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## Message from the President

*On behalf of the College, I would like to extend my warmest welcome to all new Fellows and Members to the family of The Hong Kong College of Pathologists. This is a moment of celebration for the new milestone. After surmounting years of serious training and hurdles of examinations, our new Fellows are now qualified specialists in Pathology who are consultants to bedside doctors. This is also the moment of gratitude. Our trainers should be thanked for their tireless supervision, ever since the trainees joined the profession of pathology.*

*It is now increasingly known that pathologists play a pivotal role in prevention, diagnosis, and treatment of disease. Regrettably, the importance of Pathology is sometimes recognized through unfortunate incidents covered in the news media. Nevertheless, we may take such opportunities to highlight the importance of good pathology practice and our contribution to clinical medicine.*

*The application of genetics and genomics in medicine is increasing. Following the initiation of the Hong Kong Academy of Medicine to enhance the training and accreditation of investigation on genetics and genomics, our College is likely to be the first college in Hong Kong to establish a post-specialty fellowship in Genetics and Genomics.*

*To let our community understand our work, the College has been reaching out. With President as representative, our College has expressed views in task forces and specialists panels on health issues. In liaison with the international pathology community on International Pathology Day, a two days' workshop has been organized in November for the public and secondary school students. With our sincere and persistent effort, we should be able to break the barrier surrounding our profession and communicate better with the public and health professionals.*

*With the evolution of medical technology and the rising expectation of our patients and the public, let us unite our strength and determination to face the challenges and work towards a better future for the community.*

*Prof CHEUNG Nga Yin Annie*

*Nov 2015*



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*Please send comments to:*  
Dr. LAI Sai Chak  
(Chief Editor),  
Address: Forensic Pathologists'  
Office, 6/F Arsenal House West  
Wing, Police Headquarters, Arsenal  
Street, Wanchai, Hong Kong.  
E-mail: sc\_lai@dh.gov.hk  
Phone: 2860 2461  
Fax: 2804 1714

# President's Activities



▲ *International Liaison of Pathology Presidents (ILPP) meeting in Dublin on 14th July 2015.*



▲ *ILPP meeting at Royal College of Physicians of Ireland on 14th July 2015.*



▲ Conferment of Fellow of the Academy of Medicine, Singapore on 31st July 2015.

▶ Speaker and Discussant in the Seminar on the World Metrology Day (WMD), World Accreditation Day (WAD) and World Standards Day (WSD) 2015.



▲ 49th Singapore-Malaysia Congress of Medicine on 31st July 2015.

# Examination Results

## Congratulations to the following candidates for passing Fellowship Assessment / Membership Examination

Dr. AU YEUNG Kwok Him, Rex (Fellowship Assessment - Anatomical Pathology)

Dr. CHEONG Renee Constance Yue-Kew (Fellowship Assessment - Anatomical Pathology)

Dr. KAM Kwok Ling (Fellowship Assessment - Anatomical Pathology)

Dr. PANG Chun Yin (Fellowship Assessment - Anatomical Pathology)

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Dr. CHIK Kar Ki (Fellowship Assessment - Clinical Microbiology and Infection)

Dr. IP Ho Wan (Fellowship Assessment - Haematology)

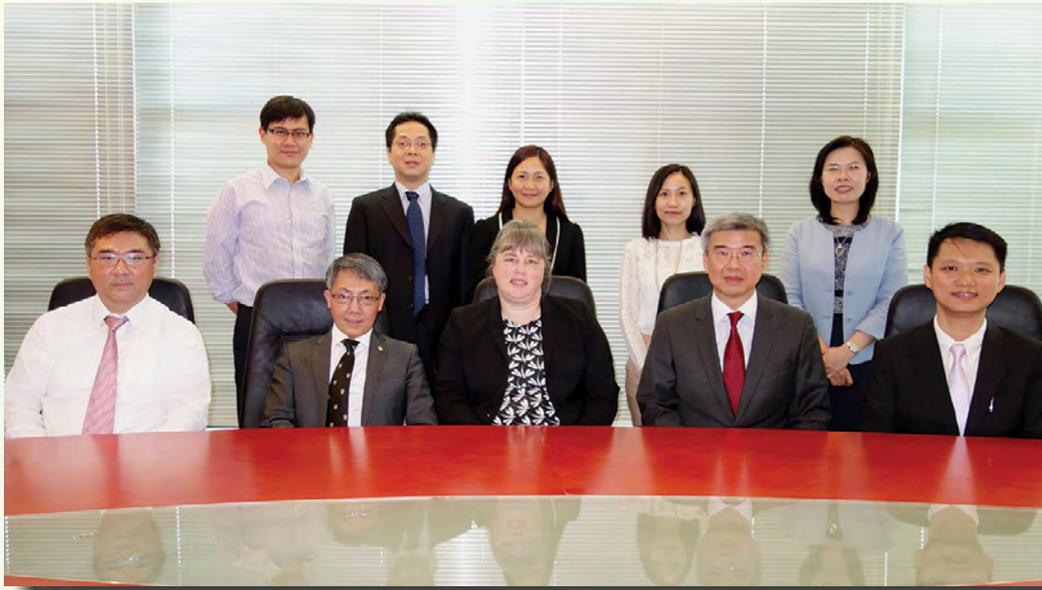
Dr. SIN Chun Fung (Fellowship Assessment - Haematology)

