SYMPOSIUM
Keynote Speaker

The Future of Digital Implant Dentistry in Asia: AI-Driven Innovations and Their Impact on Clinical Practice and Dental Education

James Chow

The landscape of digital implant dentistry in Asia is poised for a transformative leap, driven by AI-powered innovations, advanced digital workflows, and cutting-edge technologies such as dynamic and robotic computer-assisted implant surgery (CAIS), automated treatment planning, and 3D printing. This synopsis, informed by the expertise of an Oral Maxillofacial Surgeon specializing in digital dentistry, explores how these advancements are reshaping clinical practice and dental education in the region.

AI-driven innovations are revolutionizing implant dentistry by enhancing precision, efficiency, and predictability. In clinical practice, AI algorithms streamline treatment planning by analyzing cone-beam CT scans and intraoral digital impressions to generate optimized implant placement strategies tailored to patient-specific anatomy. Dynamic navigation and robotic CAIS further elevate surgical accuracy, enabling real-time guidance and robotic precision for complex procedures like zygomatic or pterygoid implants, which are increasingly relevant in Southeast Asia's diverse patient population. These technologies minimize complications, reduce surgical time, and support immediate loading protocols through seamless integration with CAD/CAM for custom prosthetics.

In dental education, AI and digital tools are transforming training methodologies. 3D-printed, lifelike models, such as those used for undergraduate teaching of third molar removal, provide hands-on experience with realistic anatomical simulations, bridging the gap between theory and practice. Virtual reality (VR) and augmented reality (AR), powered by AI, offer immersive learning environments for students to practice implant placement and surgical techniques, enhancing skill acquisition in a region where access to advanced training facilities varies.

The impact on Asia is profound, addressing challenges like rising demand for implantology, diverse healthcare infrastructure, and the need for scalable education. AI-driven automation reduces costs and enhances accessibility, while digital workflows improve patient outcomes and satisfaction. However, challenges such as technology adoption, training, and regulatory frameworks must be addressed to fully realize this potential. The future of digital implant dentistry in Asia lies in embracing these innovations to elevate clinical standards and empower the next generation of dental professionals through cutting-edge education.

Enhancing Dental Implant Surgical Skills in Novice Dentists Through Navigation-Assisted Training
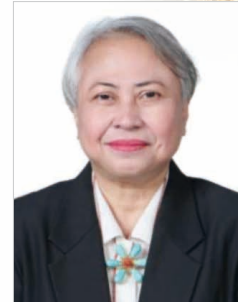
Atiphan Pimkhaokham

Recent literature highlights three major paradigm shifts in dental implantology, with the most current evolution driven by the integration of advanced digital technologies. Among these, real-time computer-assisted implant surgery using dynamic navigation systems has emerged as a pivotal advancement, offering substantial improvements in surgical precision and clinical outcomes. Comparative studies increasingly demonstrate that navigation-assisted implant placement provides superior accuracy over conventional freehand techniques.

This presentation will examine the clinical applications and advantages of dynamic navigation systems in dental implant surgery. We will also present our recently published data, which demonstrate not only enhanced accuracy in implant positioning but also significant improvement in the surgical competencies of novice dentists trained using these technologies. By exploring these findings, we aim to underscore the transformative impact of digital innovation on surgical training and implant dentistry as a whole.

Global Partnership and Cross-Cultural Competence in Dental Education Through South-East Asia Association of Dental Education

Sri Angky Soekanto

In an increasingly interconnected world, global partnerships and cross-cultural competence have become essential components of contemporary dental education. This presentation explores the role of the South-East Asia Association of Dental Education (SEAADE) in fostering these elements among dental institutions across Southeast Asia. By promoting collaborative academic programs, student and faculty exchanges, and intercultural learning opportunities, SEAADE serves as a platform for advancing shared educational standards while respecting regional diversity. Through qualitative analyses of SEAADE-led initiatives, including joint curriculum development, community outreach projects, and international conferences, this paper highlights how such collaborations enhance the cultural sensitivity, professional adaptability, and global readiness of future dental professionals. The findings underscore the importance of institutional commitment and policy support in sustaining meaningful international partnerships, with implications for reducing oral health disparities and improving patient care in multicultural settings. Ultimately, the SEAADE model offers a promising framework for integrating global health perspectives into dental curricula, preparing graduates to thrive in a globalized healthcare landscape.

