

Cariology and Operative Dentistry

1. Staffs and Students (April, 2009)

Professor	Junji Tagami		
Associate Professor	Masayuki Otsuki		
Junior Associate Professor	Toru Nikaido,	Masatoshi Nakajima	
Assistant Professor	Takako Yoshikawa, Yuichi Kitasako, Go Inoue, Keiichi Hosaka	Yasushi Shimada, Ryuzo Kishikawa, Eitetsu Cho,	
Specially Appointed Junior Associate Professor (GP)		Khairul Matin,	Hidekazu Sonoda
Specially Appointed Junior Associate Professor (GCOE)		Alireza Sadr	
Specially Appointed Junior Associate Professor		Shoji Nakashima	
Specially Appointed Assistant Professor		Ichiro Ikeda	
Hospital Staff	Tomohiro Takagaki, Takehiro Takaoka,	Meu Ariyoshi, Mariko Naito	
Technical assistant	Peththahandi Gayani Kanchana Waidyasekera, Atia Anjum		
Secretary	Shiori Ogi,	Tomoko Okura	
Graduate Student	Ayako Arimoto, Miho Tsujimoto, Masako Okuma, Lei Zhu, Oto Aramaki, Fahimeh Hayati, Chiaki Ichikawa, Fumihiko Mori, Tomoyuki Takai, Naoko Seki, Rena Takahashi, Ryoichirou Uchida, Keisuke Kambara, Takehiro Oyangai, Eri Tano, Wongyon Min, Chika Yahagi, Amir Nazari, Prasansuttiporn Taweesak, Yumi Imamura, Iori Gando, Emi Kuribayashi, Hitomi Mita, Tuki Abdlsam Bakhsh	Shima Ito, Yoshiko Kondo, Kanakano Shida, Kanakano Aoki, Mie Fujii, Kanakano Horie, Ayaka Kishi, Keizo Tanno, Patricia Makishi, Yuko Shinoda, Masahiro Takahashi, Hidenori Hamba, Sitthikorn Kunawarote, Miyuki Tanaka, Mako Tsubone, Yuko Natsume, Hamid Nurrohman, Inaz Hariri, Kanakano Imai, Sachiko Utaka, Masaru Kirihara, Wakae Sakano, Suppason Thittaweerat,	
Research Student	Shinji Ogura, Yuka Takano, Toshiaki Hirano, Tomomasa Nomura, Hiroyuki Takanashi,	Mineo Kijima, Kaoruko Tanaka, Shigeyuki Nagai, Hiroshi Sato, Yumiko Fujita	
Intern	Takako Ide, Rena Maruoka, Masahiro Ono,	Tomoko Mizutani, Mariko Ui, Ayano Ishikawa	
Visiting Researcher	Na Li		

2. Purpose of Education

Cariology and Operative Dentistry section offers a four-year graduate program. First-year graduate students attend lectures and seminars given in the graduate school and are expected to gain an understanding of the fundamentals about methodology and the knowledge necessary for their research. The contents of the classes given in our section include topics related to cariology and operative dentistry: caries diagnosis, biocompatibility, caries treatment and restoration, prevention and control, dental materials, new instruments and equipment. In keeping with the internationally orientated philosophy of this section, lectures are conducted in English and are open to all foreign students. First-year graduate students also undergo clinical training the procedures of modern adhesive restorations. Laboratory work, which commences in the first year, is performed under the supervision of our faculty staff. During the four-year program, several papers are required to be presented in domestic and / or international conferences and submitted to journals. The minimum requirements are completing the prescribed courses, a supervised research project and a dissertation for the degree published in a top international journal.

3. Research Subject

Mechanism of dentin bonding
 Adhesive of resin restoration systems to tooth substance and other restorative materials
 Structure, diagnosis and treatment of dentin caries
 Physic-chemical and manipulative properties of restorative materials
 Durability of restorative materials
 Pulpal response to restorative materials
 Improvement of various restorative techniques for direct and indirect restorations
 Improvement of various esthetic treatment techniques
 Caries risk assessment and prevention of recurrent caries
 Development and introduction for clinical works of OCT (Optical coherence tomography)

4. Clinical Service

Operative Dentistry clinic provide restoration of teeth with fillings for dental cavities, trauma and tooth wear, and root canal treatments.

