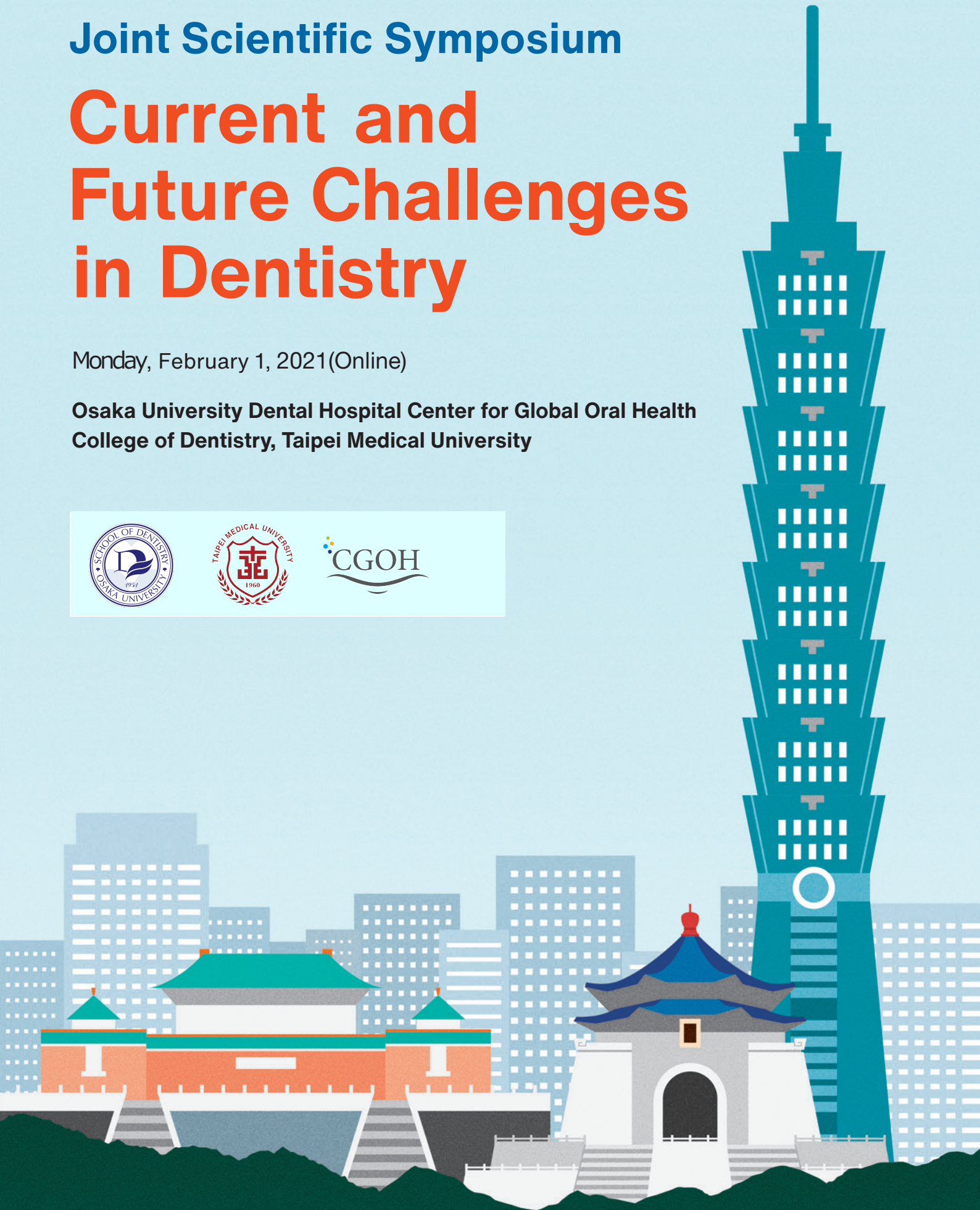


Joint Scientific Symposium

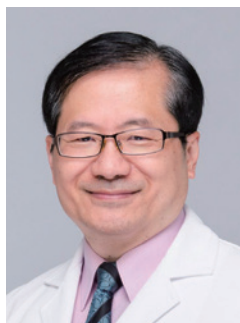
Current and Future Challenges in Dentistry

Monday, February 1, 2021(Online)

Osaka University Dental Hospital Center for Global Oral Health
College of Dentistry, Taipei Medical University



Message from the Dean



The College of Oral Medicine, Taipei Medical University was established in 2000. Our mission is cultivating the next generation oral medical practitioners and researcher. As the Dean of College of Oral Medicine, with the vision of striving to become the leading college in oral medicine internationally, our four principle strategies are “diversified development, team effort, global integration, and sustainable management”.