Entrustable Professional Activities: Curricular Innovations for Entrustable and Work ready dental practitioners

Seow Liang Lin

Entrustable Professional Activities (EPAs) are professional tasks that a competent dental graduate must be able to perform at a certain level of supervision, bridging the gap between competency-based education and real-world practice to ensure patient safety. EPAs assessment provides a comprehensive, task-based approach to evaluating knowledge, skill, and attitude, which is essential for assessing readiness to practice independently. These units of professional practice are critical clinical activities which should be assessed during training to establish if the students are ready for independent practice, with a progressive decrease in supervision, based on supervisor's entrustment decisions. Implementation and assessment of EPAs has been reported in literature for various healthcare programmes mainly medical and dental programmes, with great variability in methods for implementation. There are several challenges to implementing EPAs including clear consensus on competence for independent clinical practice / entrustment for practice, lack of expertise to design and assess EPAs in practice, resistance to this type of assessment by trainers / supervisors. The School of Dentistry, IMU University has incorporated EPAs in the revised curriculum to assess students' readiness for practice, this presentation aims to share the journey of implementation, from crafting the EPAs, faculty training to implementation using web-based software.

The Role of AirFlow and Guided Biofilm Therapy (GBT) in the Prevention and Management of Periodontal and Peri-Implant Diseases

Axel Spahr

This lecture will explore the contemporary application of AirFlow technology within the framework of Guided Biofilm Therapy (GBT), highlighting its role in the prevention and non-surgical treatment of periodontal diseases, including gingivitis and periodontitis, and peri-implant diseases such as peri-implant mucositis and peri-implantitis.

Guided Biofilm Therapy represents a paradigm shift in modern periodontal and peri-implant care, promoting a systematic, minimally invasive, and patient-centred approach. The session will detail the clinical indications, advantages, disadvantages, and efficacy of AirFlow devices in both initial therapy, surgical therapy, and supportive maintenance phases. Special emphasis will be placed on the correct selection and use of instruments and materials for effective biofilm removal and root surface debridement around natural teeth and dental implants.

Attendees will gain practical insights into how integrating AirFlow and the GBT protocol can enhance treatment outcomes, improve patient comfort, and support long-term periodontal and peri-implant health.

SYMPOSIUM
Domestic Speaker

AI Application in Dentistry

Hsiao-Yang Liu

Dentscape 德睿生醫股份有限公司

本課程將全面剖析 AI 人工智慧的核心原理，並深入探討其在牙科領域的現有應用與未來發展潛力。從提升臨床診療效率，到驅動數位化治療的革新，協助您掌握數位牙科的最新技術脈動，為未來布局。

1. AI 人工智慧的原理與基礎

從 AI 的基本概念切入，系統性解構人工智慧的核心技術、運算邏輯與訓練機制，讓您建立紮實的 AI 技術理解，掌握其如何在專業領域中發揮價值。

2. AI 在牙科的現有應用

全方位解析 AI 於牙科領域的多元應用實例，包括：

- 假牙自動設計與生成：加速設計流程，提升精準度與標準化。

- 影像辨識與診斷輔助：優化病灶判讀與治療決策。

- 數位微笑設計（Smile Design）：提升美學設計的效率與客製化。

- 診所行銷與營運管理：透過 AI 數據分析，強化客戶經營與市場洞察。

3. AI 在牙科的未來發展與前瞻

前瞻 AI 於牙科未來的應用可能性與技術演進：

- 從 2D 微笑設計（DSD）到 3D Mock-up 的自動生成：實現設計與臨床的無縫銜接，提升個性化與治療精準度。

- 全流程數位化治療規劃：從掃描、設計到製造，打造高效、整合的一站式數位牙科工作流。

- 生成式 AI 與個人化牙科：透過患者專屬數據驅動的設計與治療，邁向真正的客製化醫療。

本課程將幫助您不僅理解 AI，更能洞察其如何驅動牙科產業的下一波數位轉型。

Application of Multi-Contrast Optical Coherence Tomography in Early Oral Cancer and Tumor Margin Detection

