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THE HONG KONG 香港醫訊
MEDICAL DIARY

VOL.17 NO.5 MAY 2012

Dentistry



Hong Kong Sanatorium & Hospital

LI SHU PUI SYMPOSIUM 2012

Contemporary Medical Practice



Date: 17 June 2012 (Sunday)
Venue: N201, L2, Hong Kong Convention & Exhibition Centre (New Wing)

08:15 – 09:00	Welcome Keynote Lecture 1: Hong Kong Sanatorium & Hospital in Evolution	Dr. Joseph CHAN Dr. Walton LI
09:00 – 10:00	Symposium 1 Minimally Invasive Procedure – Is There a Limit? Minimally Invasive Aesthetic Surgery for Breast The New Landscape of Interventional Cardiology Recent Advance in Minimally Invasive Surgery Can Spinal Surgery be Minimally Invasive?	Chairperson Dr. William WEI Dr. Duncan HO Dr. Walter KING Dr. Vincent KWOK Dr. Michael LI Dr. Stephen WU
10:00 – 11:00	Symposium 2 Obstetrics/Paediatrics in 2012 Changing Trends of Prenatal Diagnosis Puberty, Genes and Environment The Success of IVF – Experience Over a Quarter Century Paediatrics Oncology – Drugs, Needles and What?	Chairperson Dr. YEUNG Chap Yung Dr. Helena LAM Dr. Danny LEUNG Dr. Louis LOW Dr. Milton LEONG Prof. Godfrey CHAN
11:15 – 12:15	Symposium 3 Early Diagnosis of Cancer and Effective Therapy Improved Clinical Outcome of Patients with Leukaemia, Lymphoma and Myeloma Lung Cancer – Biomarkers & Diagnostic Tools Screen-Detected vs Self-Discovered Breast Cancers: A Hong Kong Study Surgery for Gynaecological Cancer	Chairperson Dr. KWAN Wing Hong Dr. Thomas LEUNG Dr. Raymond LIANG Dr. Edmond MA/Dr. CHAN Wai Kong Dr. Polly CHEUNG/Miss Silvia LAU Dr. TAM Kar Fai
12:15 – 13:15	Li Shu Pui Lecture PET in Contemporary Medical Practice	Chairperson Dr. Garrett HO Prof. Michael M. GRAHAM
13:15 – 14:00	Lunch	
14:00 – 15:00	Symposium 4 Ultrasound, MRI, CT, PET – When and How? Ultrasound Sonography Applications in Pain Management Brief Overview of Interventional Radiology MRI for Head & Neck Diseases Hidden Treasures Behind Our CT Scanners	Chairperson Dr. Daniel CHUA Dr. YEUNG Wing Hong Dr. Carina LI Dr. Victor AI Prof. Ann KING Dr. John CHAN
15:00 – 16:00	Symposium 5 Endoscope in Diagnosis and Therapy Endo-Laparoscopic Management of Co-Existing Gall Bladder & Common Bile Duct Stones Gynaecology – Endoscopic Surgery Optimal Surgery for Prostate Cancer – The Robot Colorectal Surgery with Endoscope	Chairperson Dr. FAN Sheung Tat Dr. LAM Bing Dr. Angus CHAN Dr. YUEN Pong Mo Dr. WONG Wai Sang Prof. LAW Wai Lun
16:15 – 16:45	Keynote Lecture 2: A New Era of Functional CT and MR Imaging	Dr. Gladys LO
16:45 – 17:45	Symposium 6 Advances for Primary Care Diabetic Eye and Macula Eye Disease How Can Rehabilitation Medicine Help? The Cutting-Edge Technologies for Cutting Bone Accurately in Knee Replacement Strategy in Managing Chronic Constipation	Chairperson Dr. Alvin KWOK Dr. Elaine TSUI Dr. CHAN Wai Man Dr. Alex CHOW Dr. TANG Wai Man Dr. CHAN On On

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Contents

Editorial		Life Style	
■ From Practice of MI Dentistry to Prevention of Periodontal Diseases	2	■ Cleft Lip & Palate Surgical Ministry – The Journey Of Blessing	28
<i>Dr. Albert MP LEE</i>		<i>Dr. Tak-kun CHOW</i>	
Dental Bulletin		Dental Quiz	
■ Psychological Characteristics of Patients with Dentofacial Deformities and Considerations for Corrective Surgery	4	■ Dental Quiz	17
<i>Dr. Ka-shing SUEN</i>		<i>Dr. Shiu-yin CHO</i>	
<i>Dr. Hannah Daile CHUA</i>			
<i>Prof. Lim-kwong CHEUNG</i>			
■ MCHK CME Programme Self-assessment Questions	6	Society News 30	
■ Biofilm and Contemporary Endodontics	8	Federation News 31	
<i>Dr. Danny LOW</i>		Medical Diary of May 33	
■ Surgical Complications in Implant Dentistry and Their Management	12	Calendar of Events 34	
<i>Dr. Raymond LK CHOW</i>			
■ Improving Aesthetics and Smiles with Incognito® Lingual Orthodontic Appliance	20		
<i>Dr. Wilson LEE</i>			
■ Multi-disciplinary Treatment with Invisalign in Dentistry	24		
<i>Dr. Yi-kwong YAU</i>			

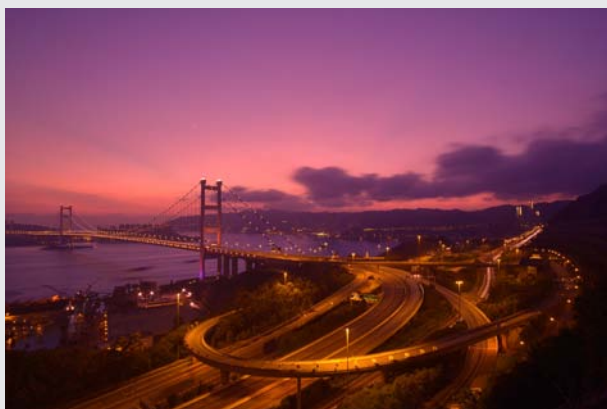
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The Cover Shot



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*Nikon D3100 12-24mm
Auto f/8 Singh-Ray G&B CPL*



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From Practice of MI Dentistry to Prevention of Periodontal Diseases

Dr. Albert MP LEE

BDS, MSc, FRACDS, FCDSHK(Paed Dent),
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Editor

Dr. Albert MP LEE

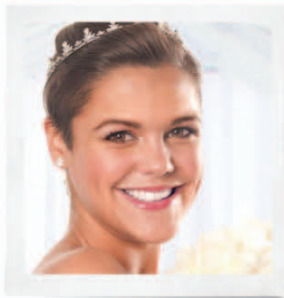
MI Dentistry (Minimal Intervention Dentistry) is a practice philosophy incorporating minimally invasive operative procedures for management of dental caries in general dental practice. It consists of a 4-phase cycle in a patient-care concept including accurate diagnosis using the latest caries detection technology; preventing and controlling the progression of caries using chemical treatments to promote healing of early incipient lesions; restoration of advanced lesions using minimally invasive techniques and adhesive dental materials; and finally, regular recall frequency to monitor the disease development. There are growing research and clinical evidences that early carious lesions can be reversed using preventive treatments; while advanced carious lesions can be managed without complete excavation of residual caries-affected dentine and sealed under an adhesive restoration. The changing theory of caries management has a remarkable impact on operative dentistry from invasive restorative procedures to the concept of filling with less drilling.

Periodontal disease is a multi-factorial disease in the oral cavity causing destruction of gingival attachment and bony structure surrounding the tooth. Recent clinical studies and researches indicate that some oral bacteria having tissue-invading properties can gain direct access to distant organs in the body through the microvascular system in the gingivae. Therefore periodontal infection is now thought to be a risk factor associated with cardiovascular diseases including atherosclerosis, hypertension, increased intima-media thickness of arteries; cerebrovascular diseases including stroke (fatal/non-fatal); and adverse pregnancy outcomes including preterm delivery and restricted foetus growth. Despite various aetiological factors causing periodontal diseases, it is mainly a biofilm mediated chronic inflammatory disorder caused by bacteria in the periodontal pocket. Hence mechanical disruption of the biofilm in the microbial plaque formed around the tooth is a prerequisite for successful periodontal treatment.

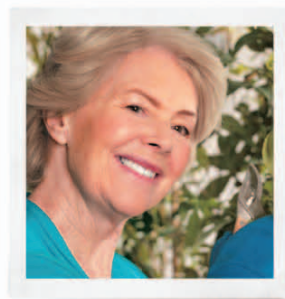
By applying the practice philosophy of MI dentistry for patients with dental caries, patients with periodontal diseases can also be monitored in the MI care plan of a dental practice. Reinforcing oral hygiene, regular prophylaxis and scaling are all biofilm disruption procedures in patients susceptible to periodontal diseases. A routine and frequent dental recall visit is beneficial to all patients so that the periodontal health can be monitored and maintained. With such a dental care plan, the development of systemic complications that are detrimental to the patients' general health can also be prevented.

Nowadays dentists are no longer a "dental mechanic" putting a drill on every single tooth, but rather, more likely to play a role of a "dental physician" using various preventive and chemotherapeutic means to treat the most common dental diseases in their general dental practice.

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Psychological Characteristics of Patients with Dentofacial Deformities and Considerations for Corrective Surgery

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This article has been selected by the Editorial Board of the Hong Kong Medical Diary for participants in the CME programme of the Medical Council of Hong Kong (MCHK) to complete the following self-assessment questions in order to be awarded 1 CME credit under the programme upon returning the completed answer sheet to the Federation Secretariat on or before 31 May 2012.

The face is a unique and significant feature in human beings as it is the centre of attention during face-to-face interactions. Deformities of the facial region can cause a negative impact on aesthetics, functions (speech, mastication, airway), and also on one's psychosocial well-being. It is important for medical and dental practitioners to appreciate the psychological impact of facial deformities and psychosocial benefits of correction surgery.

Dentofacial deformities

Patients with dentofacial deformities normally present with disharmonised dentofacial skeleton and malocclusion. The malpositioned teeth may also cause problems with speech, particularly on articulation. In severe retrognathic cases, the deformity may be associated with obstructive sleep apnoea. The disharmony can be isolated to one jaw, both jaws and involve multiple craniofacial structures. The deformity may express as over-development (hyperplasia) or under-development (hypoplasia). The abnormality can occur in different anatomical planes. Occasionally, one side of the jaw can grow longer than the other side, resulting in facial asymmetry. Some of the deformities are associated with craniofacial syndromes and the most common one is cleft lip and palate.

Psychosocial impact on patients with dentofacial deformities

Interpretation of personality on first impression based solely on appearance is common in our society. A physically attractive person is usually perceived to have more positive self-concept¹, mental health² and self-confidence^{3,4}. People are more willing to interact with attractive individuals as they perceive that it may bring them increased status and esteem⁵.

Deformed faces may cast a negative image on the individuals and cause misinterpretation to ones' personality. Social interactions of patients with cleft lip and palate are adversely affected by their facial appearance⁶. Many wrongly assume that this group of patients are less intelligent and have poor academic skills⁷. Unfortunately, this creates pressure on their self-esteem and social behaviour^{8,9}. Adolescent cleft lip and

palate patients often show poor social behaviour. In adult patients, they tend to internalise their problems and are prone to develop anxiety and depression⁸.

Treatments for correcting dentofacial deformities

Orthognathic (Greek "ortho" means straight and "gnathic" means jaw) surgery has been developed for over 50 years and it is considered as a mature technique performed by maxillofacial surgeons worldwide. This procedure has been applied in Hong Kong for more than 25 years. It is one of the most common maxillofacial procedures done in our discipline with over 100 cases per year.

Patients with dentofacial deformities commonly undergo a combined orthodontics and orthognathic surgery to correct their deformities¹⁰. Most patients receive orthodontic treatment to align the teeth as a pre-surgical phase for the jaw correction¹⁰. The aim of orthognathic surgery is to place the jaw(s) into correct anatomical positions so that normal facial harmony and occlusion can be achieved. The surgery is commonly done after the cessation of skeletal growth at age 16 to 18. The occlusal result is perfected by post-surgical orthodontic treatment in maintaining a normal occlusion and good dental inter-digitation.

The corrective surgery can involve the maxilla, mandible, nose and other craniofacial skeletons, depending on the skeletal diagnosis. For the maxilla, Le Fort I osteotomy is a commonly performed maxillary osteotomy. This technique is used to correct vertical, transverse and antero-posterior disharmony of the maxilla in relation to the cranium. The maxilla can be further segmentalised into several pieces to provide a satisfactory dental occlusion and lip-nose relationship. In correction of the midface deformity, Le Fort II or III osteotomy may be required to achieve a balanced nasomaxillo-zygomatic complex. Dentoalveolar protrusion is common in Orientals. Dentoalveolar osteotomies (Wunderer and Schuchardt) are performed to correct the protrusion of the upper lip.

In the mandible, anterior subapical osteotomy (Hofer osteotomy) is very versatile as it can setback or upright the lower anterior alveolus for correction of lower lip



protrusion. Mandibular body osteotomies such as Step osteotomy can be used to close dental spaces and correct anterior open bite. Several osteotomies are available to advance or setback the whole mandible. The technique is applied on the mandibular ramus region. Sagittal split osteotomy is the commonest osteotomy used to advance the retruded mandible. To achieve mandibular setback, Vertical Subsigmoid Osteotomy is preferred as it causes less neurosensory disturbance. Other ramus osteotomy techniques such as inverted L or C osteotomy are less commonly used.

Correction of the chin deformity can be achieved by a sliding osteotomy or augmentation with an alloplastic material. Alloplastic implants may cause delayed infection and resorption of the underlying bony structure. Therefore, we prefer the sliding osteotomy for correction of chin deformities as it has less long term problems.

