Human papilloma virus and squamous-cell carcinoma of the oral cavity

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Abstract
We recently observed a 65-year-old woman with an in situ squamous cell carcinoma (SCC). For the past three years she presented a white lesion on the inside area of the left angle of the mouth. She was a pipe-smoker and the neoplasm was attributed to this factor. Histological analysis of the affected tissue confirmed the clinical diagnosis of SCC and was compatible with HPV infection. Because we were able to perform additional studies, HPV was recovered from the lesion HPV 6/11 types were detected by in situ hybridization assay.

Key Words: squamous cell carcinoma; papillomavirus infection; in situ hybridization

INTRODUCTION

A variety of benign and malignant papillomatosis occurs on the oral mucosa. HPV types 2, 7, 13, 32 and the genital type 6, 11, 16 and 18 have been detected in these lesions, however HPV DNA has been found in altered as well as in normal tissue,[1] so, no conclusions could yet be reached about the role played by HPV in the etiology of these lesions.[1,2]

Smoking, alcohol and chronic mucosal trauma are recognized risk factors in oral cancer. Pipe smoking is also a known predisposing influence to cancer of the lower lip.

CASE REPORT

A 65-year-old black woman, pipe smoker, from Minas Gerais State, Brazil, observed at the Oral Dermatology Out-Patient Clinic of the Federal University of Rio de Janeiro, presented a well delimited verrucous leukoplastic plaque on the inside area of the left angle of the mouth (Figure 1). Histopathological analysis of the affected area suggested in situ SCC associated to HPV infection. To determine the HPV types, hybridization in situ assay was performed with 1, 2 ,6/11, 16/18 and 31/33/35 DNA probes. HPV types 6/11 were detected (Figure 2). The patient was recommended for a total excision of the lesion.

COMMENTS

The etiology of the oral cancer is thought to be multifactorial. Apart from the two major risks factors (tobacco and alcohol) HPV etiology has been proposed. HPV have been frequently recovered from oral cancers,[3] but the virologic data is inconsistent. In several

studies, HPV are identified as frequently detected in the controls as well in as the cases. Mignona et al.[4] examined 15 cases of in situ and early SCC. The distribution showed a prevalence of 16/18 type in tongue and floor of the mouth carcinoma, 6/11 in gingiva, hard palate and buccal mucosa carcinoma, and 31/33/35 in comissure. These results suggest an important role of HPV in oral carcinogenesis, but further investigation is still necessary.

Fig. 1. Clinical presentation of the oral neoplasia.

The neoplastic lesion of this patient could have been originated by three risk factors: tobacco, trauma caused by the pipe smoking and HPV. Chiominto et al,[5] comparing the presence of HPV and other factors of risk in oral carcinoma, did not find statistical significance. They concluded that HPV does not play a primary role in oral cancers, but is a concomitant cause with other factors of risk.

HPV 6/11 are related to low risk of malignant transformation in the genital area, but they might have an increased oncogenic potential on the oral mucosa.

Although today PCR is more commonly used, in situ hybridization remains as a very sensible and specific method for the detection of HPV.

The association of the human papilloma virus and various malignancies has become increasingly troublesome. HPV can be recovered from cervices that are dysplastic and from other tissues. It is important to call attention that it is not just the cervix where the papilloma virus is implicated but also the mouth.

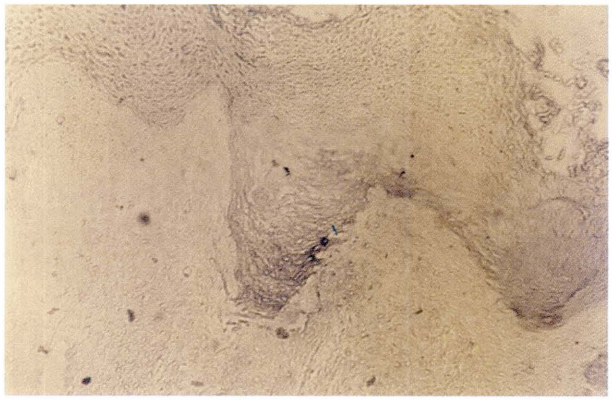

Fig. 1. In situ hybridization assay for HPV types 6/11 (NBT-BCIP (nitro blue tetrazolium-bhrome clore indolyl phosphate) - streptavidin alkaline phosphatase, 100X).

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