Wen-Chuan Kuo

The Institute of Biophotonics at National Yang Ming Chiao Tung University

According to the Taiwan Cancer Report, oral cancer ranks as the fourth most prevalent cancer, with its incidence continuing to rise. Currently, there is no effective tool to adequately distinguish between benign and malignant precancerous lesions, necessitating reliance on biopsies. However, excessive biopsy procedures increase the burden on medical staff and can deter patients from undergoing examinations. As such, optical sectioning is emerging as a promising future trend. Furthermore, accurately predicting the surgical boundaries of oral cancer to reduce recurrence remains a significant clinical challenge. To address this, we have developed a non-contact optical sectioning method using multi-contrast optical coherence tomography (MCOCT) to detect suspicious conditions prior to pathological sectioning. This innovation aims to offer numerous benefits, including improved early cancer diagnosis rates, a reduction in the number of biopsy slices required, decreased medical expenses, and enhanced patient satisfaction and compliance. Additionally, multi-contrast OCT can be employed to delineate tumor boundaries before surgery for cases confirmed positive by pathological biopsy, thereby mitigating postoperative recurrence.

AI-Empowered Cellular-Resolution Optical Coherence Tomography for Oral Diseases and Cancer Diagnosis

Sheng-Lung Huang

臺灣大學光電工程學研究所

Optical coherence tomography (OCT) has now become a standard of care, impacting the treatment of millions of people every year. There is tremendous clinical and preclinical OCT progress in diagnosing cancers and disorders. OCT is a non-invasive 3D microscopic technique extensively applied in ophthalmology, cardiology, and dermatology. It has been extending its impact to other biomedical specialties, such as oral cavity and dentistry.

The detection of skin cancers has been studied using full-field OCT (FF-OCT) to achieve real-time imaging with cellular resolution. The animal model on squamous cell carcinoma shows > 90% accuracy. This talk will address an FF-OCT system for big data collection and deep learning algorithms for detecting / segmenting crucial cell/tissue/lesion features. As a demonstration, the boundary of the epithelial and lamina propria layers are distinguished in the cross-sectional view, which is essential information for oral cancer detection in the early stage.

Histopathological stained images are considered the gold standard for clinical cancer diagnosis. However, the staining process for excisional biopsy is time-consuming, which is an issue when surgery progresses. Virtue histopathology by AI-empowered cellular-resolution OCT will be addressed.

The future of the OCT ecosystem to foster innovation and provide societal benefits looks as bright as ever. On the technology side, numerous frontiers with new imaging devices, system concepts, integrated optics, light sources, and multimodality will power the technology far into the future. On the application side, OCT will continue to expand its clinical impact on the unmet needs of various medical specialties.

Negotiating Root Canals: A Clinical Strategy

Yung-Hao Hsu

臺北市立萬芳醫院－委託臺北醫學大學辦理

The term "negotiate" refers to the successful navigation through a difficult path. In endodontic treatment, performing negotiation involves using small-sized files to explore the root canal. During negotiation, the resistance felt as the file penetrates the canal provides the operator with tactile feedback, which helps in understanding the morphology of the canal.

This lecture follows the clinical workflow, beginning with the identification of the canal orifice. It then focuses on how to use small-sized K-files during negotiation to distinguish among body interference, dentine mud, and ledges within the canal. The presentation will also discuss strategies to overcome these three challenges, including techniques such as the envelope of motion and ledge bypassing. In addition, the lecture will cover the physical property differences among small-sized K-files from various commercial brands, explaining how these differences can guide clinical decisions in file selection. It is hoped that the content of this lecture will provide practical, clinically applicable procedures to improve the success rate of canal negotiation and working length establishment.

