International Poster Journal IPJ of Dentistry and Oral Medicine

Int Poster J Dent Oral Med 2007, Vol 9 No 03, Poster 371

Using of light-curing "waxes" in the removable partial denture technology

Sprache: Deutsch

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Datum/Veranstaltung/Ort:
22-25 september 2006
FDI Congress, Shenzhen 2007
Shenzhen, China

Einleitung

The wax patterns of the metallic frameworks of the removable partial dentures could be made directly on the cast [1,2,3],using profiled waxes like: "Ti-Light" or "LiWa" (light curing "waxes").

Problemstellung

This study intends to describe the problems, failures of this new technology.

Material und Methoden

The study was made at the Department of Removable Partial Dentures Technology, Specialization Dental Technology, University School of Dentistry, Timisoara, Romania, between 2004 and 2006, on 30 casts with different edentation types [4]. The wax patterns of removable partial dentures metallic frameworks were made directly on the cast using profiled waxes like:"Ti-Light"(Ti Research GbR, Mainbernheim, Germany) and "LiWa"(WP Dental GmbH Bevern/Hamburg).

Fig. 1. "Ti Light" Package

Fig. 1. "LiWa" Package

Fig. 2. Waxing up directly on the cast with light curing material

Fig. 3. Wax up on the cast before light curing: a. "Ti Light"

Fig. 3. Wax up on the cast before light curing: b."LiWa

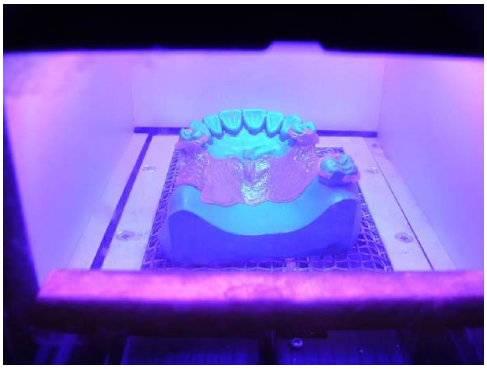


Fig. 4. The wax pattern was light- cured five minutes in a light-curing equipment (Spectramat; Ivovlar, Schaan, Liechtenstein)

Fig. 5. After light-curing the wax pattern "Ti Light" turns his colour from pink to yellow,

Fig. 5. After light-curing the wax pattern - while "LiWa" wax pattern remains with the same colour

Fig. 6. Detaching the wax pattern from the cast

Fig. 7. Aplication of sprue bands for casting

Fig. 8. Adaptation of metallic framework on the cast ("Ti Light"- wax up)

Fig. 9. Comparative evaluation of metallic components of removable partial dentures: a. made with light curing wax;

Fig. 9. Comparative evaluation of metallic components of removable partial dentures: b. made in classical technology

Ergebnisse

Light-curing waxes are sticky (to casts and instruments) and difficult to use. Therefore they need precision in profiles applying. Even the wax patterns seem to have a great elasticity, their removing from the cast have to be made with great patience, in not producing materials cracks or fractures .

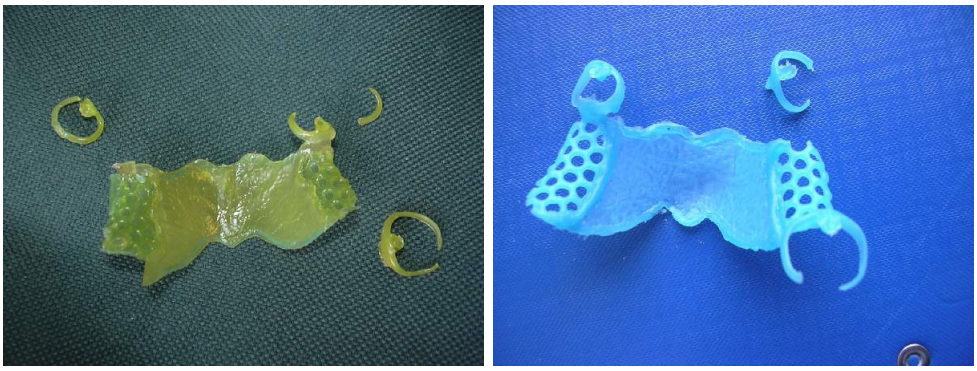
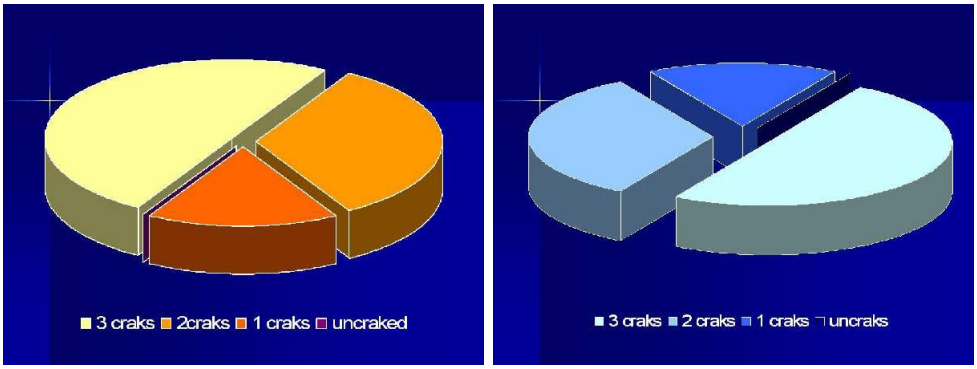


