Clinicopathological aproach oh squamous cell carcinoma in lower lip: case report

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ABSTRACT

Actinic Cheilitis and Lip Squamous Cells Carcinoma are pathologies that may be associated with chronic exposure to ultraviolet rays. Individuals who do not use sunscreen or caps and who carry occupations in which they have prolonged contact with the sun's rays are considered to be at high risk for the development of potentially malignant disorders or Lip Squamous Cells Carcinoma. The lower lip is an anatomical site that is easy to access for the examination and allows direct vision of the structures, which facilitates the identification of initial lesions, making possible the early diagnosis of oral pathological conditions. This article aims to report a clinical case of lower lip epidermoid carcinoma in a male patient, construction worker, leucoderma, 66 years old. Clinical and histopathological characteristics will be discussed, as well as the importance of education programs for the population regarding risk factors and prevention of these changes since it is a high incidence of Actinic Cheilitis and Lip Squamous Cells Carcinoma in the brazilian population.

Keywords: actinic cheilitis; oral câncer; ultraviolet rays.

Abordagem clinicopatológica de carcinoma epidermoide em lábio inferior: relato de caso

RESUMO

A Queilite Actinica e o Carcinoma Epidermóide de lábio são alterações que podem estar associadas à exposição crônica aos raios ultravioletas. Individuos que não fazem o uso de protetores solares ou bonés e que exercem profissões em que se tenha contato por tempo prolongado com os raios solares são considerados de alto risco para o desenvolvimento de desordens potencialmente malignas ou do Carcinoma Epidermoide. O lábio inferior é um sitio anatômico de fácil acesso para

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o exame e permite visão direta das estruturas, fato que facilita a identificação de lesões iniciais, possibilitando o diagnóstico precoce de condições patológicas orais. Este artigo tem o objetivo de relatar um caso clinico de Carcinoma Epidermoide de lábio inferior em paciente do sexo masculino, trabalhador da construção civil, leucoderma, 66 anos de idade. Características clínicas e histopatológicas serão discutidas, além da importância da realização de programas de educação para a população a respeito dos fatores de risco e prevenção dessas alterações, uma vez que é alta incidência de Queilite Actinica e Carcinoma Epidermoide de lábio na população brasileira.

Palavras-chave: queilite actinica; câncer oral; raios ultravioletas.

INTRODUCTION

Prolonged sunlight exposure can cause many lips pathologies in people do not use adequate protection such as sunscreen, lip balm, caps and hats. Among these disorders, we can highlight Actinic Cheilitis (AC) and Lip Squamous Cells Carcinoma (LSCC) (1). Chronic exposure to U.V. radiation is main cause to in lip carcinogenesis, especially type B (UVB), because it has a greater potential for penetration when compared to type A (UVA) (2-3)

AC is a potentially cancerous lesion that has been indicated as a risk factor for LSCC. This lesion occurs predominantly in middle-aged, light-skinned men excessively exposed to ultravioleta radiation, such as those who work outdoors (4-5). Some papers in the literature aim to estimate percentages of malignant transformation of AC. However, to date, there is no accurate estimate of the malignant transformation, but it is known that factors such as alcohol and smoking can increase the chances of malignancy (6-8).

Oral cancer is the eighth most prevalent neoplastic disorder worldwive, with more frequent histological type squamous cell carcinoma (SCC). Intraoral lesions relate with smoking, alcohol and viruses. In the lip, the factor commonly cited as important in cancer is solar radiation, especially in light-skinned men, above 50 years of age, exposed to chronic solar radiation, however, although controversial, factors such as alcohol and smoking may be associated with the etiology of neoplasia. In Brazil, lip cancer deserves attention because it is a tropical country, where there is a high incidence of ultraviolet radiation (1,9-11).

Early diagnosis and immediate treatment still play a key role in patients' survival and quality of life (9). Treatment options include surgery, radiation therapy, chemotherapy or a combination of these. The choice of treatment modality depends on the size, location, histopathological appearance, presence of metastases, and others (12). Preventive measures vary from orientations to the population at risk about the cause of the problem to the importance of using sunscreens on both skin and lip and wearing hats and caps.

Due to the high incidence of AC and LSCC in the Brazilian population, the lack of clinical diagnosis and the difficulty of obtaining a histopathological diagnosis, this article aims to report a clinical case of LSCC related to chronic exposure to ultraviolet rays.