What is passive ultrasonic irrigation? Is it more effective compared to other root canal cleaning methods?

Chen Chieh-Ju

高雄醫學大學附設中和紀念醫院牙髓病暨牙體復形科

　　超音波目前已廣泛應用於牙科根管治療的過程中，除了拆除釘柱、尋找鈣化根管、移除斷械等等，在根管沖洗的步驟中也可以使用超音波輔助，利用其產生的聲流（acoustic streaming）及空泡效應（cavitation），達到加強清潔的功效，此即為被動式超音波沖洗（passive ultrasonic irrigation）。本次演講會介紹根管超音波沖洗的具體操作方式，並和傳統沖洗及其他清潔方式進行比較。

Start Strong: Building the Dental Home from the First Tooth

Pei, Shan-Li

陽明格子牙醫診所

在新世代 AI 技術快速發展、少子化浪潮席捲之下，預防牙醫的觀念逐漸普及，「Dental Home 口腔親善之家」已成為兒童口腔健康照護的重要核心理念。

從 1992 年美國兒科醫學會提出 medical home 的概念後，美國兒童牙科醫學會於 2001 年提出並在 2024 年再度更新了 dental home 的建議，也就是嬰幼兒應在未滿 12 個月之前，進行第一次的口腔衛教和檢查，即建立口腔親善之家，進行定期檢查、早期風險評估與家長衛教，有效預防早期蛀牙與咬合問題。

本場演講將說明 Dental Home 在各年齡層的臨床操作流程，從牙齒發育追蹤、齲齒預防策略，到咬合發展評估與早期介入，搭配實際病例解析，提供完整的預防性照護架構，協助臨床醫師打造具有效率與實務可行性的兒童口腔健康模式，讓孩子從第一顆牙開始贏在起跑點，健康成長，遠離未來高風險治療。

Understanding Today's Kids and Parents: Behavior Management and Nitrous Oxide in Pediatric Dentistry

Sheen Ming-Hsuan

壹八八美學牙醫診所

兒童行為處理的理論自 1990 年代發展至今已逾三十年。

在 AI 與科技快速進步的當代，這些技巧仍適用於現在的孩子嗎？父母對這些方法的接受度如何？臨床上該如何應用，才能避免網路負評？

本次演講將回顧行為處理的核心技巧（如正向回饋、負向回饋、隔離法、轉移注意力），並探討笑氣在兒童牙科中的應用、與行為管理的整合。

一起重新思考，如何與新世代的孩子與家長建立更好的合作關係。

Immediate Dental Implants: Streamlining Treatment for Enhanced Patient Outcomes

Chang Wei Jen

臺北醫學大學牙醫系

Immediate dental implants represent a significant advancement in modern dentistry, offering patients a quicker path to restored smiles and improved oral function. This technique involves placing an implant directly into the socket immediately after tooth extraction, minimizing the waiting period associated with traditional implant procedures.

Clinically, immediate implants find application in various scenarios. They are frequently used following traumatic tooth loss, severe decay, or instances where a tooth is deemed non-restorable. In the aesthetic zone (front teeth), immediate placement is particularly beneficial as it helps preserve the natural gum line and bone structure, leading to more predictable and aesthetically pleasing results.

One key advantage of immediate implants is the reduced treatment .This treatment can significantly improve their quality of life, allowing them to eat, speak, and smile with confidence.

However, careful patient selection is crucial. Factors such as bone quality, the presence of infection, and the patient's overall health must be thoroughly evaluated. Successful immediate implant placement relies on meticulous surgical technique, proper implant selection, and close post-operative monitoring. While not suitable for every patient, immediate implants offer a valuable treatment option for those seeking a faster and more efficient route to dental restoration.