The Osaka University is our important partner in Japan. The students from our School of Dentistry are supported to learn in Osaka University during summer and they carry their experience into their internship. Moreover, they also introduced what they have learned in this journey. It is about time to leveling our academic collaboration.

We are delightfully invited by Osaka University to co-organize the symposium titled “Current and Future Challenges in Dentistry”. Since we keep our eyes on the challenges in dental education in many dimension, the three topics we would like share are in the specialties of Orthodontics, Prosthodontics, and Pedodontics.

The 2021’s symposium is considered a milestone of cooperation in research between Osaka University and Taipei Medical University. Although the outbreak of coronavirus has barricaded us in our homeland, but the internet created a new channel to crossover it and keeps us connected.

We look forward to building a new bridge to joint research in dental medicine after the internet assembly and earnest hope that it will prove pleasant and rewarding to you.

A handwritten signature in black ink that reads "Hsin-Chung Cheng".

Hsin-Chung CHENG, DDS, MS, PhD

Dean & Professor

College of Oral Medicine Taipei Medical
University

Message from the Director



It is our great pleasure to work with Taipei Medical University in co-organizing the Joint Scientific Symposium, especially in this difficult time with all the challenges of COVID-19. The theme of the Symposium, entitled, “Current and Future Challenges of Dentistry” is extremely timely. The pandemic has presented us with numerous limitations and obstructions.

I would like to introduce The Center for Global Oral Health (CGOH), which was established in 2015 at the Osaka University Dental Hospital as an integrated center to promote collaborations in clinical research and education in dentistry worldwide. Osaka University Dental Hospital, where the CGOH is based, has established itself as a pioneer in global oral health research and education: it provides patients with high quality treatment, using the latest research and the best scientific evidence; it offers clinical training to undergraduates and postgraduates that incorporates the latest global knowledge and experience.

Since the pandemic hit us all last year with severe restrictions on travel, global activities anywhere in the world have been constrained. However, I believe this symposium will offer a memorable milestone in our international co-operation. I hope Taipei Medical University and Osaka University will share our comprehensive knowledge and experience and new and exciting ways for expanding our future international collaboration.

A handwritten signature in black ink, appearing to read 'Mikako Hayashi', written over a light blue grid background.

Mikako HAYASHI, DDS, PhD

Director of Osaka University Dental Hospital

Online Joint Scientific Symposium

“Current and Future Challenges in Dentistry”

Date: February 1(Mon), 2021

Place (Online): College of Dentistry, Taipei Medical University

Osaka University Dental Hospital

Taipei(CST)	Osaka(JST)	
13:00-13:10	14:00-14:10	Opening Remark Prof. Hsin-Chung CHENG (Dean of College of Oral Medicine, Taipei Medical University) Prof. Mikako HAYASHI (Director of Osaka University Dental Hospital)
13:10-13:30	14:10-14:30	Shinya MURAKAMI (Osaka University) Regroth®, the novel FGF-2 medicine for periodontal regeneration, paves the way to the future of regenerative medicine
13:30-13:50	14:30-14:50	Hsin-Chung CHENG (Taipei Medical University) The affecting factors of smiling esthetics on orthodontic treatment from evidence-based researches and clinical applications
13:50-14:10	14:50-15:10	Mikako HAYASHI (Osaka University) How best to prevent and manage root caries in elderly
14:10-14:30	15:10-15:30	Nai-Chia TENG (Taipei Medical University) Toward dental caries: exploring prevention further than restoration
14:30-14:50	15:30-15:50	Kazuhiko NAKANO (Osaka University) Novel guidelines for prevention of infective endocarditis in Japan
14:50-15:10	15:50-16:10	Sheng-Wei FENG (Taipei Medical University) Prosthetic rehabilitation of edentulous patients with implant overdentures: a 5-year evaluation
15:10-	16:10-	Closing Remark Prof. Takashi YAMASHIRO (Vice Director of Osaka University Dental Hospital, Director of Center for Global Oral Health, Osaka University Dental Hospital)

Regroth[®], the novel FGF-2 medicine for periodontal regeneration, paves the way to the future of regenerative medicine



Shinya MURAKAMI, DDS, PhD

Professor and Chair
Department of Periodontology
Osaka University Graduate School of Dentistry

