專題演講

S01

客製化矯正器之近況與臨床療效
Contemporary customized orthodontic appliances and their clinical performance

胡兆仁（Jau Ren Hu）
崇民牙醫診所 Dr Lin & Partners Dental Office

Traditional edgewise orthodontic appliance has been developed for more than 100 years and is now a quite mature technique to be used worldwide. However, it still has some disadvantages, such as complex mechanics, unaesthetic in appearance, uncomfortable during treatment, etc. Also, the design of the braces is majorly based on the mean values of particular samples, which makes orthodontists sometimes need to spend time to do a lot of finishing to overcome the differences between patients and values.

Two major innovations in orthodontic appliances have been provoked in the recent decade after the fast development and applications of the 3D processing hard- and soft- wares, as well as internet communication. The treatment results of these appliances can be manipulated and foreseen by the cooperation between orthodontists and software technicians through internet, and then the appliance is manufactured for each individual patient, which is known as a customized procedure.

Nowadays, customized edgewise appliance can be obtained with the benefits of shorter treatment time, and even better results as well, compared with the traditional one.

Removable clear aligner is another kind of customized appliance, and very welcome by the patients due to its more esthetic and comfortable design.

The speaker will compare several aspects of these two kinds of customized appliances through research review and personal clinical experience.

S02

舌側矯正的現在與未來
The present and future of lingual orthodontic

吳錫堯（Hsi-Yao Wu）
登士美齒列矯正美容中心

從 1970 年代日本矯正醫師 Dr. Fujita 首次使用舌側矯正器來治療患者，舌側矯正已經在全世界發展了將近五十年！這五十年來舌側矯正在各地蓬勃發展，不斷的累積成功的治療經驗，治療的技術也不斷的演進，本次的演講將跟大家介紹舌側矯正的最新發展。

目前舌側矯正的發展主要朝正確的術前診斷與精確的治療計劃，減少治療的時間及增進治療的品質等方面在演進。

在術前診斷的正確性上，CBCT 及 3D 影像可以幫助醫生在術前對患者的軟硬組織做好完整的評估，對於治療後的變化做出預測。

在臨床方面，藉由數位口內掃描及電腦排牙，可以在治療前將牙齒做好精確的排列，並經由 3D 列印，將結果轉移到患者口內，可以減少治療的時間達到精細完工的要求，希望這次的演講可以將最新的舌側矯正發展，介紹給大家。

S03

有認知功能障礙之老年患者的假牙選擇，決定和應用
Applications of complete dentures to the geriatric patients with cognitive impairment

柯恩生（En-Sheng Ke）
新苑牙醫診所 負責人
萬芳醫院牙科部 兼任主治醫師
雙和醫院牙科部 兼任主治醫師

面臨高齡社會的來臨，全口無牙患者的假牙治療也面臨不同型態的挑戰，雖然 搭配植體的覆蓋式義齒，能有效的解決很多患者與牙醫師的困擾，但是嚴重萎縮的牙　與認知功能障礙、行為不配合的患者，對牙醫師仍然深具挑戰性。特別是近年來對醫療平權，與高齡者健康意識的重視，高齡失智症患者，及其家人更積極尋求牙科治療。這類患者的全口假牙治療，更應該注意適當的假牙邊緣延伸，正確的顎間關係，簡易有效的咬合模式。治療過程中如果能施予適度的鎮靜，可大幅節省臨床操作時間，並增加紀錄顎間關係的正確性。而治療成功的關鍵，終究取決於定期的假牙維修與不間斷的口腔照護，因此，牙醫師與患者的家屬與照護者應該更緊密合作，才能維持高齡失智患者的口腔機能與健康。

S04

我對咬合與生物學在使用牙科植體於老年患者贋復物 / 假牙之具體考量觀點

Occlusion vs. biologics on dental implants over the geriatric prosthodontics: My specific perspectives

王宜斌（Yi-Bing Wang）
三軍總醫院 Tri-service General Hospita

牙科植體與自然牙在生物學上最大的不同在於，植體是藉由骨整合 (Osteointegration) 固定在齒槽骨內，因此缺乏牙周組織中調控咬合輕重的本體感受 (Proprioception)，過大的咬合力可能會造成植體周圍骨質的傷害。目前因缺乏植體咬合學的研究定論，在臨床上多將自然牙的咬合觀念應用在植體贋復物。牙科植體的咬合觀念原則上應盡量減少植體贋復物的應力 (Stress) 而達到與口腔內其他牙齒協調 (harmony) 的咬合模式 (occlusal scheme)。同時須遵守以下三點 : (一) 咬合力要傳向植體的長軸，(二) 植體在輕咬時不接觸 (自然牙先接觸)，用力咬緊時植體才均勻接觸，(三) 盡量由自然牙來引導。這就是植體保護咬合 (implant-protected occlusion) 的觀念。但是某區域都是植體，非得用植體當作引導 (guidance) 時，則義齒需由頭到尾都要順合下顎的運動。此外增加植體的數目也可減少對植體的應力。

台灣地區 65 歲以上人口在 2018 年已達 14%，預估到 2025 年老年人口會達 20%。老年人口的增加會導致全口無牙患者增加，對假牙的需求量也會增加。老年患者多無固定的收入，因此以經濟上的考量，對全口無牙的患者，上顎做全口假牙，下顎做植體支持覆蓋義齒 (Implant supported overdenture) 是不錯的選擇。覆蓋義齒可增加固位力、穩定度與支持力。因而可增加假牙的咬力，進而改善咀嚼食物的能力。生活品質也可獲得改善。其咬合模式以雙側平衡咬合為宜。

S05

臨床 CBCT 影像診斷用於治療牙髓疾病 / 根管治療學
Advanced CBCT imaging on the endodontics

涂明君（Ming-Gene Tu）
中國醫藥大學牙醫學系繼中國醫藥大學附設醫院牙科部
School of Dentistry, China Medical University

Introduction

A thorough understanding of the complexity of the root canal system is essential of understanding the principles and problems of shaping and cleaning, for determining the apical limits and dimensions of canal preparations, and for performing successful endodontic procedures. Root canal calcification is also considered a great challenge during root canal treatment. Root canal calcification, which refers to the deposition of hard tissue on the root canal wall as a result of trauma, caries, periodontal diseases, and aging, on tributes to 76.7% of difficult RCT cases. CBCT provides not only three-dimensional which were considered superior to routine X-ray films.

Case Reports

A 30-year-old male patient referred from prosthodontic department to endodontic department in China Medical University Hospital for a new crown replacement. An intraoral periapical radiograph shows incomplete root canal treatment with apical lesion of the left maxillary first molar and a vague image of the mesio-buccal root area. A further confirmation a CBCT (Planmeca) arranged, CBCT with a 3D reconstruction confirmed severe calcified MB2 canals of this tooth.

MB2 canal orifice was located and calculated by using the software of ImplantMax.

We measured the distance and angulation of orifice of MB2, and the distance of the calcified canal from the orifice in this tooth through the assistance of the CBCT image. After five appointments by using the surgical operating microscope and Piezo-electric ultrasonic instrument for the calcified canal, patient was free of symptom and sign, and root canal obturated by using warm vertical compaction method.

Conclusions

The present case report emphasizes the need to understand, interpret, and manage a calcified canals has been successfully managed using CBCT. CBCT offers an imaging technique of choice for the management of endodontic disease, and it appears superior validity and reliability in the management of endodontic retreated cases. The use of magnification has been demonstrated to improve the clinician’s ability to visualize and access canals and the use of a 3-dimensional imaging methods (CBCT) in future characterized by the rapid acquisition of volume images from a single low-radiation-doses can of the patient and is of value in assessing the severe calcified canal cases. The assistance by 3D CBCT can help the location of calcified canals, thereby improving root therapy success.

