外賓演講

Treatment consideration for successful implant therapy in the geriatric patients

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As a large percentage of our aging population is edentulous (Morais et al., 2003; MacEntee, 2007), there has been a significant increase in the implant therapy over the past few decades, Although concerns has been raised when treating the geriatric patient, studies indicate implant therapy can be successful even in this patient category. Some studies indicate that edentate people have poorer nutrition than those with teeth (Sahyoun et al., 2003), as well as being more vulnerable to disease (Lowe et al., 2003). Furthermore, findings from several studies suggest that the number of teeth is a significant, independent risk indicator for mortality and that use of adequate dentures may reduce this risk (Abnet et al., 2005; Padilha et al., 2008). It has therefore been proposed that a mandibular two-implant overdenture (IOD) should be the first choice standard of care, considering the scientific evidence supporting its use, for elderly edentate individuals (Feine et al., 2002; Timmerman et al., 2004; Thomason et al., 2009). A panel of prosthodontic experts from US dental schools supported treatment with IODs over conventional dentures (CDs) (Das et al., 2012), in agreement with the McGill (Feine et al., 2002) and York Consensus Statements (Thomason et al., 2009), which were based on research demonstrating the superiority of mandibular

IODs over CDs for many variables, including oral health–related quality of life (Awad et al., 2000; Jofre et al., 2013), patient satisfaction (Thomason et al., 2003; Heydecke et al., 2008), food avoidance (Gjengedal et al., 2012), chewing ability (de Oliveira and Frigerio, 2004), and food preparation (Awad et al., 2012). Simple, fast, and minimally invasive treatment concepts has been suggested to be more important to meet the needs of elderly adults with compromised physical health (Walton and MacEntee, 2005; Müller et al., 2011). A reduced chewing efficiency may not only compromise the pleasures of dining but also affects food choice and nutritional intake (Sheiham et al., 2001). The objectives of this presentation is to discuss 1) what the concern are when a geriatric patients have insufficient number of teeth 2)the treatment options for the geriatric patient with missing teeth and when implant therapy is indicated 3) specifically what physical and medical limitations affect the outcome of implant therapy in the geriatric patient 4) Treatment and treatment outcomes that can be expected when performing implant therapy on the geriatric patient 5) Maintenance protocol post- implant treatment in the geriatric patient

6) Our experiences at University of Rochester Eastman Institute for Oral Health. with the geriatric patient

歯周組織再生療法的可能性與挑戰
Possibilities and Challenges in Periodontal Regeneration

北島 一 (Hajime Kitajima)

The key to achieving successful regenerative therapy is to precisely evaluate each clinical case on its own merits. As a first step, we must consider the patients local and systemic factors, life habits, and level of compliance as initial variables for regenerative therapy candidacy. If these cases have good prognosis we can next consider the type and classification of osseous defects. There are 4 general types of bone loss; dehiscence defects, infrabony defects, suprabony defects, and furcation involvement. There is much evidence in the literature supporting regenerative possibilities for infrabony defects, and to a lesser extent dehiscence defects. Regenerative therapy for furcation involvement is considered uncertain, and the regeneration of suprabony defects is viewed as an impossibility. However this is not always the case as I will demonstrate in this presentation.

Furthermore, it is possible for an initial poor prognosis to be changed to a favorable one, even in infrabony defect cases where bone resorption is advanced as far as the root apex.

Regenerative therapy is not only for severe infrabony defect cases, but has potential for some types of suprabony defects as well. For example it could be beneficial for increasing vertical tissue height, especially in the esthetic zone, or in cases where the suprabony defect is adjacent to an implant site and treated together.

In this presentation, I will discuss regenerative therapy possibilities for cases with dehiscence, infrabony, or suprabony defects. I will also describe how to overcome functional or esthetic problems through analyzing periodontal clinical cases.

接着歯学在審美修復治療上的應用
Aesthetic Restoration based on Adhesive Dentistry

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Amakawa Dental Office Gaiemmae, Tokyo, Japan

These years, Aesthetic restorative treatment has become popular to the general public, due to the progress of excellent materials for aesthetics in adhesive dentistry. On the other hand, because of the varieties of materials developed, it also makes the selection of restorative methods and materials more complicated. To gain predictable results, we have to understand scientific backgrounds.

I hear a lot of this in my practice recently: " I want to have a beautiful smile without preparing my teeth", "I want you to restore my teeth with a composite resin". Through the Internet, patients already understand the recent development of restorative dentistry very well. In other words, "Aesthetic Restoration" is no longer the same as the "preparation and setting crown". Minimally invasive treatment (MI treatment), such as composite resin or laminate veneer, is a very effective aesthetic restorative treatment unlike preparing the natural tooth to satisfy the client's need. Dentists better have several options of adhesive restorations to meet the patient's expectations.

My philosophy in dentistry is to provide a relaxing and healing atmosphere with high quality treatment. My office specializes in quality Esthetics and Endodontic treatments. For those propose, microscope is essential. The use of magnification combined with light enables us also to do precise treatment.

In this presentation, technical aspects of an aesthetic treatment utilizing adhesive concepts and importance of microscope for esthetic restoration will be discussed with clinical cases.

Radiation dose management for dental radiography

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School of Dentistry, Seoul National University, at Seoul, Korea.

In dentistry, intraoral radiography, panoramic radiography, cephalography and cone-beam computed tomography (CBCT) are abundantly performed diagnostic x-ray examination.. A worldwide effort is ongoing to reduce patient radiation dose in diagnostic imaging. The principles of radiation protection, suggested by the International Commission for Radiation Protection (ICRP), consist of justification, optimization, and individual dose limitation. Under these principles, patient dose in medicine, in fact, may be unlimited if the justification and optimization are satisfied. Thus, application of the optimization principle in diagnostic imaging should be officially observed so that diagnostic image quality can be achieved with a minimal radiation dose.

