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SEM Analysis of the Effectiveness of the Acid Etching on Cat Enamel

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Abstract : The aim of this paper is to summarize the literature on micromorphology and composition of the enamel of the cat and present an original experiment by SEM on how it responds to the etching with ortophosphoric acid for the time recommended in the veterinary literature (30", 45", 60"), derived from research and experience on human enamel; 21 teeth of cat were randomly divided into three groups of 7 (A, B, C): Group A was subjected to etching for 30 seconds by means of orthophosphoric acid to 40% on a circular area with diameter of about 2mm of the enamel coronal; the Groups B and C had the same treatment but, respectively, for 45 and 60 seconds. The samples obtained were observed by SEM to constant magnification of 1000x framing, in particular, the border area between enamel exposed and not exposed to etching to highlight differences. The images were subjected to the analysis of three blinded experienced operators in electron microscopy. In the enamel of the cat the etching for the times considered is not optimally effective for the purpose adhesives and the presence of a thick prismless layer could explain this situation. To improve this condition may clinically in the likeness of what is proposed for the enamel of human deciduous teeth: a bevel or a chamfer of 1 mm on the contour of the cavity to discover the prismatic enamel and increase the bonding surface.

Keywords : cat enamel, SEM, veterinary dentistry, acid etching
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