

Author: [ADVANCED](#)

Volume Page

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

ONLINE ISSN : 1881-1361

PRINT ISSN : 0287-4547

Dental Materials Journal

Vol. 26 (2007) , No. 4 p.598-601

[\[PDF \(197K\)\]](#) [\[References\]](#)**Analysis of Internal Defects in All-ceramic Crowns Using Micro-focus X-ray Computed Tomography**[Takashi NAKAMURA](#)¹⁾, [Kazumichi WAKABAYASHI](#)¹⁾, [Yoshiko KAWAMURA](#)¹⁾,
[Soichiro KINUTA](#)¹⁾, [Yoshihiko MUTOBE](#)¹⁾ and [Hirofumi YATANI](#)¹⁾

1) Department of Fixed Prosthodontics, Osaka University Graduate School of Dentistry

(Received December 22, 2006)

(Accepted March 8, 2007)

Abstract:

The purpose of this study was to examine all-ceramic crowns for internal defects using micro-focus X-ray computed tomography (microCT). Mono-ceramic CAD/CAM crowns, ceramic-core CAD/CAM crowns, and heat-pressed ceramic crowns were used as specimens. The microCT images of the specimens were obtained and analyzed using a 3D volume rendering software.

Mono-ceramic CAD/CAM crowns contained almost no pores, while ceramic-core CAD/CAM crowns contained pores only in the porcelain veneer area. Heat-pressed ceramic crowns had lots of pores in the cusps and the area around them.

Results of this study indicated that internal pores in all-ceramic crowns could be observed non-destructively using microCT, and that CAD/CAM all-ceramic crowns contained fewer pores than crowns fabricated using manual techniques.

Key words:[MicroCT](#), [All-ceramic crown](#), [Internal defect](#)[\[PDF \(197K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)[RIS](#)[BibTeX](#)

To cite this article:

Takashi NAKAMURA, Kazumichi WAKABAYASHI, Yoshiko KAWAMURA, Soichiro KINUTA, Yoshihiko MUTOBE and Hirofumi YATANI. Analysis of Internal Defects in All-ceramic Crowns Using Micro-focus X-ray Computed Tomography . Dent. Mater. J. 2007; 26: 598-601 .

doi:10.4012/dmj.26.598

JOI JST.JSTAGE/dmj/26.598

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



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

