

EFFECT OF DENTURE CLEANSER ON THE SURFACE
ROUGHNESS AND HARDNESS OF DENTURE BASE MATERIALS



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ABSTRACT

Rough surface of a prosthesis plays an important role in the accumulation of plaque while surface hardness indicates its resistance to wear. As the use of denture cleanser is an alternative method to keep the prosthesis cleaned, it is necessary to know its effect on the surface properties of denture base materials. Oxygenating cleanser was chosen for testing as it is one of the most commonly used denture cleansers.

Eighteen circular discs (30-mm diameter, 3-mm thickness) of 3 denture base materials (SR-Triplex Hot, SR-Ivocap and Vitaflex) were fabricated using the techniques recommended by the manufacturers of each material. The specimens in one group (n=3) were immersed for 5 min in Polident and tap water alternately for 60 cycles. The specimens in the other group were immersed in tap water only. The measurement of surface roughness and surface hardness was carried out immediately after specimen preparation and after 15, 30 and 60 cycles of immersion, respectively. The data were analyzed using two-way ANOVA and Dunnett's T3 ($p=0.05$).

The surface roughness and hardness of Vitaflex was significantly decreased after storage in Polident ($p<0.05$). Immersion in Polident had no effect on surface roughness and hardness of SR Triplex and SR Ivocap ($p<0.05$). For all immersions, time had no effect on surface roughness measurement ($p>0.05$) but significantly influenced the surface hardness test of SR Triplex Hot ($p<0.05$).

Denture cleanser Polident had no effect on the surface roughness and hardness of SR-Triplex Hot and SR-Ivocap, but it decreased the surface roughness and hardness of Vitaflex. Therefore, care should be taken when choosing Vitaflex as a denture base material when the prosthesis is cleaned with Polident.

KEY WORDS: DENTURE BASE MATERIAL/PMMA/NYLON/ DENTURE CLEANSER/SURFACE ROUGHNESS/SURFACE HARDNESS

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