

[Available Issues](#) | [Japanese](#)>> [Publisher Site](#)

Author: [ADVANCED](#) | Volume Page
 Keyword:



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

PRINT ISSN : 0040-8891

The Bulletin of Tokyo Dental College

Vol. 46 (2005) , No. 1/2 :7-15

[\[PDF \(949K\)\]](#) [\[References\]](#)

Relationship between Large Tubules and Dentin Caries in Human Deciduous Tooth

[Hiroko Agematsu](#)¹⁾, [Shinichi Abe](#)¹⁾, [Kazunari Shiozaki](#)²⁾, [Akinobu Usami](#)³⁾, [Shigemitsu Ogata](#)⁴⁾, [Kazunari Suzuki](#)¹⁾, [Masakazu Soejima](#)¹⁾, [Masaharu Ohnishi](#)¹⁾, [Kanzo Nonami](#)¹⁾ and [Yoshinobu Ide](#)¹⁾

1) Department of Anatomy, Tokyo Dental College

2) Department of Anatomy, Tsurumi University, School of Dental Medicine

3) Division of Oral Anatomy, Department of Morphological Biology, Ohu University School of Dentistry

4) Department of Clinical Nursing, School of Health Sciences, Faculty of Medicine, Kagoshima University

(Received April 20, 2005)

(Accepted June 15, 2005)

Abstract: The purpose of this study was to elucidate the relationship between large tubules and dentin caries by using human deciduous incisors that showed various levels of attrition but no macroscopical lesions resulting from caries. The teeth were cut longitudinally in the mesio-distal direction and the exposed surfaces observed with a high-resolution field emission scanning electron microscope. The inside of each large tubule showed dense collagen fibers running parallel to its long axis and small spherical bodies of aggregated crystals, but no marked attrition. In teeth where attrition had exposed dentin at the incisal edge, oral bacteria had infiltrated the large tubules. Furthermore, in teeth with advanced attrition, it was difficult to distinguish between the large tubules and the surrounding dentin matrix, and numerous bacteria were observed in both areas. These findings support the hypothesis that large tubules play a role in the pathway of caries formation in coronal dentin when incisal dentin is exposed by attrition. This suggests that early treatment of exposed dentin surfaces might be effective in preventing dental caries.

Key words: [Large tubule](#), [Deciduous tooth](#), [Dentin caries](#), [Attrition](#), [SEM](#)

To cite this article:

Hiroko Agematsu, Shinichi Abe, Kazunari Shiozaki, Akinobu Usami, Shigemitsu Ogata, Kazunari Suzuki, Masakazu Soejima, Masaharu Ohnishi, Kanzo Nonami and Yoshinobu Ide: "Relationship between Large Tubules and Dentin Caries in Human Deciduous Tooth". The Bulletin of Tokyo Dental College, Vol. **46**: 7-15 (2005) .

doi:10.2209/tdcpublication.46.7

JOI JST.JSTAGE/tdcpublication/46.7

Copyright (c) 2005 by Tokyo Dental College, Japan



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

