

Immunohistochemical expression of Cytokeratins in periapical lesions

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Objective. This study seeks to clarify the histological origin of apical lesions, through the expression of certain cytokeratins. *Study design.* In 3 years 30 patients were selected. After clinical and radiological exams were chosen patients who had severe apical lesions and tooth decay with exposure of the pulp chamber left untreated for very long periods (more the 12 months). Serial slides were prepared both for immunohistochemistry and Hematoxylin- Eosin.

Material and methods. Twenty specimens coming from the 30 patients were used for our purpose. All periapical lesions were surgically extracted and fixed in Bouin mixture, and embedded in paraffin. Samples were processed immunohistochemically employing the instructions of the Envision Dako cytomation kit. Monoclonal antibodies against Cytokeratins (CKs) 1, 5, 8, 10 and 14 were used. Slides were observed with Leica Laborlux-S microscope and the image were acquired with NIKON DSL2 System. Each sample has been analyzed with a “double-blind” system by two different operators. Moreover, the digital images acquired have been compared to an image analysis tools by Adobe photoshop CS5 Extended.

Results. CKs 1, 5 and 8 are expressed in all samples at external epithelial layer with no statistically significant differences. CK 10 is weakly expressed in some epithelial cells lining the periapical lesion. CK 14 was negative in most samples, and little positive in some specimens.

Conclusion. Our results suggest that most of the apical lesions we studied have an epithelial origin. The absence of CK14 positivity may be explained by the fact that during the extirpation of the lesion the basal epithelium remained attached to the surrounding bone.

Keywords: Cytokeratins, apical lesions, Immunohistochemistry