The objectives of this presentation are to (1) understand the Diagnostic Reference Level (DRL); (2) review the inspection methods and items for panoramic radiography and CBCT, which would be emphasized considering their unique geometry;

(3) explain an integrated program for patient dose monitoring. Dental x-ray image acquisition machines including CBCT, panoramic radiography and intraoral radiography were divided into three groups; group A) with dose report, B) without dose report but DICOM header includes exposure condition information, and C) without dose related information. A system for automatic transport of dose report was developed for group A. Automatic exposure condition extraction and transportation system was developed for group B. Manual entering system was developed for group C; (4) introduce the evaluation method of image quality with laboratory phantom and clinical evaluation.

In conclusion, we will discuss the methods for optimization and monitoring of patient radiation exposure to increase patients benefit while reduce the hazard.

The Japanese experience in oral health and care for the special needs from the past to the future

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Special needs Dentistry, Matsumoto Dental University
at Shiojiri, Nagano, Japan

Persons with disabilities need support by law, have limitations in life, and their disease does not heal. WHO indicates that “Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions.” Some laws help people with disabilities in Japan. Persons with disabilities are not always patients in Special Need Dentistry. The patients in Special Needs Dentistry need the special care in dental treatment. Our patients have many kinds of diseases, such as intellectual disability, autism spectrum disorders, Down syndrome, congenital heart disease, acquired heart disease, cerebral palsy, epilepsy, Parkinson's disease, cerebral vascular disease, heart failure, renal failure, ALS, elderly needing nursing care, and mental illness.

The common problem in Special Needs Dentistry is that people with disabilities cannot receive dental treatment; persons with intellectual disabilities or Autistic spectrum disorder refuse dental treatment. 15~25% of patients in Special Needs Dentsitry are difficult to treat. Behavior management during dental treatment includes behavior modification, nitrous oxide inhalation sedation, intravenous sedation, deep sedation, intravenous anesthesia, and general anesthesia. In order to carry out these methods, the education and environmental improvements are required. Japanese Society for Disability and Oral Health and the Dental School of Japanese universities were responsible for the education and developed the Special Needs Dentistry. In order to carry out deep sedation, intravenous anesthesia and general anesthesia, each medical facility such as university hospitals, hospital dentistry, dentistry in facilities for the disabled, the center of the Dental Association in a city or prefecture, have placed staff and medical devices. Especially, the dental health care center of the Dental Association in a city or prefecture was established in various parts of Japan, which has played an important role in the advanced dental care institution.

The most important is education about dental health care of people with special needs. The Dental Clinic and Dental Association Center of the region carry out the regular dental check up of persons with special needs, maintained their dental health. Persons with special needs who have had periodic dental examination carried out have less dental decay than healthy persons in Japan.

The cooperation of the Japanese Society for Disability and Oral Health, local government and universities has developed special needs dentistry in Japan. However, there are several problems. The current Special Needs Dentistry and the transition of education (Japanese Society for Disability and Oral Health, dental school of universities) and the dental care environment will be described in Japan.

How do we improve patient safety in dentistry?

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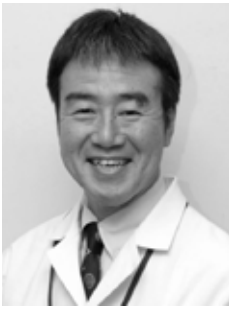
Japanese population has been running into a unique super aged society in the world. According to the Annual Report on the Aging Society published by the Cabinet Office, in 2015, elderly people (aged 65 and over) accounted for 26.7% of the country's population, while the proportion of those aged 75 and over reached its highest level of 12.9%. With the arrival of the full-blown super-aging society, the number of elderly patients presenting at dental clinics is also rising, as is the proportion of sick and elderly patients with multiple systemic complications. Patients feel stress during dental treatment at a level more than that we dentists expect. Stressors during dental treatment include anxiety, fear, and other forms of psychological stress; pain and other forms of physical stress; and medication-induced stress. Normally, the biological reaction to these stressors is within the patient's physiological reserved capacity, and thus does not become a problem. Elderly patients and those with underlying systemic diseases, however, may possess few physiological reserves capacity, and stressors may induce unexpectedly serious accidents. The Japanese Dental Society of Anesthesiology Accident Countermeasures Committee carried out a survey of Dental Associations in municipalities and wards throughout the country that covered case reports of dental treatment accidents, and found that acute myocardial infarction and acute heart failure caused by cardiomyopathy or cardiac valvulopathy accounted for approximately 40% of deaths during dental treatment, and that cerebrovascular disorders such as cerebral hemorrhage and cerebral infarction for approximately 20%. Over half of all accidents that occurred at dental clinics, including fatal accidents, developed during or immediately after local anesthesia, and the total was over 70% when those that occurred during dental treatment were included. Naturally, if dentists are to provide safer and more comfortable dental treatment in the future, it will be more important than ever for us to correctly understand the characteristics of the underlying systemic diseases suffered by our patients before carrying out dental treatment that takes account of their general condition.

In this presentation, I will explain the efforts made in Japan with respect to the risk management and crisis management required for providing safe dental treatment, and describe the training system for dental students that are implemented at Japanese university dental schools in relation to treatment safety. It is my hope that the content will contribute toward improving the safety of dental treatment in Taiwan.

