

Developmental Oral Health Sciences

1. Staffs and Students (April, 2010)

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2. Purpose of Education

Pediatric dentistry is a subject of clinical dentistry that deal with education and research of not only developmental oral health sciences but also prevention and treatment methods of the diseases which disturb oro-facial growth and development of children. The main objective of pediatric dentistry in this graduate course is to provide students an opportunity to study the theory and the method for the guidance of the oro-facial growth and development and for the diagnosis, prevention and treatment of diseases and malfunctions which disturb the oro-facial growth and development during the period of childhood.

Oral pediatrics is a subject of clinical dentistry that deal with education and research of not only maintenance and promotion of the oral health for growing children but also prevention and treatment methods of diseases and malfunctions which disturb oral health of growing children. The main objective of oral pediatrics in this graduate course is to provide students an opportunity to understand that a child is a living body with mental, physical, and physiological characteristics which are different from those of adults and to study the pathogenesis, prevention, and treatment of the particular oral diseases in childhood. Students are also taught the theory and the method of ongoing health care that is necessary for maintaining and promoting oral health from infant to adult. In addition, they are taught the clinical significance and importance of the behavioral management of child patients and the necessity and importance of understanding and cooperation of the parents to it.

3. Research Subjects

- 1) Physiological and biological studies on the stomatognathic function of children
- 2) Studies on the development and developmental disturbance of the teeth
- 3) Studies on the growth and development of the maxillofacial cranium and the dentition
- 4) Development of the new materials for endodontic treatment of deciduous and immature permanent teeth
- 5) Basic research on clinical pediatric dentistry

4. Clinical Services

The pediatric dentistry clinic in the department of oro-facial development and function provides the comprehensive dental treatment for a child while growing. The examination, diagnosis, and treatment of the oral diseases and the oral abnormalities are performed in the clinic. In addition, health guidance, preventive measures, and the long-term oral health management by the periodical checking system are carried out, in order to keep and promote oral health from infant to adult.

5. Publication

Original Article

1. Imamura Y, Tanaka Y, Nagai A, Yamashita K, Takagi Y. Self-sealing ability of OCP-mediated cement as a deciduous root canal filling material. *Dental Material Journal*, 29:582-588, 2010
2. Isokawa N, Ochiai S, Mito T, Ishibashi N, Kindaichi J, Ishikawa M, Takagi Y. Three-dimensional comparison in palatal forms between the Modified Presurgical Nasoalveolar Molding Plate and the Hotz Plate applied to the infants with unilateral cleft lip and palate. *Singapore Dental Journal*, 31(1):1-7, 2010.
3. Alles N, Soysa NS, Hayashi J, Khan M, Shimoda A, Shimokawa H, Ritzeler O, Akiyoshi K, Aoki K, Ohya K. Suppression of NF-kappaB increases bone formation and ameliorates osteopenia in ovariectomized mice *Endocrinology*, 151(10):4626-34, 2010
4. Kanayama K, Sriarj W, Shimokawa H, Ohya K, Doi Y, Shibutani T. Osteoclast and osteoblast activities on carbonate apatite plates in cell cultures. *J Biomater Appl*. 2010 Jul 12. [Epub ahead of print]
5. Soysa NS, Alles N, Weih D, Lovas A, Mian AH, Shimokawa H, Yasuda H, Weih F, Jimi E, Ohya K, Aoki K. The pivotal role of the alternative NF-kappaB pathway in maintenance of basal bone homeostasis and osteoclastogenesis. *J Bone Miner Res*, 25(4):809-18, 2010