CASE REPORT

Patient, male, light-skinned, 66 years of age sought dental service due to lower lip injury, with evolution of one month. During the anamnesis, he reported being a construction worker, with history of smoking and alcoholism, but is said to be an ex-smoker, with a habit interruption at 38 years of age. In the intraoral clinical examination the presence of an ulcerated lesion on the lower lip was observed, measuring about 1cm. (Figure 1 and 2). The patient reported painful symptomatology on touch and during brushing. The clinical diagnosis was of actinic cheilitis, not excluding the hypothesis of possible squamous cell carcinoma. The patient was subjected incisional biopsy for diagnostic confirmation and decision of appropriate treatment. The biopsy was performed under local anesthesia and a small part of the lesion was removed with a scalpel blade 15. The specimen was placed in a 10% formalin container and sent to the Department of Pathology, Faculty of Medicine, UFAM, where it was submitted to histopathological examination.

Figure 1 – Initial clinical appearance: ulcerated lesion with raised borders, measuring about 1cm in diameter on the lower lip.

Figure 2 – Initial clinical appearance: ulcerated lesion with raised borders, measuring about 1cm in diameter on the lower lip.

Microscopic examination revealed a fragment of oral mucosa exhibiting neoplastic lesion of epithelial origin characterized by the proliferation of squamous cells exhibiting hyperchromatism, pleomorphism, vacuolated and hypertrophic nuclei, evident nucleoli and intraepithelial keratinization in the form of corneal pearls (Figure 3,4,5). The diagnosis

was of moderately differentiated squamous cell carcinoma. The patient was referred to an oncology reference center for complete excision of the lesion. Currently, the patient is well and without recurrence of the lesion.

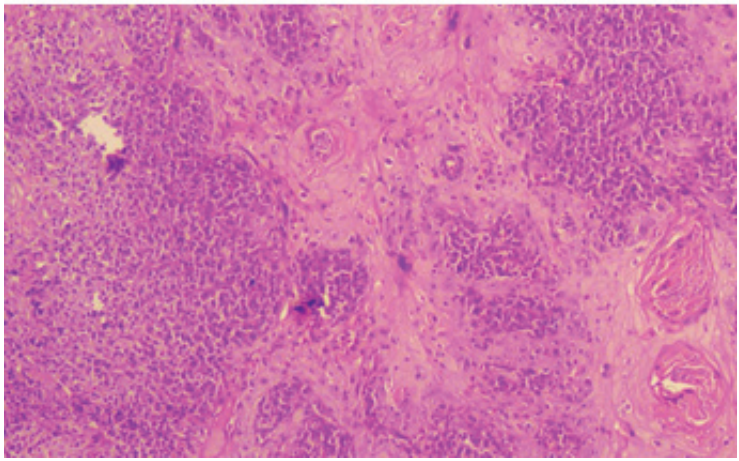

Figure 3 – Nests of neoplastic epithelial cells invading the underlying connective tissue.

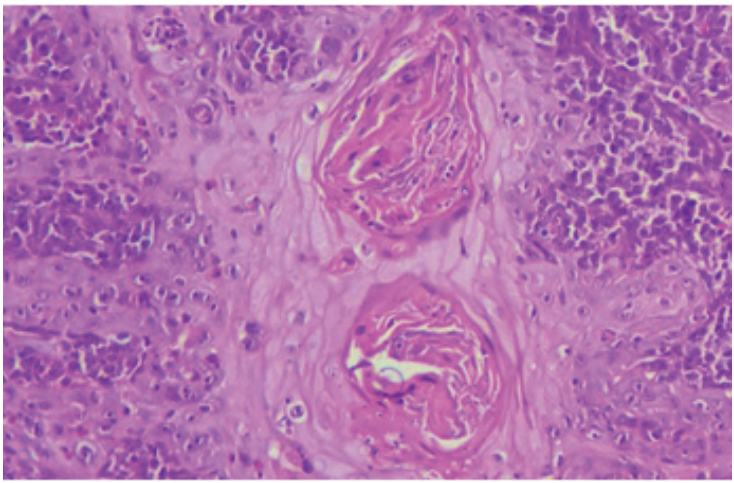

Figure 4 – Tumor island centered by keratinization.

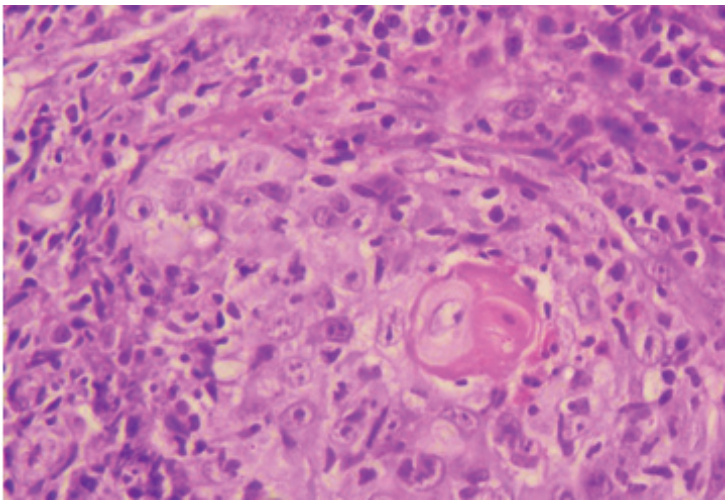

Figure 5 – Pleomorphic cells with bizarre, hypertrophic and hyperchromatic nuclei, with binucleation and atypical mitoses.