Sedation for persons with disabi lities



深山治久 (Haruhisa Fukayama)
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Sedation is composed of 2 methods, nitrous oxide inhalation sedation and intravenous sedation. Nitrous oxide for inhalation sedation is usually used less than 30 % in oxygen, which means more oxygen than air can be given to the patients. However, for persons with disabilities, its sedative effect cannot be expected.

Intravenous sedation is indicated for the category of those patients, like mentally retarded, autism, cerebral palsy, epilepsy, Down's syndrome and so on. Generally, intravenous sedation keeps the patient conscious, or, awake, and anxiety and fear will be diminished.

Our academic society, Japanese Dental Society of Anesthesiology (JDSA) have a guideline for intravenous sedation, which emphasizes that the patient should be conscious during sedation. However, persons with disabilities cannot be accepted and their dental treatments cannot be accomplished even conscious sedation is used. For these patients, what is called deep sedation is often applied using benzodiazepine derivatives and intravenous anesthetics.

Deep sedation keeps the patient unconsciousness and immobile, resulting in more precise and longer procedures. The possible complications caused by deep sedation are respiratory depression and hemodynamic depression. Securing airway like endotracheal intubation or supraglottic airway is not indicated in deep sedation. In the absence of secured airway, respiratory depression brings critical life-threatening situation of the patients. Hemodynamic depression sometimes occurs by intravenous anesthetics like propofol. These complications are often hazardous and need prompt treatments including emergency endotracheal intubation, administration of vasoactive drugs, and cardiopulmonary resuscitation.

The dentists who administer intravenous sedation for the patients with disabilities should have some competencies.

1) Precise evaluation of the patients. Medical interviews can reveal the patients' health conditions, which include indications and contra-indications for intravenous sedation.

2) Pharmacodynamics of administered drugs. The characters of benzodiazepine derivatives and intravenous anesthetics should be learned for administration.

3) Careful monitoring of the patients. Blood pressure, heart (pulse) rate, electrocardiogram (ECG), respiratory rate, arterial oxygen saturation (SpO2), bispectral index (BIS) are candidates for safe intravenous sedation.

4) Venipuncture technique. Securing intravenous route is necessary for sedation.

5) Some medical devices. Besides monitoring machine for vital signs, electric syringe pump is recommended for propofol administration.

6) Medical person. Medical doctors and nurses are better to be stand-by for emergency situations. Emergency hospital is also recommended to transfer the patients when necessary.

Intravenous sedation of special needs dentistry is different from the one for the ordinary patients. Often deep sedation is applied to special care patients. Evaluation of the patients, careful monitoring, and titrated dosage are required for safe and comfortable treatment.

全瓷贋復體之現況
Dental ceramics: state of the art

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Department of Clinical and Community Sciences UAB School of Den;stry

This lecture will summarize the currently available classes of dental ceramics including zirconia, translucent zirconia, lithium disilicate, and porcelain.

Results of various research project will be described to explain strength, wear, and translucency of these materials.

Clinical recommendations will also be presented, including: bonding, adjustment, polishing, crown design, and crown removal.

天然抗菌物：抗毒力防齲新模式研究进展
Plant-Derived Antimicrobials as Innovative Virulence-Targeted Anti-Caries Therapy

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Dental caries, the most common infectious disease of mankind, is a multifocal disease influenced by interactions among the host, diet, susceptible tooth surfaces, and plaque bacteria. The adherent plaque biofilm has been closely associated with caries and periodontal disease. While mechanical removal remains the most effective means of plaque control, chemical adjuncts, including fluoride, with antimicrobial or bactericidal properties have been developed to control plaque mediated oral diseases. However, due to the increased incidence of resistant organisms and the adverse effects of existing therapies, "non-bactericidal" or "virulence-targeted" therapies are receiving increasing attention. The identification of alternatives to traditional antimicrobial treatment, to target cariogenic virulence factors without necessarily killing or suppressing the pathogen or resident oral species, is an innovative concept in caries management.

In recent years, there has been a popular demand for "natural alternatives" that provide oral health benefits vs. the use of synthetic antimicrobial chemicals. Considerable effort has been expended to develop natural products as caries-preventive agents. Plants including fruits and vegetables contain biologically active phytochemicals that suppress oral bacteria associated with caries, periodontal disease, and other oral diseases. Despite the advances made in the identification of food components and development of food products with disease preventing and health promoting benefits, the general public seems less aware of foods that promote oral health. The underlining hypothesis of our research is that selected foods or higher plants possess antimicrobial phytochemicals capable of suppressing growth and virulence factors of oral pathogens, thereby reducing risks of oral diseases and promoting oral health.

Using an interdisciplinary research approach involving dentistry, oral microbiology, and natural products chemistry, we have developed methodologies for screening, fractionating and identifying oral antimicrobials from plant sources. Our laboratory and human studies data have shown that selected plant-based food/beverages or plant-derived compounds were capable of reducing oral malodor, dental plaque biofilm acid production and demineralization of dental hard tissues.

The concept of oral disease prevention using naturally occurring substances in the diet is a practical approach toward reducing caries incidence and benefits overall health. If sequenced properly between meals and oral hygiene, many foods or beverages may have added oral health benefits by controlling, through "prevention", the most prevalent diseases of mankind.

Paradigm Shift of Periodontal Treatment and New Clinical Indicators - New value of peripheral blood antibody against Porphyromonas gingivalis -

Hidemi Kurihara, Yuushi Uchida, Kazuhisa Ohara, Noriyoshi Mizuno, Tsuyoshi Fujita
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Here, I would like to discuss about new clinical meaning of periodontal disease on the progression of medical and dental cooperation.

Periodontal disease is known to link to many systemic diseases. Diseases based on metabolic syndrome and aging are linked to periodontal disease. It is reported recently that periodontal disease influence to institutional bacterial flora. These research results have increased importance of medical and dental cooperation in future. Dentists and medical doctors will exchange information of patient status more frequently.