Psychosocial benefits of orthognathic surgery

It has been well published that patients after orthognathic surgery generally have more positive mind, more vigour, less fatigue, less depression and less tension stress six months after the surgery when compared to those receiving only orthodontic treatment or no treatment^{11, 12, 13}. In addition, patients can have better social functioning, social adjustment, self-confidence, self-concept, body image, emotional stability, self-esteem and facial attractiveness image, positive life changes and reduced anxiety¹⁴. No gender difference was found in the changes of psychological functioning before and after surgery¹⁵.

Psychological considerations for orthognathic patients

It is of utmost importance to understand a patient's motivation seeking for jaw correction. Many express their wish to improve aesthetics, oral functions (speech and mastication), self-esteem, social life, or prevent future dental problems (temporomandibular joint disorder and dental attrition). Patients are particularly concerned about the effects of the surgery on their facial appearance. It is prudent for the surgeons to justify whether the patients' expectations are realistic. Unrealistic expectation can cause dissatisfaction of the final outcome, even though the result is considered as acceptable by most people.

It is essential for the maxillofacial surgeons to provide informed consent regarding the surgery. It is important for the patients to understand the risks, benefits, surgical procedures, post-operative complications, treatment options, length of hospital stay and dietary adjustment before they subject themselves to surgery.

Pre-surgical psychological assessment and support

Orthognathic surgery can be considered as a potentially traumatic event which can cause post-operative

stress. Pre-existing psychological distress can be exacerbated post-operatively causing psychological problems, such as posttraumatic stress disorder. Therefore, psychological screening is recommended for orthognathic patients at the initial consultation stage as part of the work-up. This will help the surgeons in identifying any psychological risk factor and evaluate the patient's fitness to receive orthognathic surgery. Risk factors associated with poor psychological outcomes after orthognathic surgery include personality disorders, body dysmorphic disorder, depression and anxiety^{16, 17}. Patients having results exceeding the normal psychological threshold should be referred to clinical psychologists for a thorough evaluation and possible psychological support. Reports from the psychologists regarding a patient's mental health status can provide important information on his/her readiness for orthognathic surgery.

Post-operative psychological support

Inevitably, some orthognathic patients may express dissatisfaction and distress post-operatively. It is necessary for the surgeons to identify severity of the problems and investigate the overlying causes. Prompt management and reassurance should be given to the patients. Surgical outcomes which are considered to be satisfactory to surgeons but not to the patients, may arise due to the unmatched expectation and outcomes. Referral to psychologists for counselling and support can be beneficial for the management of these patients.

Conclusion

Patients with dentofacial deformities commonly face psychological stress and may not be well accepted in the society due to their facial appearance. Orthognathic surgery has been found to provide many psychological benefits to these patients. Pre-operative psychological screening is necessary to identify patients with unrealistic expectations, who are prone to develop post-operative psychological disorders. Informed consent including risk, benefits of the corrective surgery should be discussed well before their commitment to surgery. Psychological support is useful for the management of any unexpected psychological disorders post-operatively. Close collaboration with clinical psychologists is essential in the multi-disciplinary management of patients with dentofacial deformities.

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MCHK CME Programme Self-assessment Questions

Please read the article entitled "Psychological Characteristics of Patients with Dentofacial Deformities and Considerations for Corrective Surgery" by Dr. Ka-shing SUEN, Dr. Hannah Daile CHUA and Prof. Lim-kwong CHEUNG and complete the following self-assessment questions. Participants in the MCHK CME Programme will be awarded CME credit under the Programme for returning completed answer sheets via fax (2865 0345) or by mail to the Federation Secretariat on or before 31 May 2012. Answers to questions will be provided in the next issue of The Hong Kong Medical Diary.

Questions 1-10: Please answer T (true) or F (false)

- Deformities of the facial region have no impact on patients' aesthetics and psychosocial well-being.
- Retruded jaws may be associated with obstructive sleep apnoea.
- The public generally consider individuals with deformed faces are of normal intelligence and have better academic skills.
- Patients with dentofacial deformities commonly undergo a combined orthodontics and orthognathic surgery to correct their facial deformities.
- Patients after orthognathic surgery generally have more positive mind, more vigour, less fatigue, less depression and less tension stress six months after the surgery when compared to those receiving no treatment.
- Females attain more positive psychological functioning before and after surgery than males.
- Many patients with facial deformities express their wish to improve aesthetics, oral functions, self-esteem and social life.
- Psychological screening is not recommended for orthognathic patients as part of the work-up.
- Risk factors associated with poor psychological outcomes after orthognathic surgery include personality disorders, body dysmorphic disorder, depression and anxiety.
- The perception of surgical outcomes is expected to be the same between surgeons and patients.

ANSWER SHEET FOR MAY 2012

Please return the completed answer sheet to the Federation Secretariat on or before 31 May 2012 for documentation. 1 CME point will be awarded for answering the MCHK CME programme (for non-specialists) self-assessment questions.

Psychological Characteristics of Patients with Dentofacial Deformities and Considerations for Corrective Surgery

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Biofilm and Contemporary Endodontics

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Introduction

Contemporary root canal treatment comprises of three procedural stages: mechanical instrumentation, chemical decontamination, and 3-dimensional obturation of the entire root canal system¹. Despite the continuous development and invention of high-tech instruments, advanced biomaterials and effective treatment protocols, decontamination of the entire root canal system remains the key objective of contemporary root canal treatment. With complete elimination of bacteria from the root canal system, successful outcomes could be achieved. Having said that, studies have shown endodontic failures, in which persistent infection occurs even with thorough decontamination of the root canal system^{2,3}. As a result, a new biofilm concept of endodontic infection was introduced; not just to understand the pathogenic potential of the endodontic microorganisms but also the basis for development of new strategies towards eradication of more resistant bacteria⁴.

Formation of Biofilms

Biofilms, by definition, are matrix-enclosed bacterial communities, in which microbes adhere to each other and/or to surfaces or interfaces^{5,6}. This definition includes microbial aggregates and floccules and also adherent populations within the pore spaces of porous media. Without the existence of bacteria, perhaps biofilms would not be found. Thus, a prerequisite for biofilm formation is the availability of "planktonic microorganisms"; in which the free-floating microbes exist in an aqueous environment. Another important requirement would be the presence of an organic conditioning polymeric matrix (also known as conditioning film)⁶.

The development of biofilms could be described into 4 phases, which are (i) deposition of a conditioning film, (ii) adhesion and colonisation of planktonic microorganisms in a polysaccharide matrix with subsequent co-adhesion of other microorganisms, (iii) maturation of microbial community and (iv) detachment of biofilm microorganisms into the surrounding environment^{4,7}.

(i) Deposition of a conditioning film

The conditioning film is often formed prior to the arrival of planktonic microorganisms and comprised of proteins and glycoproteins from saliva and gingival crevicular fluid. Besides, the conditioning film comprises selective behaviours that determine which

type of microorganisms will attach to the matrix; hence, affects the microbial composition of the biofilm.

(ii) Adhesion, colonisation and subsequent co-adhesion of planktonic microorganisms

Upon completion of the conditioning film, the readily available free-floating bacteria that exist in the surrounding aqueous solution will start to attach onto the film surface and then colonisation occur with multiple micro-colonies formed. Interestingly, the initial type of bacteria that begin to colonise, seems to be crucial for the subsequent co-adhesion of other different bacteria⁸.

(iii) Maturation of microbial community

The microorganisms that are embedded within the conditioning film will later multiple and evolve to become a structurally organised mixed microbial community. During this stage the inherent characteristics of the microorganisms and the nature of the micro-environment influence growth and succession of microorganisms in the biofilm.

(iv) Detachment of microorganisms

The detachment of microorganisms is a dynamic process among the biofilm formation. Indeed, it should be considered as a continuous process during development of biofilm, rather than a final stage of biofilm formation. The detachment begins at the initial microbial adhesion, in which the quantity of detachment increases with maturation of biofilm, as the gross amount of microorganisms within the biofilm multiplies. It is the detached microorganisms that contribute to transmission and colonisation at other susceptible loci.

Clinical Implication

Studies have shown that bacterial interaction and cooperation is crucial for bacterial survival, persistence and growth in the microbial community that exists within the root canals^{9,10}. Even though the organisation of biofilm is acknowledged, development of biofilm in endodontic infections remains mysterious⁴. As readily available planktonic microbes are capable to form biofilm in an aqueous medium, root canal biofilm is not uncommon in endodontic infections. If that is the case, this would be extremely important with substantial clinical significance; as biofilm-embedded microorganisms are known to show better resistance to external adverse influences such as antimicrobial treatment procedures than free-floating planktonic analogs^{5,6}.



In the context of root canal biofilm, it has been suggested that the pre-condition for root canal biofilm formation varies depending on the cause of pulpal tissue breakdown⁴. For example, caries exposure of pulp remains the most common cause of tissue breakdown. Carious invasion of the pulp represents bacterial infiltration into the root canal, in which the inflammatory lesion front may move successively towards the root apex. As a consequence, providing an aqueous medium by which the foreign planktonic microorganisms from the oral cavity could migrate into the root canal space and initiate biofilm formation. Nonetheless, the actual phenomenon that occurs after initial penetration of microorganisms remains unclear. There is a lack of information regarding how these microorganisms attach and spread further along the entire root canal space. Perhaps, a massive infiltration of polymorphonuclear cells as a result of inflammation leads to formation of by-product exudates could account for the availability of an aqueous medium for biofilm formation¹¹.

On the other hand, there are cases of necrotic pulpal tissues, which are relatively dry and may not be fluid-filled. As such, the question remains as to whether bacterial condensations in a biofilm structure can develop or be retained in sites of the root canal system other than near the bacteria/inflammatory interface; where protein-rich immuno-substance and bacterial produced adhesive substances may provide the adequate prerequisites. Indeed, evidences regarding the pattern of root canal biofilm distribution during the progress of pulpal breakdowns are rather limited among dental literatures.

Architecturally, the mature biofilm is a highly organised filamentous structure consisting of mushroom-shaped microcolonies of bacteria bound together by a polysaccharide matrix together with surrounding open water channels that maintain homeostasis^{7,12,13,14}. There is no doubt that the biofilm acts as a physical barrier against the action of antimicrobial substances and the host's defence mechanisms⁴. Therefore, microorganisms that are embedded within the biofilm are shielded and thus often harder to be eliminated as compared with their free-floating planktonic counterpart^{14,15}; in which they are often (up to 1000-fold) more resistant to phagocytosis, antibodies and many antibiotics^{5,13,15,16}.

Another unique feature of the biofilm would be its constitution of a protected mode of growth that permits survival in a hostile environment⁵ and recovers rapidly following access to increased nutritional supply. The dense filamentous structure of biofilm might restrict the penetration of the antimicrobials into the biofilm¹⁷. That is, deep-seated microorganisms may be able to survive against antimicrobials and remain viable for remultiplication when conditions are favourable once again. For instance, an *in vitro* study showed that bacteria of endodontic origin were able to grow on dentin slices of extracted teeth to form biofilm that was not likely to be eradicated using various antibiotics such as ampicillin, doxycycline, clindamycin, azithromycin, or metronidazole^{18,19}. Besides, the biofilm has been shown to be able to neutralise potent oxidising agents, making it difficult for them to penetrate and kill microorganisms²⁰.

The proximity of individual microorganism in a biofilm also increases the chances for gene transfer, making it possible to transform previously avirulent microbes into a highly virulent pathogen that is not susceptible to antimicrobics¹³. Indeed, this potential for gene transfer within the biofilm is particularly significant in the case of *Enterococcus faecalis* (*E. faecalis*), because a number of its virulence factors are encoded on transmissible plasmids, which include collagenase, gelatinase, and adhesions, all with the potential to contribute to survival in and colonisation of the root canal²¹.

Contemporary Root Canal Treatment

It is well known that persistent endodontic infections do not result from an individual species of microbial⁸. Rather, it is the entire polymicrobial entity that undergoes physiological and genetic changes triggered by ecological changes within the root canal system. Therefore, the prime objective of contemporary root canal treatment is "root canal decontamination"; that is complete eradication of free-floating bacteria as well as bacteria embedded within the biofilm from the root canal space. Furthermore, removal of the entire biofilm (i.e. anti-biofilm) along the root canal system would be equally important as this will prevent reactivation of survived nonviable bacteria²². Based on the current understanding of root canal biofilm concepts, various means for the effective control of root canal biofilm are being explored.

One important clinical procedure of conventional root canal treatment would be mechanical instrumentation with endodontic files. Unfortunately, mechanical instrumentation alone does not result good removal of biofilm²³. Practically, the challenging component of biofilm removal is the not readily accessible areas such as fins and crevices of the root canal system. Such inaccessible root canal spaces would be a source of undisrupted biofilm. Thus, the use of antimicrobial agents has been recommended as an adjunct to mechanical instrumentation to eliminate root canal microorganisms²³.

In contrast, intra-canal irrigation with antimicrobial solutions would be able to eliminate root canal biofilm that is impossible to be removed with mechanical instrumentation. Antimicrobial irrigation aims to assist in the removal of root canal biofilm from uninstrumented surfaces that usually account for 30 to 50% of the entire root canal wall^{22,24}. A number of studies have examined the antimicrobial efficacy of root canal irrigants on root canal biofilm, which include sodium hypochlorite (NaOCl), EDTA, chlorhexidine and BioPure MTAD^{22,25-29}.