DISCUSSION

AC is a potentially malignant lesion that can progress to an invasive LSCC (2,6,7,13). There is no agreement in the literature regarding the frequency with which AC becomes LSCC, since the analysis of this type of lesion is subjective and is not sufficient to predict with certainty which lesions will progress to carcinoma (2,13). In a study by Martinez et al (14), an increase in p53 tumor suppressor gene expression was observed when compared to normal oral and buccal mucosa, suggesting its relation with the regulation of the malignant transformation of these lesions. When there is limited exposure to the sun's rays, the functions regulated by the p53 gene do not present significant alterations, allowing repairs in the DNA. However, when exposed to intense UVB causes mutations in the p53 gene, resulting in dysregulation of its functions, causing damage to the DNA molecule and keratinocytes, making the cells susceptible to genetic changes. Changes caused by UVB in the p53 gene result in genomic instability, increasing the susceptibility of cells to malignant transformation (Figure 6) (15).

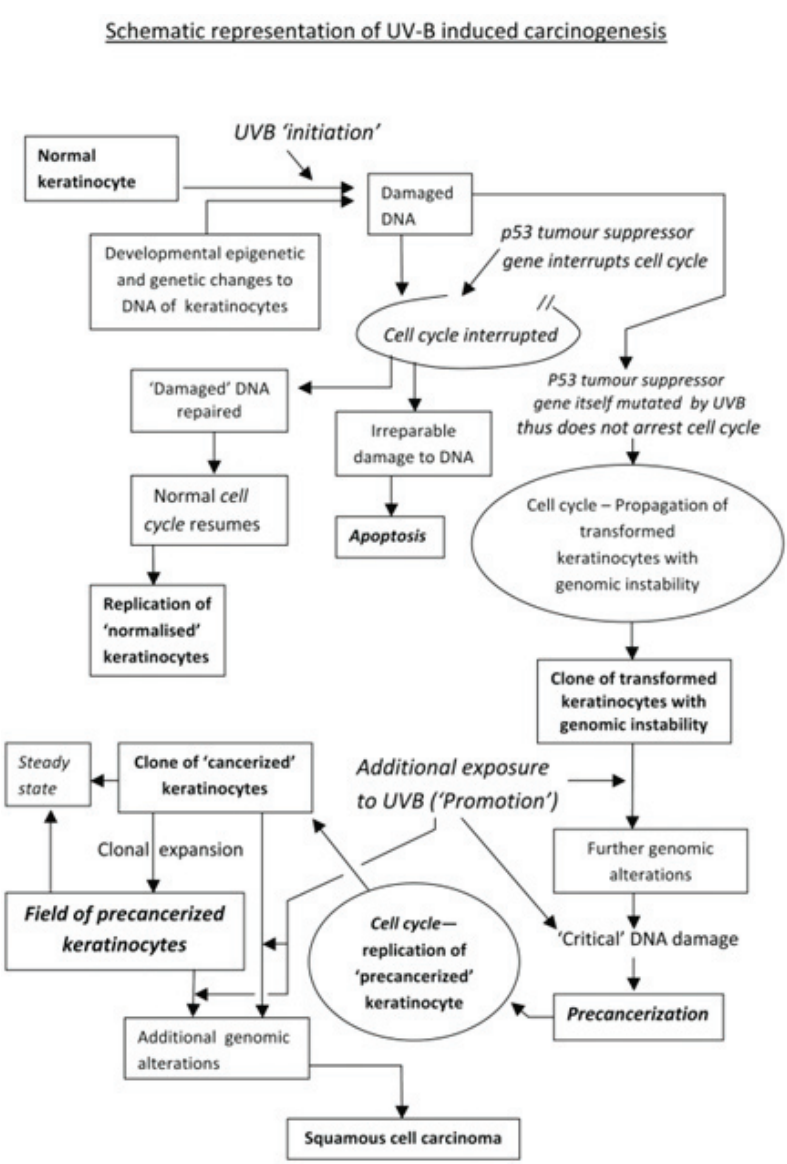

Figure 6 – Schematic representation of carcinogenicity induced by ultraviolet rays.