Unlock Effortless Zirconia Veneer Bonding with Nano Technology - Scientific Reviews

CHIENMING, KANG

臺北醫學大學牙醫系博士研究所

Since its introduction into the dental field in the 20th century, zirconia has seen increasingly widespread clinical applications and material advancements. However, as a polycrystalline ceramic that lacks a silica phase, zirconia cannot be treated with conventional glass-ceramic bonding or etching techniques to enhance adhesion. This limitation has posed challenges in the clinical use of thin zirconia veneers.

Improving the bonding strength of zirconia has thus become a major focus in modern dentistry. With growing scientific evidence and literature, dental practitioners today have a better understanding of the principles and feasibility of zirconia bonding.

This course aims to share strategies for enhancing zirconia bonding strength and survival rates through the use of ceramic primers and lithium disilicate coatings. These techniques make it possible for thin zirconia veneers to achieve reliable and durable adhesion in clinical settings.

The Development of AI Model in the Auto-annotation of Dental X-ray Images

Fang Chih-Yuan

萬芳醫院口腔醫學部 / 臺北醫學大學牙醫學系

With significant breakthroughs in hardware, the development of artificial intelligence (AI) in the medical field has made remarkable progress. A review of the literatures related to dentistry reveals that the application of AI technology primarily focuses on diagnosis, treatment planning, and patient education, encompassing the analysis of X-rays, intraoral color photographs, and digital pathology slides. This demonstrates the potential of AI in clinical applications within dentistry.

This report will first provide a brief overview of the technological development of AI and large language models (LLMs), as well as the current advancements in the field of dentistry. Additionally, I will share my research findings and insights from the past two years regarding AI image annotation models. Furthermore, my research explores the attitudes and acceptance of AI models among different levels of dentists in our country, including dental students, interns, residents, and attending physicians, as well as the potential roles that AI models may play in dental education. Through this presentation, I hope to provide the audience with a comprehensive preliminary understanding of the applications of AI in the field of dentistry.

AI-Driven Transformation in Oral and Maxillofacial Surgery: A New Blueprint for Diagnosis, Education, and Decision-Making

Kai-Hua Lien

臺中榮民總醫院口腔醫學部口腔顎面外科

本次演講以「AI 驅動下的口腔顎面外科轉型」為主軸，從臨床決策與技術革新的角度出發，探討人工智慧在當前口腔顎面外科中已成為不可或缺的重要力量。隨著臨床影像快速發展、手術規劃日益精細，傳統依賴經驗判斷的模式逐漸面臨瓶頸。AI 的導入不僅能協助臨床醫師進行早期偵測與風險評估，更能在教育與遠距醫療中，提供一致、即時且可視化的輔助決策，推動醫療邁向更精準與標準化的時代。

我們臺中榮民總醫院團隊的研究以全景 X 光影像為基礎，與國立中興大學合作開發一 Mask R-CNN 深度學習模型，用以自動偵測顎骨內常見的良性囊腫與腫瘤，包括含齒囊腫、根尖囊腫、齒源性角化囊腫及造釉細胞瘤。在 215 張經病理確診的全景片中，模型整體靈敏度達 89.7%、精確度 83.9%，其中含齒囊腫的 F1 分數高達 96.6%，顯示 AI 在輔助早期診斷與轉診判斷上的臨床潛力。同時，我們亦發現標註策略對模型效能具有關鍵影響，進一步驗證了在深度學習中解剖學脈絡資訊的重要性。

在此基礎上，本次演講將以系統性方式介紹人工智慧於口腔顎面外科的研究與臨床應用現況，涵蓋口腔癌前病變之多模態 AI 偵測、口腔癌之 AI 早期診斷及多影像模式下的腫瘤範圍與淋巴結分析、重建手術中 AI 與 AR / VR / XR 對穿通枝定位與併發症預測的輔助作用，以及在顏面骨折創傷手術、正顎手術，與顳顎關節診療中的應用潛力。除此之外，AI 亦逐漸成為醫學教育的重要推手，從影像判讀訓練、手術模擬、病房管理到病歷紀錄與技能評估，皆能協助新世代醫師在學習與決策過程中更快速達到專家水準。