S06-1

活用“吞嚥造影”吞檢查法於治療咀嚼吞嚥困難或障礙病症—日本經驗

The vadility of videofluoroscopic(VE) examination on patients with dysphagia or swallowing disorders: My Japanese experience

原田和昭（Kazuaki Harada DDS PhD）
原田歯科医院 Harada Dental Clinic
九州歯科大学客座教授 Visiting Professor Kyushu Dental University

Dysphagia is a highly prevalent and increasingly common condition found in the elderly. The causes of dysphagia come from multiple factors, such as stroke, neurodegenerative diseases, dementia, and age related entities, etc. It may lead to severe complications such as malnutrition, dehydration, and aspiration pneumonia. Early detection of dysphagia is important due to its high mortality rate.

A thorough clinical examination should be done before performing any instrumental examination to evaluate the condition of patients who may be having problems with swallowing.

Videofluoroscopic swallowing studies (VFSS), have been used as the gold standard of the instrumental examination for evaluation swallowing disorders. This technique can be used to assess the swallowing ability of different volumes, texture, and viscosities of food, as well as the effectiveness of compensatory maneuvers and the swallow physiology of patients. VFSS can also detect whether aspiration occurs before, during, or after swallowing.

The purpose of this presentation is:

1. Recognizing the mechanism of normal swallowing and dysphagia.
2. Highlighting the growing needs for VFSS in the near future, and the urgency for dentists to make the preparation as soon as possible to meet the needs.
3. Knowing how dentists are involved in the care team for patients with dysphagia. A multidisciplinary collaboration of a care team is crucial to the care for those patients, therefore to understand the purpose and to make use of this technique in the management of dysphagia is imperative for dentists who are intending to join this work.

With this presentation, I'll introduce the care delivery treatment plan currently used by dentists in Japan for patients who suffer from dysphagia after being discharged from hospital. I'll also discuss how crucial a seamless plan coordinated by medical providers across different discipline is to support those patients in their community. The progress of the treatment of clinical cases will be shown and followed by some modifications done with the valuable information gained from VFSS.

S06-2

臨床影像診斷檢 對老年病人的安全考量
Advanced imaging: Safety issues to the geriatric patients

原田和昭（Kazuaki Harada DDS PhD）
原田歯科医院 Harada Dental Clinic
九州歯科大学客座教授 Visiting Professor Kyushu Dental University

As cone beam computed tomogaraphy (CBCT) becomes more commonly used in dentistry, oral health care professionals have to consider not only the applicability, but also safety issues that should be carefully evaluated. The advance of CBCT has been an enormous success in dental imaging. It is a type of imaging technology that is entirely new to dentists who have a responsibility to deliver this technology to patients in a responsible way, so that diagnostic value of CBCT can be maximized and radiation doses from the procedure can be kept as low as reasonably achievable.

The principles of radiation protection include: justification, optimization, and the dose limits. It is essential that X-ray examination is performed to justify the usage of CBCT on eligible patients, after weighing the potential diagnostic benefits CBCT produces against the individual detriment that the radiation exposure might cause.

The optimization process includes the design, selection and maintenance of appropriate equipment, as well as the adoption of systematic procedures and standardization of criteria in order to obtain the necessary diagnostic information using the lowest radiation dose that can be reasonably achieved.

The radiation dose limit should not exceed the upper dose limit that any member of the clinical staff or members of the general public may receive from any man-made radiation exposures other than medical exposures.

CBCT equipment factors in the reduction of radiation risk to patients includes X-ray tube voltage, current and exposure time , field of view and collimation , filtration, digital detector, voxel number, and shielding devices. Risks in relation to age and average contribution of organ doses to effective dose calculations for CBCT, adapted from Pauwels et al (2012), are also shown in this presentation.

The radiation doses (and hence risks) from dental CBCT are generally higher than conventional dental radiography (intraoral and panoramic) but lower than MSCT scans of the dental area. The dosage required is also determined by equipment type and exposure parameters, especially the field of view selected. In particular, “low dose” protocols on modern MSCT equipment may bring doses down significantly (Loubele et al 2005; Ballanti et al 2008).

No exposure to X-rays (diagnostic radiology?) can be regarded as completely free of risk, so the use of dental CBCT by practitioners implies a responsibility to ensure appropriate protection.

The present guidelines, however, focus on the practical implementation of the main elements of the radiation protection system, i.e. the justification of patient exposure, and the optimization of patient and staff protection.

Guidelines are not a rigid constraint on clinical practice. Local variations will be required according to national legislation, healthcare provision, practice setting and the unique clinical circumstances of patients.

S07

臨床影像診斷用於治療老年患者的 TMJ 病症
Diagnostic imaging on treating TMJ disorders in geriatric patients

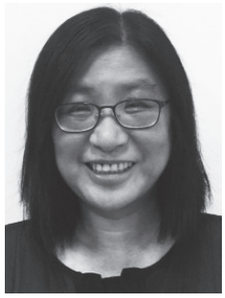
許明倫（Allen Ming-Lun Hsu）
國立陽明大學牙醫學院
東南亞牙醫教育學會
世界牙醫教育學會聯盟

We are facing a serious problem of the aging society in Asia. The pressure of aging population often referred to as the Silver Tsunami, will lead to an increased need for geriatric dentistry. Temporomandibular joint (TMJ) disorders is a common disorder which affects the masticatory function including joint or muscles pain, joint clicking and limitation of jaw movement. Patient with TMJ disorders might undergo anatomical change, therefore, image evaluation is one of methods for diagnosis of joint derangement. In addition, a change inside joint cavity is evidence which can reflect joint derangement. The aims of this study were to evaluate (1) the correlation between the grading systems of osseous change, fluid effusion and the Wilk’s classification. (2) The correlation between the cytokines in synovial fluid and the osseous change, fluid effusion scoring. This study included 27 patients (24 females and 3 males). All the patients received MRI assessment before arthrocentesis. Each joint were evaluated through the grading criteria for severity of osseous change and fluid effusion by blinded observers using MRI assessment. The joint synovial fluid was collected from arthrocentesis and cytokines expression were examined by Luminex multiplex assay. All data were analyzed using the Pearson correlation test. In order to evaluate the volume of fluid effusion more specifically, the fluid effusion scoring was classified by using Image J. The Wilk’s classification showed significantly correlation with the osseous change scoring, but not with the fluid effusion scoring. Comparing to the osseous change scoring, the fluid effusion scoring indicated high correlation with interleukin (IL)-8 and soluble interleukin-6 receptor (sIL-6R) which involve inflammation, and soluble tumor necrosis factor receptor I (sTNF-RI) and sTNF-RII which inhibit inflammation. This study emphasized the importance of fluid effusion scoring which can be a reliable and validated method for diagnosis of TMJ pathological change.

S08

針對牙周病相關之生活型態管理
Life style management in periodontal disease

范靜媛（Ching-Yuan Fann）
開南大學健康產業管理學系



背景及目的：自從牙周病不僅僅被視為口腔局部疾病，而被認定為是一種全身性 / 系統性疾病時，我們即對生活型態（包括抽菸、飲酒、嚼檳榔、運動、刷牙習慣、和飲食型態）和這種慢性系統性疾病 - 無症狀的牙周病及有症狀的牙周病，之間的關係產生高度的興趣。故本研究主要目的為 -- 利用來自基隆社區篩檢計畫中針對 35-44 歲之青壯年族群的牙周病篩檢計畫中所用到的二種指標（社區牙周病指數 (CPI) 及附連喪失 (LA)），去了解生活型態和無症狀牙周病之間的關係，接著利用全國牙周病調查中牙齒動 與否作為有症狀牙周病之指標，去探討生活型態與其間的關係。

材料與方法：針對無症狀牙周病與生活型態研究部分之研究對象來自 2005 到 2009 年間基隆社區牙周病篩檢計畫中共 10,213 名 35-44 歲民眾的檢查結果，其中社區牙周病指數 (CPI) 大於或等於 3， 附連喪失 (LA) 指數大於或等於 1 時為具有無症狀牙周病。人口學變項、教育程度、生活型態、疾病史等資料來自由公衛護士或志工面訪的問卷資料，血糖及白血球等生化值則來自空腹 12 小時後之血液檢查結果。針對有症狀牙周病與生活型態研究部分之研究對象則來自 2007 到 2008 年間全國牙周病調查資料，該計畫共調查了 6 個縣市共 4,061 名 18 歲以上的民眾，其中回答牙齒是否動 的民眾共 2,544 名，其生活型態資料亦得自問卷，血糖及白血球值亦得自血液檢查結果。