Clinically, AC encompasses a broad spectrum of presentation, as hyperkeratotic patches on the lips, with atrophic areas and superficial erosions. As the lesion progresses, rough, scaly, and variable-thickness areas arise, with well-defined or poorly defined borders, which may or may not be associated with erythematous areas (1,7,9). The slow evolution of the lesion usually causes the patient to neglect the search for treatment until

the same reach more advanced stage, suggesting a SSC (2,7,11). In our case, the lesion was ulcerated with hardened base and well defined limits. Due to the history of chronic sun exposure, AC was suspected, not eliminating the possibility of a possible SSC, since the literature estimates that 95% of the SSC of the lip originates from AC (7).

SSC is the most common malignant tumor of the oral cavity. In the lip, they are associated with light-skinned men, older than 50 years and submitted to chronic sun exposure, although factors such as smoking and alcoholism are also associated (1,9-10). In the present case report, the possible SSC hypothesis was not excluded, since the patient presented common characteristics of patients with LSSC. Although the patient had history of smoking, the fact of practicing a profession that is chronically exposed to ultraviolet rays was considered a possible etiological factor for the development of neoplasia. Moreover, it is not clear in the literature the carcinogenic effect of smoking and alcoholism on the pathophysiology of LSSC. It is suggested that the appearance of neoplasia depends mainly on exposure to UV rays, than secondary behavioral habits (4).

Clinical characteristics of the LSSC are very variable. It is characterized by the presence of a hardened, exudative and crusted base ulcer (1,9). The location of the lesion varies considerably, with a clear predominance of the lower lip, which is most probably due to the anatomical position, with exacerbated exposure to ultraviolet radiation, especially UVB rays (more important than UVA and UVC) (3,6). Initially, the lesion is asymptomatic, and it may be difficult to distinguish a SSC from CA, since there are no well defined clinical features that separate the AC from the initial SSC (9). Biopsy is absolutely indicated for lesions that have a hardened base and ulcerations to obtain at a definitive diagnosis and propose the appropriate treatment (7). Because of these characteristics, the biopsy was indicated for lesion of the case reported here, confirming the diagnosis of SSC, being it moderately differentiated.

In our case, the patient denied using lip balm or caps during their daily activities, which may have contributed to the appearance of the lesion. A study by Lucena et al (6) evaluated the prevalence of AC in workers exposed to the sun on the municipal beaches of Natal. In the study, a statistically significant relationship was observed between AC and the use of lip balm and caps. It should be noted that caps, especially hats, protect only the upper and middle third of the face, favoring the incidence of UV rays on the lips. Even so, workers believe that they are protected against radiation, disregarding the importance of the use of lip balm, whose use was observed in only 42.7% of the cases. This neglect reflects the lack of knowledge about the harmful effects of UV radiation, showing the need to introduce preventive measures for this population, considering the possibility of developing LSCC.

Microscopically, SSC is characterized by invasive cords or islands of malignant squamous epithelial cells, with increased nucleus-cytoplasm ratio. Varied degrees of cell pleomorphism can be observed, as can the presence of keratin beads. The OMS classifies the SSC into three categories, based on the degree of cellular differentiation: little, moderately and well differentiated. Well differentiated, low grade or grade I corresponds to SSC with tissue architecture similar to normal squamous epithelium.

Well-differentiated tumors grow slowly. On the other hand, poorly differentiated SSC, high grade or grade III, is characterized by the predominance of immature cells, many atypical mitoses, expressive nuclear and cellular pleomorphism, with little or no production of keratin pearls. These tumors show rapid growth and early metastasis. A tumor with a morphological appearance between these two extremes is called grade II or moderately differentiated carcinoma (16-18). The lesion presented here showed characteristics that are consistent with the moderately differentiated carcinoma.

Surgery is the treatment of choice for most lip tumors, requiring total thickness resection of the skin and underlying mucosa in order to obtain a safe surgical margin (3,19). Broad excision is generally curative, offering lip cancers an excellent 5-year survival rate of 80-90% (11). Currently, with two years of follow-up, the patient is well without signs of relapse.

Patients in occupations requiring prolonged exposure to sunlight should be carefully evaluated, and in the presence of suspected SSC changes, biopsy should be considered. Due to the high prevalence of LSSC, especially in countries with a tropical climate and in those with a high concentration of occupations of outdoor workers, it is observed the importance of a correct diagnosis, adequate treatment and longterm patient follow-up.

CONCLUSION

Chronic exposure to sunlight can be extremely harmful during outdoor activities, especially in countries with a tropical climate like Brazil, which experiences the highest levels of ultraviolet radiation in the world. It is important to intensify educational and preventive measures, especially for the population at risk, in order to avoid the development of SSC or potentially malignant lesions, such as AC.

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