As compared with other irrigants, NaOCl is probably the most effective antimicrobial and antibiofilm agent²⁸. NaOCl is capable of both physically removing biofilm^{22,28} and killing bacteria^{22,25-29}. The antimicrobial effectiveness is dose dependent, in which a higher (6%) concentration of NaOCl is sufficient to remove both bacteria and biofilm from root canals²². On the other hand, when the concentration is reduced to 1%, viable microorganisms will be able to survive. Possibly, the reduced concentration of NaOCl could be compensated if



it is replenished frequently or allowed to have additional time to exert its antimicrobial properties. Besides, the effectiveness of an irrigant is dependent on the nature of the organisms and the contact time²⁵. The antimicrobial effect of NaOCl is likely because of removal of organic matrix of the biofilm, thus eliminating the bacterial component of the biofilm together with eradication of biofilm. Adjusting the temperature of NaOCl also affects the organic tissue dissolubility³⁰.

Recently, chlorhexidine has been shown to have an effective antimicrobial property when used as an endodontic irrigant³¹. However, its effectiveness in removal of root canal biofilm as well as the dose dependent effect of chlorhexidine are not promising²². BioPure MTAD has also been examined in the same study which shows that its antimicrobial property is minimal and incapable to physically remove biofilm^{22,27}. EDTA is generally recommended for the removal of smear layers and its antimicrobial effect remains controversial^{27,29,32}. However, it has been suggested that EDTA facilitates biofilm removal or bacteria removal from biofilms²⁹.

Clinically, root canal irrigation often comprises a combination of the above-mentioned irrigants. Therefore, the effects of different irrigation regimens in relation to biofilm removal were also examined³³. The study reported that EDTA when used as final irrigant of the root canal would lead to high susceptibility of biofilm formation; whereas, a recommended irrigation regimen of EDTA followed by NaOCl and chlorhexidine that would alter the favourable factors of biofilm formation.

Apart from irrigation regimen, other irrigation variables such as irrigant agitation on the efficacy of biofilm removal were also suggested³⁴⁻³⁶. Dynamic irrigation which consists of irrigation with the addition of intracanal push-pull manipulation of a tapered gutta-percha point closely resembling the canal dimensions enhanced the removal of root canal biofilms³⁵. Canal enlargement of both apical dimension and canal taper also directly affects the amount of biofilm removal³⁵. Irrigating needles designed with multiple openings would enable better biofilm removal as well as frequent replacement of irrigating solutions³⁵. Sonic and ultrasonic irrigations are able to dislodge experimental biofilm^{34,37,38}. A typical sonic irrigation system such as EndoActivator system was reported to be able to effectively remove biofilm³⁷. With ultrasonic irrigation, energy is transmitted to the irrigant in the root canal by means of ultrasonic waves and subsequently induces acoustic streaming. The acoustic streaming induced is then able to cause de-agglomeration of root canal biofilm³⁸, and hence improves efficacy of NaOCl against the microorganisms.

Recently, light activated disinfection was able to demonstrate a good result against removal of biofilm³⁹. Although light activated disinfection alone was not effective enough to remove mature biofilm, combined procedures of chemo-mechanical instrumentation together with light activated disinfection were able to eliminate mature biofilm. This is probably because mechanical instrumentation of the root canal would have partially disrupted the underlying biofilm

structure, and thus facilitates the penetration of antimicrobial irrigants into the biofilm structure. Perhaps more long-term clinical studies are required to verify the clinical efficacy.

Summary

The concept of biofilm plays an important role in the paradigm shift of contemporary root canal treatment. Biofilms are sessile microbial communities composed of microorganisms irreversibly attached to a substrate-rich layer and interface and/or to each other. Apparently, there is no standard clinical procedure available in terms of mechanical and antimicrobial measures that can predictably eliminate the endodontic infection in total, particularly those microorganisms lodged within the non-instrumented fins and crevices of root canal system as well as the dentinal tubules. Therefore, it would be reasonable to assume that the ideal endodontic irrigant would be the one that is antimicrobial as well as capable in physically removing both the biofilm and the associated microorganisms. Root canal treatment procedures should focus more on antimicrobial irrigation rather than mechanical instrumentation.

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Surgical Complications in Implant Dentistry and Their Management

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Introduction

Dental implant is a predictable and safe treatment modality for partial and total edentulous patients. High success rates have been demonstrated. However, complications may occur in a small proportion of patients. These complications could occur during the placement of implants (surgical complications) or after the placement of prostheses (prosthetic complications). Complications may or may not lead to implant failure, but managing these problems could be very challenging. This article will highlight various surgical complications associated with dental implant surgery and discuss their management.

Surgical complications occur in the surgical phase of dental implant treatment. It could happen intra-operatively (during the insertion of implant fixtures), or post-operatively (shortly after implant placement). These complications include:

- Haemorrhage
- Wound dehiscence/infection
- Nerve injury
- Displacement of implant into the maxillary sinus
- Damage to adjacent teeth

Haemorrhage

The amount of bleeding associated with a surgical procedure depends on the local and general factors. Local factors include flap or flapless procedures, the raising and extent of flap and also soft tissue management. General factors would be the patient's general health, presence of any haemorrhagic disorders and administration of anticoagulants. Active profuse bleeding during implant surgery is very rare unless major vessels are damaged. In fact, post-operative haemorrhagic patches developed on the skin or mucous membranes were quite common (Fig. 1). Goodacre et al¹ reported that 24% of his implant cases have post-operative ecchymosis. The incidence of these haemorrhagic patches can be reduced with careful soft tissue management and try to avoid vertical relieving incision in the flap. Application of pressure on the flap after suturing for few minutes can also minimise haematoma formation, and thus reduces bruises.

Infections

The infection rates after implant surgery were low; Powell and his colleagues² reported the implant infection rate in his studies was around 1.14%, and Gynther et al³ found a 0.7% infection rate. Treatment of infections associated with dental implant placement was

similar to other dentoalveolar infections. Antimicrobial therapy and sometimes combined with surgical debridement can effectively resolve the infection. Strict aseptic technique during implant placement is also suggested.

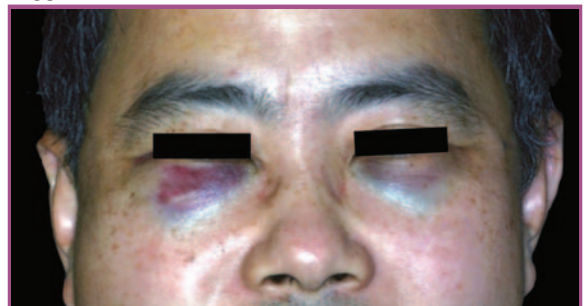


Fig. 1 Ecchymosis of the infra-orbital areas after bilateral maxillary implant placement

Nerve injury

Nerve injury caused by dental implant insertion is a serious complication and frequently leads to medicolegal consequences. The incidence of sensory disturbance reported in the literatures was around 10%. Inferior dental (ID) and mental nerves are frequently involved^{4,5}. It is due to the intrusion of implant or twist drill into the inferior dental canal or mental foramen (Fig 2). Patients usually complained of paraesthesia or hypoesthesia of the ipsilateral side of the lower lip (Fig 3). However, if dysesthesia (pain elicited by low threshold stimulus) or anaesthesia (complete loss of sensation) is noted by the patient, severe nerve damage is expected. Radiograph or CT scan should be taken to ascertain the implant's position. If it is intruded into the canal, it should either be withdrawn a couple of turns or removed completely. However, the implant may lose its primary stability after partial withdrawal, and in that case, complete removal of the implant is the only way. Because loose implants can get infected easily, this will further complicate the situation.

To prevent nerve injury, careful pre-operative determination of the nerve position (ID and mental nerves) is very important. Diagnostic imaging such as panoramic radiograph and cone beam CT should be obtained before the surgery. If panoramic radiograph is used, the appropriate magnification factor has to be taken into account. It is recommended that the dental implant should be at least 2mm away from the nerve^{6,7}. A drill guard can be used to avoid accidental over-drilling. In addition, informed consent to the patient on the risk of nerve damage should also be mentioned.

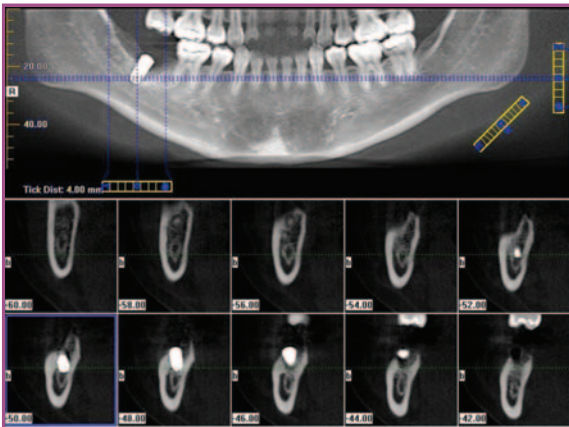


Fig. 2 Implant at 47 intruded into the inferior dental canal

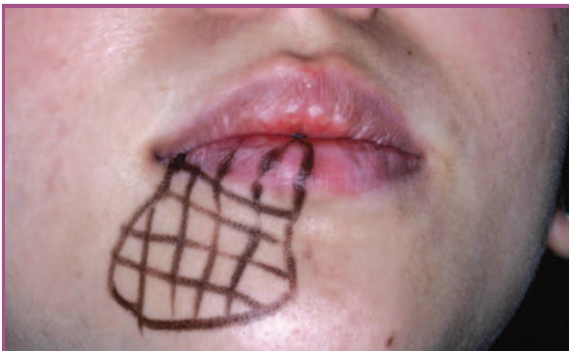


Fig. 3 Numbness of the right lower lip after implant placement at 47

Once neurosensory deficit occurs, the patient should be managed promptly, rather than leaving him/her unattended, and hoping the sensation will come back by itself. Neurosensory test⁸ should be undertaken monthly using light touch and two-point discrimination and pin prick stimuli thresholds (Fig 4). The lack of any evidence of recovery by 3 months is recommended as an indication for surgical intervention. If there is some evidence of sensory recovery by 3 months, monitoring should be continued for a further 3 -6 months, until there is no further improvement. At this stage, an operation is considered if there is either poor recovery or dysaesthesia⁹. The modified protocol based on that of Robinson for the management of nerve injury is shown in figure 5.

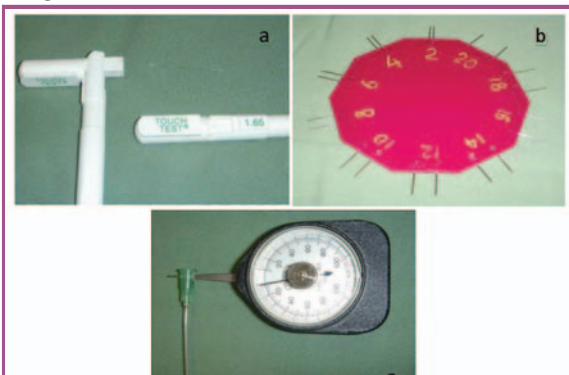


Fig. 4 Neurosensory test - a) Light touch b) Two point discrimination c) Pin prick

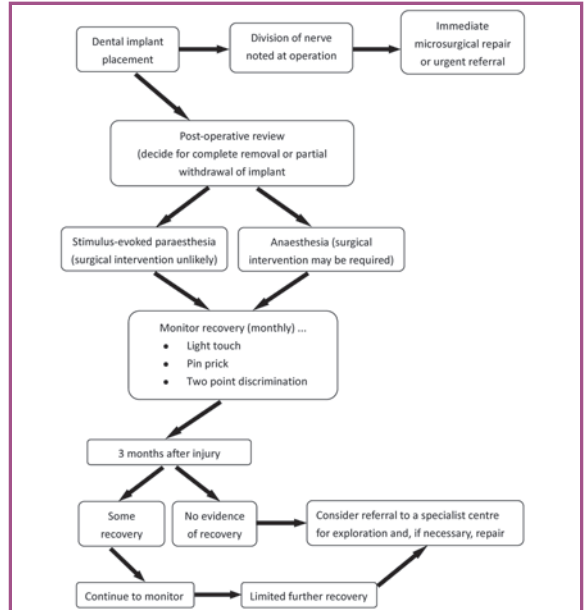


Fig. 5 Protocol for the management of nerve injury caused by dental implant placement

Displacement of implant into the maxillary sinus (Fig 6)

An implant which is displaced into the maxillary sinus during insertion must be removed immediately. Otherwise, maxillary sinusitis and other serious sinus sequelae (e.g. pan-sinusitis) could happen (Fig 7). Symptoms of sinusitis include fever, para-nasal pain especially when leaning forward, yellowish discharge from the nose. Retrieval of displaced implant is accomplished by a lateral open approach (creating a lateral bone window into the sinus). In case of purulent infection of the sinus, pus has to be drained also (Fig 8). Antibiotics and nasal decongestants should be prescribed post-operatively.

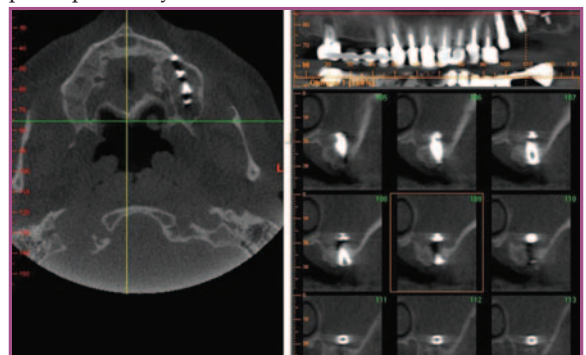


Fig. 6 Displacement of implants and cover screw into the left maxillary antrum



Fig. 7 Left pan-sinusitis, note the infection spreading

Damage to adjacent teeth

Apart from nerve damage, incorrect angulation or positioning of an implant can also damage the adjacent teeth. Implant impinging on an adjacent tooth can jeopardise its blood supply and result in pulp necrosis and thus periapical pathology. The damaged tooth will require root canal therapy, apicectomy or, in the worst case, extraction. Untreated periapical lesion may contaminate the implant and results in failure. Figure 9 showed a case of implant at 46 hitting the root of 45, buccal abscess developed at 45 two months after the placement. Surgical exploration revealed severe bone loss at 45 and mesial aspect of the implant and 45 required extraction (Fig 10). In this case, the implant still retained its stability, therefore, bone grafting of the defect was undertaken and a bridge was made using the 44 as abutment (Fig 11).