我們利用羅吉斯迴歸去探討牙周病與生活型態之間的關係，在單變項分析中有顯著者接著會納入多變項分析中。多變項模式 I 為一般的生活型態 (包括抽菸、飲酒、嚼檳榔、運動、刷牙習慣) 加干擾因子；模式 II 的生活型態則多加入了飲食型態 (包括肉類、蔬菜類、水果、牛奶、飲料、咖啡、茶等攝取頻率)。

結果：以社區牙周指數 (CPI) 為指標時，在單變項分析中一般的生活型態及除了肉與咖啡以外的飲食型態均有統計上的顯著相關。在模式二的多變項分析中，曾經抽菸及高飲料攝取（每週大於等於 5 次）者均有較高的風險，校正干擾因子後曾經抽菸者之危險對比值為 1.17 倍 (95% 信賴區間 :1.03-1.33)；高飲料攝取者為 1.16 倍 (95% 信賴區間 :1.01-1.32)。相反地，早晚均有刷牙者，高水果攝取（每週大於等於 5 次）具有保護作用。其中早晚刷牙可降低 26%（危險對比值 =0.74;95% 信賴區間 :0.56-0.98）的風險，高水果攝取可降低 20% (危險對比值 =0.80;95% 信賴區間 :0.73-0.89)。利用附連喪失 (LA) 或二者任一成立作為指標去進行分析的結果亦很相似。

探討生活型態與牙齒動 之間的相關時，在調整干擾因子後，僅曾經抽菸者有統計上的顯著相關，其風險較從未吸菸者高出 79% (危險對比值 =1.79; 95% 信賴區間 :1.36-2.37)。

結論：不論探針深度或附連喪失來測量無症狀牙周病，在校正其它干擾因子後，抽菸、高飲料攝取、和缺乏早晚刷牙習慣是無症狀牙周病的危險因子。而抽菸同時也與有症狀牙周病有關。

S09

從零開始 : 齲齒之診斷與治療
Dental Caries – diagnosis and management

藍文蔓（Wen-Man, Lan）
台大醫院牙體復形科
Division of Restorative & Esthetic Dentistry, National Taiwan University Hospital

隨著 Minimal Invasive Dentistry 愈來愈廣泛地被討論，到底什麼程度的脫鈣是有機會再礦化回去？什麼程度的破壞是需要進行填補？更甚者，移除齲齒時要移除到什麼地步才能喊停？讓我們從齲齒的形成開始探討，從牙齒的結構改變，到相對應的處理方式，在每種狀況下我們有哪些選擇，有哪些武器，讓我們一起揭開齲齒的面紗。

S10

活髓保存術 — 恆牙深度齲齒除了根管治療外的選擇
Vital Pulp Therapy in deep carious permanent teeth

吳敏駿醫師（Dr. Min-Chun Wu）
台灣大學牙醫學系學士
前台大醫院牙科部住院醫師
中華民國牙體復形學會學術副主委
中華民國家庭牙醫學會會員
北台灣牙醫植體醫學會理事暨研究員
台北市牙科植體學學會會員

蛀牙，佔據一般牙科醫師 7 成以上的日常治療內容，而深度蛀牙更常讓醫師難以抉擇，到底要不要直接進行到根管治療呢？近幾年在牙科領域，微創、保守性治療的觀念受到日益重視，且隨著更好的材料不斷推陳出新，盡可能地維持牙齒 pulp tissue 的活性以延長牙齒的壽命，便成為面對蛀牙時的首重目標。但什麼 case 可以做？要怎麼做？用什麼材料？後續贋復的選擇？是不是很難？—在今天課後，相信你我都能輕鬆上手 Vital Pulp Therapy ！

S11

前牙美觀區植牙的考量
Esthetic considerations for maxillary anterior implants

張瑞忠（Jui-Chung Chang）
高雄醫學大學牙醫系
印第安納大學贋復牙科碩士
奇美醫學中心牙醫部主治醫師
中華民國贋復牙科學會專科醫師

牙齒拔除以後，齒槽骨必然會有水平與垂直方向的吸收，即使在植入人工牙根後也無法阻止骨頭吸收現象的發生。尤其是在上顎前牙區，先天齒槽骨就不如後牙區豐富，這種情況下，日後想要以植牙贋復來恢復缺牙區的外觀，勢必面臨更大的挑戰。本次報告主要以理論為基礎，針對前牙美觀區植牙時，探討術前診斷，拔牙前的準備工作，以及臨床手術與贋復所需注意的事項，藉以提昇日後植牙贋復物的成功率。

S12

淺談植體覆蓋式活動假牙的突破與創新
Renovations and innovations in implant overdentures

許育瑞（Yu-Jui Hsu）
奇美醫學中心牙醫部主治醫師
中華民國贋復牙科學會專科醫師
中華民國家庭牙醫學會專科醫師

早在 2002 年在加拿大蒙特婁 McGill 大學所舉行的一場 symposium ，與會的專家針對 edentulous patient 所發表的共識為下顎 2 支植體的 implant overdentures(IOD) 是全口無牙病人的治療首選 (First-Choice Standard of care)。隨者醫療科技的進步與臨床經驗的增加，一個很穩健的治療計畫 - 植體覆蓋式活動假牙 - 還能有怎樣的突破與創新呢 ?!

此次將回顧相關文獻探討治療夢想的藍圖，與重新省思個人案例分享臨床治療的現實，尋求夢想與現實的平衡。

S13

先天性牙齒發育異常之基因研究與臨床應用
Inherited dental anomalies - clinical and molecular crosstalk implants

王詩凱（Shih-Kai Wang）
台灣大學牙醫學系 台大醫院兒童牙科
School of Dentistry, National Taiwan University

Inherited dental anomalies are genetic disorders characterized by developmental aberrations in tooth numbers, shapes, structure, or eruption with or without systemic manifestations. Patients with these disorders suffer from esthetic, functional, and psychological burdens and have a low quality of live. To date, inherited dental anomalies can only treated with traditional prosthodontic, orthodontic, or surgical approaches, primarily due to our lack of understanding of the genetic and molecular pathogenesis of these disorders. Discerning the genetic etiology of these developmental defects not only gains our insight into normal tooth development but also provides a fundamental basis for developing potential therapeutic strategies for these diseases.

Familial tooth agenesis (FTA), amelogenesis imperfecta (AI), and inherited dentin defects (IDD) are the three most prevalent inherited dental anomalies in humans. For the past decades, a significant progress has been made in unraveling the causative genes for these three disorders. For FTA, mutations in genes involved in early tooth development, namely *MSX1, PAX9, AXIN2, EDA, WNT10A,* and LRP6 have been identified to cause congenital missing teeth with various patterns. On the other hand, more than a dozen genes critical for dental enamel formation have been revealed by studying families with both non-syndromic and syndromic AIs. A dentin specific gene, *DSPP* (dentin sialophosphoprotein), was also demonstrated to be responsible for most cases of IDD. However, despite these advances, the genetic causes of many FTA, AI, or IDD cases remain to be elucidated, and even more efforts still need to be made to discern the causative genes for other inherited dental anomalies, such as non-syndromic hyperdontia. As these disorders provide a valuable source for studying human tooth development, the resulting knowledge will in turn pave the way for developing new treatment modalities for the diseases.

