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<th>Use and design of magnets in denture retention</th>
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<td>Author(s)</td>
<td>Dias, AP; Darvell, BW</td>
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<td>Citation</td>
<td>73rd General Session and Exhibition of the International Association for Dental Research, Singapore, 28 June-1 July 1995. In Journal of Dental Research, 1995, v. 74 n. Sp Iss, p. 585 Abstract no. 1477</td>
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<tr>
<td>Issued Date</td>
<td>1995</td>
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<tr>
<td>URL</td>
<td><a href="http://hdl.handle.net/10722/53203">http://hdl.handle.net/10722/53203</a></td>
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Dent. Res. 74 (IADR Abstracts) 1995

1473 Effects of Cross-Linking Agents on Properties of HEBA-based Denture Base Resin, T. Adr, J. P. Matze, and J. P. Matze. (University of Gothenburg, Sweden)

The use of 2-hydroxyethyl methacrylate (HEMA) as a polymerizable material has been well documented. The purpose of this study was to evaluate the effects of cross-linking agents on denture base resins. In a previous study, the use of cross-linking agents was shown to improve the mechanical properties of HEMA-based resins. The effect of cross-linking agents on the mechanical properties of HEMA-based resins was investigated in this study. The results showed that the cross-linking agents improved the mechanical properties of the resins.


The water uptake characteristics of soft lining materials are of obvious importance as they are expected to function as an interface in the mouth. It has been reported that some soft lining materials have been shown to have a high uptake of material from distilled water (abstract #1383 IADR, 1994). However, in this study, Nova s in solution for 9 hours in distilled water and two saline solutions (0.4% NaCl and 0.9% NaCl) showed a lower uptake of material than the new materials. In addition, the results of this study also showed that the external solution was less effective in leaching the materials.

1475 Creep and Dynamic Mechanical Behavior of two Denture Bases Resins, K. MAURO, H. KOGA, and J. VAIYADHYANATH (J UMDNJ, Newark, NJ, USA)

The purpose of this study was to evaluate the creep behavior of two denture base resins under cyclic loading. The results showed that the creep behavior of the resins was affected by the cyclic loading. The results also showed that the cyclic loading had a significant effect on the creep behavior of the resins.

1476 Water Sorption of Microwaved, Self and Heat Cure Resins, A. SAMANT, J. VAIYADHYANATH, and G. CILLI. (UMDNJ-NJIT, Newark, NJ, USA)

Although microwaving offers important advantages in the fabrication of denture bases over conventional curing, inadequate information is available on the properties of microwaved cure denture base resins. The purpose of this study was to investigate the effects of microwaving on the properties of microwaved cure denture base resins. The results showed that microwaving had a significant effect on the properties of the resins.

1477 Use and Design of Magnets in Denture Retention, A. P. Dixa and W. B. Davar. (Prince Philip Dental Hospital, The University of Hong Kong, Hong Kong)

Although rare-earth alloy magnets have been used to retain prostheses and to move teeth for over fifteen years, the literature on these systems can be characterized in general as lacking reference to physical principles. The use of magnets in denture retention systems has been demonstrated to be effective in improving the retention of dentures.

1478 Simultaneous Determination of Leachable Substances from Denture Base Polymers, T. HONGO and S. SATO (Tokyo Medical and Dental University, Tokyo, Japan)

Residual monomer levels in denture base polymers have become very important from the point of view of the quality of dental restorations and biocompatibility. There have been several reports regarding levels of residual monomer in acrylic resins, little is known about reports on quantitative analysis of all substances leached out from acrylic resins except monomer. The purpose of this study is to develop a new determination method for leachable substances in acrylic resins using HPLC. Conventional heat-cured acrylic resin (ACR) and heat and pressure-cured acrylic resin (ACR-P) were used as specimens and immersed in ethanol. The identification and determination of leachable substances was performed by using HPLC.

1479 Computer-Aided Instruction by Virtual Reality System in Clinical Dentistry, T. SUZUKI, T. KUROMORI, (Research Center for Biomedical Engineering, Kyushu University, Kyushu, Japan)

In Clinical Dentistry, the heuristic knowledge of dynamic treatment procedures such as diagnosis, treatment plans, and surgical plans may be hardly be handed only by references or manual training. Employing new computer technology, Virtual Reality (VR) system, our approach is to develop a "therapeutic simulator" which will the role of an expert dentist. As a part of this research project, a 3-dimentional dental application a multi-faced 3D digilizer was developed to obtain positional and kinematic data of the hand movement of dentures during treatment. In addition, it will be possible to simulate the actual treatment using the computer system.

1480 A Novel Method for the Implication of Tooth Preparations, A. J. L. M. DOORNBOS and V. P. DOORNBOS (University of Manchester, UK)

Prior to this investigation, a simple means of accurately reproducing a number of in vivo preparations for the laboratory testing of materials or performance of restorations that had not been described. In this study, a new copy metal model method (CMM) was introduced. In-vivo preparations were made by means of a metal replica method and by taking wax impressions of the teeth. The teeth were then sectioned and the replica was made. The final impression of the metal replica was then made and used to duplicate the in-vivo preparations.

This study was supported by a Grant-in-Aid for Scientific Research from the Ministry of Health and Welfare of Japan and in part a Grant-in-Aid for Scientific Research (No. 05454290) from the Ministry of Education, Science and Culture of Japan.