2019-2020	President of Japanese Society of Periodontology
2016-2019	Director of Osaka University Dental Hospital
2008-2016	Vice Director of Osaka University Dental Hospital
2002-present	Professor and Chair, Department of Periodontology, Osaka University Graduate School of Dentistry
2000-2002	Associate Professor, Department of Periodontology, Osaka University Graduate School of Dentistry
1992- 2000	Assistant Professor, Department of Periodontics, Osaka University Dental Hospital
1990-1992	Instructor, Department of Periodontology, Osaka University Graduate School of Dentistry
1988-1990	Visiting Fellow, National Cancer Institute, NIH, USA
1988	Ph.D., Osaka University Graduate School of Dentistry
1984	D.D.S., Osaka University Faculty of Dentistry

Abstract

Enhancing the biological potential of mesenchymal stem cells within periodontal ligament and stimulating the periodontal regeneration are recognized as being clinically possible. Basic Fibroblast Growth Factor (FGF-2) is known to stimulate the proliferation, migration of a variety of cell types and to strongly induce angiogenesis. The preclinical studies using beagles demonstrated that topical application of human recombinant FGF-2 (hrFGF-2) into intraosseous alveolar bone defects stimulated significant periodontal tissue regeneration accompanied with neogenesis of cementum, alveolar bone and fibrous attachment. In randomized controlled double-blinded clinical trials conducted in Japan, a significant difference in % increase in alveolar bone height at 2- or 3-walled intrabony defects of the periodontitis patients was demonstrated by standardized radiographs between Placebo Group and 0.3% hrFGF-2 Group at 9 months after the treatment. This FGF-2 medicine for periodontal regeneration has finally become commercially available (Regroth[®]) in Japan. Interestingly, it has been suggested that concomitant use of Regroth[®] with bone filling material significantly increased the efficacy, compared to the bone filling material alone. In addition, the preclinical studies using beagles demonstrated that Regroth[®] could promote the stability of dental implants with low primary stability. In this symposium, I would like to demonstrate the data of mode of actions, efficacy and safety of (Regroth[®]) and the clinical cases and to discuss the new era of regenerative therapy in dentistry, which Regroth[®] can pave the way.



The affecting factors of smiling esthetics on orthodontic treatment from evidence-based researches and clinical applications



Hsin-Chung CHENG, DDS, MS, PhD

Dean and Professor
College of Oral Medicine, Taipei Medical University
Orthodontic Department, Taipei Medical University Hospital

Professor Cheng is and the current Dean and Professor on College of Oral Medicine, Taipei Medical University, and the President of Taiwan Association of Orthodontists (TAO) (2017-2018). He has been the chairman and editor in chief of TAO Journal Committee (2013-2016). He graduated from school of dentistry, Taipei Medical University in 1983 and got Master degree and PhD from the same university in 1995 and 2008, respectively. He practiced in orthodontic department at his hospital and also engaged in teaching and research in his school of dentistry for over 25 years.

His major researches were surface treatment of orthodontic TADs and high molecular orthodontic material, esthetic smile in orthodontics, efficient orthodontic treatment of anterior cross-bite, evidence based in orthodontics..., etc. He has published over 300 different kinds of academic and clinical papers and been also invited to make lectures about his associated researches around the Asian countries and got an enthusiastic response.

Abstract

The clinical problems resolution and application of evidence-based information to patients have been much improved since the evidence-based medicine (EBM) developed in two decades. From the history development of EBM, the evidence-based dentistry (EBD) was severely behind than EBM. Most of dentistry remains in the "rule of thumb", representing a lack of scientific evidence, there is a great the improvement of space! For the orthodontics, the relevant discussion of EBD was emphasized only in recent years. This report will be presented first from the development and application of EBD, and then introduce the Cochrane Library website in the Cochrane Database of Systematic Reviews, consists of thousands have been systematic review evidence report on the steps to collect. My meta- analysis and clinical related researches of the smiling esthetic on orthodontic extraction will be described. I will also introduce the clinical application of my evidence-based researches and present lots of interesting clinical orthodontic cases in this report. Finally, I will take some home messages to the audiences about the clinical considerations of smiling esthetics on orthodontic extraction treatment.



How best to prevent and manage root caries in elderly



Mikako HAYASHI, DDS, PhD

Professor and Chair
Department of Restorative Dentistry and Endodontology
Osaka University Graduate School of Dentistry

Dr. Mikako Hayashi has been Professor and Head of the Department of Restorative Dentistry and Endodontology since April 2012. She graduated from Osaka University in 1987 and was awarded her PhD in 1998. From 2001 to 2002, she spent 18 months at University of Manchester, UK doing research on restorative dentistry and dental materials. During her stay in UK, she joined the Cochrane Collaboration (Oral Health Group) and learned evidence-based medicine.