There are many examinations for periodontal treatment, however these examinations are only for treatment of periodontally diseased teeth. There is no examination to express total mass of periodontal disease in each patient in daily treatment. Japanese Society of Periodontology (JSP) announced and recommends using a classification of periodontitis on severity for clinical study. The classification is based on levels of high sensitive C-reactive protein and Shei's bone resorption score. That is, the classification is based on levels of disease progression and inflammation. Here, I would like to discuss from three different aspects, infection, inflammation and dysfunctions.

I will pick up peripheral blood IgG antibody against Porphyromonas gingivalis as a indicator of total mass of "infection level" of periodontitis.

Total sum of all pocket depth measured by 6-point method (total pocket depth, TPD), iTPD that is TPD modified by positive ratio of BOP (bleeding on probing) in all probed periodontal pockets and PISA, periodontal inflammatory surface area, are candidates for total inflammation degree in each patients. Measuring occlusal force is a candidate for indicator of "oral dysfunction" on periodontitis.

Think about peripheral blood IgG titer against P. gingivalis. IgG titer against P. gingivalis is high at the first visit of patient with periodontitis and decreases by adequate periodontal treatment. However, there are many patients who have left periodontitis without treatment for long time. Many reports have indicated that P. gingivalis is detected in regions of arteriosclerosis and non-alcohol steatohepatitis (NASH) and patients with rheumatoid arthritis or NASH show high IgG titer against P. gingivalis. Therefore, when the patients showed high IgG titer against P. gingivalis, there are two possibilities that the patients have only periodontitis or both periodontitis and systemic disease that related P. gingivalis infection. Even the good periodontal treatment controlled oral P. gingivalis infection, systemic P. gingival infection may remain in the patients who left their periodontitis untreated for long time. When we measure the blood IgG antibody level against P. gingivalis at before and after the periodontal treatment, we may detect the systemic diseases initiated through the gate of P. gingivalis infection in periodontitis.

STB 舌侧直丝弓矫治技术与隐形塑料矫治器的联合应用
Incisors Torque Control and Periodontal Defects Using Lingual Straight Wire Appliance Combined With Removable Thermoplastic Aligners

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Objective:

to investigate the effects of STb lingual straight wire appliance on upper incisor torque control, profile change and periodontal health.

Materials and Methods:

16 adult patients receiving four premolars extraction were treated with lingual straight appliance combined with removable thermoplastic aligners for finishing and detailing. Full-size lingual straight wire and sliding mechanics combined with palatal miniscrews were applied to space closing. The removable thermoplastic aligners,instead of fixed lingual appliance, were employed for finishing and detailing. Those parameters were measured and compared before and after treatment through cephalometry and CBCT.

Results:

Both upper incisors torque control and profile improvement were well achieved. No obvious periodontal damage was found, in spite of 7 patients with slight gingival recession and black triangles in lower incisors.

Conclusion:

STb lingual straight wire appliance gives us a better option for upper incisor torque control and profile improvement in adult patients. The removable thermoplastic aligners during finishing stage can shorten periodontal suffering from fixed appliance and free clinicians from time-consuming jobs of wire-bending.

Dysphasia rehabilitation carried out by dentists

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The cooperation of many professions is needed to dysphasia rehabilitation, and it has a point of view not only curing organs but also how patients are alive.

Dental workers should continue to traditional dental treatment until now and from now. However, these subjects are disability children, stroke, dementia, Parkinson's disease and so on.

We must always argue about philosophical construct for clinical approach, because there are approaches of ten ways for ten stroke patients. The variation in rehabilitation approaches might be due to a wide variety patient's life style.

So, we should innovate a philosophical construct of rehabilitation medicine. Rehabilitation medicine treats four items that include healing, compensatory, environmental improvement and psychological approaches.

Even if a denture has good stability, that biting power is 10 to 20 percentages in comparison with natural teeth. From a standpoint of rehabilitation medicine, a denture isn't able to recover the function, but it can be thought that compensatory approach of function. For this reason, the rehabilitation medicine maintains life supports, but not treatment.

Eating and swallowing include 5 stages, anticipatory stage, preparatory stage, oral stage, pharyngeal stage and esophageal stage. Dysphasia is tendency to attract the attention of the pharyngeal stage for the risk avoidance. Aspiration is involved to 60 to 80 percentages in the acute period, however it decreases to 7 percentages in the maintenance period.

On the other hand, biting of the only one side, spilling of saliva, having no taste and dry mouth that are oral stage disorder remain in chronic stage of disease.

The important thing of eating and swallowing is not only the safety but also delicious taste and enjoyment. That is Dental professionals role. We must hold the inflexible role of eating and swallowing rehabilitation. Dental specialty is the direct touchable into the mouth, and dentists can do functional training with direct contact to oral structures. I will introduse the dysphagia rehabilitation that dentists are able to carry out as a professional for oral function.

日本在宅訪問歯科政策及實踐
Dental Health Care System & Practice in Japan

牛山京子 (Kyoko Ushiyama)
Dental Hygienists Association in Yamanashi Prefecture

I have carried out home-visiting oral health care from 1986. When I met a patient's mouth at the first time, I strongly felt helplessness because his oral cavity was suffered from oral condition that couldn't be accepted food.

Medical insurance for home visiting of dental hygienists in Japan was established in 1988 and an oral health care service in a national system of care insurance for the elderly started in 2006. The oral health care including normalization idea has been provided by care and medical stuffs.

Professional oral health care operated by dental hygienists consists of three items. The 1st is cleaning oral, the 2nd is functional training for oral organs and the 3rd is meal support.