5. Publications

Original Articles

1. Aksornmuang J, Nakajima M, Panyayong W, Tagami J. Effect of photo-curing strategy on bonding of dual-cure one-step self-etch adhesive to root canal dentin. *Dent Mater* 28(2): 133-141, 2009.
2. Anjum A, Otsuki M, Matin K, Tagami J. Preservation in the liquid media produces alterations in enamel surface properties. *J Dent* 37 (11) 884-890, 2009.
3. Bakry AS, Nakajima M, Otsuki M, Tagami J. Effect of Er-YAG Laser on dentin bonding durability under simulated pulpal pressure. *J Adhes Dent* 11 (5) 361-368, 2009.
4. Carrilho MR, Tay FR, Donnelly AM, Agee KA, Carvalho RM, Hosaka K, Reis A, Loguercio AD, Pashley DH. Membrane permeability properties of dental adhesive films. *J Biomed Mater Res B Appl Biomater.* 88(2):312-20, 2009.
5. Chung CW, Yiu CK, King NM, Hiraishi N, Tay FR. Effect of saliva contamination on bond strength of resin luting cements to dentin. *J Dent* 37(12) 923-31, 2009.
6. Dhanpal P, Yiu CK, King NM, Tay FR, Hiraishi N. Effect of temperature on water sorption and solubility of dental adhesive resins. *J Dent* 37(2) 122-32, 2009.
7. Gyo M, Okada A, Ono M, Tagami J, Matin K. Effects of alkali-ion water on single species *Streptococcus mutans* biofilm. *Int Chin J Dent* 9: 55-60, 2009.
8. He Z, Otsuki M, Sadr A, Tagami J. Acid resistance of dentin after erbium:yttrium -aluminum-garnet laser irradiation. *Lasers Med Sci* 24(4): 507-513, 2009.
9. Hiraishi N, Yiu CK, King NM, Tay FR. Effect of pulpal pressure on the microtensile bond strength of luting resin cements to human dentin. *Dent Mater* 25(1) 58-66, 2009.
10. Hiraishi N, Yiu CK, King NM, Tay FR. Effect of 2% chlorhexidine on dentin microtensile bond strengths and nanoleakage of luting cements. *J Dent* 37(6) 440-8, 2009.
11. Hiraishi N, Yiu CK, King NM, Tay FR. Antibacterial effect of experimental chlorhexidine-releasing polymethyl methacrylate-based root canal sealers. *J Endod.* 35(9) 1255-8, 2009.