She is currently a director of the university dental hospital. Her research interests are dental materials, clinical cariology and contemporary endodontics.

Abstract

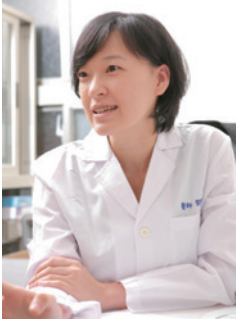
Japan has set the laudable goal of 80-20 meaning that at the age of 80, people would have at least 20 of their natural teeth. But to achieve this, dentistry needs to undergo a paradigm shift. Everyone involved, government and dentists particularly must enhance the concept of Minimal Intervention (MI). Experts from the Japanese Society of Conservative Dentistry in 2009 published a Guideline for evidence-based treatments of caries based on MI policy. This was followed in 2015 by an expanded version incorporating recommendations for remineralizing incipient enamel and root caries.

The aim was to make drilling of healthy tooth a thing of the past. This will make it easier to keep healthy teeth longer as well as taking a lot of the pain out of dental treatments.

Specially in elderly people, preventing and managing root caries is critical to keep their healthy oral condition. This presentation will explain the latest scientific evidence, the best modern materials, the advanced clinical techniques that are combining with MI to make dentistry a key partner in helping patients lead longer healthier lives.



Toward dental caries: exploring prevention further than restoration



Nai-Chia TENG, DDS, PhD

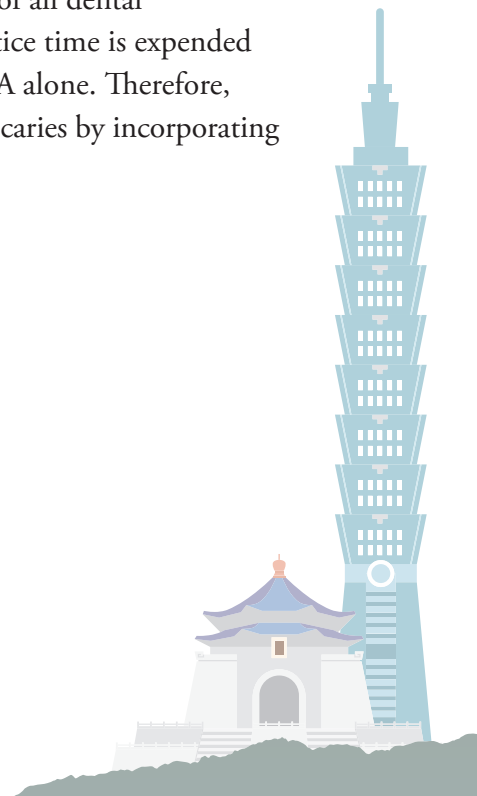
Professor and Chair
School of Dentistry, Taipei Medical University
Department of Pediatric Dentistry, Taipei Medical University Hospital

Dr. Naichia Teng, pediatric dentist (Ph.D.-dentistry), now is the professor of Dental school, head of the Department of Pediatric Dentistry education program. She got her DMD degree ((Doctor of Dental Medicine) at Taipei Medical University, Ph.D. degree and specialist of pediatric dentistry at Tokyo Medical and Dental University. Her biomaterials training and research were started at institute of Biomaterials and Bioengineering of Tokyo Medical and Dental University. Currently Dr. Naichia Teng researches focus on the bone graft, and dental material. Studies are on the mechanisms of bone regeneration and enamel remineralization.

Abstract

Millions of people worldwide suffer from a toothache due to tooth cavity, and often permanent tooth loss. Dental caries, also known as tooth decay, is a biofilm-dependent infectious disease that damages teeth by minerals loss and presents a high incidence of clinical restorative procedure. Basically, dental caries is a multifactorial disease, but demineralization of susceptible dental hard tissues resulting from acidic by-products from bacterial fermentation of dietary carbohydrates is considered to be the fundamental mechanism. The complexity of oral biofilms contributes to the difficulty in developing effective novel dental materials.

Previous studies demonstrated that secondary caries and bulk fracture are considered to be the most important factors leading to dental composite restoration failure, among which secondary caries are a main reason for replacing the existing restoration materials. As a result, half of all dental restorations fail within 10 years, and nearly 60 % of the average dentist's practice time is expended on replacing them. Replacement dentistry costs \$5 billion annually in the USA alone. Therefore, there is a great need to explore novel anti-caries materials to combat secondary caries by incorporating bioactive agents possessing remineralization and antibacterial properties.



