Polyurethane liners improve the durability of silicone-based facial prostheses. However, the bond between these 2 materials is weak, and when separation occurs, it often requires rebonding of the prosthesis. Primers have been used to increase bond strength. This article describes the repair of a partially separated liner (Fig. 1).

PROCEDURE

1. Heat the original molds in a laboratory oven (LO) (Imperial V, Lab-Line Instruments, Inc, Melrose Park, Ill) at 170°F for 5 minutes. If large prostheseside undercuts are present, duplicate the mold using a silicone-based duplicating material (Elite Double 8, Zhermack, Inc, Eatontown, NJ). Pour impressions and eliminate undercuts.

2. Apply separating fluid (Separating Fluid; Ivoclar Vivadent, Schaan, Liechtenstein) to the mold and return it to the LO for 15 minutes.

3. While the molds are in the LO, carefully separate weakly bonded areas between the silicone and polyurethane liner, and clean with soap and water. Note: Steps 3-6 should be performed while the prosthesis is outside of the molds.

4. Place the prosthesis in the LO at 170°F for 2-3 minutes. While it is warm, clean the separated polyurethane liner carefully with commercial pure acetone (Humco Holding Group, Texarkana, Tex) and a sterile cotton-tipped applicator (Citmed, Citronelle, Ala). Use a minimum amount of acetone, to prevent the liner from distorting. When dry, repeat twice.

5. Return the prosthesis to the LO for 1-2 minutes. Apply primer (Sofreliner Primer; Tokuyama Dental Corp, Tokyo, Japan) with a fresh cotton-tipped applicator, and avoid distorting the liner. When dry, repeat twice.

6. Apply silicone medical adhesive (Silastic Medical Adhesive Silicone, Type A; Dow Corning, Midland, Mich) or a mixture of 7:3 Silastic Medical Adhesive Type A and silicon (MDX4-4210; Factor II, Inc, Lakeside, Ariz) between the elastomer and existing polyurethane liner. Use slight finger pressure to express excess and remove bubbles or voids.

7. Return molds from the LO. Place the prosthesis in the mold, assemble, clamp, and return it to the LO at 170°F for 15 minutes. Remove the prosthesis from the LO and allow it to bench polymerize overnight (Fig. 2).

REFERENCES


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Influence of abutment material on stability of peri-implant tissues: A systematic review

Purpose: The aim of this systematic review was to evaluate available evidence for a difference in the stability of peri-implant tissues between titanium abutments versus gold alloy, zirconium oxide, or aluminum oxide abutments.

Materials and Methods: Studies were identified by examining several electronic databases and major dental implant, prosthetic, and periodontal journals. To be selected for the preliminary article pool, the article must have been written in the English language and published from 1980 to March 2007. Articles were sorted based on the nature of the study. In vitro studies and literature reviews were excluded. The included articles were clinical, human histology, and animal studies. Case reports, case series, uncontrolled clinical trials, and clinical studies with teeth treated as a control were excluded from the final review.

Results: The initial article pool included 40 articles of which 9 met the inclusion criteria: 3 animal studies, 2 human histological studies, and 4 randomized clinical trials. Soft tissue recession was not accurately measured in the included clinical studies. Assessment of peri-implant tissues around zirconium oxide and titanium abutments was described only in animal and human histologic studies. Due to differences in study types, timing of follow-ups, and outcome variables, meta-analysis could not be performed.

Conclusion: Included studies revealed that titanium abutments did not maintain a higher bone level in comparison to gold alloy, aluminum oxide, or zirconium oxide abutments. However, there is a lack of information about the clinical performance of zirconium oxide and gold alloy abutments as compared to titanium abutments.

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