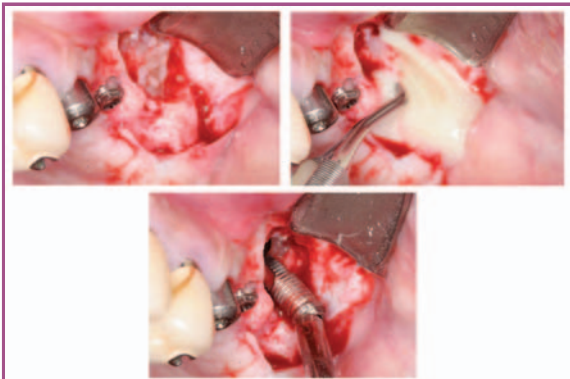


Fig. 8 Lateral open approach to retrieve the displaced implants and drain pus

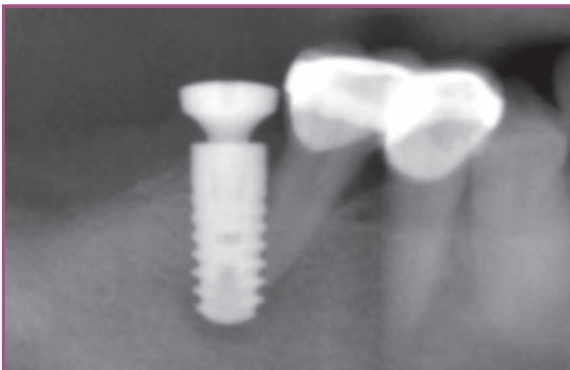


Fig. 9 Implant hitting the root of the adjacent 45.



Fig. 10 The resulted bone defect at the mesial side of the implant

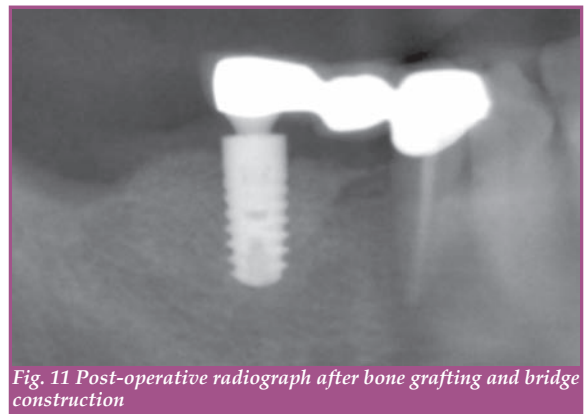


Fig. 11 Post-operative radiograph after bone grafting and bridge construction

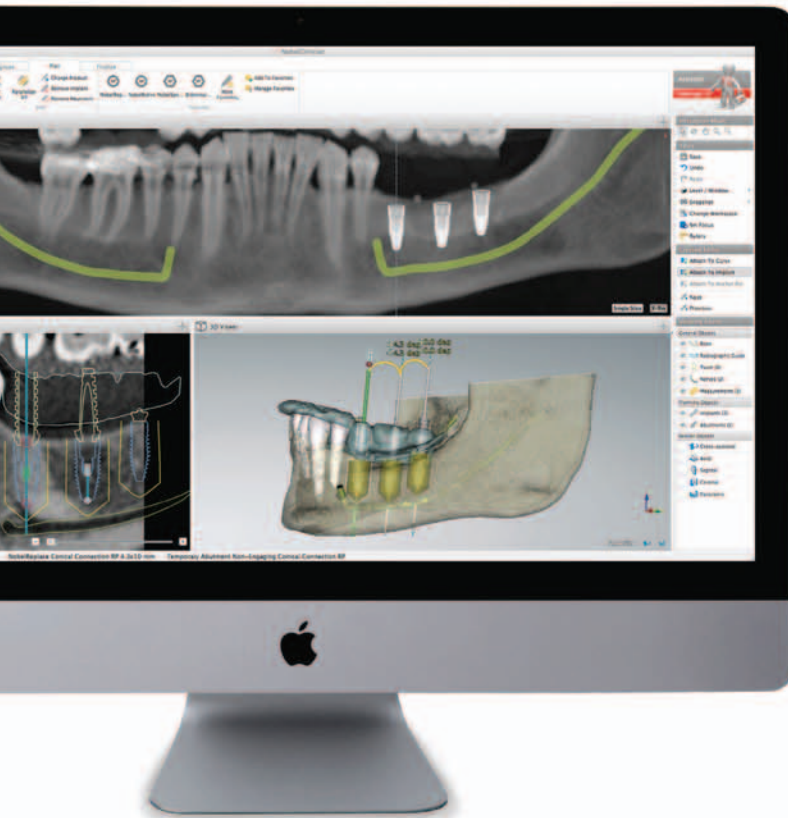
Conclusion

Dental implant treatment is safe and detrimental complication is rare. McDermott et al¹⁰ found that the overall implant complication was about 15.3% and surgical complication only accounted for 1%. Though surgical complication is rare, it could lead to medicolegal consequences. Most of these complications can be avoided by careful pre-operative assessment and planning, and through the use of accurate diagnostic tools. Last but not the least, informed consent should be given and the risks of treatment should be fully explained to the patients before the surgery.

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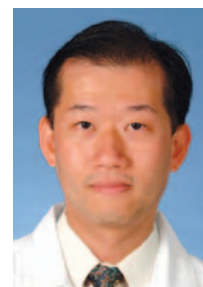




Dental Quiz

Dr. Shiu-yin CHO

BDS(HK), MDS(Otago), FRACDS, FHKAM(Dental Surgery)
Senior Dental Officer, Farling School Dental Clinic



Dr. Shiu-yin CHO



History:

A 12-year-old boy slipped and fell at the school playground. His tooth 11 suffered horizontal crown fracture. His teacher retrieved the fractured fragment and carefully wrapped it in a piece of tissue paper and let the child to bring it home. The child sought dental care in the evening and the dentist reattached the fragment with bonding agent and composite resin. However, the reattached fragment appeared to have different colour from the remaining tooth structure.



Question:

- 1: why the reattached fragment showed different colour from the remaining tooth structure?
- 2: what could be done to improve the aesthetics for this tooth?

(See P.37 for answers)



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June 1 – July 27, 2012	CMED 6911 Human resources (HR) in health care organisations	6:30 – 9:00pm
June 2 – July 28, 2012	CTCE 6040 Advanced statistical methods II – analysis of complex data	10:00am – 12:00pm
June 9, 16, 18 & 19, 2012	CMED 6903 Health care financing	Full day
July 30 – August 3, 2012	CMED 6203 Measurement in health	9:00am – 1:00pm
August 6 – 10, 2012	CMED 6226 Population health informatics/eHealth	9:00am – 1:00pm
August 13 – 18, 2012	CMED 6219 Health communication	9:00am – 1:00pm
August 20 – 24, 2012	CMED 6204 Health and society	8:30am – 12:30pm

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Improving Aesthetics and Smiles with Incognito® Lingual Orthodontic Appliance

Dr. Wilson LEE

FCDSHK (Orthodontics), FHKAM (Dental Surgery), MOrthRCS (Edin), MOrth (HK), AdvDipOrtho (HK), MRACDS (Ortho), BDS (HK)

Specialist in Orthodontics, Private Practice; Part-time Clinical Lecturer, Faculty of Dentistry, HKU; Council member, Hong Kong Society of Orthodontists



Dr. Wilson LEE

Introduction

Where beautiful smiles play a significant role in our world today, the number of orthodontic patients in orthodontic practices is ever increasing.¹ Most patients, including adolescents, want to improve the alignment of their teeth and smiles without showing the metal braces, and prefer treatment with invisible or nearly invisible appliances.² Despite the wide availability of clear ceramic brackets in the market, patients continue to prefer 'invisible' braces when they have their teeth straightened. Orthodontists often choose to use orthodontic appliance systems that can meet patient's demand and deliver clinically excellent treatment results.

'Invisible' Orthodontic Appliance

There are basically two types of 'invisible' orthodontic appliances available in the market:

1. REMOVABLE – e.g. Invisalign®. Aesthetic orthodontic appliances such as Invisalign® have been developed in the past two decades which have met some demands by patients. As it is a removable orthodontic appliance, it has its limitations in controlling teeth movement in three dimensions. Treatment duration is also longer than conventional labial or lingual appliances. A recent US study has shown that the mean accuracy of tooth movement is 47%.³ In Hong Kong, both Specialists in Orthodontics and General Dentists can prescribe this removable appliance to their patients.
2. FIXED – e.g. Incognito® lingual orthodontic appliance - which was the most popular lingual appliance around the world last year. This lingual appliance is only prescribed by Specialists in Orthodontics since it is very technique sensitive, and requires specialist training before certified to use this appliance. Lingual braces are not visible from the outside and there is little or no aesthetic impairment of a patient's smile during treatment. The disadvantages would be initial tongue discomfort and speech disturbances.⁴

Brief History of Lingual Orthodontic Appliance

The original lingual orthodontic appliance was first introduced by Dr. Kinya Fujita in Japan and Dr. Craven Kurz in the USA in the late 1970's. It has created

significant interests to Orthodontic specialists in the mid-1980's. However, there were three major problems which have resulted in the decline in these conventional lingual orthodontics in the early 1990's:

1. Difficulty in finishing the cases in high standard and the emergence of more aesthetic clear labial appliances which were easier to control but not invisible;
2. Rebonding problem – it is very difficult to precisely rebond the brackets after they accidentally come off from the tooth surface;
3. Speech problem – due to the larger profile and size of the conventional lingual brackets, tongue movement is more restricted during speech and the brackets causes invariable irritation during speech.

Incognito Lingual Orthodontic Appliance

Dr. Dirk Wiechmann of Germany invented the Incognito lingual appliance in the late 1990's and has created enormous interests in lingual appliances in the last decade.⁵⁻⁸ His company and technique were subsequently acquired by 3M Unitek® in 2009. The appliance is distinguished from other bracket systems because both the brackets and the wires are custom made for individual patients, and fabricated using state-of-the-art CAD/CAM technology and archwire bending robots.

The technological advances in the Incognito lingual appliance help in solving the three major problems in conventional lingual orthodontics:

1. Improvement in patient comfort and speech adaptation – as the appliance is custom-made and adapted to the tooth surface as flat as possible;
2. Improvement in accuracy of rebonding – as the custom-made bracket base covers most of the lingual tooth surface, this allows the ease of direct rebonding of a bracket without the need of any jig or positioning aids;
3. Improvement in ease of finishing and detailing of a case – based on the set-up models, the custom-made brackets and pre-fabricated archwires (according to the arch form) have improved accuracy in finishing the case as close to the set-up models as possible. A recent study of 94 consecutive patients in a German orthodontist's clinic has shown that discrepancies in position and rotation between the set-up models and outcome were small for all teeth, generally less than 1mm and 4 degrees, except for the second molars, where some larger discrepancies were observed.⁹



Appliance Manufacturing Process

After the orthodontic treatment plan has been explained to the patient and a consensus is reached on the treatment objectives, an accurate polyvinyl siloxane impression and bite registration are obtained from the patient. A therapeutic set-up of the teeth model is made on a mounted articulator (Figure 1) based on Andrews' six keys to normal occlusion¹⁰, or the orthodontist could prescribe the detailed set-up criteria (e.g. angulation and torque) to the technicians.



Figure 1: Set-up models of final prescribed occlusion mounted on an articulator.

With the use of high-resolution optical 3D scanner, the teeth set-up model is scanned into the computer. Based on the data collected from the set-up model, the shape and position of the brackets will be designed virtually. The patented state-of-the-art CAD/CAM technology will assist in design and fabrication of Incognito lingual brackets (Figure 2a-e).



Figure 2a: Individual positioning of the bracket bodies and base pads are plotted and placed on a CAD/CAM software; Figure 2b, Generation of the archwire co-ordinates; Figure 2c: Prototyping the wax brackets on a rapid prototype wax printers; Figure 2d: Individual brackets are casted and polished (a molar bracket is shown here); Figure 2e: State-of-the-art archwires bending robot. All photos above are courtesy of 3M Unitek®.

The base pad of the bracket is first plotted on the lingual surface of each tooth, with the aim of maximising the surface area of bonding surface (Figure 2a). The large size of the pad not only gives greater bond strength,

but also makes it easier to adapt to the individual tooth during bracket rebonding. Then the low profile bracket bodies are inserted, making sure the bracket profile is as thin as possible in order to maximise patient comfort during daily function. The CAD/CAM software will help select the height, angulation and torque of the brackets. As such, the individual patient's prescriptions of the appliance are built into each bracket (Figure 2b).

Once all the brackets are designed, the information will be transferred to the production line by first creating wax patterns of each bracket using a 'rapid prototyping' machine (Figure 2c). It is similar to a wax printer. After adding the wax blanks to the patterns, they are placed inside a casting cylinder and coated with plaster, similar in casting a gold crown. The wax is then burnt and gold alloy is poured into the cylinder. This nickel-free gold alloy offers an alternative especially to patients who are allergic to Nickel.

After casting, all the brackets are polished to a fine surface in order to ensure patient comfort (Figure 2d). The size of the bracket slot is then checked with precision equipment to confirm their accuracy. Measuring rates show divergences of not more than 0.008mm between slots.

In the final stage of the bracket production, the brackets are bonded to the original model, and an indirect bonding transfer tray is made. In most cases, the brackets are bonded to the patients' teeth at the same time.