整體而言，本次報告旨在呈現 AI 如何從輔助診斷逐步走向臨床決策、教育與研究的整合應用，描繪出口腔顎面外科邁向智慧化、精準化與人機協作的新藍圖。

Empowering Smiles through Technology: AI-Enabled Oral Health Literacy and Social Responsibility in Action

Ding-Han Wang
國立陽明交通大學牙醫學系

With the advancement of artificial intelligence and digital technologies in clinical settings, a pressing challenge in modern dentistry is how to effectively extend these innovations into communities and primary care to promote equitable oral health for all. This presentation introduces a series of digital health initiatives led by the School of Dentistry at National Yang Ming Chiao Tung University (NYCU), including the Mobile Extended Reality (MXR)-based interactive oral health education system, the Decayed-Missing-Filled Teeth Artificial Intelligence System (DMFT-AI) for caries risk assessment, and oral microbiome analysis using 16S rRNA sequencing. These components together form an integrated model for promoting community oral health across diverse age groups and special needs populations. The MXR teaching modules incorporate voice guidance, 3D models, animations, and haptic feedback to enhance user engagement and retention of oral health education content. Studies have demonstrated significant learning improvements, particularly among children and older adults. The DMFT-AI platform enables automated analysis of intraoral photographs, identifying carious lesions and tooth numbering with high agreement compared to clinical diagnoses, thus supporting frontline public health workers in rapid, scalable screening for dental caries. Concurrently, the team has employed 16S rRNA sequencing to analyze tongue and saliva samples from various populations, such as patients with oral cancer, individuals receiving nasogastric tube feeding, and residents in long-term care facilities, to investigate dysbiosis patterns and their associations with disease risks. The goal is to establish microbiome-based indicators that can support personalized prevention and early intervention strategies. Looking forward, this integrated digital platform holds significant potential not only for improving oral health literacy and accessibility in underserved and aging populations within Taiwan, but also as a scalable model for public health promotion and international collaboration, contributing to the global movement toward oral health equity.

Reshaping Future Teledentistry in Taiwan: AI as Infrastructure, Not Just Innovation

Dr. Yi Te Lin, DDS, MS

美國常春藤賓州大學兼任助理教授、中山醫學大學兼任講師

過去兩年，全球正經歷一場以人工智慧為核心的新興產業革命。AI 的應用已不再停留於實驗室驗證或概念展示，而是逐步走入臨床現場，成為驅動醫療體系轉型的重要推力。在這場變革中，如何善用 AI 補足台灣牙科臨床的現實挑戰與資源限制，將是我們必須共同思考的關鍵課題。

本次演講將分享我在美國賓州大學的牙周病科跨領域與工程團隊協作投入牙科 AI 研發的實務經驗，說明人工智慧在臨床分析、決策支援與診間流程優化上的實際應用潛力。同時，我也將從臨床與策略的雙重視角，探討 AI 如何作為醫療基礎建設的一環，進一步強化台灣遠距牙科的可近性與可行性，為臨床醫師與病患創造雙贏且更高品質的照護未來。

Orthodontic Management of Class III Malocclusion with Restorative Considerations

Cheng Wen-To

台北市耀美牙醫診所

矯正治療中的三級咬合已經是較為進階的治療，若又合併伴隨牙列缺失、牙齒磨耗或咬合塌陷，將使治療計畫更具挑戰。若單靠贋復處理難以恢復理想的功能與美觀兼具，而矯正治療若未整合修復需求，也可能導致治療無法順利完成。