12. Hosaka K, Nishitani Y, Tagami J, Yoshiyama M, Brackett WW, Agee KA, Tay FR, Pashley DH. Durability of resin-dentin bonds to water- vs. ethanol-saturated dentin. *J Dent Res* 88(2):146-151, 2009.
13. Iida Y, Nikaido T, Kitayama S, Takagaki T, Inoue G, Ikeda I, Foxton RM, Tagami J. Evaluation of dentin bonding performance and acid-base resistance of the interface of two-step self-etching adhesive systems. *Dent Mater J* 28(4): 493-500, 2009.
14. Ikeda I, Otsuki M, Sadr A, Nomura T, Kishikawa R, Tagami J. Effect of filler content of flowable composites on resin-cavity interface. *Dent Mater J* 28(6): 679-685, 2009.
15. Inoue G, Nikaido T, M Foxton R, Tagami J. The acid-base resistant zone in three dentin bonding systems. *Dent Mater J* 28(6): 717-721, 2009.
16. Kitasako Y, Burrow MF, Huq LN, Stacey MA, Reynolds EC, Tagami J. A simplified quantitative test-adapted Checkbuf test-for resting saliva buffering capacity compared with a standard test. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 108(4): 551-556, 2009.
17. Kitayama S, Nikaido T, Maruoka R, Zhu L, Ikeda M, Foxton RM, Miura H, Tagami J. Effect of an internal coating technique on tensile bond strengths of resin cements to zirconia ceramics. *Dent Mater J* 28: 4: 446-453, 2009.
18. Kitayama S, Foxton RM, Nasser NA, Bravis T, Pilecki P, Wilson RF, Nikaido T, Tagami J, Watson TF. Effect of resin coating on adhesion and microleakage of CAD/CAM fabricated all-ceramic crowns after occlusal loading: a laboratory study. *Eur J Oral Sci* 117: 454-462, 2009.
19. Mai S, Kim YK, Hiraishi N, Ling J, Pashley DH, Tay FR. Evaluation of the true self-etching potential of a fourth generation self-adhesive methacrylate resin-based sealer. *J Endod* 35(6) 870-4, 2009.
20. Nakata K, Nikaido T, Ikeda M, Foxton RM, Tagami J. Relationship between fluorescence loss of QLF and depth of demineralization in an enamel erosion model. *Dent Mater J* 28(5): 523-529, 2009.
21. Nikaido T, Weerasinghe D, Waidyasekera K, Inoue G, Foxton RM, Tagami J. Assessment of the nanostructure of acid-base resistant zone by the application of all-in-one adhesive systems: Super dentin formation. *Bio-Med Mater Eng* 19:163-171, 2009.
22. Ogisu S, Kishikawa R, Otsuki M, Matoba K, Sadr A, Inai N, Tagami J. Effect of convergent light-irradiation on microtensile bond strength of resin composite to dentin. *Int Chin J Dent* 9:45-53, 2009.
23. Sadr A, Shimada Y, Lu H, Tagami J. The Viscoelastic Behavior of Dental Adhesives: A Nanoindentation Study. *Dent Mater* 25(1): 9-13, 2009.
24. Shida K, Kitasako Y, Burrow MF, Tagami J. Micro-shear bond strengths and etching efficacy of a two-step self-etching adhesive system to fluorosed and non-fluorosed enamel. *Eur J Oral Sci* 117(2):182-186, 2009.
25. Shimada Y, Ichinose S, Sadr A, Burrow MF, Tagami J. Localization of matrix metalloproteinases (MMPs-2,8,9 and 20) in normal and carious dentine. *Australian Dental Journal* 54(4): 347-354, 2009.
26. Shinohara MS, De Goes MF, Schneider LF, Ferracane JL, Pereira PN, Di Hipolito V, Nikaido T. Fluoride-containing adhesive: Durability on dentin bonding. *Dent Mater* 25(11):1383-1391, 2009.
27. Suyama Y, Otsuki M, Ogisu S, Kishikawa R, Tagami J, Ikeda M, Kurata H, Cho T. Effects of light sources and visible light-activated titanium dioxide photocatalyst on bleaching. *Dent Mater J* 28(6): 693-699, 2009.
28. Tajima K, Nikaido T, Inoue G, Ikeda M, Tagami J. Effects of coating root dentin surfaces with adhesive materials. *Dent Mater J* 28 (5): 578-586, 2009.
29. Takagaki T, Nikaido T, Tsuchiya S, Ikeda M, Foxton RM, Tagami J. Effect of hybridization on bond strength and adhesive interface after acid-base challenge using 4-META/MMA-TBB resin. *Dent Mater J* 28:185-193 2009.
30. Taniguchi G, Nakajima M, Hosaka K, Iwamoto N, Ikeda M, Foxton RM, Tagami J. Improving the effect of NaOCl pretreatment on bonding to caries-affected dentin using self-etch adhesives. *J Dent* 37(10):769-775, 2009.
31. Torkabadi S, Nakajima M, Ikeda M, Foxton RM, Tagami J. Influence of bonded enamel margins on dentin bonding stability of one-step self-etching adhesives. *J Adhes Dent.* 11(5): 347-353, 2009.
32. Waidyasekera K, Nikaido T, Weerasinghe DS, Ichinose S, Tagami J. Reinforcement of dentin in self-etch adhesive technology: A new concept. *J Dent* 37(8): 604-609, 2009.
33. Wattanawongpitak N, Nakajima M, Ikeda M, Foxton RM, Tagami J. Microtensile bond strength of etch-and-rinse and self-etching adhesives to intrapulpal dentin after endodontic irrigation and setting of root canal sealer. *J Adhes Dent* 11(1): 57-64, 2009.
34. Zhu L, Nikaido T, Kitayama S, Ikeda M, Foxton RM, Tagami J. Effect of surface abrasion and silica coating on tensile bond strength of a resin cement to zirconia ceramics. *Int Chin J Dent* 9:23-30, 2009.

Restorative Sciences

Review articles

1. Maruoka R, Nikaido T, Kitayama S, Kunzelmann KH, Tagami J. Resin coating technique. *Aesthetische Zahnmedizin*. 12: 1: 24-29, 2009

Books