Fig. 10. Cracks at both materials



Statistics of cracks

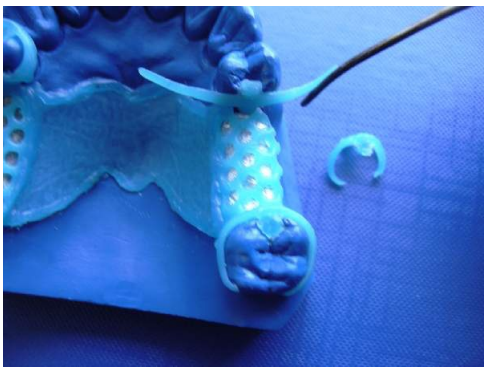


Fig. 11: Light curing wax up: a. LiWa sticky to instruments,

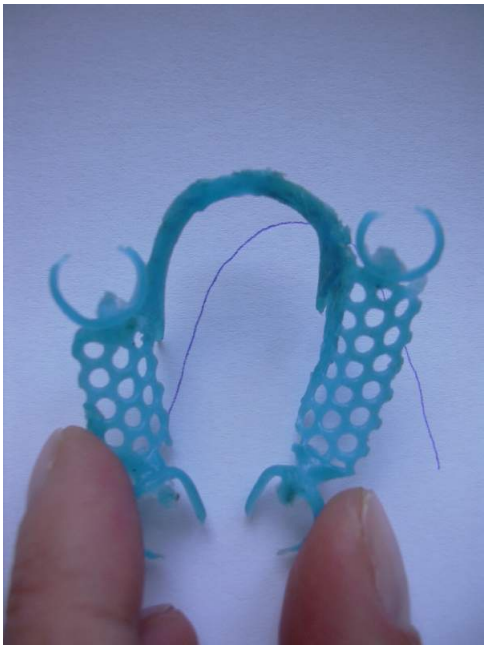


Fig. 12. Elasticity testing for both materials: b. "LiWa"

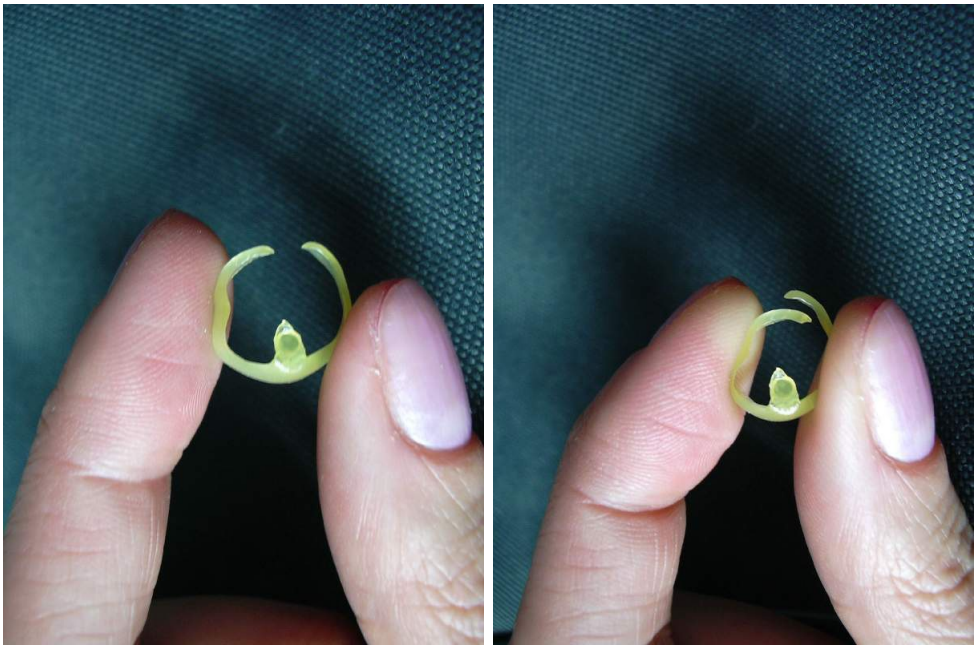


Fig. 12. Elasticity testing for both materials:
c. "Ti Light"

Schlußfolgerungen

Classic wax-up is ample debated in the literature. First data about light-curing waxes used in the removable partial dentures technology were published in 2003 (1, 2, 3). Hafner C. Hoffmann A. modifies the classic technology, reducing the working time and saving materials used in the intermediary stages. Reducing the working time and economizing some materials used for intermediary stages are major qualities that will impose this materials in practice Anyway the technique is ingenious and perhaps it can be improoved also through the profiles modify (similar with those described in Tübingen, Germany - half-drip for the clasps)), that can improve the mechanical strength (4) of the wax pattern and consequently of the metallic framework.. Even if all the wax-up details are not edited, unmistakable, the system, that proved to be operative, will be completed.

Literatur

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