ONLINE ISSN : 1881-1361
PRINT ISSN : 0287-4547

Dental Materials Journal
Vol. 29 (2010) , No. 2 p.132-137

[PDF (4134K)] [References]

Construction of database for three-dimensional human tooth models and its ability for education and research - Carious tooth models -

Sakae NAGASAWA[1)2)], Takamitsu YOSHIDA[1)2)], Kaoru TAMURA[2)], Masatoshi YAMAZOE[1)4)], Keigo HAYANO[2)], Yoshinori ARAI[1)], Hirohito YAMADA[3)], Etsuo KASAHARA[3)] and Michio ITO[1)2)]

1) Division of Biomaterials, Department of Hard Tissue Research, Graduate School of Oral Medicine, Matsumoto Dental University
2) Department of Dental Materials, Matsumoto Dental University
3) Department of Endodontics and Operative Dentistry, Matsumoto Dental University
4) Yamamoto Precious Metal Co. Ltd.

(Received February 9, 2009)
(Accepted October 8, 2009)

Abstract:
To construct a human teeth database which is freely available to researchers and students, three-dimensional human tooth models were generated in a previous study, by means of micro-CT, from 35 human teeth extracted during orthodontic treatment. In this study, X-ray images of 55 extracted human teeth were acquired using three-dimensional micro-CT at a resolution of 50×50×50 μm, and then visualized using a numerical data visualization software. These carious tooth models provided insight into the morphology and progression of carious defects as well as a rare insight into the morphology of carious tooth pulp, therefore rendering them as a useful tool and efficient method for dental students' learning. Moreover, these three-dimensional models could be simultaneously observed and used by many students and researchers at any one time, which was a superior advantage than having only one actual tooth for learning and study by many.

Key words:
Micro-CT, Three-dimensional tooth models, Carious tooth

To cite this article:

Sakae NAGASAWA, Takamitsu YOSHIDA, Kaoru TAMURA, Masatoshi YAMAZOE, Keigo HAYANO, Yoshinori ARAI, Hirohito YAMADA, Etsuo KASAHARA and Michio ITO. Construction of database for three-dimensional human tooth models and its ability for education and research - Carious tooth models - . Dent. Mater. J. 2010; 29: 132-137 .

---

doi:10.4012/dmj.2009-013

JOI JST.JSTAGE/dmj/2009-013