Archwire production

The 3-dimensional geometry of each archwire is calculated with the CAD/CAM software and the information is transferred to the state-of-the-art archwire bending robot (Figure 2e). All the archwires in the sequence of treatment have the same geometry to obtain the final position of the teeth in the set-up model. Although the archwires are custom made and bent, it is still up to the Orthodontists to do some final adjustments and detailing on the chair side. There are some differences in archwire design between cases, e.g. those require extraction of teeth and those don't need extraction, and it is the Orthodontist who decides all the selection of wires. Common wires used are 0.014-inch superelastic (SE) Nickel-Titanium (NiTi) wire, 0.016-inch SE NiTi wire, 0.016x0.022-inch SE NiTi wire, 0.016x0.024-inch Stainless Steel wire, and 0.0182x0.0182-inch Titanium Molybdenum Alloy (TMA) wire.

Clinical Indications

Incognito® is generally suitable for treatment of all malocclusions regardless of age, as long as the patient has a permanent dentition with a healthy periodontium. Three clinical cases are presented in Figures 3 to 5.

Conclusions

The Incognito® lingual orthodontic appliance has revived interests in orthodontic patients who seek invisible lingual braces to straighten their teeth. It is

the only customised, individually fabricated, fixed and invisible lingual orthodontic appliance. It has the advantages of easier rebonding protocol with individually fitted bracket base. Wire bending is reduced with pre-fabricated archwires provided. Teeth movements and incisors torque control are also improved with Incognito® compared to the removable orthodontic aligners. Incognito® lingual orthodontic appliance is suitable for treatment of all malocclusions, and for adolescents and adults.

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Case Presentation



Figure 3: Case 1 - Adult female with a chief complaint of malaligned front teeth and midline shift. Treatment plan was with extraction of 3 premolars with Incognito lingual appliance. (3a) Pre-treatment; (3b) after bonding of Incognito appliance and extraction of three premolars; notice the appliance adapts closely to the teeth surface and is totally invisible from the outside; (3c) Upper arch photo: the brackets were bonded to the palatal side of the teeth; (3d) Post-treatment shows the well aligned front teeth and midline is on; (3e) Pre-treatment lateral profile: lips profile was slightly protruded; (3f) Post-treatment lateral profile: notice the reduced convexity of the lips profile.



Figure 4: Case 2 - Adult female with a chief complaint of crooked front teeth. Treatment plan was with Incognito lingual appliance without extraction of any tooth. (4a) Pre-treatment; (4b) Post-treatment; (4c) & (4d) initial bonding of Incognito appliance to upper and lower arches; (4e) & (4f) four months after treatment, notice the teeth have been aligned significantly; (4g) Pre-treatment frontal smile; (4h) Post-treatment frontal smile, notice the much improved smile.



Figure 5: Case 3 - Adult female with a chief complaint of underbite, crowded front teeth and displaced upper right canine. Treatment plan was with Incognito lingual appliance with extraction of upper right first premolar. (5a) Pre-treatment frontal smile; (5b) Pre-treatment frontal photo shows the Class III malocclusion with reverse overjet and crowding in upper arch; (5c) Post-treatment frontal smile, notice the much improved smile; (5d) Post-treatment frontal photo.

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22 May	Nutrition for Aging - Physiological & Psychological Changes in Elderly - Specific Nutrient Needs in Elderly	Dr. Susan LUI <i>PhD. (HK) R.D (USA)</i> <i>Dietitian-In-Charge, Haven of Hope Hospital</i>
29 May	Medical Nutrition Therapy in Geriatric Nutrition - Common Chronic Illnesses in Elderly - Medical Nutrition Therapy for 1. Hypertension 2. Hyperlipidaemia 3. Type 2 diabetes	Ms. Sally POON <i>BSc, MND, APD (DAA, Australia), SRD (HPC, UK)</i> <i>Newsletter Editor, HKNA</i> <i>Private Dietitian</i>
5 June	Geriatric Nutrition Care in Community - Common Eating Problems in Elderly - Menu Planning in Community Settings - Practical Tips for Food Preparation	Ms. Mandy MAN <i>BSc (Hons), PDHC, MPhil, MND,</i> <i>APD (DAA, Australia)</i> <i>External Coordinator, HKNA</i> <i>Community Dietitian</i>
12 June	Nutritional Screening in Elderly - Use of Two Validated Nutrition Screening Tools (C-MNA, C-MUST) for Geriatrics - Nutrition Intervention Strategies	Ms. Wendy HUI <i>M.P.H., R.D. (ADA, USA)</i> <i>Freelance Dietitian</i>
19 June	Nutrition Support in Elderly - Malnutrition in Elderly - Enteral and Parental Nutrition Support in Elderly - Practical Tips and Case Sharing	Ms. Kathleen YAU <i>BSc, PgD Diet, SRD (HPC, UK)</i> <i>Membership Secretary, HKNA</i> <i>Dietitian, Pamela Youde Nethersole Eastern Hospital</i>
26 June	Management of Dysphagia - Symptoms of Dysphagia - Eight Standard Procedures for Dysphagia Management - Preparation of Dysphagia Diets	Ms. Wendy HUI <i>M.P.H., R.D. (ADA, USA)</i> <i>Freelance Dietitian</i>

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Multi-disciplinary Treatment with Invisalign in Dentistry

Dr. Yi-kwong YAU

BDS(Hong Kong), DGDGP(UK)

General Dental Practitioner



Dr. Yi-kwong YAU

Introduction

After practising as a general dental practitioner for 24 years, the author noticed that general dental practitioners nowadays perform a wide range of treatment modalities. Following the advancement in dental technology and material development, more and more general dentists have incorporated implant and orthodontics into their practices. With the introduction of a new orthodontic system, Invisalign, both general dentists and orthodontists can offer an additional treatment option to patients who cannot accept traditional braces to straighten their teeth.

Invisalign was first introduced into the dental market in 2001 in Hong Kong. By using patented CAD-CAM technology to treatment plan and to manufacture a series of custom-made aligners, over 1.6 million patients have been treated with Invisalign (Figure 1). Depending on the complexity of the teeth, most patients just need to wear the series of aligners to complete the treatment while some patients have to combine Invisalign with fixed appliances but this still significantly reduces braces wearing time. The treatment outcomes however are still not as consistent as those treated with conventional fixed appliances but getting more and more successful cases have been reported over the years following the improvement of biomechanics and research in engineering. Now more complex treatments can be treated with Invisalign and more patients in the market are also asking for this treatment approach with the appliances that are comparatively invisible, significantly more comfortable and easier for patients to maintain good oral hygiene as they can remove the aligners when they brush and floss.

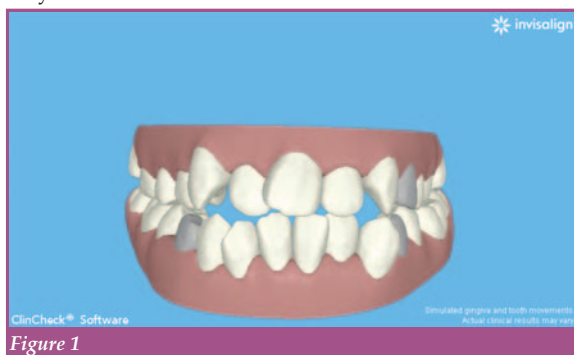


Figure 1

The following 2 cases demonstrate how we can incorporate Invisalign into multidisciplinary treatments in dentistry:

Case 1 : Use of Invisalign to correct class III malocclusion and reposition of an upper right lateral incisor (#1.2) to camouflage a missing upper right central incisor (#1.1)

The patient was a 16-year-old female student who wanted to correct her crowding. She came with class III dental malocclusion with severe crowding, shift of upper midline to the right, anterior cross bite and open bite. In addition, her upper right central incisor (#1.1) was lost due to trauma she had while she was young (Figure 2).



Figure 2

The treatment plan was :

1. Removal of three premolars (upper left first premolar #2.4, lower left and right first premolars #3.4 & #4.4) and followed with Invisalign treatment to correct the crowding and the occlusion. #1.2 would be moved to the position of #1.1 for future camouflage as #1.1.
2. #1.2 would be built up with composite to camouflage #1.1 before the refinement.
3. Crown lengthening procedure of #1.2 to level the gingival margin with adjacent upper left central incisor #2.1.
4. Crowning of #1.2 to camouflage #1.1 by an all ceramic crown.

In the Invisalign software, the attachment and the staging design was based on the Best Practice Protocol of Invisalign for extraction cases. The space for the future #1.1 can be controlled much easier than using the fixed appliance, as this can be determined accurately by the computer software with a simple instruction of finishing with same size as #2.1.

The orthodontic treatment finally took 28 months to accomplish with the finishing of the upper right lateral



incisor (#1.2) being moved to the position of the upper right central incisor (#1.1) (Figure 3). The movement required no other auxiliary tools except Invisalign aligners and Class III intermaxillary elastics. Mesial and distal spaces of the tooth was reserved for a future crown to camouflage the missing upper right central incisor (#1.1). The gum margin of the upper right lateral incisor (#1.2) was adjusted to level with that of the adjacent central incisor (#2.1) by crown lengthening procedure. And the treatment was all completed after a crown was placed (Figure 4).



Figure 3



Figure 4

Case 2: Use of Invisalign to reorganise spaces for implant replacement of missing upper lateral incisors (#1.2 & 2.2)

A 41-year-old female patient came with the chief concern of a dislodged bridge that was used to replace the missing upper left lateral incisor (#2.2) (Figure 5). She wanted a replacement of this bridge and another existing bridge which was to replace her missing upper right lateral incisor (#1.2) by implant supported crowns. With such, the patient could also improve the aesthetics of her front teeth. She had class I dental relationship with acceptable posterior occlusion and facial profile. There were spaces distal to the upper left and right canines (#1.3 & #2.3). The mesio-distal spaces of the upper left and right lateral incisors (#1.2 & #2.2) are too narrow for the implant insertion.

Therefore, the treatment plan was focused on the anterior teeth:

1. Orthodontic treatment by Invisalign to enlarge the spaces for implant insertion of the upper lateral incisors (#1.2 & #2.2) and close all other residual spaces.

2. Implant to replace the upper lateral incisors (#1.2 & #2.2).
3. Crowning of the upper central incisors (#1.1 & #2.1) to improve the contours and reduce the interdental spaces.
4. Whitening of teeth before the final crowning.



Figure 5

Before the PVS impression for case submission, the dislodged Maryland bridge was cemented back, with metal wings cut away from the upper canines to allow separated movements of incisors and canines for space opening (Figure 6). During the software design, the Grid tool was used to measure the dimension of #1.2 and #2.2 implant spaces before the approval of the software (figure 7). Rectangular attachments were used to control the root tip of their adjacent teeth.



Figure 6

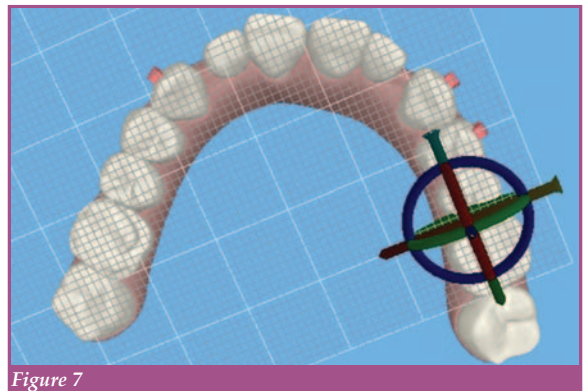


Figure 7

With 10 months of treatment with Invisalign, the spaces for the upper lateral incisors (#1.2 & #2.2) were widened to 7 mm (Figure 8). Then two Replace Select implant fixtures were inserted with an immediate function protocol (Figure 9). Tooth whitening was then performed. After 3 months, an impression was taken to prepare for the Procera zirconium abutment of the upper lateral incisors (#1.2 & #2.2). Crowns were then cemented on all 4 upper incisors (#1.1, #1.2, #2.1 & #2.2) (Figure 10).



Figure 8



Figure 9



Figure 10

is available in the beginning or in the intermediate stage of the treatment, the aligners can be used as a template to guide the surgery (Figure 12). The aligner can also be used to fabricate temporary restorations that can serve as a useful anchor tooth to improve the control of tooth movements (Figure 13). As long as cases are selected appropriately with careful treatment planning, many patients can benefit from this new orthodontic modality.



Figure 11. use of a non-moving full size pontic at final position and superimposition tool to determine implant position.



Figure 12. implant inserted.



Figure 13a. use aligner to make a temporary crown that aligner can be fitted on. b. button and power chain to derotate premolars combined with aligner treatment. c. rotation of premolars corrected.

Conclusion

A multidisciplinary approach in treating patients allows a more systematic and comprehensive treatment planning and improves patients' dental health, function and aesthetics more efficiently and effectively. Adjunctive treatment by orthodontics is a less invasive approach to improve the teeth positions and angulations and to distribute spaces before performing restorative treatments by crowns, bridges or implants. In other words, the need for elective root canal treatment can be reduced and enamel reduction can also be minimised. Additionally, such treatment approach can increase the safety margin of implant surgery and the proportions of prostheses can be better estimated. Hence, the quality of life of Invisalign patients will also be improved due to its appliance being invisible, comfortable and removable.

Invisalign is not just for aligning teeth, its patented software called ClinCheck assists us to plan the final position of the implant osteotomy site and allow the insertion of the fixture at the early stage of orthodontic treatment with accuracy. By asking for a full size virtual pontic on the edentulous area located at the final position and not moving in the ClinCheck, we can use the Superimposition Tool to determine the position of the implant (Figure 11). While the space for the insertion

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Sold more than 80 countries worldwide, Invisalign is a well established brand name among consumers and has helped over **67,000** Invisalign Trained Doctors achieve healthy, beautiful smiles for over **1.6 million** patients worldwide.

Align Technology leads the invisible orthodontics market with a portfolio of virtually invisible, clear, removable orthodontic treatment options for straightening teeth using the Invisalign® system.

