

Histopathological and immunohistochemical aspects
of paraprosthetic gingival mucosa lesions induced by Ni-Cr metal alloys

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Abstract

The histological changes of the oral mucosa in contact with metal alloy dentures are mainly due to the corrosion products released from the dental alloys. The purpose of this study was to highlight the histological and immunohistochemical effect of nickel and copper compounds on the oral mucosa cells. Material and methods: The selected participants were wearers of fixed dentures made of nickel-based alloys and copper-based alloys. The gingival mucosa fragments were prelevated through excision after removing fixed denture and extraction one of its affected teeth. The gingival mucosa fragments were processed through the histological technique of paraffin inclusion. The paraffin embedded tissue sections were usually stained with Haematoxylin-Eosin and processed by immunohistochemical technique with VEGF antibody and in order to study the cyt c expression. Results: The gingival mucosa fragments from nickel-based alloys dentures wearers were diagnosed with papilloma and, also, gingival mucosa samples prelevated from copper-based alloys dentures wearers were diagnosed with condyloma acuminata. The cytochrome C immunohistochemical expression was different in the epithelial layer of two types of mucosal fragments but it was the same in their lamina propria connective tissue. Immunohistochemical reaction for VEGF was different in the gingival mucosa fragments with papilloma compared with condyloma acuminata samples. Conclusion: The two types of metal alloys have different effects on the adjacent gingival mucosa.

Key words: gingival mucosa, papilloma, condyloma acuminata, cytochrome C, immunohistochemical reaction VEGF