



كلية النبات للآداب والعلوم والتربية
قسم علم الحيوان

دراسات وراثية مناعية على تأثير حسوة الراتنجات المركبة والمملغم للنسيج الطلائي الشفي والفمي فى الإنسان

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IMMUNOGENETIC STUDIES ON THE EFFECT OF COMPOSITE RESIN AND AMALGAM FILLING MATERIALS ON HUMAN LABIAL AND BUCCAL EPITHELIUM

Thesis

Submitted to Women's College, Ain Shams University
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﴿... يرفع الله الذين آمنوا منكم
والذين أوتوا العلم درجات والله بما
تعملون خبير﴾

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ABSTRACT

In the past few years, there has been a growing concern of the potential health hazards imposed by use of dental filling materials that include toxic compounds. So the aim of the present work was to evaluate the percentage of apoptotic cells in the epithelium of buccal and labial mucosa after applying amalgam and composite filling materials. Also to detect the correlation between dermatoglyphics and the number of apoptotic cells. The buccal mucosal samples were collected from sixty patients with amalgam filling after 15 min, 1 week and 3 years of insertion. Meanwhile, the labial mucosal samples were collected from thirty patients with composite filling after 15 min and 1 week of insertion. The epithelial cells were stained with fluorescence dyes; ethidium bromide, propidium iodide and monoclonal antiFas-1 antibody then examined under fluorescent microscope. The results showed that, there was a highly significant increase ($p < 0.001$) in the number of apoptotic cells stained with ethidium bromide and propidium iodide stains in the contact side when compared with the control side in each group of amalgam and composite fillings. In addition, the cytotoxicity of amalgam was decreased with aging time while that of composite was increased. On the other hand, using antifas-1 antibody, it was found that the

apoptotic cells were died through mitochondrial pathway. Regarding the dermatoglyphic analysis, the patients with low number of apoptotic cells induced by amalgam and composite fillings were characterized by increasing whorl patterns on the finger-tips, increasing distal loops on the III-interdigital area and more arches on the IV-interdigital area. Meanwhile, the patients with moderate and high number of apoptotic cells were characterized by increasing ulnar loops on the finger-tips, increasing arch patterns on the III-interdigital area and more distal loops on the IV-interdigital area. In conclusion, the variation in the dermatoglyphic patterns according to the number of apoptotic cells in one week group indicates genetically susceptible and resistant patients to filling toxicity.

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