cell has been reported, which also predisposes them to infections, autoimmune diseases and cancer. The subject of autoimmune diseases Medrano et al reported a series of cases of patients with rheumatic disease that developed thyroid cancer similar to the study published by Antonelli [30-33].

After the history of diabetes in our case, is a well known the autoimmune pathogenesis of this disease. The chronic inflammatory state in them generates several antibodies that have been detected as a autoimmune event [34-36]. Another different aspect in this group of patients is the phenotypic patients without obesity and older than 65 years as our case similar to reported by Turner et al [37-39].

Oral potentially malignant disorders (OPMD) have made it possible to homogenize the nomenclature of lesions in the

oral cavity. The main objective is to allow early detection of lesions that can potentially progress to carcinoma [40]. The workshop held in London 2005, recommended the use of the term [41].

Tobacco continues to be the most important risk factor in the transformation of an OPMD. Although there are others of lower risk, which must be considered: local infections, chronic trauma, HPV among others. [42,43] The sequence of cellular changes that end in carcinoma are very similar; leukoplakia is an example, to cite the most common induced by tobacco. However, our patient has erythroplakia, which are lesions with a higher risk of transformation to carcinoma in the context of diabetes and aging without tobacco history [44-46].

Schepman reported that risk of transformation of leukoplakia can be as low as 1.2% however, associated with other cellular changes it could be up to 14.5 % [47-49]. On the other hand, dysplasias are more common in erythroplaias, mainly in old patients. The rate of malignant transformation rate is 14.3%–66.7%. The biopsy report of our case shows a focus of severe dysplasia close an invasive carcinoma as reported by Villa and Peter [50-52].

Early detection of any OPMD requires a histological biopsy to classify the risk of transformation to cancer. Adequate clinical training in this subject is the first step, even if its percentages of sensitivity and specificity are very low [53,54]. On the other hand, several studies using high technology are appearing every day, allowing for earlier diagnosis in the high-risk patients. Autofluorescence imaging (AFI), In vivo microscopy IVM, Optical coherence tomography, Reflectance confocal microscopy, Multiphoton microscopy [55-60]. These technological tools have the disadvantage of having high costs and are not available in our country.

Molecular biology has made it possible to identify similar genetic alterations in OPMD and cancer, in such a way that they have become the main biomarkers that identify the patient at high risk of transformation [61,62].

The development of a second primary tumour in the head and neck could be as high as 15% and as low as reported by Medrano at 1.4%. [63]. Microsatellite marker term has a gene expression that could have macroscopic, microscopic manifestations or only genetic. Boland reported that 30% of cells with hyperplasia's shared the same genetic changes in areas with cancer. This has also been identified in head and neck cancer. In our case there are lesions with severe dysplasia close of squamous cell carcinoma oral mucosa [64] in 1953 Slaughter had already proposed this hypothesis: field cancerization, which continues to be used today.

## Conclusion

The early detection is the main goal in front to OPMD, the first step in patients with or without tobacco and alcohol exposition. There are others patient's risk factor that allow to develop it. The histological biopsy will help to identify the progression risk to cancer and allow establish the follow-up or the most appropriate therapeutic decision.

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