Dr. CHUNG Ivy Ah-yu (Membership Examination - Anatomical Pathology)

Dr. WAN Judith Vonnie (Membership Examination - Anatomical Pathology)

Dr. SHUM Ho Cheung (Membership Examination - Forensic Pathology)

Dr. CHEUNG Sin, Joyce (Membership Examination - Haematology)



▲ *Examiners in Chemical Pathology:*  
 Front row (left to right): Prof LAM Ching Wan, Dr Sidney TAM, Dr Penny COATES (External Examiner),  
 Dr SHEK Chi Chung Anthony (Chief Examiner), Dr CHAN Ho Ming;  
 Back row (left to right): Dr POON Wing Tat, Dr TAI Hok Leung Morris, Dr MAK Miu Chloe,  
 Dr YUEN Yuet Ping, Dr CHAN On Kei Angel.



▲ *Anatomical Pathology Examiners' Dinner:*  
 Front (left to right): Dr CHAN Wai Kong, Dr Sanjiv MANEK (External Examiner), Prof KHOO Ui Soon  
 (Chief Examiner), Dr Manek's daughter and wife, Prof CHEUNG Nga Yin Annie, Dr YUEN Wah Fun;  
 Back (left to right): Dr CHAN Chak Lam Alexander, Dr LAM Wing Yin.



◀ *Examiners in Anatomical Pathology:*  
 Front (left to right): Dr LAM Wing Yin,  
 Dr Sanjiv MANEK (External Examiner), Prof KHOO Ui Soon (Chief Examiner), Dr LAU Lin Kiu;  
 Back (left to right): Prof TO Ka Fai, Dr LEUNG Chung Ying, Dr NG Wing Fung, Dr CHAN Chak Lam Alexander.



► *Forensic Pathology Examiners' Dinner:  
(Left to right): Dr Philip BEH (Chief Examiner),  
Prof Jack CRANE (External Examiner),  
Dr LAI Sai Chak, Dr POON Wai Ming.*



▲ *Dinner of Haematology Examiners on 3-9-2015.  
(Left to right): Dr Edmond MA (Chief Examiner),  
Dr Raymond CHU, Dr Erica WOOD (External Examiner),  
Prof Margaret NG and Dr Jason SO.*

► *Haematology Viva on 5-9-2015: Back row (left to right):  
Dr Michael WONG, Dr Edmond MA (Chief Examiner).  
Front row (left to right): Dr Eudora CHOW,  
Dr Erica WOOD (External Examiner), Dr WONG Wai Shan.*



# Fellows' Laurels

## Prof Dennis LO Yuk Ming Receives International Awards for Pioneering Research

Prof Dennis LO Yuk Ming, Director of the Li Ka Shing Institute of Health Sciences, Li Ka Shing Professor of Medicine and Professor of Chemical Pathology of The Chinese University of Hong Kong (CUHK), has been honoured with the highly prestigious Wallace H. Coulter Lectureship Award 2015 by the American Association for Clinical Chemistry (AACC) for his pioneering and revolutionary work in the use of plasma DNA for developing a new generation of molecular diagnostics.

Prof Lo and his colleagues are instrumental in making non-invasive DNA-based prenatal testing a clinical reality. His team has developed a Down syndrome test that has been adopted in over 60 countries and has been used by over a million pregnant women. With the use of massively parallel sequencing and the development of novel bioinformatics strategies, Prof Lo's group succeeded in deciphering a genome-wide genetic map of the foetus through the analysis of traces of fragmented DNA floating in the blood of pregnant women. This scientific achievement lays the foundation for developing non-invasive prenatal diagnostic tests for multiple genetic diseases. His team has also applied a similar strategy to the detection of cancers which are common in Hong Kong, including nasopharyngeal cancer and liver cancer.