S14

征服兒牙的第一步：治療計畫的戰略思考
First step in pediatric dentistry: Strategic considerations in treatment planning

沈明萱（Ming-Hsuan, Sheen）
高雄醫學大學附設醫院兒童牙科
Kaohsiung Medical University Hospital

乳牙的治療計畫，需要考量患者的年紀、牙齒的預後以及對繼生齒的影響。不論是齲齒或外傷，除了解決患者立即性的疼痛或發炎，還要長期追蹤以避免對恆牙牙胚有不良影響。本次演講會分享幾個長期追蹤的案例，藉此說明治療計畫擬定的思考流程和重要細節。

Treatment planning for primary teeth has to consider the patient’ s age, prognosis and impact on the succedaneous dentition. In case of caries or trauma, long-term follow-up is crucial to monitor the development of permanent tooth germs. In this speech, the thinking process and important details of treatment planning for primary teeth will be discussed.

S15

雷射在牙髓病學之應用
Laser application in endodontics

Wan-Hong Lan
Department of Dentistry, National Taiwan University Hospital Taipei, Taiwan

Laser is a kind of energy-gathering light beam which can vapor the substances. Pulse mode is the most used laser type in dentistry. Every pulse can only vapor specific number of cell layer. Dentists can control the laser precisely and use on specific area gradually through the pulses over and over again. Fiber laser can send laser light directly to the tissue and used for soft tissue cutting. The advantages are minimal bleeding, painless, safely reliable and high precision.

For the most case, no anesthesia is needed because of the painless advantage, and it can also reduce the patients' feeling of fear for the anesthetic injection. With few patients confront with uncomfortable experiences on occasion, the use of laser cutting can be safe and minimize the pain and recovery time for most patients.

The most clinical use of pulse mode dental laser has a character of extremely short pulse intervals, which unable the nerve to react immediately so that the patients won't feel pain or palpitation. Most importantly, the laser is a precise and effective way to perform dental procedures without damaging surrounding normal tissue.

The biggest advantage of laser is that it allows dentists to control the energy-gathering laser to treat deep-cavity which is hard to reach by normal treatment.

Laser application in endodontics include hypersensitive dentin, deep caries, pulp involvement, periapical involvement. To compare with conventional equipment, it shows more benefits for patients. I will provide some clinical cases in the meeting for references.

S16

鉺雅鉻雷射在根管治療的應用
Application of Er:YAG laser in root canal treatment

李苑玲（Yuan-Ling Lee）
臺灣大學臨床牙醫學研究所副教授

自愛因斯坦於 1917 年提出雷射的概念而至今，各種不同波長與介質的雷射在醫學領域已有廣泛的發展與應用。傳統醫用雷射多用軟組織切割的應用，因此在牙科醫療的應用較為有限。鉺雅鉻雷射（erbium-doped yttrium aluminium garnet laser, Er:YAG）的波長為 2936 nm，剛好與水分子的吸收波長相同，也與牙齒硬組織主成分氫氧基磷灰石（hydroxyapatite, HAP）的吸收波長相近，可以用於硬組織的處理，近年來被應用在各種牙科治療的用途，包括牙體復型、牙周病與根管治療等。此外由於 Er:YAG 雷射的波長與水分子吸收波長相同，當水分子吸收雷射能量時會產生雷射光能溫度及光能音爆震波空蝕效應（photothermal & photoacoustic cavitation），因此雷射活化沖洗方法（laser-activated irrigateon, LAI）被提出用於根管治療的應用，來達到根管系統的消毒（disinfection）與移除塗抹層的目的。本篇將針對 Er:YAG 雷射在根管修形、消毒與沖洗等應用層面進行探討，瞭解能量設定、雷射探頭置放和運動模式等變因，對於根管治療成效的影響效應。

S17

精準微創口腔雷射醫療在數位化牙醫的運用
Minimal invasive precision dental laser application in digital dentistry

黃萬騰（Wan-Teng Huang）
美麗華牙醫診所 Mirmar Dental Clinic
台灣世界臨床雷射醫學會 Asia Pacific Laser Institute

精準微創醫療已經是下一個世代醫療的醫療準則，雷射運用於口腔醫療內已經是一個成熟的醫療技術，雷射精準切割與生物刺激的效應使得操作傷口癒合良好，在精準微創醫療中是一個較佳的操作工具。

在數位化牙醫領域，配合數位化的口腔操作環境，口腔雷射發揮其精準及微創的特性，配合數位導引板，發揮其長處。

未來數位化牙醫世代，配合口腔雷射的精準與微創的特性，減少臨床操作上的不適，提升醫療的品質。

Minimal invasive precision medicine is the standard principle of the next generation medicine.

Laser application in dental medicine play an important role in precision field. The precise cutting and biostimulation effect made the post operation healing in good progress. It is a proper tool in minimal invasive dental medicine.

Precision ,Minimal invasion, the benefit of dental laser combined with digital surgical stent can aid the dental surgery procedure more quick and safety in digital dental surgery.

In the future digital dental generation. The cooperation of laser and digital environment will help the dental experts operate more precise and minimal invasive procedure to help patients have the better experience in dentistry.

S18

YAG 雷射於植體周圍炎之臨床治療
YAG Laser in clinical treatment of peri-implantitis

陳昶愷（ Chang Kai Chen）
國軍高雄總醫院左營分院 牙科
Section of Dentistry, Zuoying Branch of Kaohsiung Armed Forces General Hospital, Kaohsiung, Taiwan

近年來植體周圍炎已成為植體治療中主要的考量。在臨床上常診斷的方式為“累進阻斷支持療法 (Cumulative Interceptive Supportive Therapy)”是由 Mombelli & Lang 學者提出用於治療植體周圍炎之方式。治療與牙周病相似，將植體周圍與疾病表面之受感染區域去毒性化為基礎步驟；然而植體表面充滿各種微結構 (microstructured surfaces)，使用機械性工具或是用化學性來進行清創，這樣的方式，可能無法保證完全表面去毒性化。因此最佳的治療準則、手術方式、以及使用那種適合的器械仍未被建立。近期有許多的研究學者聚焦於雷射應用，因為其有效的剝離 (ablation)、殺菌 (bactericidal) 與光生物調節性 (photobiomodulation) 之效果，被寄望成為植體周圍炎治療過程中，扮演整體上重要的角色。現今運用雷射在植體周圍炎的結果與傳統治療相當，且被廣泛研究。

關於手術使用鉺雅各雷射，其植體周圍炎手術治療優勢影響為其可改善較佳骨癒合之可能性。特別的是鉺雷射比較於傳統機械性器械，允許深窄骨缺損區域較有效的清創。Azzeh 學者等人研究應用鉺雅各雷射於植體周圍骨再生手術時能在無併發症下得到高度患者與醫師的滿意度。近期 Yamamoto 學者等人提出使用鉺雅各雷射完全移除清創受污染陽極表面之氧化層，其研究結果顯示成功的臨床應用此方法於手術治療植體周圍炎。另外一方面，Renvert 學者等人回顧文獻於 2012 年指出手術治療為植體周圍炎疾病可預期的方式，使用雷射於手術曝露植體表面，來治療植體周圍炎未顯示有效益。關於表面去毒性化 Schwarz 學者等人指出，在植體周圍炎病灶手術治療時，表面清創與去毒性化之方式對於臨床癒後並無顯著影響。

現今牙科雷射逐漸應用於治療植體周圍炎。雖然在動物植體周圍炎研究中顯示較佳的結果，但只有少數臨床研究，且與傳統治療相比顯著的差異尚未被證實。關於現今證據，鉺雷射為最具前景的雷射系統可用於清創感染表面與骨缺損。然而鉺雷射對於鈦的影響仍需在細節上澄清。需要更多的臨床與動物實驗證實其於治療植體周圍炎之應用優先性。奠基于先前的研究與臨床經驗我們可結論，應用雷射有其技術與治療上的優勢作為處理植體周圍炎疾病的替代或輔助工具。基於以上文獻，對於軟硬組織，調好適當的能量與波長，雷射在牙醫植體學的應用是大有可為的。無疑地，了解關於雷射之物理學、雷射與組織間交互作用的廣泛知識，以及適當的訓練都是雷射應用在日常治療必要的條件，並且更要注意安全措施，避免雷射傷害，以及不必要的醫療糾紛。有了這些雷射的知識，雷射便可以用來治療植體周圍炎，將導致植體失敗的植體周圍發炎反應處理好，甚至能夠有骨整合的效果。在 2018 中華牙醫學大會，我們將回顧雷射在牙醫植體學之運用，竭誠歡迎各位醫師及舊雨新知，與您分享在基礎研究與臨床案例，一起進入雷射治療之新殿堂，共窺其奧密。