Founded in 1997, Align received FDA clearance in 1998 and began its first commercial sales of Invisalign to U.S. orthodontists in 1999. In 2000, Align launched its first U.S. national consumer-advertising campaign and a year later, introducing to the Asian and European markets, marking the company's first phase of international expansion.

Cleft Lip & Palate Surgical Ministry – The Journey Of Blessing

Dr. Tak-kun CHOW

BDS(HK), FRACDS, FDSRCS(Eng), FHKAM(DS), FCDSHK(OMS)

Specialist in Oral & Maxillofacial Surgery, Private Practice
Formerly Consultant, Maxillofacial Surgeon United Christian Hospital



Dr. Tak-kun CHOW

The impression of Cleft surgeries in my earlier professional life was just like a “Black Hole” that drew so many clinicians and research workers’ energy, hoping to give an answer to cure or correct this congenital deformity. Hitherto, I have already spent more than two decades of my professional life in cleft surgical management. In the recent fifteen years, I am blessed to have the opportunity to serve in mainland China as well as Indonesia as a volunteer cleft surgeon that forms my life-long ministry.

As I was asked to mention something about my cleft surgical volunteer work in the “Life Style” section, this reminds my calling to serve back in 1996 by Dr. Sik-kuen CHOW (SK), Plastic Surgeon, my primary cleft surgery mentor and currently ministry co-worker. He saw the tremendous demand in cleft lip and palate services in the Mainland and the need of a dedicated team to serve under the HIS Foundation. The HIS Foundation was established in 1992 as a charitable Christian organisation. The Chinese name of HIS Foundation (天鄰基金會) www.his-foundation.org/default_ch.asp?page=Home_ch was derived from the Chinese verses 「苦難如身受，天涯若比鄰」。 Its objectives are to provide disaster and poverty relief, as well as medical and education services with a view to witnessing Christian love and gospel in different parts of the world. They conduct free medical service and surgery for the patients and provide aids for the handicapped people who otherwise cannot afford the normal fees. These services rekindle life, dignity and hope for many sick people. The medical teams include medicine, orthopaedics, cleft lip and palate, ophthalmology, geriatrics and rehabilitation.

Oro-facial cleft, particularly cleft lip & palate is a major public health issue affecting 1 in every 500 to 1000 births worldwide. In China, the reported rate of occurrence ranged from 1.33 to 2.23 per 1000 live and stillbirths¹. According to the UNICEF statistics, the annual number of births in China during year 2010 was 16,486 (thousands) www.unicef.org/infobycountry/china_statistics.html. Having such vast number of children born with cleft lip & palate deformities each year the need of treatment is enormous in the Mainland. In the past two decades, many overseas humanitarian organisations offered continuous support to the local medical facilities, hoping to relieve the surgical demands from clinical skills side to fiscal aspect in management.

My passion in surgical care of cleft patients evolved ever since I came back for posting in United Christian Hospital from the UK immediately after my maxillofacial surgical training in 1989. I was obliged to take care of at least 300 on-list cleft patients in the dental department²

referred by Dr. EH Paterson just before his retirement for subsequent staged secondary cleft reconstruction³. Furthermore, my ministry comrade Dr. SK Chow’s tireless commitment further nurtured both my clinical skills and visionary.



Figure 1. Cleft surgical team members from Hong Kong, Melbourne and Sydney

In the past fifteen years, the HIS Foundation cleft surgical team operated in a constant approach. Normally a two-surgeons’ led operating team, anaesthesiologists, operating room nurses, recovery or intensive care nurses and ward nurses (occasionally speech therapists) are accompanied with a caring and diligent steward to compose a 10 to 12 volunteers’ team (Figure 1). Very often, we may have devoted surgeons, anaesthesiologists or nurses taking a long-haul flight from the United States or Australia to join our mission. Every time we need to squeeze almost a mini-operating theatre setup into our luggage with risk of overweight penalty by the airlines. Our daily roster starts with early morning devotion followed by a busy operating day sometimes till late evening (Figure 2). So far most of our patients are kids from registered peasant poverty families though recently we diversify our service to treat orphans with cleft lip and palate. Usually, 5 operating days are planned within one mission, and about 25 patients undergo surgery after selection when particularly their health status are fit for anaesthesia. Our surgeons and anaesthesiologists work with corresponding local clinicians for skills and knowledge transfer. Occasionally we also offer surgical treatment for burn scar contracture, hypospadias, ptosis of upper eyelid, TMJ ankylosis reconstruction and microtia for total ear reconstruction. I am blessed to have the opportunity to travel within Henan Province 河南省 in my first decade of service to cities such as Luoyang 洛陽, Ayang 安陽, Zhumadian 駐馬店, and Jiaozuo 焦作. More recently, we have extended our serving portal to



Yangzhou 揚州 in Jiangsu province 江蘇省, Zaozhuang 棗莊 in Shangdong province 山東 and Lampung of Indonesia by sending at least four to six surgical teams annually.



Figure 2. Simultaneous Two-operating tables team

Our team adheres to a standardised surgical protocol of Two-Flaps and post-uvular veloplasty^{4,5} (Dr. Paterson's modification⁶) technique for palate repair (Figure 3) and Tennison technique for lip repair (Figure 4). We perform either standard 2 stages protocol or One-stage^{7,8} primary lip & palate repair and primary rhinoplasty for children with body weight more than 8.0 Kg. The one-stage repair could save one general anaesthetic procedure which is the most difficultly accessed service in the Mainland.



Figure 3. Post-uvular veloplasty –musculo-muosal post-uvular extension to improve anterolateral velopharyngeal competence



Figure 4. Cleft Lip Repair – pre and post-operative view

In those years, there had been a few memorable scenes that I would never forget. About a decade ago, a poor and old peasant couple adopted two abandoned children just by picking up along the road side. They sold their cattle to cover their travel expenses to bring the kids to see us for free surgical treatment. We could see their merciful and sacrificial heart to the two miserable abandoned lives. The ward environment in county hospitals is quite different from Hong Kong with the whole family crowds in one patient's bed during the hospitalisation period. Very often, a panoramic

view of the city could be seen through the windows in some old fashioned operating rooms. Once I stretched my neck when I felt tired during a very difficult palatal repair, I was amazed by the falling of snowflakes in one very chilly winter in Luoyang 洛陽. With the fast economic blooming of the Mainland in the past decades, we as a frequent visitor could feel and see the marked improvement in the highway facilities from the airport to the city, varieties of fast-food restaurants and of course the dressing outlook of our patients' families.

I really treasure the enjoyable fellowship with our team colleagues (Figure 5) during such a short intense partnership week though we originate from very different serving sectors. Sometimes we worked hand in hand during stormy perioperative situations, routine day and day ward rounds, lunch box sharing and hearing of team members' life testimony. We all witness the immediate surgical outcome that not only to treat the children's congenital deformity, we envisage a holistic healing both physically and spiritually to them and their families (Figure 6). Lastly, we are reluctant to say good-bye to the kids and their families, we hug each other with joyful tears after such a long week during the farewell moment. The restoration of smile and oral function after cleft repair surgeries could immediately change the life map of this child (Figure 7). Unfortunately, we still see quite a volume of miserable adult patients with unrepaired cleft lip or palate in our Indonesia trip. It persuades me to continue the ministry in places that are deprived of cleft surgical care within my limited professional life. All over the years of service, I could see how true the bible says "It is more blessed to give than to receive (施比受更為有福)".



Figure 5. Tea Break Time in Zaozhuang 棗莊



Figure 6. Farewell group photo with cleft and hand team patients in Ayang 安陽



Figure 7. Smile with joy and confidence

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Acknowledgement: I would express my sincere gratitude to a group of Christian co-workers of HIS Foundation ministry for their endeavours in the cleft lip & palate services and special thanks to Dr. Sik-kuen Chow, Specialist in Plastic Surgery for the proof reading of this manuscript



Society News



Hong Kong Society of Biological Psychiatry

The Hong Kong Society of Biological Psychiatry (HKSBP) was founded by a group of Hong Kong psychiatrists and researchers interested in the biological aspects of psychiatry. HKSBP is a member society of the World Federation of Societies of Biological Psychiatry (WFSBP). Council members of the Society include many prominent psychiatrists from the universities, public hospitals as well as the private sector. The Society was established:

- To promote education and the attainment of the highest level of knowledge and understanding in the field of biological psychiatry. Biological psychiatry involves mainly the biological and medical aspect of psychiatry, compared to psycho-social aspects
- To foster and grant scholarships to encourage scientific research and development, studies, surveys, investigations or discussions in the field of biological psychiatry
- To establish and maintain an efficient collaboration with international and national learned societies, governmental organisations, professional associations and other groups, societies, institutions and individuals who contribute to progress in the field of biological psychiatry





Public Talk on Stress, Anxiety and Insomnia

On 25th March, 2012, a crowd of about 70 participants were drawn to a Public Talk held at the Federation's Lecture Hall, sharing and discussing the topic, "Stress, Anxiety and Insomnia".

Our Honorary Secretary, Dr. Yin-kyok NG, had the honour to invite two distinguished guest speakers, Dr. Yoki FONG and Dr. Sammy CHENG, to deliver the talk. Prior to the talk, the President of the Federation of Medical Societies of Hong Kong, Dr. Raymond SK LO, held the souvenir presentation ceremony with our distinguished guest speakers, Dr. NG and the sponsor, Sanofi.

The Talk was highly stimulating and informative. It introduced to the audience the symptoms and treatment of mental pressure, as well as ways to handle insomnia and promote mental health. The participants' active questioning and engagement and the refreshment marked a wonderful ending of this event. We would like to thank Sanofi for the generous sponsorship and support for this talk.



Dinner Gathering with the Council Members of the Hong Kong Medical Association

On 3 April, the Executive Committee members of the Federation of the Medical Societies of Hong Kong were invited by Council Members of the Hong Kong Medical Association for a dinner gathering. The dinner was held at the Association's Premises on 5th floor, Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong.

It was a marvelous occasion of fraternity in an enjoyable and happy atmosphere. FMSHK President Dr. Raymond LO was also invited to present a prize to the winner of the HKMA medical student project competition. We are looking forward to more opportunities of gathering and exchange in the near future.



PhotogBuddy – Outing to Lion’s Nature Education Centre

On 7th April, 2012, 16 participants, including voluntary workers, bereaved children and their families joined the event, "PhotogBuddy". It was co-organised by the HKFMS Foundation Limited and Togetherness, as a Project-Life Moment activity.

The first part of the event was located in the Lions Nature Education Centre, in which participants, especially bereaved children and their families, could try to leave the past behind and enjoy Nature’s beauty. They did not only visit exhibition halls featuring diverse collection of nature-related themes, including Insectarium, Agriculture Hall, Fisheries Hall, Shell House, they also bought fresh, organic field crops from the situated farm.

This was then followed by an enjoying lunch of local delicacies. The second part of the event was an extra tour around the Sai Kung Town Centre, exploring and experiencing the famous Sai Kung Pier with seafood restaurants and markets. Throughout the whole event, the voluntary workers played the role of photographers to capture every memorable and joyful moment of the bereaved children and their families. Apart from the wish that they could learn to appreciate, as well as cherish, every second in their lives, it is also hoped that a positive relationship could be developed by spending a sunny, interactive afternoon with a group of active voluntary workers.

We would like to express our sincere gratitude to Ms Pearl TSE from Togetherness for her effort in making the meaningful event smooth and successful. Upcoming photo review gatherings will be held. Furthermore, a photography course is being planned in summer, aiming to further kindle the life interests and strengthen the support for the bereaved children and families. We hope to extend wider our support network, and referrals for the programme are most welcome. For information and enquiries, please contact our Admin Manager Ms Nancy CHAN on Tel 2527 8898.



New Team Members



Ms. Nancy CHAN
Administrative Manager

FMSHK is a family of health professionals and it is with great pleasure that as of March, 2012, I became a part of this big family. I would like to extend my gratitude to the Executive Committee members of the Federation of the Medical Societies of Hong Kong (FMSHK) to entrust me to assume this new role. I am a Nutritionist and Dentist by training in the University of Ulster and Centro Escolar University respectively, as well as attained Fellow in Life Office Management Institute. Working previously as Assistant Vice President in the Sun Life Financial Hong Kong Ltd, I have equipped myself with vast experiences in customer service, marketing, accounting and projects management over the years. With the vision to put the values of the FMSHK into the practical field, it is my firm belief that the experience here will be challenging, enjoyable, and rewarding. I look forward to collaborate with every single member society in the foreseeable future.



Ms. Annie WONG
Executive Officer

I studied for a degree in Management. Prior to joining the Federation, I gained experience by carrying out administrative duties in the government. Now I was appointed to handle the Hong Kong Medical Diary and coordination of projects with commitment to providing high quality products and services.