The summary of oral health care is written below this line.

①Care technique for variety patient's needs

②Flexible approach with a multidimensional perspective

③Knowledge and technique of oral care with communication ability

④Originality and ingenuity from point of view of life

⑤We have to find an efficient way of organizing patient's needs.

Patients with need of nursing care come with difficulty in cleaning of the oral cavity.

Furthermore their oral cavity is dry. It has no saliva and food debris remains in it. Oral health promotion must keep clean. Dental Hygienists make patients to use brushes according to self-support degree. The brushes is used to teeth or mucosa.

The training (gymnastics and massages to tongue, lips and cheek) would improve oral function.

The meal support starts from observation of patient's eating condition, and we must support their function depending on themselves-support degree, decrease of oral function and dental disease.

Eating is to living. I hope to keep oral health and comfortable meals for even patients. And they can live with great dignity until final life.

齲病預防和新修復治療的臨床試驗
Clinical trials on prevention and innovative treatments for dental caries

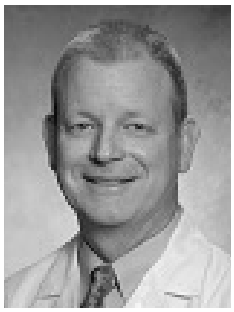
盧展民 Edward (Chin-Man Lo)

This presentation will cover an overview of the latest clinical evidence, including systematic reviews, for the various dental professional-administered and self-administered dental caries prevention methods for children, adolescents and adults.

The well-proven methods include regular topical applications of fluorides in the forms of gel, varnish, and solution; and addition of fluorides to toothpaste and mouthrinse. Pit and fissure sealants are also known to be effective. The more recent method is the use of sugar-free chewing gum.

The extension of using these methods from primary prevention to secondary prevention (treatment for established caries lesions) will be discussed. The latest views on the principles of minimally invasive surgical procedures in treating caries lesions that have advanced into dentine will also be presented.

預防口腔癌之現況與挑戰
Oral Cancer Prevention: Current Realities and Future Challenges



Mark W. Lingen, DDS, PhD, FRCPath
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With an annual incidence of nearly 600,000 cases, oral and pharyngeal squamous cell carcinoma (SCC) is the sixth most common malignancy in the world today. Chronic exposure to tobacco products and alcohol are the classical and most-common etiological factors for this disease. The presence of high-risk forms of the human papillomavirus (HPV), however, is another causative factor and is present in a growing subset of patients with these malignancies. Despite numerous advances in therapy, the long-term survival for patients with OSCC, particularly those associated with the classical etiology, has remained modest. Several factors contribute to this poor outcome. First, SCC is often diagnosed at an advanced stage. The 5-year survival rate of early-stage disease is ~80% and only ~20% for late-stage disease. Second, field "cancerization" leads to the development of multiple primary tumors with a major impact on survival. Second primary tumors are the most common cause of treatment failure and death in patients with early-stage disease. Therefore, comprehensive treatment plans must include improved forms of both screening and secondary prevention, such as chemopreventive strategies, in order to improve long-term outcomes.

To that end, we are pursuing a number of translational research inquiries focused on the early detection and prevention. First, we are pursuing the hypothesis that angiogenesis inhibitors are effective chemopreventive agents. The expression of the angiogenic phenotype is an early and essential step in the development of SCC, making it an attractive target for cancer prevention. The long-term goal of our work is to develop novel, nontoxic chemopreventive strategies for SCC that are based upon the inhibition of angiogenesis.

In addition, conventional histologic examination can only indicate that a given lesion may have malignant potential, and cannot be used for the prediction of malignant change. Therefore, the development of molecularly based approaches to identify predictive biomarkers to interrogate dysplastic lesions would greatly improve early detection, prognostication and intervention. Therefore, we are seeking to establish a molecularly-based saliva screening test for the identification of high-risk patients.

口腔黏膜的黏液腺導管開口部之組織病理生成多樣化
Histopathogenetic varieties of mucous gland ductal openings in the oral mucosa

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Osaka Dental University
大阪歯科大学 大阪・枚方 日本国

The tissue structure of the oral mucosa has not been so extensively explored or conceptionally well established, when compared with that of the skin. In the skin, its appendage components, such as hair or hair follicle, sebaceous gland, arrector pilli, two kinds of sweat glands, are fully recognized. However, we have no idea about whether the oral mucosa has its adnexal components. Of course we know that there are mucous glands, such as palatal, buccal, labial, retromolar, and lingual ones, in the oral mucosa, or so-called Fordyce spots, though we are not confident that these tissue components are regarded as mucosal adnexa.

I have raised the question above mentioned for many years, while no appropriate answer for it by myself or by any others. The reason why I stick to this issue is that we need to determine if there is any particular germinal center corresponding to the bulge of the skin, which supplies mucosal epithelial stem cells. In addition, Fordyce spots have been considered as ectopic sebaceous gland because they are not associated with hair follicles. The term "ectopic" implies that sebaceous glands happen to be abnormally generated in the oral mucosa, which must not contain sebaceous gland. However, we have seen orifice-like structures for the "ectopic" sebaceous gland, when biopsy or surgical samples of the oral mucosa contain Fordyce spots by chance. In addition, frequent appearance of Fordyce spots in the buccal mucosa and lip but not in the other portion of the oral cavity may indicate their functional significance; in other words, sebaceous secretion is also required in the oral mucosa as is authentically recognized in the conjunctiva where Meibomian glands play an important role.