S19

從牙醫的觀點看失智症的全人照護
Total care of dementia from view point of dentistry

黃純德 教授（Professor Shun-Te Huang）
高雄醫學大學口腔衛生學系
Department of Oral Hygiene, Kaohsiung Medical University
高雄醫學大學附設醫院特殊需求者牙科及兒童牙科
Division of Special Care Dentistry and Pediatric Dentistry

台灣 65 歲以上老人失智症盛行率為 4.97%，65 歲以上老人每 12 人即有 1 位失智者，而 80 歲以上則每 5 人即有 1 位失智者；顯示隨著增齡，失智症者顯著增加。

失智症（Dementia）是漸進式心智功能退化，它是許多症狀的組合 (症候群)，包括記憶力減退、理解力的低下，智能低下；它還會影響到其他認知功能，包括有語言能力、空間感、計算力、判斷力、抽象思考能力、注意力等各方面功能的退化；同時也可能出現個性改變、妄想或幻覺等症狀，容易疑神疑鬼，不容易信任他人，這些症狀的嚴重程度足以影響其人際關係與工作能力。同時也會懷疑牙醫師沒做好牙科治療或假牙；甚至在牙科診所內也會有失序的行為，造成牙醫師及從業人員的困擾；到晚期時幾乎必須完全依賴他人照顧。

然而每位失智症老人狀況並非都相同，依病因、病程、病症、生活經歷、個人特質及心理、健康等因素而異。因此對每一位失智症者都必須尊重個案的特殊狀況，視其失智種類、嚴重度及其特質而定，行為誘導或溝通時絕不可以一個統一模式來來處理與應對。但基本原則是不變的；如 1) 瞭解他的病情、寬容他的行為、真誠的微笑，2) 和善的態度、簡單的字句、明亮的聲音，3) 溫和的說明，不要爭辯，並維持幽默感，4) 營造安全的環境及氣氛，任何動作都先預告他不要有突然的動作，5) 瞭解那些病狀並非惡意，6) 不要在意他的行為與動作（如吐髒話、罵人等）　7) 但要做好防護工作（以防吐口水等），8) 要明確瞭解固定的照護者及其聯絡方式。

此外老年人常見的疾病如高血壓、糖尿病、心臟血管疾病、腦中風等都會增加阿茲海默症的風險；如糖尿病會造成記憶或認知衰退。血壓收縮壓 >160mmHg 且未治療者，發生阿茲海默症的風險為血壓正常者的 5 倍。同時控制好高血壓後，確實可以降低發生阿茲海默症的風險。因此我們在治療失智症者的口腔疾病時也絕對不能忽略他們常伴隨的共病問題。

因此牙科治療前 1) 一定要詢問清楚病情、服藥狀況，必要時跟他的主治醫師聯絡，2) 務必要有他的家屬或照護者在場，跟家屬或照護者說清楚，以免衍生誤會，3) 若有系統性疾病時，須隨時注意生理的變化，必要時在生理監視器下進行治療，4) 牙齒看診時間儘可能短一些，且排定病患一天中意識最清楚的時候。

因此失智症者須我們以全人照護的觀點來從事醫療照護的工作。

S20

從牙醫觀點看原發型身心障礙者的全人照護
Total care of developmental disabled people from view point of dentistry

詹嘉一（Chia-Yi Jan）
台灣特殊需求者口腔醫學會
Taiwan Association for Disabilities and Oral Health

身心障礙者的口腔健康狀況往往被照顧者所忽略，特別是原發型身心障礙者小病人，直到照顧者意識小病人牙齒到有問題時，才發覺這類病人牙齒治療的困難，此時牙科治療是費時、費人力、費金錢，如果時間再延後至 12 歲以後才開始牙科治療，那才真是考驗牙醫師的能耐。

預防勝於治療，講是容易能徹底做到的是何其困難。身心障礙者的口腔健康預防的重責大任完全落在照顧者身上，因此照顧者的意識就非常重要。如何提高照顧者的牙科健康意識及徹底執行確實是一大課題。

治療面如果只著重功能勢必徒勞無功，治療時牙醫師該如何制定治療計畫，以及如何突破治療困難，在在都考驗著牙醫師的智慧。這也是身心障礙者牙科成為獨立一科是有其必要性。

此次報告，僅就講者 20 多年來的心得與經驗提出來與大家分享。

S21

勝任能力導向醫學教育新進展
The next step for competency-based medical education (CBME)

楊志偉（Chih-Wei Yang）
國立台灣大學醫學院附設醫院教學部
Department of Medical Education, National Taiwan University Hospital

以核心能力為導向的醫學教育 (Competence-Based Medical Education, CBME) 是近年來醫學教育改革的趨勢，CBME 的好處是可以根據受訓者所需的核心能力 (core competency) 設計課程或學程，並強調訓練後的結果，而非單注重過程面的評估，如此可達成以學員為中心的教學與評估，教學的結果也可以落實在實務的操作與表現，並對社會大眾有更具體透明的教學呈現。

CBME 要能夠進一步的推廣，除了核心能力架構提供醫療專業能力的評估基礎外，必須被落實在日常整合性的醫療行為中。為了讓 CBME 能夠從概念性的核心能力架構，落實在平時的臨床教學訓練評估中，許多醫學教育領域的學者及機構提出落實 CBME 的具體作法，其中，最具影響力及說服力的做法就是里程碑計畫 (milestones project) 及可信賴專業活動 (Entrustable Professional Activities, EPAs)。前者是由美國 ACGME 所發佈，後者則是由荷蘭的學者 Olle ten Cate 所提出。

ACGME 里程碑的概念指的是在某專科領域中一個 (或一組) 對於特定能力可觀察可測量的表現敘述，里程碑的制定可以更強化六大核心能力的落實，因為 :1. 讓各個核心能力可以更清楚具體的被描述 2. 可以根據各專科領域的特性，發展各核心能力的知識、技能、態度及信念 3. 具體描述住院醫師訓練過程中應該經歷的每一個階段，直到具備勝任能力。核心能力的發展必須有漸進式的歷程與里程碑，此概念源自於 Dreyfus 的技能訓練發展模式 Dreyfus Model，這個模式強調專業的養成需有漸進式的過程，這也是里程碑概念的基礎。

可信賴專業活動 (Entrustable Professional Activity, EPA) 是專業活動的單位 (units)，指當學員達到足夠的勝任能力，能夠被信任而放心獨立進行的醫療行為，EPAs 可以在過程面及結果面被獨立執行與觀察，根據學員需要被監督 (supervision) 的等級來決定其勝任能力的表現，因此很適合用來決定學員是否具備「可信賴」的核心能力或勝任能力。

本演講將帶領聽眾深入淺出的就 CBME 的最新進展，進行概念性的說明以及實務性的經驗分享。

S22

臺灣牙醫教育制度之省思
Reflection on the dental education system in Taiwan

賴向華（Eddie Hsiang-Hua Lai）
國立臺灣大學牙醫專業學院
School of Dentistry, National Taiwan University

臺灣的醫學教育最新、最重大的改變是從2013年開始，醫學系將改為六年制（2015年開始學士後醫學系改為四年制），學生畢業後需接受為期兩年的一般醫學訓練（PGY訓練）。新制醫學生在畢業前需通過OSCE、取得畢業證書，才能參加國家醫師執照考試，國考通過之後可取得醫師證書及執業執照（執業地點限於PGY受訓醫院）；兩年PGY訓練合格、取得結訓證書之後，可取得執業執照（執業地點不受限），並可接受專科醫師訓練。

