

Author:  [ADVANCED](#)

Volume Page

Keyword:    [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1881-1361

PRINT ISSN : 0287-4547

**Dental Materials Journal**

Vol. 25 (2006) , No. 3 p.604-610

[\[Image PDF \(1323K\)\]](#) [\[References\]](#)**Accuracy of Temporary Laser Welding of FPDs by Nd:YAG Laser in the Oral Cavity**[Chiharu SHIN](#)<sup>1)</sup>, [Hiroyuki MIURA](#)<sup>1)</sup>, [Daizo OKADA](#)<sup>1)</sup> and [Ariko YAMAZAKI](#)<sup>1)</sup>

1) Fixed Prosthodontics, Department of Restorative Sciences, Division of Oral Health Sciences, Graduate School, Tokyo Medical and Dental University

(Received January 30, 2006)

(Accepted July 24, 2006)

**Abstract:**

The purpose of this study was to investigate the accuracy of temporary fixation with laser welding for fixed partial dentures (FPDs). Five kinds of experimental FPD with different welding/soldering gaps were fabricated (0, 20, 50 $\mu$ m for welding; 300 $\mu$ m for soldering). Then, FPDs were temporary-fixed by laser welding or with a self-curing resin. Fixation accuracy was evaluated by the change in distance and the angular deformation between two retainers. The change in distance and the angular deformation between two retainers of the FPD without welding/ soldering gap were significantly larger than the other FPDs ( $p < 0.05$ ). With due consideration to the displacement of teeth or implants especially in the mesiodistal direction, and by taking into account the inevitable errors of the indirect method, it seemed reasonable to provide a welding space of approximately 20 $\mu$ m.

**Key words:**[Nd:YAG laser](#), [Temporary laser welding](#), [Deformation](#)[\[Image PDF \(1323K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)[RIS](#)[BibTeX](#)

To cite this article:

Chiharu SHIN, Hiroyuki MIURA, Daizo OKADA and Ariko YAMAZAKI. Accuracy of Temporary Laser Welding of FPDs by Nd:YAG Laser in the Oral Cavity . Dent. Mater. J. 2006; 25: 604-610 .

---

doi:10.4012/dmj.25.604

JOI JST.JSTAGE/dmj/25.604

Copyright (c) 2009 The Japanese Society for Dental Materials and Devices

---



---

[Japan Science and Technology Information Aggregator, Electronic](#)