Thus, putting the Fordyce spots aside, in this presentation the author will focus on the ductal opening of mucous glands of the oral mucosa for its role in the histopathogenesis of several oral diseases. They include (1) squamous cell papilloma, (2) lymphoepithelial cyst, (3) intraductal papilloma, (4) basal cell carcinoma or peripheral ameloblastoma, (5) mucoepidermoid carcinoma, and (6) some types of squamous cell carcinoma including basaloid squamous cell carcinoma. In this abstract, the author shortly describe the former two: squamous cell papilloma and lymphoepithelial lesion.

There are some clinical and histopathological variations in squamous cell papillomas, and they have been called otherwise verruca vulgaris or condyloma acuminatum depending on their clinical appearances. According to my own investigation, there seem to be no fundamental differences in clinicopathological features of these three lesions, and thus they could be lump together as squaous cell papilloma. Interestingly, squamous cell papillomas arise most frequently in the palate, followed by the gingiva, tongue, lip, and buccal mucosa, where mucous glands are distributed, within the oral cavity. In addition, they are frequently located at the ductal opening of mucous glands or mucous gland ducts are involved within squamous cell papillomas, and papilloma constituent cells preserve immunohistochemical profiles of mucous gland duct epithelia.

Lymphoepithelial cyst of the oral mucosa has been considered as a disease of ectopic tonsil. However, the author has paid attentions to their locations which are closely related mucous glands. We have already demonstrated that parotid lymphoepithelial cysts are generated in the process of sialadenitis, in which lymphocytes are recruited to form lymphoid tissues around ducts. The histopathogenesis of the parotid lesion has been applied to intraoral lymphoepithelial cysts after our investigation using immunohistochemistry.

年輕恆牙的牙髓處理 - 活性或壞死牙髓
Management of the young permanent pulp: vital and non-vital

Peter Parashos
Melbourne Dental School, University of Melbourne,

Vital pulp therapy relies on an understanding of the biology of pulpal inflammation and the pulpal response to medicaments and materials used in such cases. Traditionally, calcium hydroxide has been used successfully in vital pulp therapy. Such therapy has become predictable, particularly after trauma. More recently, calcium silicate based materials appear to have superseded calcium hydroxide as the material of choice but recent literature indicates that those materials are not without their problems; their handling properties and the risk of discolouration of teeth will influence their selection in certain clinical scenarios.

The response of the cariously exposed pulp has been more unpredictable because of the difficulty in establishing the degree of pulpal inflammation. The clinical choices of pulp capping, partial pulpotomy, full pulpotomy and pulp extirpation have poorly defined clinically relevant criteria to choose between them. Furthermore, endodontic management of immature permanent teeth has always been a significant clinical problem because of the poor structural prognosis of such teeth after traditional apexification techniques. Such teeth often are lost as a result of vertical root fractures then leading to difficult restorative treatment planning in young patients. However, recently the understanding of pulpal response to inflammation and pulp medicaments and materials has improved due to published systematic reviews and the introduction into clinical practice of calcium silicate based materials.

This lecture will first review the best available evidence concerning the biologic response to dental materials used in vital pulp therapy, and demonstrate a better understanding of pulpal response which can then be used as a foundation for developing clinical strategies to manage traumatically exposed and cariously exposed pulps in young teeth.

A relatively new area of clinical practice is the management of the young immature permanent tooth with a necrotic and infected pulp, which is currently known as regenerative endodontics. The second part of this lecture will review the literature concerning this treatment modality and make recommendations concerning a simple clinical strategy to treat such teeth.

Based on the above discussion, and clinical experience from private practice and the endodontic unit at the Melbourne Dental School, step-by-step procedures will be described to provide guidelines for treating vital pulp exposures, and treating immature teeth with necrotic infected pulps.

裂齒症的牙髓方面考量
Endodontic considerations for cracked teeth

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This presentation will mainly address the question of when endodontic intervention is required for cracked teeth, including appropriate restorative options. Cracked teeth often present clinically in different forms which can create confusion as regards to classification, aetiology, management and prognosis. In this lecture the differences between the different types of cracks in teeth will be described particularly cracked tooth as distinct from vertical root fracture (VRF). The difference between cracked cusps and cracked tooth will be contrasted with their different clinical prognoses. The concept of crack progression along a continuum will be presented from crack initiation to split tooth. The pulpal consequences of a crack will be discussed relative to that progression. The role of bacteria in cracks will be highlighted and the uncertainty of crack elimination will be clarified. The pulpal and structural implications of the main types of clinical presentation of cracks will be described in relation to diagnosis and prognosis. In particular, the relationship between patient symptoms and clinical signs will be contrasted with pulpal status. This is clinically important as it relates to the decision as to when is there pulp involvement and when is endodontic intervention required in cracked teeth? The underlying fundamental factor is differentiating between reversible and irreversible pulpitis. Not all cracked teeth will require endodontic treatment. A flow chart will be presented and discussed that will help guide treatment decision-making as it relates to the clinical signs and symptoms during the initial stage as symptoms vary from mild to moderate to severe. The distinction between mild and moderate symptoms is the most challenging. A suggested treatment regimen will be presented to allow appropriate and suitable treatment based on presenting signs and symptoms.

Another confusing clinical scenario is the situation in which the pulp has become necrotic and infected as a result of crack progression into the pulp. This represents the chronic stage of crack progression where the deciding signs will be the extent of the crack relative to the periodontium and within the tooth. The relationship of the crack with external periodontal involvement will influence the decision to treat such cracked teeth. This situation then focuses on structural prognosis and is based on whether or not a crack can be stabilized.

In summary, prompt conservative intervention is crucial in retaining the tooth and the pulp; cracks will propagate over time and will eventually lead to a split tooth if not protected restoratively. Careful evaluation of teeth during the chronic stage of crack progression is essential for good management.