醫學系學制從七年改為六年的原因之一，是七年級學生在醫院實習時的角色定位不明，一方面他們不具醫師身分，另一方面他們有時被視為學生、有時又被視為員工，因此不時會有學習與工作相衝突的時候。將實習改至畢業後、已取得醫師證書與限制性執業執照，一方面可以解決實習醫師角色不明的情況，並且與國際接軌，另一方面若醫學生畢業後不想行醫或想先追求其他夢想，也可以不必花一年時間當實習醫師。

五加二教育制度指的是大學牙醫學系讀五年，畢業之後再加兩年的PGY訓練，就優點而言，在國家醫療政策面上，

如跟其他醫師職類越接近，原則上越能爭取應用之權益，當然推行的阻力也相對較小。其次，在醫療法規面上，更符合目前之現況與社會之期待。因為目前實習醫師是學生，所以理論上屬教育部管轄，可是實習醫師卻又都衛生署管轄之教學醫院接觸病人，也同時會延伸一些法律爭議性。但也當然有它的缺點，因為目前PGY的訓練還不夠完善，另外也會牽涉到的就是說訓練人數、容額的問題。所以應於改制實施前加速改善。

在執行面部份，應分成結構面、過程面及結果面去探討。結構面包括計畫目的，任務分工。過程面包括課程內容，方式及教材，師資培育。而結果面則涵蓋評核標準，執行成效評估等，缺一不可。也因此包括教育部、衛生署、考選部、七院校及牙醫師全聯會等目前正密切會商，尋求解決及改進之道，以達到教、考、訓、用等這合適之方法。

S23

牙科種植學的軟組織處理
Soft tissue management in implant dentistry

王大源（Dayen Peter Wang）
臺北醫學大學口腔醫學院院長
Dean, College of Oral Medicine, Taipei Medical University

Tooth extraction in the esthetic area remains a clinical challenge. It includes

1. soft tissue recession
2. progressive vertical and horizontal ridge resorption
3. loss of the buccal plate
4. loss of adjacent papilla.

New techniques and materials have improved treatment predictability and esthetic outcomes. However, soft tissue esthetics surrounding implants and fixed restorations are still a major concern for the contemporary implant dentistry.

In this presentation, by using clinical cases, one by one to answer the above challenge with the following sequence:

a. classic soft tissue application in conjunction with periodontal surgery,
b. progressive improvement of soft tissue management in combined implant surgery.
c. current concept of combined soft and hard tissue management in the esthetic zone will be presented.

S24

3D 列印方式應用於自體牙齒移植
Applications of rapid prototyping teeth as surgical templates in autotransplantation

蘇偉嘉（Wei-Chia Su）
高雄長庚醫院口腔顎面外科
Department of Oral and Maxillofacial Surgery, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan

Introduction

Autotransplantation has been utilized as a treatment for missing teeth. Traditionally, autotransplantation procedures use the extracted donor tooth as a template for the preparation of the recipient site. Developments in cone beam computed tomography (CBCT) and rapid prototyping have permitted innovations such as the fabrication of accurate surgical templates to aid in recipient site preparation.

Materials and Methods

A 21 year old female were referred for extraction of her Tooth #36 residual roots. On examination, tooth #28 was noted and autotransplantation of tooth #28 to #36 extraction socket was suggested. The DICOM dataset from patient’ s CBCT was converted into three-dimensional stereolithography (STL) data and the shapes of the upper third molar were extracted by differentiating the isosurface of the alveolar bone and teeth by the density difference. Three-dimensional tooth templates were printed using a stereolithographic production system. The templates were duplicated with alginate as negative mold then fabricate with orthodontic resin in order to put into oral cavity.

Results

Under local anesthesia, the extraction socket was prepared by the reproduced resin surgical template, the donor tooth was placed in a slight infra-occlusion to prevent postoperative forces. An immediate good fit of the donor tooth was achieved with an extraalveolar time of 5 seconds. A figure-eight suture was placed across the occlusal plane and a wire was placed on the proximated teeth to fix the transplanted tooth. In 3 month post-operation follow up, the transplanted tooth showed positive vitality test, probing test showed less than 3mm in all directions, tooth is without mobility.

Conclusion

It has been established that the most important factor in the success of autogenous tooth transplantation is the vitality of the periodontal ligament attached to the donor tooth, and its viability decreases when it is exposed extra-orally. The decrease in extra-oral time has led to more predictable outcomes and improvements in success rate for autotransplanted teeth. We believe with the help of rapid prototyping, the survival rate of autogenous tooth transplantation may be improved, surgical time may be reduced and possibly the transplanted teeth may remain it’s vitality.

S25

口腔腫瘤術後的重建治療
Reconstructive surgery for oral tumor

黃冠閔（Kuan-Min Huang）
彰化基督教醫院牙科部口腔顎面外科
Division of oral and maxillofacial surgery, Changhua Christian Hospital

口腔腫瘤是口腔內的硬或軟組織出現不正常的增生或病變。口腔腫瘤不論為良性還是惡性，手術後所造成口腔甚或是顎顏面外形的改變，以及口腔功能的缺損大多是無法避免的。所以在口腔腫瘤術後傷口重建治療上，要如何做術前評估？有那些重建方式可以應用和設計上的策略為何？每種方法都有優缺點和可能併發症，但要如何取捨？此外從過去到現在，傳統紙上 2D 方法到目前電腦模擬輔助 3D 列印的變革，在重建手術上也產生明顯的影響。藉著這次討論會提出報告與各位醫師分享。

S26

骨髓炎及骨壞死：案例分享與文獻回顧
Osteomyelitis and osteonecrosis : Cases report and review of article

陳文惠（Wen-hui Chen）
義大醫院牙科部 Dental department of Eda hospital

細菌性感染導致的骨髓炎，是我們最熟悉的骨髓炎，但是骨髓炎的致病因子並非只有齒源性的細菌感染，骨髓炎也不是一定會造成骨壞死。

非細菌性骨髓炎，以及一些硬化性或增生性骨髓炎，是臨床上較少見的骨髓炎，因為這些骨髓炎在臨床上發生機會較少，因此造成診斷上的困難，所以本次報告的重點會以案例輔以文獻來說明如何診斷和治療。

第二部分將介紹一些非細菌感染造成的骨壞死，以及大家最關心的 MRONJ (Medication-related osteonecrosis of Jaw) ，隨著年齡老化，使用抗骨吸收藥物的族群增加，也增加了牙科治療的困難度，在此次的報告中，將與大家分享造成 MRON 的風險、診斷與治療。

S27

Outcome analysis and unexpected-scenario prediction in 2-stage orthodontic lower third molar extraction

Tze-Ta Huang, Chen-Jung Chang, Ken-Chung Chen, Jen-Bang Lo,
Meng-Yen Chen, and Jehn-Shyun Huang
Assistant Professor, Division of Oral and Maxillofacial Surgery,
nstitute of Oral Medicine, Department of Stomatology,
National Cheng Kung University Hospital, College of Medicine,
National Cheng Kung University, Tainan, Taiwan.

Purpose: We propose a 2-stage orthodontic lower third molar extraction procedure to reduce iatrogenic inferior alveolar nerve injury.We tested our hypothesis that there are factors that can predict both dislodgement of the root portion and limited traction distances.

Patients and Methods: Fifteen patients (mean age, 25.7 years; age range, 17 to 65 years) with 20 lower third molars were enrolled. Panoramic films and cone beam computed tomography were analyzed. Dislodgement of the root portion, traction distance, duration of the orthodontic phase, and postoperative complications were documented. The predictive factors were analyzed and discussed.

Results: Three teeth had dislodgements of the root portion. The mean traction duration was 59.2 days (range, 33 to 77 days), and the mean traction distance was 2.60 mm (range, 0.27 to 5.20 mm). Root apex cortical bone indentation and root curvature were significantly associated with traction distance. Pulpitis symptoms were documented in 1 tooth, and no postoperative nerve disturbances occurred.

Conclusions: Our proposed 2-stage orthodontic lower third molar extraction procedure reduced iatrogenic inferior alveolar nerve injury. Cortical bone indentation and root curvature predicted dislodgement of the root portion and limited traction distances.

