

Fixed Prosthodontics

1. Staffs and Students(April, 2009)

Professor	Hiroyuki MIURA	
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Graduate Student	Emi NISHIJIMA, Koichiro YUSA, Haruomi ABE, Reiko OGURA, Ning XU, Reina NEMOTO,	Chalida NAKALEKHA, Kenichi GOSHIMA, Jinbao MA, Naosuke KUMAGAE, Satoshi OMORI, Sachi MAKINO

2. Purpose of Education

The major subjects of the studies are occlusion of Cr-Br prostheses (fixed restoration such as crown and fixed partial denture), analysis of mandibular movement, influence of crown and periodontal tissue and its systemic affect, accuracy of manufacturing processes of crown (i.e. casting, soldering, luting and adjustment of occlusion), functional analysis of stomatognathic system and development of apatite ceramic implant. The research themes are investigated with measurement systems of mandibular movement, measuring instruments of tooth micro-displacement, electromyography, measurement apparatus of dimensional accuracy, EPMA (electron probe microanalyzer) for analyzing very small amount of dental alloy and histopathological methods. Clinical training and general lecture on prosthodontics are prepared for the graduate students in the first year. After the second year they will have special training for their research methods and experiments will be performed according to the research plan. In the last year the students will write the paper for thesis under the direction of the professor.

3. Research Subjects

- 1) Occlusion and Mastication.(mandibular position, mandibular movement, articulator, masticatory efficiency)
- 2) Influence of occlusal contact on stomatognathic system including periodontal tissues. (Tooth displacement, distortion of alveolar bone, occlusal contact, proximal contact etc.)
- 3) Clinical application of All-Ceramic CAD/CAM FPDs.
- 4) Influence of occlusal height for an important prosthesis on the periodontal tissues of the antagonist.
- 5) Application of laser welding in crown and bridge restorations.
- 6) Influence of dental materials for periodontal tissues and biological body.
- 7) Functional analysis of abnormal stomatognathic function

4. Clinical Services

1) Clinic for prosthodontics (Prosthodontics practice clinic)

This clinic is organized by clinical teams, and 4 to 8 dentists compose 1 team working in cooperation between teams. Here offers a complete range of restorative, rehabilitative, and esthetic dentistry, treatment types include since simple one teeth to complete oral rehabilitation using the latest technologies.

2) Clinic for dental allergy (Dental allergy clinic)

This clinic provides allergy tests test for dental alloys and dental materials on potential patients before dental treatment, besides, patients with skin and/or oral diseases histories induced by previous dental restorations. The causal allergen/s is/are identified by patch tests or if some metal restoration is allergy set on, is analyze by Electron Probe

Micro Analyzer (EPMA), removing out only restoration such content allergens.

5. Publications

Original Article

1. Suzuki C, Miura H, Okada D, Komada W, Miyasaka M, Yamamoto M, Masuoka D: Investigation of distortions around the cervical area of teeth restored with two kinds of crown materials. *Dent Mater J* 28: 142-152, 2009.
2. Yamamoto M, Miura H, Okada D, Komada W, Masuoka D: Photoelastic stress analysis of different post and core restoration methods. *Dent Mater J* 28: 204-211, 2009.
3. Fukui Y, Komada W, Yoshida K, Otake S, Okada D, Miura H: Effect of reinforcement with resin composite on fracture strength of structurally compromised roots. *Dent Mater J* 28: 602-9, 2009.
4. Kawashima K, Miura H, Kato H, Yoshida K, Tanaka Y: The communiton behavior of food on buccal and lingual side during mastication. *J med dent sci* 56: 131-138, 2009.
5. Okayasu H, Miura H, Okada D, Shin C. Relationship between Upper and Lower Molars during Mastication, *J Med Dent Sci* 56: 91-9, 2009.
6. Nozaki K, Kaku M, Yamashita Y, Yamauchi M, Miura H: Effect of cyclic mechanical loading on osteoclast recruitment in periodontal tissue. *J Periodont Res*;45:8-15, 2010. (Published Online: Jul 8 ,2009)
7. Kenichi Goshima, Michala O. Lexner, Carsten Eckhart Thomsen, Hiroyuki Miura, Klaus Gotfredsen, Merete Bakke: Functional aspects of treatment with implant-supported single crowns: a quality controlstudy in subjects with tooth agenesis. *Clinical Oral Implants Research* 21 (1): 108-114, 2010. (Published Online: Oct 21, 2009)