Novel guidelines for prevention of infective endocarditis in Japan



Kazuhiko NAKANO, DDS, PhD

Professor and Chair
Department of Pediatric Dentistry
Osaka University Graduate School of Dentistry

2018.4-present Vice Dean, Osaka University Graduate School of Dentistry
2014.8-present Professor and Chair, Dept. of Pediatric Dentistry, Osaka University Graduate School of Dentistry
2002.11 PhD (Osaka University)
1990.4-1996.3 Osaka University Faculty of Dentistry (DDS)
1971.11 Born in Naha, Okinawa

Standing Director, Japanese Society of Pediatric Dentistry
Board Certified Fellow and Trainer of Japanese Society of Pediatric Dentistry

Abstract

Infective endocarditis (IE) is reported to be an important systemic disease and not uncommon in the field of dentistry. Approximately 1 of 100 newborns in Japan are complicated with congenital heart disease, with most at risk for developing IE. At our institution, antibiotics are prescribed for prevention prior to invasive dental treatments such as tooth extraction, which can cause bacteremia. Guidelines for prevention of IE used in the United States have been updated several times since the original version published in 1955 by the American Heart Association (AHA). When the author graduated from university in 1996, no specific guidelines for Japan existed, thus clinicians commonly referred to those published in 1997 by the AHA, which were subsequently updated in 2007 (AHA 2007). Japanese guidelines were initially published in 2003 by the Japan Circulation Society (JCS 2003) and later updated in 2008 (JCS 2008). In 2016, the author was invited to join the committee for developing a new set of guidelines (JCS 2017) as an update to JCS 2008 and has since been collaborating with medical doctors who are experts in related fields.

Inclusion of the author was the first time for a dentist to be asked to work with the committee for developing Japanese guidelines. Thus, information related to dentistry was provided with as much detailed description as possible. As a result, methods for prevention of IE in the field of dentistry in association with the basic concepts were added to the revised guidelines, as well as recommended protocols regarding use of specific antibiotics and their dosage. In this presentation, a summary of the JCS 2017 guidelines will be given, including concepts described therein for prevention of IE, especially those related to the dentistry field.



Prosthodontic rehabilitation of edentulous patients with implant overdentures: a 5-year evaluation



Sheng-Wei FENG, DDS, MS, PhD

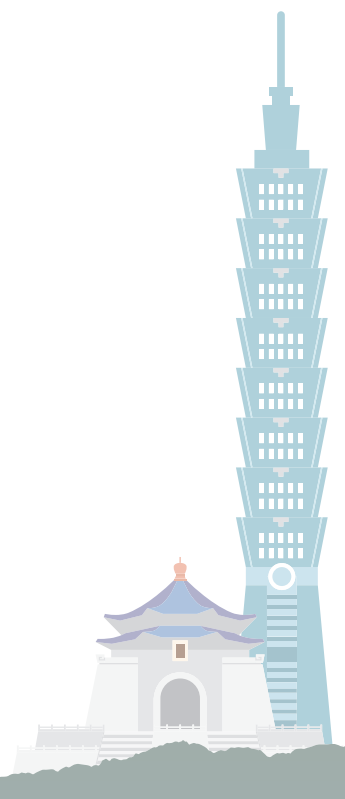
Associate Professor and Chair
School of Dentistry, Taipei Medical University
Department of Dentistry, Taipei Medical University Hospital

Associate Professor Sheng-Wei Feng received his Ph.D. diploma from School of Dentistry, Taipei Medical University in 2014. He practiced in prosthodontic at Taipei Medical University Hospital and has been engaging teaching and servicing in School of Dentistry over 10 years. His research interests are dental implant, tissue engineering and regenerative therapy and is an experienced researcher.

Abstract

In the past, traditional complete denture therapy is the only treatment option for the fully edentulous patients, especially for the elderly. Although the clinical application of dental implants can efficiently rehabilitate oral esthetics and function, complications were still occurred after several years of follow up. Most clinical complications are related to prosthetic design, fabrication and maintenance. For the elderly, different concern and viewpoints should be considered before the implant placement.

Implant-retained overdenture can increase denture retention and stability with high patient satisfaction/quality of life, cost-effectiveness, and masticatory performance. Therefore, the lecture will present the clinical performance and complications with the treatment concept of implant-retained overdentures after 5 to 7 years of function. In addition, how to effectively apply implant-retained overdentures in clinic will also be presented.



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