S28

探討植體支持固定式與活動式假牙之演進與未來
The evolution and future of implant-supported rigid/ removable denture

洪維澤（Wei-Tse Hong）
高雄醫學大學口腔醫學院 Kaohsiung Medical University College of Dentistry
維恩牙醫診所 Wei-En Dental Clinic

自牙科人工植體問世以來，其臨床使用目的莫不以“最少數量”達到“最大咬合效益”為各臨床醫師及相關工作者的最大目標，all-on-four 設計理念即為最鮮明一例。然而跳脫傳統的創新往往也是種挑戰，當重建目標為全顎或全口時，牙醫師往往一方面質疑是否套用傳統局部活動假牙或全口假牙的設計原則和理念在人工植體的運用上，另一方面也要持續面對人工植體與自然牙截然不同的性質所帶來的影響和變化。

此外，全顎重建的治療範圍廣泛，使得患者的本身特質、植體運用的時機、數量與方式產生多樣的計畫選擇和治療結果。例如本國逐漸進入高齡社會，植體治療方式是否該因應高齡患者本身特質而有所調整？諸如此類的臨床考量都會讓牙醫師在選擇植體支持式的假牙時內心出現許多疑慮。

我們或許已不再質疑植體的高成功率，但“長期”成功率也意味著植體在口內不會一直維持牙醫師當初所植入及開始負載受力的全新樣貌，我們更會面對其折舊、耗損或者後期失敗等挑戰植，牙醫師要如何運用臨床專業技能克服上述種種問題是本次演講所要討論的重點，此外我們也將分享長期使用多植體支持式假牙的經驗演進與心得，並合併研究國內外長期文獻追蹤，展望人工植體治療在全顎重建的最新原則。

S29

Uncommon mesenchymal tumors oral surgeons/ pathologists may encounter: Personal experience

Jen-Chieh Lee, M.D., Ph.D.
Graduate Institute and Department of Pathology, National Taiwan University Hospital, National Taiwan University College of Medicine, Taipei, Taiwan

While oral or head and neck pathology is dominated by epithelial lesions, mesenchymal tumors may occasionally come under the scope (literally) and, albeit generally rare and particularly because of the rarity, pose great diagnostic challenge to the oral pathologists. Whereas the mesenchymal tumors facing the oral pathologists usually also occur in a wide variety of other anatomic locations, some seem to have the proclivity for the head and neck regions. This talk is not meant to introduce the head and neck mesenchymal tumors in a comprehensive way, but rather to render a reasonable coverage of various entities beginning with sharing my personal experience in some interesting challenging cases.

S30

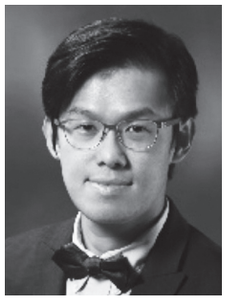
人類乳突病毒與鼻 / 鼻竇癌
HPV-related sinonasal carcinoma

謝明書（Min-Shu Hsieh）
台大醫學院病理學研究所暨台大醫院病理部

High-risk human papillomavirus (HR-HPV) infection has been recognized as an important risk factor in human cervical carcinoma and oropharyngeal squamous cell carcinoma (SqCC). HPV-related oropharyngeal carcinoma is now an independent category in the WHO classification and has its own AJCC TNM classification. Nowadays, HR-HPV infection is found not uncommon in carcinomas of the sinonasal tract. The most common HPV-related carcinoma of the sinonasal tract is squamouos cell carcinoma. Similar to its oropharyngeal counterpart, HR-HPV infection is restricted to non-keratinizing SqCC and not found in those with keratinization. Morphologically, HPV-related sinonasal SqCC can be papillary, basaloid, or adenosquamous variants. In addition to SqCC, another HR-HPV related new entity has been found in the sinonasal tract. This new entity comprises basaloid cells arranged in solid or cribriform structures and morphologically similar to high-grade adenoid cystic carcinoma. Initially it was named as HPV-related carcinoma with adenoid cystic features in 2013 and later renamed as HPV-related multiphenotypic sinonasal carcinoma (HMPSC) in 2017. This entity is unique as it express myoepithelial markers such as p63, SMA, calponin, or SOX10. HMPSC is usually associated with an atypical overlying squamous epithelium which shows nuclear pleomorphism. Strong p16 expression and HR-HPV in situ hybridization are positive in HMPSC and overlying atypical squamous epithelium. The HPV types are different in HPV-related SqCC and HMPSC. HPV 16/18 are typically seen in HPV-related SqCC while HPV 33/35 are found in HMPSC. Several HPV tests are now available to diagnosis HPV-related carcinoma of the sinonasal tract.

S31

矯正過程中咬合平面的變化對臉部外觀的衝擊
The impact of occlusal plane change on facial esthetics during orthodontic treatment



張恆銘（Heng-Ming Chang）
秀傳醫療財團法人彰濱秀傳紀念醫院牙科部

傳統矯正治療中，大部分醫師及患者往往只著重前後向 (Anteroposterior) 的改變來改善患者的外觀，但往往忽略了垂直向 (Vertical) 及橫向 (Transverse) 的變化也能造成外觀前後向的改變。其中垂直向的咬合平面旋轉對於下顎前突量、臉部垂直向比例、上顎前牙的美觀及微笑曲線都有不可忽視的影響。橫向的咬合平面旋轉對於臉型不對稱的改善也有幫助。

因此，此次演講將介紹垂直向及橫向咬合平面旋轉的理論基礎（Rationale）及治療機制（Mechanics）。並透過數個病例報告來闡述此項作法的成效。

希望藉由此次的演講，能幫助各位醫師在訂定矯正患者治療時，可以有更全方位的視野，為患者帶來更理想的治療結果。

S32

舌側矯正之臨床應用
Clinical application of lingual orthodontics

黃丞聰（Cheng-Tsung,Huang）
昇暘牙醫診 Sunrise dental clinics

舌側矯正，顧名思義是指將矯正器置放於牙齒舌側面的矯正方式。該矯正方式起源於成人患者因社交、職業、美觀的需求，希望得到一個不會影響日常生活及社交活動的矯正治療。舌側矯正器的創始者為美國的 Kurz 醫師及日本的 Fujta 醫師，這個矯正器一問世，便受成人患者一特別是演員、模特兒、律師、教師…等美觀或職業要求較高之患者熱烈的歡迎。

舌側矯正治療在發展的過程，曾遭遇瓶頸，由於當時醫師對舌側矯正技術的生物力學機制認識非常膚淺，導致許多醫師在治療複雜的成人病例時陷入了困境，以致發展受挫了一陣子。

進入九十年代，舌側矯正技術取得了突破性的進展，經過二十年的發展，該技術已成為一種成熟、系統化的固定式矯正方式，並在歐洲及亞洲國家流行起來。

不過，舌側矯正技術無論是生物力學機制及臨床操作技巧，都遠比唇側矯正技術複雜。首先，舌側矯正器黏著時，常採用間接黏著技術，這也是舌側矯正成功的關鍵基礎，但這在唇側矯正並不一定需要。另外，由於舌側矯正在拔牙病例中，常須整體移動六顆前牙，對錨定要求較高，矯正器槽溝的設計，也使前牙轉矩控制不易，種種因素使得舌側矯正在生物力學上需要有額外的考量。

總之，舌側矯正成功於間接黏著技術，常失敗於前牙轉矩控制，該描述頗為貼切，也發人深省，實為學習舌側矯正技術初學者銘記在心之金玉良言。

S33

跨科別矯正治療的審思
Reflections on the role of orthodontics in interdisciplinary treatment

張毓仁（Yu-Jen Chang D.D.S, MSc）
高雄長庚醫院牙科系 副系主任
中華民國齒顎矯正學會學術副主委
美國肯塔基大學、密西根大學臨床研究員醫師
高雄長庚醫院牙科

A new Orthodontics, based on immeasurably accurate diagnosis, is arising. What do you think about 3D in your orthodontics? What do you think about orthodontics combined periodontics treatment? And what do you think about treatment of craniofacial deformity? We are facing a new horizon in our daily orthodontics treatment, Now, 3D imaging is popular for orthodontic treatment, even the combined treatment with craniofacial surgery.