本演講將從矯正的角度出發，探討如何在處理前牙錯咬與骨頭差異的同時，為贋復治療建立理想的基礎。

透過臨床案例，將說明：如何正確診斷 Class III、矯正治療策略、何時應協同贋復考量、以及不同醫師治療之間的順序安排，達到有效率、穩定且預期性高的重建結果。

The Evolution and Future of Orthodontic Treatment Materials

Chen, De-Shing

臺北醫學大學口腔醫學院牙學系

臺北醫學大學附設醫院口腔醫學部齒顎矯正科

在齒顎矯正治療的領域中，骨骼生理學與牙齒移動的理論一直是最基本且核心的基石。我們秉持這些理論準則，謹慎而專業地面對各種異常咬合的治療挑戰。過去百年間，隨著材料學的進步，齒顎矯正治療經歷了無數次的創新與變革。時至今日，隱形牙套作為最受歡迎的矯正系統之一，已發展超過二十年，並持續優化患者的體驗與治療效果。面對瞬息萬變的人工智慧時代，我們不僅需從過去的經驗中汲取智慧，也必須透過不斷的研究與學習來緊跟時代的腳步。展望未來，我們期望齒顎矯正治療能更為精準高效，並藉助科技的力量提升學習與臨床操作的穩定性，為專業領域注入全新的活力與價值。

All-on-digital implant overdenture?

Chang, Min-Chieh

國立成功大學牙科部贋復科兼任主治醫師

隨著高齡患者對義齒穩定性與舒適性的需求與日俱增，植體輔助全口活動義齒（implant overdenture）是一兼顧功能與成本效益的重要治療選項。全口贋復重建的規劃與製作，涵蓋咬合學、解剖學、生物力學、材料學等多學科的整合應用，而當數位科技與義齒製作流程深度整合，數位化製程是否已具備全面取代傳統手工製作的能力？是目前時常被關注的議題。本次演講以「All-on-digital implant overdenture ？」為題，聚焦於植體輔助全口活動義齒的臨床規劃與數位化應用，以個人淺薄的臨床實務經驗為出發，分享對於 CAD / CAM 技術在提升製作精度、效率與穩定性上的應用經驗和挑戰，並思考如何在超高齡化社會中發揮最大價值。了解數位化製作植體輔助全口活動義齒的現況與限制，進而反思在這波數位浪潮下，我們面臨的是「被取代」，抑或是迎向「被數位強化」的未來？

Key Advancements in Periodontal Treatment and Education: Trends in Microsurgical Therapy and Regenerative Materials

Ya-Hsin Wu

中國醫藥大學牙醫學院助理教授

中國醫藥大學附設醫院牙周病科主治醫師

在牙周治療日益講求精準與預後可控的今日，顯微鏡技術的導入不僅提升了手術操作的細膩度，更大幅改變了臨床教學的方式，讓學生得以「看得清、學得精」。本演講將分享顯微輔助手術在牙周臨床中的應用經驗，並探討如何透過放大視野，強化學生的臨床訓練與診斷思維。同時，也將介紹近年常用的牙周再生材料與其選擇策略，說明如何因應不同臨床情境做出適切整合。透過手術實例與教學經驗，讓我們重新思考「技術」如何驅動牙周治療與教學的雙軌升級。

The Impact of Digital Technology on Removable Prosthodontics: Recent Advances and Clinical Application

Sheng-Wei Feng

臺北醫學大學牙醫學系

　　高齡社會的變化下，越來越多的高齡患者需要牙醫師特別的口腔治療與照護，尤其是活動義齒的治療需求更是在這幾年有增加的趨勢，這是我們未來一定會面對道的課題，如何全面性地提供高齡者適合的治療建議、如何善用新科技以有效率且成功的完成活動義齒治療，同時配合正確的義齒照護，將會在這次的演講中逐一説明。

Consideration of Periodontal Tissue Regeneration

Yan Dah You

高雄醫學大學附設醫院牙周病科

　　牙周組織再生是現代牙周治療的重要目標，目標在恢復因遭受牙周病破壞的齒槽骨、牙周韌帶與牙骨質。為達到理想的再生效果，臨床上需考量多項因素。首先，病患的全身健康狀況與口腔衛生習慣會直接影響傷口癒合與治療預後。其次，缺損類型是關鍵考量因素之一，包含缺損的深度、角度及骨壁數量，皆會影響再生潛力。此外，治療時所選用的再生材料（如再生膜、再生凝膠或骨替代材料）及手術技術（如切線設計與縫合方式）也須謹慎選擇與操作。最後，術後的傷口照護對再生結果有決定性影響。因此，牙周組織再生手術需合併牙周病灶缺損特性、材料選擇與臨床操作技術，以提升療效並延長自然牙的使用時間。以上內容將在本次主題中做分享～

