Oral Implantology and Regenerative Dental Medicine

1. Staffs and Students (April 2009)

Professor	Shohei KASUGAI	
Associate Professor	Makoto SHIOTA	
Junior Associate Professor	Noriko TACHIKAWA	
Assistant Professor	Hisatomo KONDO (- July 2009),	Shinji KURODA,
	Motohiro MUNAKATA (Nov 2009 -)	
Technician	Michiko SUZUKI	
Dentists	Yoko YAMAGUCHI,	Hidemi NAKATA,
	Aoi SAKUYAMA,	Toru KANAI,
	Yuki SHIMIZU,	Hiroshi KOBAYASHI,
	Takahiro NAKAMURA	
Graduate Students	Maho OZEKI (-March),	Kazuhiro KON (-March),
	Tetsu MACHIDA (-March),	Katsuichiro MARUO (-March)
	Norihide UENO,	Junhi PARK,
	Myat NYAN,	Hudieb, Malik Ismail,
	Junichi KIMURA,	Yuki DATE,
	Kanako NORITAKE,	Takayuki MIYAHARA,
	Robiani, Hisham,	Jia HAO,
	Reena RODORIGUEZ,	Tokuo AKINO,
	Tomoko NAGAYAMA,	Masaki FUJII,
	Akiko FURUICHI,	Ossama ZAKARIA,
	Shang GAO,	Masahiro SHIMOGISHI,
	Kang CHEN,	Yasunobu HADA,
	Maruwa MADI (October-)	

2. Purpose of Education

Currently, oral rehabilitation with dental implant is very effective and predictable. It is absolutely important for the dental student to understand dental implant treatment compared to other modalities. Nine hours lectures for the 5th year dental students are the introduction part. Each of these students has a chance to see patient examination process and several steps of treatment planning for half a day in the dental implant clinic. Furthermore, each of the 6th year students have a chance to see surgical procedures, prosthodontic treatments and maintenance procedures. In the residential program, we accepted 20 dentists and teach them more advanced contents of dental implant treatment.

In the doctoral course of Implantology, biomaterial sciences, structural engineering, anatomical structures, diagnosis and technical innovations are overviewed. In the doctoral course of Regenerative Dental Medicine, tissue engineering concept, regeneration of soft tissue and bone and recent technological advancements in these field are overviewed.

3. Research Subjects

Materials and structures of dental implant prostheses
Implant design and surface modification of dental implant
Dental implant and its surrounding tissues
Regeneration of soft tissues
Regeneration of bone

4. Clinical Survices

In Dental Implant Clinic in the dental hospital, we treat partially or fully edentulous patients with dental implants. If soft tissue management and/or bone augmentation procedures are required, we also do these surgeries. Number of patients in Dental Implant Clinic is increasing every year and approximately 120 patients per day are treated, which is extremely over our capacities. Approximately 1,800 implants were installed in 2009. As dental implant clinic of TMDU, patients with some problems, who are treated by other dentists, are increasing and this is a great concern.

5. Publications

Original Articles

1 Kon K, Shiota M, Ozeki M, Yamashita Y, Kasugai S. Bone augmentation ability of autogenous bone graft particles with different sizes: a histological and micro-computed tomography study. Clinical Oral Implants Research 20(11):1240-6, 2009

2. Ikeda E, Morita R, Nakao K, Ishida K, Nakamura T, Takano-Yamamoto T, Ogawa M, Mizuno M, Kasugai S, Tsuji T. Fully functional bioengineered tooth replacement as an organ replacement therapy. Proc Natl Acad Sci U S A. 106(32):13475-80, 2009
3. Kobayashi H, Katakura O, Morimoto N, Akiyoshi K, Kasugai S Effects of cholesterol-bearing pullulan (CHP)-nanogels in combination with prostaglandin E1 on wound healing. Journal of Biomedical Material Research, Part B: Applied Biomaterials 91(1):55-60, 2009
4. Nakamura T, Shiota M, Kihara H, Yamashita Y, Kasugai S. Effects of granule size and surface properties of red algae-derived resorbable hydroxyapatite on new bone bormation. Journal of Oral Tissue Engineering, 6(3): 167-179, 2009
5. Okabayashi S, Takayama K, Kuroda S, Kanai T, Fujii S, Sato M, Kasugai S. Hydroxyapatite fiber material for bone tissue engineering Journal of Oral Tissue Engineering 6(3):180-188, 2009
6. Kondo H, Amizuka N, Kihara H, Furuya J, Kuroda S, Ozawa S, Ohya K, Kasugai S. The target cells of parathyroid hormone (PTH) anabolic effect in bone are immature cells of osteoblastic lineage. Journal of Oral Tissue Engineering 7(1):2-14, 2009
7. Oda M, Kuroda S, Kondo H, Kasugai S. Hydroxyapatite fiber materialwith BMP-2 gene induces ectopic bone formation. Journal of Biomedical Material Research, Part B: Applied Biomaterials 90(1):101-9, 2009
8. Nyan M, Sato D, Kihara H, Machida T, Ohya K, Kasugai S. Effects of the combination with alpha-tricalcium phosphate and simvastatin on bone regeneration. Clinical Oral Implant Research 20(3):280-7 2009