Orthodontics is Changing. Are You?

S34

新興傳染病與感染管制
Emerging infectious diseases and infection control

盛望徽（Wang-Huei Sheng）
臺大醫院內科部感染科

隨著公共衛生進步，疫苗研發突飛猛進，許多傳統的傳染病，像霍亂、傷寒或瘧疾，已逐漸消聲匿跡；但是新興傳染病崛起及再浮現傳染病，因全球化趨勢，嚴重衝擊醫療院所、社會全體、甚至全球人類之生存。新興病原菌之崛起及過去病原菌之捲土重來，然而抗生素的開發趨緩而藥廠的態度也消極。故現今已進入所謂的「後抗生素時代」，面臨「病原菌的反擊」。在觀念上必須有所改變，也許要發展新的治療策略，加強快速診斷，利用新技術來開發疫苗或抗生素，甚至於免疫療法及基因治療，並運用資訊科技掌握即時的疫情。隨著國際旅遊的增加，不同國家的抗藥性細菌也得以傳播。2010 年，國內出現首例帶有 NDM-1 超級抗藥性細菌確定病例。近 20 年新興傳染病原主要來自動物，包括愛滋病被認為是經由動物傳給人、再人傳人所致；加上這些病毒有變異性，如 H1N1，疫苗和藥物研發跟不上突變速度，就會不斷生成新型流感病毒、肆虐全球。SARS 之疫讓台灣各大醫院終於警覺到提升感染管制的重要，這些院內感染控制工作包括 : 制定並執行各項必要之感染控制政策及措施、監測及管理可能感染狀況、傳染病之通報及病例追蹤、隔離及防護、抗生素管控、員工之保健措施。

S35

性別與牙醫的二三事
Something about gender and the dentists

林雅音（Ya-Yin Lin）
中國文化大學護理教師暨助理教授
Nursing teacher, assistant professor in Chinese Culture University

本講座從性別的角度切入，就牙科與牙醫相關的生活經驗進行討論，先從性別與牙醫師職業、性別與牙醫診間、性別與美容牙科等來分析與交流。期能在輕鬆愉快的氣氛中將性別議題融入此次牙醫師繼續教育課程中，逐漸地在我們的生活與牙醫診間裡實踐性別平等。

This topic will focus on gender and the dentist-related life experiences. We will discuss such as gender and the dentistry, gender and dental clinics, and gender in esthetic dentistry. To integrate the issue of gender into this dentists' continuing education curriculum in a pleasant atmosphere, we wish we can practice gender equality in our life gradually.

S36

牙根覆蓋術 --- 系統性回顧
Root coverage: Systematic review

周郁翔（Yu Hsiang Chou）
高醫牙周病科
Division of Periodontics, Department of Dentistry, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan

牙齦萎縮的因素如：牙周炎性反應、不當刷牙力道、齒列位置不佳、外傷、牙齦的型態偏薄。牙齦萎縮會導致牙根的暴露、牙齒對冷熱敏感、牙根蛀牙等症狀及美觀方面的問題。常見的手術治療方式之一為牙根覆蓋術，大致上可依軟組織來源分為取自體牙齦組織移植與非自體牙齦移植手術兩大類，需視患者嚴重程度與適應症而定。牙根覆蓋術是屬於牙周病手術中較精細的手術，此手術可以解決部分牙齦萎縮的問題、減輕牙根敏感的困擾、滿足美觀的需求。本次演講將討論常見的牙根覆蓋術式的適應症及比較臨床治療效果。

S37

How to handle peri-implantitis?

高文愷（Daniel Kao）
華盛頓植牙矯正中心
美國常春藤賓州大學

Peri-implantitis is a site-specific infectious disease that causes an inflammatory process in soft tissue and bone loss around an osseointegrated implant. The management of peri-implantitis should be focused on the control of infection, the decontamination of the implant surface and regeneration of the alveolar bone. There are several dental implant surface decontamination approaches have been proposed such as mechanical debridement, anti-infective treatments, photodynamic and laser therapy. Mechanical surface debridement constitutes the fundamental element of treating both periodontitis and peri-implantitis. Conventional mechanical debridement aims to remove the biofilm wholly, such as with titanium, plastic or steel curettes. However, the screw-shaped design of the implant fixtures, combined with various surface modifications of titanium, may increase the difficulty of using hand instruments. The air abrasion method with amino acid glycine/ erythritol particles has been shown to remove biofilm on the infected implant surface. However, it is possible that the remnant particles disturb the cell response and may cause insufficient re-osseointegration after the therapy. To overcome this problem, several in vitro studies have shown to remove biofilm by using biocompatible particles such as tri-calcium phosphate powders (TCP). With this novel “controlled air abrasion approach”, the lesion area will also be isolated with special designed devices. The peri-implantitis area may be treated with higher air-abrasive pressure in relatively controlled environment to effectively remove the biofilm on the infected implant surface with the isolation device. Also, the controlled isolation device may also reduce the chance of subcutaneous emphysema.

S38

口腔外的秘境：牙髓醫療跨科別的連結與疼痛管理
The unknown territory beyond the oral cavity: An interdisciplinary approach to pain management in endodontic dentistry

郭恬君（Tien-chun Kuo）
協力牙醫診所 Elite Dental Office

牙醫師面對因牙齒疼痛求診的患者時，在排除齒源性病因後，往往需要耳鼻喉科、神經內科等科系的醫療協助，以正確診斷並治療共同存在或表現為牙齒疼痛的其他病症。隨著 CBCT 廣泛被應用於臨床醫療，我們對於鼻竇、根管的型態有了不同的體認。牙髓病醫療目的在於治療並避免根尖感染以期保留牙齒，但牙髓疾病並非疼痛的唯一因素，將分享牙髓專科與各次專科間及其他科系的協同醫療經驗，包含診斷、疼痛處理、治療計畫擬定與執行，在跨科合作協同處理的案例中，彼此需要共同的語言以達良好溝通、並對彼此治療有相同期待、了解治療的極限，以達優質治療成果。

S39

型態・顏色別結合的奧妙
The mystery of morphology and color

江愷任（Kai-Ren Chiang）
奇技牙藝工坊 負責人
中華牙技學會 學術委員

每顆牙齒都有它獨特的歷史，不同的時期中，型態與顏色會呈現出微妙的互動關係，因此造就牙齒不同的風貌與色彩，在這次的演講中，將與大家分享這部分的思維。

S40

從色蠟練習到燒瓷
Learning from color wax to porcelain

廖哲葦（Leo Liao）
天野牙體技術所 負責人

Chapter1 色蠟模擬自然牙之功能、顏色與型態

自然牙型態與顏色之發展和變化
色彩學在牙科的運用
型態觀察與練習方法
型態與顏色的關聯性
色蠟模擬自然牙的方法
Chapter2 比色驗證與色蠟應用
染色與混色方法
色蠟支台齒得製作
如何將色蠟練習轉換成燒瓷概念
eLAB 比色驗證在臨床的應用 (單顆、多顆、變色牙根、長石貼片)

Chapter2 前牙色蠟示範

直接與間接內染方法
混色方法
層次的設計
如何做出有深度透明感的作品
自然牙特徵的表現方法
用色蠟堆築解析仿真燒瓷的技法

** 本次課程將節由色蠟來分析自然牙的型態邏輯與臨床上顏色的應用方法，並且把色蠟練習的知識結合比色驗證燒瓷技術。從色蠟支台齒的製作，正確材料的選擇邏輯到各種形式的仿真審美臨床案例都將會在這次的大會跟各位分享。適合對於如何著手加強自然牙型態和顏色牙技初學者，或是在燒瓷上想要達到更進階傲真的牙技朋友們參與。