牙科植體周圍病的診斷與處理
Diagnosis and Management of peri-implant disease

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近幾年來，口腔種植牙治療已經成為牙科治療的常規及主流，也因此，牙科植體周圍病在種植牙日漸普及的今天也愈來愈多。一般而言，大約有 10% 的種植牙病患或是 20% 的種植牙會有牙科種植體周圍病。因此，牙科種植體周圍病的診斷與治療益顯的重要；然而，牙科種植體周圍病的成因相當多，有可能是因為病患的口腔衛生不良、修復物設計製作不良的問題、口腔內軟、硬組織條件不足的問題、……等等原因所引起，而其表現的臨表徵也不盡相同，疼痛、紅腫、出血、化膿、……等等都是會發生的症狀。

因此，如何診斷常見的種植體周圍病的臨表現，找出其病因及危險因子，並針對這些因素去治療，是非常重要的。在治療方面，常見的治療方法有雷射治療，種植體表面改形，引導骨再生術、軟組織移植術……等都有其適應症及效果，如何應用決策樹的思考模式，找出其病因，並選擇合適的種植體周圍病的治療方法，也是口腔醫生當今相當重要的課題。

辨識口腔上皮幹細胞的新方法
A novel approach to identify oral keratinocyte progenitor/stem cells

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The development of diseases in the oral soft tissues causes oral mucosa defects by surgical intervention, resulting in loss of epithelial integrity. Thus, open wounds need to be reconstructed with a graft material such as autologous epithelial cells/tissues, synthetic materials, etc. Recent technology of tissue engineering/regenerative medicine allows maxillofacial surgeons to utilize a tissue-engineered oral mucosa substitute. Our research team successfully developed an ex vivo produced oral mucosa equivalent (EVPOME), composed of oral keratinocytes and a human cadaver dermis. We have done human clinical trials of intraoral grafting of EVPOMEs in the US and Japan. Moreover, cell sheet engineering technology, another platform technique for regenerative medicine, has also been applied to various diseases in the clinical setting. The oral mucosa cell sheets have been used for extraoral applications to repair and regenerate epithelial tissues such as cornea and esophagus.

On the other hand, when manufacturing those cell/tissue based devices, it is necessary for investigators to comply with specific regulatory framework in regenerative medicine. The regulatory framework includes many guidelines to follow such as quality assurance/ quality control (QA/QC) to maximizes patients' safety and ensure the efficacy of products. Currently, "release testing" immediately before shipping the cell/tissue based device, which is determined individually, is challenging. It includes elimination of substandard products during manufacturing. In case of a corneal keratinocyte cell sheet, the maintenance of a keratinocyte stem cell population in culture is a critical factor for successful clinical results. Therefore, it is important for investigators to detect oral mucosa keratinocyte progenitor/ stem (P/S) cells and predict P/S cell population-rich culture, which improves the quality of oral mucosa graft materials and leads a novel cell therapy using oral keratinocytes.

However, up to date, there are no specific markers available to identify oral mucosa keratinocyte stem cells, different from corneal and intestinal epithelia. Since we found small-sized oral keratinocytes showed a characteristic of P/S cells, we have developed GACS (gravity-assisted cell sorting) that enables to sort proliferative cell population. Although this technique is simple and inexpensive, the biological significance is not sufficient. Recently, much progress has been made in developing a variety of molecular-based regents and analytical equipment for cells/tissues. In this presentation, I will introduce two emerging approaches. One is a novel RNA probe, and the other is time-lapse image monitoring that is done by non-invasive measurement, an important issue for QA/QC in regenerative medicine.

重症病童的牙科治療
Dental Treatment in a Sick Child

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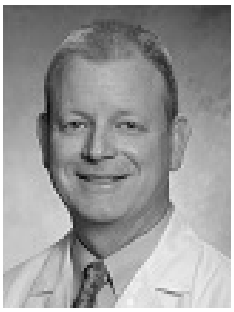
Although, dentists are aware of the impact of systemic diseases on dental management, many are uncomfortable with managing sick patients in their office. This may be attributed to lack of exposure in dental school or daily practice to gain competency in the management of these patients.

With advent of newer medical treatment regimens, more patients are surviving longer and many lead fairly normal lives. As such, dentists will likely encounter such patients in their practice more frequently. The care of the medically compromised patients can be complicated; nevertheless, all dentists must understand the implications of the medical conditions/ diseases, importantly the potential complications and precautions needed when treating these patients in their office. Additionally, dental health professionals must have an appreciation of oral findings that may be manifestations of underlying systemic conditions.

The aims of this lecture are to provide participants i) the skills to elicit a thorough and relevant medical and dental history and ii) the concepts for managing this group of vulnerable patients. It is difficult to discuss all the possible diseases encountered in children, as such this lecture focus on children with specific conditions (coagulopathy/ hematology) as a platform to illustrate these concepts.

如何改善牙醫研究成果發表之成功率
How to Improve the Odds of Successfully Publishing your Dental Research



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The scholarly pursuit of new ideas and its dissemination is a hallmark of academic medicine and dentistry. Whether basic, translational or clinical research, the long-term goal of this activity is to acquire knowledge that may help better understand the biology and pathophysiology of diseases such that clinicians can ultimately better care for the patients we are charged with treating. The objective of this presentation is to provide guidance with respect to the most common errors that are observed. In addition, it will presentation will stress a number of important things authors can do to improve their chances of getting their articles published.

With the advent of electronic publishing and the establishment of several different publisher models, such as “Open Access”, there has been a dramatic increase in the number of submissions received by most journals. However, the significant increase in the number of manuscripts produced has not always resulted in a concomitant increase in the number of high quality manuscripts. In fact, it is widely believed in the publishing field that the introduction of electronic publishing has made it too “easy” to submit a manuscript to a journal that is not particularly well formulated.