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<ul style="list-style-type: none"> * Joint Professional Basketball Tournament 2012 * HKMA Snooker Tournament (Final Round) <p style="text-align: right;">6</p>	<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Management of Insomnia and the Use of Hypnotic Medications * HKMA Kowloon City Community Network - Current Controversies and Novel Target in Osteoporosis * FMSHK Officers' Meeting * Council Meeting <p style="text-align: right;">7</p>	<ul style="list-style-type: none"> * Certificate Course on Management of Drug Abuse Patients for Family Doctors (Kowloon Districts) * MPS Workshop – Mastering Your Risk <p style="text-align: right;">2</p>	<ul style="list-style-type: none"> * MPS Workshop – Mastering Difficult Interactions with Patients <p style="text-align: right;">3</p>	<ul style="list-style-type: none"> * Joint Surgical Symposium - Neurosurgeons' Nightmare * Certificate Course on Management of Drug Abuse Patients for Family Doctors (Kowloon Districts) * HKMA Shatin Doctors Network - Lecture on Allergic Rhinitis & Complaints to the Medical Council of Hong Kong * HKMA Yau Tsim Mong Community Network - Family Liver Disease - a Review of the Spectrum of Disease, Diagnosis and Therapy <p style="text-align: right;">4</p>	<ul style="list-style-type: none"> * MPS Workshop – Mastering Difficult Interactions with Patients * Refresher Course for Health Care Providers 2011/2012 <p style="text-align: right;">12</p>	<ul style="list-style-type: none"> * MPS Workshop – Mastering Difficult Interactions with Patients * Refresher Course for Health Care Providers 2011/2012 <p style="text-align: right;">5</p>
<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Management of Insomnia and the Use of Hypnotic Medications * HKMA Kowloon City Community Network - Current Controversies and Novel Target in Osteoporosis * FMSHK Officers' Meeting * Council Meeting <p style="text-align: right;">8</p>	<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Management of Insomnia and the Use of Hypnotic Medications * HKMA Kowloon City Community Network - Current Controversies and Novel Target in Osteoporosis * FMSHK Officers' Meeting * Council Meeting <p style="text-align: right;">9</p>	<ul style="list-style-type: none"> * HKMA Kowloon East Community Network - Reflect manage of hypertension * HKMA Structured CME Programme with Hong Kong Sanatorium & Hospital Year 2012 - Cervical radiculopathy diagnosis & management * Respiratory Clinical Meeting – "Out of the blue" & A Rare Answer to A Common Scenario * MPS Workshop – Mastering Adverse Outcomes <p style="text-align: right;">10</p>	<ul style="list-style-type: none"> * HKMA CME – Certificate Course for GPs 2012 <p style="text-align: right;">17</p>	<ul style="list-style-type: none"> * HKMA Shatin Doctors Network – Acne and Acne Scar Management <p style="text-align: right;">18</p>	<ul style="list-style-type: none"> * HKMA Shatin Doctors Network – Acne and Acne Scar Management <p style="text-align: right;">11</p>	<ul style="list-style-type: none"> * MPS Workshop – Mastering Adverse Outcomes <p style="text-align: right;">19</p>
<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Clinical Consideration of the Long-term Treatment of Osteoporosis <p style="text-align: right;">15</p>	<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Management of Insomnia and the Use of Hypnotic Medications * HKMA Kowloon City Community Network - Current Controversies and Novel Target in Osteoporosis * FMSHK Officers' Meeting * Council Meeting <p style="text-align: right;">16</p>	<ul style="list-style-type: none"> * MPS Workshop – Mastering Difficult Interactions with Patients <p style="text-align: right;">23</p>	<ul style="list-style-type: none"> * MPS Workshop – Mastering Adverse Outcomes * Atopic Dermatitis * FMSHK Executive Committee and Council Meeting <p style="text-align: right;">24</p>	<ul style="list-style-type: none"> * HKMA Wine Dinner 2012 <p style="text-align: right;">25</p>	<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Tentative * MPS Workshop – Mastering Difficult Interactions with Patients <p style="text-align: right;">16</p>	<ul style="list-style-type: none"> * 13th Regional Osteoporosis Conference 2012 * 7th Stanley Dragon Boat Warm-Up Races 2012 * MPS Workshop – Mastering Your Risk <p style="text-align: right;">26</p>
<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Management of Insomnia and the Use of Hypnotic Medications * HKMA Kowloon City Community Network - Current Controversies and Novel Target in Osteoporosis * FMSHK Officers' Meeting * Council Meeting <p style="text-align: right;">18</p>	<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Management of Insomnia and the Use of Hypnotic Medications * HKMA Kowloon City Community Network - Current Controversies and Novel Target in Osteoporosis * FMSHK Officers' Meeting * Council Meeting <p style="text-align: right;">19</p>	<ul style="list-style-type: none"> * HKMA CME – An Update in Osteoporosis Management with Bisphosphonates <p style="text-align: right;">22</p>	<ul style="list-style-type: none"> * HKMA CME – Early Nutrition & Subsequent Manifestation of Allergies <p style="text-align: right;">31</p>	<ul style="list-style-type: none"> * HKMA CME – Early Nutrition & Subsequent Manifestation of Allergies <p style="text-align: right;">31</p>	<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Tentative <p style="text-align: right;">23</p>	<ul style="list-style-type: none"> * HKMA CME – An Update in Osteoporosis Management with Bisphosphonates <p style="text-align: right;">29</p>
<ul style="list-style-type: none"> * Joint Professional Basketball Tournament 2012 * HKMA Squash Tournament 2012 * "We Are Family" - Art Gallery Concert <p style="text-align: right;">20</p>	<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Management of Insomnia and the Use of Hypnotic Medications * HKMA Kowloon City Community Network - Current Controversies and Novel Target in Osteoporosis * FMSHK Officers' Meeting * Council Meeting <p style="text-align: right;">21</p>	<ul style="list-style-type: none"> * HKMA CME – An Update in Osteoporosis Management with Bisphosphonates <p style="text-align: right;">22</p>	<ul style="list-style-type: none"> * HKMA CME – An Update in Osteoporosis Management with Bisphosphonates <p style="text-align: right;">29</p>	<ul style="list-style-type: none"> * HKMA CME – An Update in Osteoporosis Management with Bisphosphonates <p style="text-align: right;">29</p>	<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Tentative <p style="text-align: right;">23</p>	<ul style="list-style-type: none"> * HKMA CME – An Update in Osteoporosis Management with Bisphosphonates <p style="text-align: right;">29</p>
<ul style="list-style-type: none"> * 13th Regional Osteoporosis Conference 2012 * HKMA Table Tennis Tournament 2012 * HKMAPS 2nd Seasonal Photo Competition <p style="text-align: right;">27</p>	<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Management of Insomnia and the Use of Hypnotic Medications * HKMA Kowloon City Community Network - Current Controversies and Novel Target in Osteoporosis * FMSHK Officers' Meeting * Council Meeting <p style="text-align: right;">28</p>	<ul style="list-style-type: none"> * HKMA CME – An Update in Osteoporosis Management with Bisphosphonates <p style="text-align: right;">29</p>	<ul style="list-style-type: none"> * HKMA CME – An Update in Osteoporosis Management with Bisphosphonates <p style="text-align: right;">29</p>	<ul style="list-style-type: none"> * HKMA CME – An Update in Osteoporosis Management with Bisphosphonates <p style="text-align: right;">29</p>	<ul style="list-style-type: none"> * HKMA Kowloon West Community Network - Tentative <p style="text-align: right;">23</p>	<ul style="list-style-type: none"> * HKMA CME – An Update in Osteoporosis Management with Bisphosphonates <p style="text-align: right;">29</p>



Date / Time	Function	Enquiry / Remarks
2 WED 1:00 pm 6:30 pm	Certificate Course on Management of Drug Abuse Patients for Family Doctors (Kowloon Districts) Organiser: The Hong Kong Medical Association, Speakers: Dr. Steve WH CHAN & Dr. Fei-lung LAU, Venue: Kwun Tong Lei's Garden	Miss Nadia HO Tel: 2527 8285 2.5 CME points
	MPS Workshop – Mastering Your Risk Organiser: The Hong Kong Medical Association, Speaker: Dr. Andy KY CHEUNG, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	HKMA CME Department Tel: 2527 8452 2.5 CME points
3 THU 6:30 pm	MPS Workshop – Mastering Difficult Interactions with Patients Organiser: The Hong Kong Medical Association, Speaker: Dr. Justin NS CHENG, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	HKMA CME Department Tel: 2527 8452 2.5 CME points
4 FRI 8:00 am 1:00 pm 1:00 pm 1:00 pm	Joint Surgical Symposium - Neurosurgeons' Nightmare Organiser: Department of Surgery, The University of Hong Kong & Hong Kong Sanatorium & Hospital, Chairman: Dr. Kwan-ngai HUNG, Speakers: Dr. Wai-Man LUI & Dr. Jenny PU, Venue: Hong Kong Sanatorium & Hospital	Department of Surgery, Hong Kong Sanatorium & Hospital Tel: 2835 8698 1 CME Point
	Certificate Course on Management of Drug Abuse Patients for Family Doctors (Kowloon Districts) Organiser: The Hong Kong Medical Association, Speaker: Dr. Ben KL CHEUNG, Venue: Kwun Tong Lei's Garden	Miss Nadia HO Tel: 2527 8285 3 CME points
	HKMA Shatin Doctors Network - Lecture on Allergic Rhinitis & Complaints to the Medical Council of Hong Kong Organiser: HKMA Shatin Doctors Network, Chairman: Dr. Wing-kin MAK, Speakers: Dr. Hing-sang CHAN & Dr. Felice LIEH-MAK, Venue: President Room, Level 2, Royal Park Hotel, 8 Pak Hok Ting Street, Shatin	Ms. Karen YIU Tel: 2105 4815
	HKMA Yau Tsim Mong Community Network - Nonalcoholic Fatty Liver Disease - a Review of the Spectrum of Disease, Diagnosis and Therapy Organiser: HKMA Yau Tsim Mong Community Network, Chairman: Dr. David TY LAM, Speaker: Dr. Vincent WONG, Venue: Pearl Ballroom, Level 2, Eaton Smart, Hong Kong 380 Nathan Road, Kowloon	Miss Candice TONG Tel: 2527 8285 1 CME point
5 SAT 2:30 pm	MPS Workshop – Mastering Professional Interactions Organiser: The Hong Kong Medical Association, Chairman, Speaker: Dr. Ka-lam HAU, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	HKMA CME Department Tel: 2527 8452 2.5 CME points
6 SUN 2:00 pm 2:00 pm	Joint Professional Basketball Tournament 2012 Organiser: The Hong Kong Medical Association, Venue: TBC	Ms. Dorothy KWOK Tel: 2527 8285
	HKMA Snooker Tournament (Final Round) Organiser: The Hong Kong Medical Association, Venue: Prat Billiard Club, 2/F, Austin Tower, 22-26 Austin Avenue, Kowloon	Ms. Dorothy KWOK Tel: 2527 8285
8 TUE 1:00 pm 1:00 pm 8:00 pm 8:00 pm	HKMA Kowloon West Community Network - Management of Insomnia and the Use of Hypnotic Medications Organiser: HKMA Kowloon West Community Network, Chairman: Dr. Kenneth KN LEUNG, Speaker: Dr. Ka-lik KWAN, Venue: Crystal Room I-III, 30/F., Panda Hotel, Tsuen Wan, N.T.	Miss Candice TONG Tel: 2527 8285 1 CME point
	HKMA Kowloon City Community Network - Current Controversies and Novel Target in Osteoporosis Organiser: HKMA Kowloon City Community Network, Chairman: Dr. Chu-wah CHIN, Speaker: Dr. Ka-kui LEE, Venue: 2/F, Site 6, Whampoa Garden, Wonderful Worlds of Whampoa, 8 Shung King Street, Hung Hom, Hung Hom	Miss Candice TONG Tel: 2527 8285
	FMSHK Officers' Meeting Organiser: The Federation of Medical Societies of Hong Kong, Venue: Gallop, 2/F., Hong Kong Jockey Club Club House, Shan Kwong Road, Happy Valley, Hong Kong	Ms. Nancy CHAN Tel: 2527 8898
	Council Meeting Organiser: The Hong Kong Medical Association, Chairman: Dr. CHOI Kin, Venue: HKMA Head Office (5/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Hong Kong)	Ms. Christine WONG Tel: 2527 8285
9 WED 7:30 am 1:00 pm 1:00 pm 6:30 pm	Hong Kong Neurosurgical Society Monthly Academic Meeting –The biomechanics of cervical spine and post laminectomy deformity Organiser: Hong Kong Neurosurgical Society, Chairman: Dr. Larry WONG, Speaker: Dr. Calvin HK MAK, Venue: Seminar Room, Ground Floor, Block A, Queen Elizabeth Hospital	Dr. Gilberto LEUNG Tel: 2255 3368 1.5 CME points
	HKMA CW&S Community Network – Management of Atopic Dermatitis cum Annual Meeting Organiser: HKMA CW&S Community Network, Speaker: Dr. Kuen-kong LO, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	Mr. Alan LAW Tel: 25278285 1 CME point
	Certificate Course on Management of Drug Abuse Patients for Family Doctors (Kowloon Districts) Organiser: The Hong Kong Medical Association, Speakers: Dr. Gary KK AU & Ms. Esther MY CHEUNG, Venue: Kwun Tong Lei's Garden	Miss Nadia HO Tel: 2527 8285 2.5 CME points
	MPS Workshop – Mastering Professional Interactions Organiser: The Hong Kong Medical Association, Speaker: Dr. Andy KY CHEUNG, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	HKMA CME Department Tel: 2527 8452 2.5 CME points
10 THU 1:00 pm 2:00 pm	HKMA Kowloon East Community Network –Reflect manage of hypertension Organiser: HKMA Kowloon East Community Network, Speaker: Dr. Wing-kwong WONG, Venue: APM, Kwun Tong	Mr. Alan LAW Tel: 25278285 1 CME point
	HKMA Structured CME Programme with Hong Kong Sanatorium & Hospital Year 2012 – Cervical radiculopathy diagnosis & management Organiser: The Hong Kong Medical Association, Speaker: Dr. Kan-hing MAK, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	HKMA CME Department Tel: 2527 8452 1 CME point