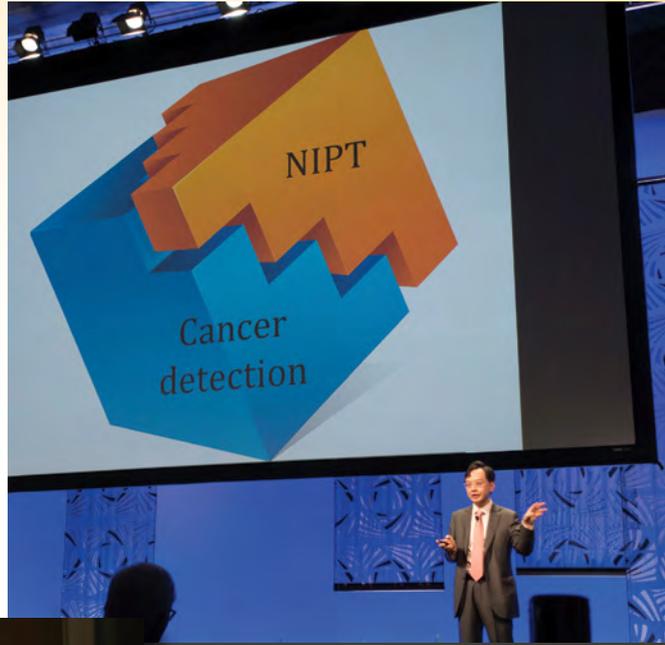
### ***About the Wallace H. Coulter Lectureship Award***

*The Wallace H. Coulter Lectureship Award recognizes an outstanding individual who has demonstrated a lifetime commitment to, and made important contributions that have had a significant impact on education, practice and/or research in laboratory medicine or patient care. It is named after Mr Wallace H. Coulter, an engineer, inventor, and entrepreneur who applied engineering principles to solve biomedical problems. So far there are only eight awardees in the world, and Prof Dennis Lo is the only Chinese scholar receiving this honour.*



▲ *Prof Lo and his Wallace H. Coulter Lectureship Award.*

► *Prof Lo speaks at the AACC Annual Meeting and Clinical Lab Expo held in Atlanta, July 2015.*



◄ *Prof Lo speaking at the Personalized Medicine World Conference, Silicon Valley, Jan 2015.*

Earlier this year, Prof Lo was also presented with the Pioneer Award at the Personalized Medicine World Conference 2015, for his pioneering research and remarkable contributions to personalized medicine.

### ***About the Pioneer Award at the Personalized Medicine World Conference***

*The Personalized Medicine World Conference is an annual event where personalized medicine experts around the world share their innovative researches and insights on future development. The Pioneer Award is given to a rare individual who has presaged the present day excitement regarding personalized medicine with major advances in the field, even at a time when less-evolved technology and less encouragement from peers existed. Last year's recipient of the award was Prof Yuet Wai KAN, renowned expert and leader in genetics research.*



# Fellows' Laurels

## Prof Rossa CHIU Wai Kwun Named “World Outstanding Chinese”

Prof Rossa Chiu, currently Professor at the Department of Chemical Pathology and Assistant Dean (Research) at the Faculty of Medicine, The Chinese University of Hong Kong, was among the recipients of the 14th World Outstanding Chinese Award (世界傑出華人獎).

Prof Chiu's research interests lie in the analysis of circulating nucleic acids found in human plasma. She has made significant contributions to the development of non-invasive prenatal diagnosis which led to the worldwide introduction of non-invasive plasma DNA tests for Down syndrome screening. Recently, she has been investigating the detection of cancer-derived DNA in human plasma with an aim to develop non-invasive blood tests for cancer detection.

In addition to receiving a number of awards and prizes from academic and professional organisations, --- reported by Pathologue every now and then --- Prof Chiu's outstanding research and contribution to society is also well recognised by the people at large, and she was a winner of the Hong Kong Ten Outstanding Young Persons selection in 2011. This year she was among the recipients of the “14th World Outstanding Chinese Award”. This award, organised by the World Chinese Business Investment Foundation, pays tribute to Chinese with outstanding cultural, social or academic contributions. There were 250 recipients from different walks of life since 2003. Previous local recipients from the medical field include Prof Joseph SUNG Jao Yiu, Vice-Chancellor of The Chinese University of Hong Kong, and Prof FAN Sheung Tat, Emeritus Professor, Department of Surgery, The University of Hong Kong.



▲ Prof Rossa CHIU receiving the award from Mr CHENG Wanqi, President of United World Chinese Association.

# TOPICAL UPDATE

Volume 10, Issue 2 July 2015

The Hong Kong College of Pathologists, Incorporated in Hong Kong with Limited Liability

**Editorial note:** In the course of medico-legal death investigation and disaster victim identification, forensic pathologists always work in close collaboration with colleagues in other forensic disciplines, including forensic odontologists. In this article, Dr. Carl Leung, a local forensic odontologist, has provided an account on the principle of forensic odontology and its application in fieldwork. We welcome any feedback or suggestions. Please direct them to Dr. Bobby Shum (e-mail: bsfshum@graduate.hku.hk) of Education Committee, the Hong Kong College of Pathologists. Opinions expressed are those of the authors or named individuals, and are not necessarily those of the Hong Kong College of Pathologists.