The objective of this presentation is to provide guidance with respect to the most common errors that are observed. In addition, it will presentation will stress a number of important things authors can do to improve their chances of getting their articles published.

Total Application of Composite

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The posterior teeth are subject to various factors that lead to their deterioration, such as high muscular loads, and aggression of bacteria, which affects in various degrees, compromising many of their intended functions. Considering this, a proper restoration of posterior teeth should seek recovery of their function within the masticatory process, besides restoring its ability to resist the strenghts and their initial appearance.

To achieve these objectives, it will be required to place restorations that structurally integrate to the remaining tooth through an adhesive process, and also possess certain mechanical and optical characteristics that allow the tooth to restore its appearance and functionality, requirements that are met by the composite resins.

In severely damaged teeth a number of problems will arise, which not only would put at risk the longevity of the restoration, but the survival of the tooth. Problems such as a) large volumes of material needed to restore those teeth, which generates a large shrinkage stress when direct restoration techniques are used; b) reduction of its ability to resist loads due to a change in its mechanical behavior; c) the presence of unfavorable substrates for adhesive procedures and d) effect in some cases with subgingival margin cavities, creating complications in impression taking, isolation, cementation, etc.

Therefore, this presentation aims to show how to deal with the problems raising in restoring severely destroyed posterior teeth by using composite resins in their different presentations; either for cavity design optimization, making the indirect restoration and finally for the cementation process of such restoration. This presentation will allow the professional to carry out customized restorations that can be integrated optically, structurally and functionally, and therefore improving the longevity of both the restoration and the tooth.

美國牙醫學教育面臨的挑戰和改革趨勢
Challenges and Trends of Dental Educational Reform in United States

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The primary objective of dental education is to train students to be professionals who will be competent of providing needed and appropriate oral care to patients as well as maintaining and improving oral health of individuals and populations. There are two basic goals of dental education: 1) educating students to serve their patients and communities; and 2) preparing students to continue to grow in skills and knowledge over their lifetime in practice to provide such services.

In the Unite States, a dental school or educational program is evaluated periodically by the Commission on Dental Accreditation (CODA) using its established Accreditation Standards for Dental Education Programs. The dental educational institution is expected to conduct the program at a level consistent with the purposes and methods of higher education and to have academic excellence, which is measured by six Standards, including institutional effectiveness, educational program, faculty and staff, educational support services, patient care services, and research programs. The dental educational environment needs to reflect principals of comprehensive and patient-centered care, critical thinking, self-directed leaning, humanistic environment, scientific discovery and integration of knowledge, evidenced care, assessment, application of technology, faculty development, collaboration with other healthcare professional, and diversity.

There are a number of challenges in achieving the objective of dental education and meet the CODA standards. There has been an unprecedented expansion of knowledge and information in the scope, depth and speed of the dental education, and the faculty are facing students of increasing culture diversity who are much fast in learning and using new technology with a tendency of independence and creativity. Consequently, new approaches to faculty training, frequent updates of curriculum, and innovative teach methods have all become necessary to meet these challenges. In addition, current level of financial burden of the dental education has become a concern, and new dental educational models are being attempted.

Challenges in dental education also bring opportunities. This presentation will review current dental educational approaches, discuss challenges relevant to students, faculty, and curriculum, and identify responsibilities of dental educators and practicing dental professionals. There will also be a discussion on a learner-focused program and teaching methods using digital resources.

How to understand to use fiber-less Er:YAG laser

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Since the theory of laser was discovered by Albert Einstein in 1917 and the first successful laser using ruby crystal was created by Theodore Maiman in 1956, various types of laser have been developed and applied in our society. These days, Diode, Nd:YAG, Ho:YAG, Erbium (Er,Cr:YSGG, Er.YAG) and CO2 lasers are used as a dental laser. These dental lasers have common characteristics to absorb water. When the laser beam strikes the target soft tissue including water component, it absorbs and heats up rapidly ablating the tissue. Hydroxyapatite is the main component of enamel, dentine and bone. Er.YAG (2940nm) and Er,Cr:YSGG (2790nm) are typical Erbium lasers for absorbing hydroxyapatite. Their wavelengths are close and they have similar characteristics for ablating hard tissue with hydroxyapatite component. Lite Touch (LT), fiber-less l Er:YAG laser has a unique laser device. The laser accelerator is installed in a hand-piece and fiber tube is not used in laser beam delivery system. As a result, energy loss is less and high power can be transmitted at the tip. Reducing problems with fiber means lower maintenance cost. At present, LT is used for a wide range of dental treatment from soft tissue to hard tissue.

Laser beam is invisible. When you look at the laser beam sideways, you cannot see it. When it hits an object and is absorbed, it makes heat, light and an explosion to the target tissue. At that time, you see these phenomena induced by the laser beam and then you can recognize the existence, power and work of the laser beam. Burning, charcoaling, vaporization, eruption, explosion, boiling up, flaming out, flaring up and smoking, melting and carbonization are LT laser induced phenomena. These variations are depending on the material and heat.

LT laser has a mechanism of water supply in hand-piece. Water flows from the nozzles to wet the tip and the target tissue. The laser beam first hits the water drop at the tip and causes the first explosion with water drop. It cleans the ablation site and reduces thermal damage. Next, it hits the target tissue and ablates. However, too much water will reduce the power of the ablation. To find a balance between laser energy and water volume requires experience.

This lecture will show how to understand to use Lite Touch, fiber-less Er.YAG laser in your office and think about the possibilities.