Date / Time	Function	Enquiry / Remarks
10 THU	6:30 pm Respiratory Clinical Meeting – “Out of the blue” & A Rare Answer to A Common Scenario Organiser: Hong Kong Thoracic Society & American College of Chest Physicians (HK & Macau Chapter), Chairmen: Dr. Kin-keung KWONG & Dr. Chi-kai CHOW, Speakers: Dr. Yiu-cheong YEUNG & Dr. Chi-kai CHOW, Venue: LG1, Lecture Room, Ruttonjee Hospital	Dr. Fanny WS KO Dr. Arthur CW LAU Tel: 2632 2785 1.5 CME points (HKCP, CSHK) 2 CME points (HKCFP)
	6:30 pm MPS Workshop – Mastering Adverse Outcomes Organiser: The Hong Kong Medical Association, Speaker: Dr. Emily CW HUNG, Venue: Eaton Hotel	HKMA CME Department Tel: 2527 8452 2.5 CME points
11 FRI	1:00 pm HKMA Shatin Doctors Network – Innovative Treatment on Osteoporosis Organiser: HKMA Shatin Doctors Network, Chairman: Dr. Wing-kin MAK, Speaker: Dr. Gavin KW LEE, Venue: Tai Po Room, 2/F., Regal Riverside Hotel, 34-36 Tai Chung Kiu Road, Shatin	Ms. Mandy CHAN Tel: 9736 3128 1 CME point
12 SAT	2:00 pm MPS Workshop – Mastering Difficult Interactions with Patients Organiser: The Hong Kong Medical Association, Speaker: Dr. Justin NS CHENG, Venue: Holiday Inn	HKMA CME Department Tel: 2527 8452 2.5 CME points
	2:30 pm Refresher Course for Health Care Providers 2011/2012 Organiser: The Hong Kong Medical Association, Speaker: Dr. John TH WONG, Venue: OLMH	HKMA CME Department Tel: 2527 8452 2 CME points
15 TUE	1:00 pm HKMA Kowloon City Community Network - BPH & Prostate Cancer in Primary Care Clinics Organiser: HKMA Kowloon City Community Network, Chairman: Dr. CHIN Chu-wah, Speaker: Dr. SO Chun, Venue: 2/F, Site 6, Whampoa Garden, Wonderful Worlds of Whampoa, 8 Shung King Street, Hung Hom, Hung Hom	Miss Candice TONG Tel: 2527 8285
	1:45 pm Tai Po CME – Recent Advances in the treatment of diabetic nephropathy Organiser: The Hong Kong Medical Association, Speaker: Dr. Chung-ping HO, Venue: Tai Po	HKMA CME Department Tel: 2527 8452 1.0 CME point
16 WED	6:30 pm MPS Workshop – Mastering Your Risk Organiser: The Hong Kong Medical Association, Chairman: , Speaker: Dr. Andy KY CHEUNG, Venue: Eaton Hotel	HKMA CME Department Tel: 2527 8452 2.5 CME points
17 THU	1:00 pm HKMA CME – Certificate Course for GPs 2012 Organiser: The Hong Kong Medical Association, Chairman: Dr. Gary KK AU, Speaker: Dr. Peter KM KU, Venue: TKO	HKMA CME Department Tel: 2527 8452 1.0 CME point
18 FRI	1:45 pm HKMA Shatin Doctors Network – Acne and Acne Scar Management Organiser: HKMA Shatin Doctors Network, Chairman: Dr. Wing-kin MAK, Speaker: Dr. Mona LS CHIU, Venue: Jasmine Room, Level 2, Royal Park Hotel, 8 Pak Hok Ting Street, Shatin	Ms. Wendy CHENG Tel: 2824 0333 1.0 CME point
19 SAT	2:30 pm MPS Workshop – Mastering Adverse Outcomes Organiser: The Hong Kong Medical Association, Chairman: , Speaker: Dr. Ares KL LEUNG, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	HKMA CME Department Tel: 2527 8452 2.5 CME points
20 SUN	2:00 pm Joint Professional Basketball Tournament 2012 Organiser: The Hong Kong Medical Association, Venue: TBC	Ms. Dorothy KWOK Tel: 2527 8285
	2:00 pm HKMA Squash Tournament 2012 Organiser: The Hong Kong Medical Association, Venue: KCC	Ms. Dorothy KWOK Tel: 2527 8285
	8:00 pm "We Are Family" - Art Gallery Concert Organiser: The Hong Kong Medical Association, Venue: HK City Hall	Ms. Candy YUEN Tel: 2527 8285
22 TUE	1:00 pm HKMA Kowloon West Community Network – Clinical Consideration of the Long-term Treatment of Osteoporosis Organiser: HKMA Kowloon West Community Network, Chairman: Dr. Raymond N LAM, Speaker: Dr. Gavin KW LEE, , Venue: Crystal Room I-III, 30/F., Panda Hotel, Tsuen Wan, NT	Ms. Sandy CHUNG Tel: 3971 2940 1 CME point
23 WED	1:00 pm HKMA CW&S Community Network – Tentative Organiser: HKMA CW&S Community Network, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	Mr. Alan LAW Tel: 25278285
	6:30 pm MPS Workshop – Mastering Difficult Interactions with Patients Organiser: The Hong Kong Medical Association, Speaker: Dr. Justin NS CHENG, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	HKMA CME Department Tel: 2527 8452 2.5 CME points
24 THU	1:00 pm Atopic Dermatitis Organiser: HKMA Kln East Community Network, Chairman: Dr. Danny PK MA, Speaker: Dr. Hugh HC CHEUNG, Venue: East Ocean Seafood Restaurant at Tseung Kwan O	Mr. Alan LAW Tel: 2527 8285
	6:30 pm MPS Workshop – Mastering Adverse Outcomes Organiser: The Hong Kong Medical Association, Speaker: Dr. Emily CW HUNG, Venue: Eaton Hotel	HKMA CME Department Tel: 2527 8452 2.5 CME points
	7:00 pm FMSHK Executive Committee and Council Meeting Organiser: The Federation of Medical Societies of Hong Kong, Venue: Council Chamber, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	Ms. Nancy CHAN Tel: 2527 8898
25 FRI	7:00 pm HKMA Wine Dinner 2012 Organiser: The Hong Kong Medical Association, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	Ms. Dorothy KWOK Tel: 2527 8285
26 SAT	(27) 13th Regional Osteoporosis Conference 2012 Organiser: Osteoporosis Society of Hong Kong & Hong Kong Doctors Union, Chairman: Dr. Anita SY KAN, Venue: Hong Kong Convention and Exhibition Centre	Ms Zita BAI Tel: 2559 9973



Date / Time	Function	Enquiry / Remarks
26 SAT	9:00 am 7th Stanley Dragon Boat Warm-Up Races 2012 Organiser: The Hong Kong Medical Association, Venue: Stanley Main Beach	Ms. Dorothy KWOK Tel: 2527 8285
	2:30 pm MPS Workshop – Mastering Your Risk Organiser: The Hong Kong Medical Association, Speaker: Dr. Danny WH LEE, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	HKMA CME Department Tel: 2527 8452 2.5 CME points
27 SUN	2:00 pm HKMA Table Tennis Tournament 2012 Organiser: The Hong Kong Medical Association, Chairman: Dr. Hilton HT KOO, Venue: Luen Wo Hui Sports Centre, 3/F, 9 Wo Mun Street, Luen Wo Hui, Fanling, New Territories	Ms. Dorothy KWOK Tel: 2527 8285
	2:00 pm HKMAPS 2nd Seasonal Photo Competition Organiser: The Hong Kong Medical Association, Venue: HKMA Head Office (5/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Hong Kong)	Ms. Dorothy KWOK Tel: 2527 8285
29 TUE	1:00 pm HKMA CME – An Update in Osteoporosis Management with Bisphosphonates Organiser: The Hong Kong Medical Association, Speaker: Prof. Mone ZAIDI, Venue: Jordan	HKMA CME Department Tel: 2527 8452 1 CME point
30 WED	1:00 pm HKMA CW&S Community Network – Tentative Organiser: HKMA CW&S Community Network, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	Mr. Alan LAW Tel: 25278285
31 THU	7:00 pm HKMA CME – Early Nutrition & Subsequent Manifestation of Allergies Organiser: The Hong Kong Medical Association, Speaker: Dr. Gary WK WONG, Venue: The Hong Kong Medical Association Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F., Chinese Club Building, 21-22 Connaught Road Central	HKMA CME Department Tel: 2527 8452 1 CME point

Upcoming Meeting

7-8/7/2012

Chinese Medicine in Geriatrics, Hong Kong International Integrative Medicine Conference

Organisers: Hospital Authority & Hong Kong Association for Integration of Chinese-Western Medicine (HKAIM), Venue: Hong Kong Academy of Medicine, Enquiry: Ms Toki CHAN & Ms Justin NG Tel: (852) 28718787/ 2871 8896

CME / CNE Course

CERTIFICATE COURSE FOR General Public
課程對象：公眾人士

課程編號 C195



Certificate Course on Development and Disorders of Speech and Language in Children 兒童語言及語音的發展和障礙證書課程

Jointly organised by



The Federation of Medical
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The Hong Kong Association of
Speech Therapists
香港言語治療師協會

7月6日

課題：Language Development (0-3 years old)
0至3歲的語言發展
講者：Dr. Carol TO 杜潔森博士

7月27日

課題：Speech Development and Disorders
語音發展及障礙
講者：Ms. Pamela CHEUNG 張秀萍小姐

7月13日

課題：Language Development (4 and beyond)
4歲以上的語言發展
講者：Ms. Rachel WONG 王凱華小姐

8月3日

課題：Assessment and Treatment of Speech
and Language Disorders
語言及語音障礙的評估及治療
講者：Ms. Jess CHAN 陳嘉霖小姐

7月20日

課題：Communication in Children and
Adolescents with Pervasive Developmental
Disorders (including Autism and Asperger)
廣泛性發展障礙兒童及青少年的溝通
(包括自閉症及亞士保加症)
講者：Ms. Penita CHEUNG 張美嫻小姐

8月10日

課題：Dyslexia
讀寫障礙
講者：Dr. Dustin LAU 劉啟欣博士



查詢：香港醫學組織聯合會

電話：2527 8898

傳真：2865 0345

電郵：info@fmshk.org

凡學員出席率達七成或以上，均可獲頒發證書



Answer to Dental Quiz

Answer

1. The fractured fragment had been stored in dry condition and was desiccated, and so appeared as chalky white.
2. The fragment would return to its original colour and translucency after re-hydration in the oral cavity.

Dr. Shiu-yin CHO

BDS(HK), MDS(Otago), FRACDS, FHKAM(Dental Surgery)
Senior Dental Officer, Fanling School Dental Clinic

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Colgate Total® contains a Triclosan + Copolymer formula that helps fight gingival inflammation in two ways:†

- 1. Kills plaque bacteria for a full 12 hours* to help reduce plaque by up to 98% and gingivitis by up to 88%.*
- 2. Shown to directly reduce gingival inflammation*.

Reduction compared with control

Reduction of gingival inflammation of sites without visible plaque

Refer to Colgate Total package for approved uses

12-Hour Protection that helps prevent gingival inflammation. Better Oral Health as Part of Better Overall Health.

1. Pappapan F et al. J Clin Dent 2002;16(Suppl):S1-S10. 2. Jovanovic L et al. MedStar Dent J 2004;14:109-111. 3. Garcia-Godoy F et al. Am J Dent 1992;5(Special Issue):S10-S16. 4. Lindhe J et al. J Clin Periodontol 1982;9:219-224, supplemental report on file. ©2007 Colgate-Palmolive Company

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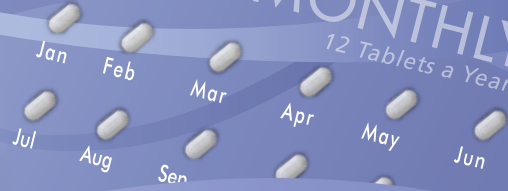
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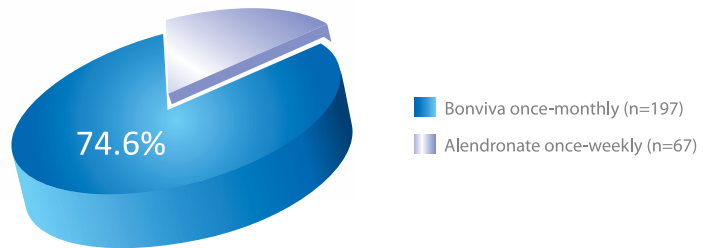
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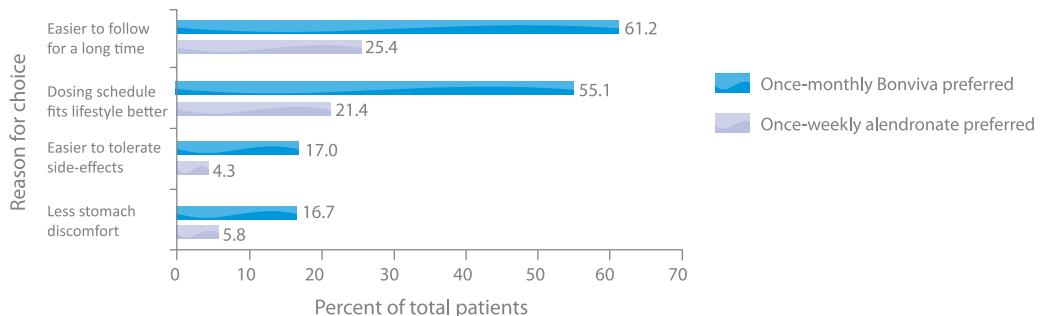
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*The Boniva ALendronate Trial in Osteoporosis (BALTO) was a 6-month, prospective, randomized, open-label, multicenter study which enrolled 342 patients. Patients were randomized to once-monthly ibandronate 150 mg followed by once-weekly alendronate 70 mg for a total of 6 months or once-weekly alendronate followed by once-monthly ibandronate for a total of 6 months. Further information is available on request.

1. Osteoporosis Int. 2006;17(Suppl 2):S110 (abstract P3835A). 2. J Bone Miner Res. 2005;20 Suppl:S282 (abstract SU403). 3. Curr Med Res Opin. 2005;21(12):1895-1903.