Classification and Management of the Simple-Challenging-Difficult Vertical Bony Defects

Cheng-Hisaing Hsu

晨光牙醫診所 Dr. Hsu's Dental Clinics

Dental implants have gradually become a mainstream choice for reconstruction of edentulous areas. Their reliability, stability, and high patient satisfaction have earned them widespread acceptance among patients and clinicians. However, when implants are eroded by peri-implantitis, their three-dimensional, nonlinear destruction can lead to a significant increase in the incidence of vertical alveolar bone defects. This often becomes a nightmare for clinicians. Fortunately, advances in clinical technology have made reconstruction of such defects no longer a fantasy. In this presentation, I will categorize common vertical bone defects according to their difficulty, provide treatment strategies, and discuss implementation details for each type. From simple to challenging, and then to difficult, I will share my experiences and make step-by-step instructions on how to tame this behemoth.

Applications of Dental Zirconia in the Ever-changing Times--Part I

Chi-Chen Hsu
中心牙醫診所

氧化鋯由於生物相容性極佳，又有多項優良的物理性質，可以說是近年來最受歡迎也最常使用的 CAD / CAM 贗復材料；但它不易修磨，難以修補，再加上具有 low temperature degradation，以及 bonding procedure / strength 等等都是引起議論的話題。本演講將詳細介紹氧化鋯的演進，優缺點及特性，臨床上如何選擇應用，並有哪些需要注意的地方，讓大家對氧化鋯知己知彼，贗復物才能長遠穩定無敵。

Applications of Dental Zirconia in the Ever-changing Times--Part II

Chunchi Peng

敦南牙醫聯合診所

氧化鋯由於生物相容性極佳，又有多項優良的物理性質，可以說是近年來最受歡迎也最常使用的 CAD / CAM 贋復材料；但它不易修磨，難以修補，再加上具有 low temperature degradation，以及 bonding procedure / strength 等等都是引起議論的話題。本演講將接續許醫師的部分，就黏著上的處理、臨床上治療計畫的選擇、與各種氧化鋯贋復的運用、並有哪些需要注意的地方，做進一步的剖析。

Role of Occlusal Rehabilitation in Periodontal Disease

YEH, HWEY-CHIN
林葉牙醫診所

Placement of restorations and dental prostheses are necessary to rebuild missing teeth and to rehabilitate occlusal functions. However, design and fabrication of prostheses for the purpose in periodontally compromised dentitions should be carefully adopted in order to protect the limited periodontium from further deterioration. It highlights the need for well-balanced occlusal loading, adequate assessment of plaque control, and motivation of periodontal maintenance. Through case presentation, factors that could affect periodontal prognosis, such as tooth morphology and alignment, periodontal severity, prosthetic considerations and therapeutic modalities, will be discussed.

LEARNING OBJECTIVES:

1. To understand the keys to successful management of periodontal disease
2. To analyze the occlusal problems in periodontal patients
3. To understand the designs of different dental prostheses that could affect periodontal prognosis

LEARNING OUTCOME:

You will learn to correctly diagnose the periodontal diseases, to sustain suitable treatment modalities, to coordinate proper prosthetic designs, and to maintain the periodontally compromised dentitions.

A Bidirectional Dialogue of Chronic Inflammation: The Intersection of Diabetes and Periodontitis

Han Yen Ting
新光醫院

Diabetes and periodontitis are chronic inflammatory diseases with a well-established bidirectional relationship. Each condition can exacerbate the other, contributing to disease progression and systemic complications. This presentation will explore the underlying pathophysiological mechanisms, current clinical evidence, and treatment considerations for periodontal care in patients with diabetes. By emphasizing interprofessional collaboration and patient-centered strategies, dental professionals can play a key role in improving both oral and systemic health outcomes.