## Forensic Odontology



**Dr LEUNG Ka Kui Carl**  
Consultant Forensic Odontologist,  
Hong Kong Forensic Odontology Group  
Honorary Professor in Forensic Science,  
Department of Medical Sciences,  
Tung Wah College

### Introduction

Forensic odontology, or forensic dentistry, was defined by Keiser-Neilson in 1970<sup>1</sup> as "that branch of forensic medicine which in the interest of justice deals with the proper handling and examination of dental evidence and with the proper evaluation and presentation of the dental findings." There are three major areas of activity embracing current forensic odontology, namely:

1. The examination and evaluation of injuries to teeth, jaws, and oral tissues resulting from various causes;
2. The examination of marks with a view to subsequent elimination or possible identification of a suspect as the perpetrator;
3. The examination of dental remains (whether fragmentary or complete, and including all types of dental restorations) from unknown persons or bodies with a view to the possible identification of the latter.<sup>2</sup>

The natural teeth are the most durable organs in the bodies of vertebrates, and humankind's understanding of their own past and evolution relies heavily upon remnant

dental evidence found as fossils.<sup>3</sup> Teeth can persist long after other skeletal structures have succumbed to organic decay or destruction by some other agencies, such as fire.<sup>4</sup>

Identification by dental means is not a new technique. It has been said that Nero's mistress, Sabina, in 66 A.D., satisfied herself that the head presented to her on a platter was Nero's wife as she was able to recognize a black anterior tooth.

Another historic case is the dental identification of the remains of Adolf Hitler. Thirteen bodies were found in the garden of the Chancellery on May 4, 1945: six children, five adults and two dogs. For two of the burned adults, visual identification was impossible. The Soviets later found the dental charts, the dental X-ray and the dental technician who performed the dental work for Hitler and Eva Braun.

*Teeth are very durable and may persist after a fire.*

After comparison, the human remains were then positively identified by dental means.

## Comparative Dental Identification

After the comparison of antemortem record and postmortem findings, a range of conclusions can be reached when reporting a dental identification. The American Board of Forensic Odontology recommends that these be limited to the following four conclusions:<sup>6</sup>

*Positive identification:* The antemortem and postmortem data match in sufficient details, with no unexplainable discrepancies, to establish that they are from the same individual.

*Possible identification:* the antemortem and postmortem data have consistent features but, because of the quality of either the postmortem remains or the antemortem evidence, it is not possible to establish identity positively.

*Insufficient evidence:* The available information is insufficient to form the basis for a conclusion.

*Exclusion:* the antemortem and postmortem data are clearly inconsistent.

It is important to note that there is no minimum number of concordant points that are required for a positive identification which is different from the analysis of fingerprint. In some cases, a single tooth can be used for identification if it contains sufficient identifying or unique features. Equally, a full mouth series of radiographs may not reveal sufficient detail to render a positive identification.<sup>6</sup> The certainty of identification conclusion lies with the forensic odontologist, who must be prepared to justify his conclusions in court.

***An unidentified corpse may be identified by comparing postmortem findings with antemortem dental record.***

## Postmortem Dental Profiling

When antemortem dental records are unavailable and other methods of identifications are not possible, the forensic odontologist can assist in limiting the population pool to which the deceased is likely to belong and thus increase the likelihood of locating antemortem dental records.<sup>5</sup> This process is known as postmortem profiling. The information from this process will enable a more focused search for

identity. A postmortem dental profile can provide information on the age, ancestry background, sex and socio-economic status of the deceased. In rare circumstances, it is also possible to provide additional information regarding occupation, dietary habits, habitual behaviour and occasionally on dental or systemic disease.

Forensic anthropologists most often provide details of osteological studies, but forensic dentists can assist in the process.<sup>12-17</sup> The determination of sex and ancestry can be assessed from skull shape and form. Generally, from skull appearance, forensic dentists can determine race within the three major groups: Caucasoid, Mongoloids and Negroid. Additional characteristics, such as cusps of carabelli, shovel-shaped incisors and multi-cusped premolars, can also assist in determination of ancestry.<sup>18</sup> Sex determination is usually based on cranial appearance, as no sex differences are apparent in the morphology of teeth. Microscopic examination of teeth can confirm sex by the presence or absence of Y-chromatin and DNA analysis can also reveal sex.<sup>19-21</sup>

The presence of erosion can suggest alcohol or substance abuse, an eating disorder or even hiatus hernia while stain can indicate smoking, tetracycline use or betel nut chewing.<sup>22-31</sup> Unusual wear patterns may result from pipe stems, cigarette holders, hairpins, carpet tacks or previous orthodontic treatment.<sup>32</sup> The quality, quantity and presence or absence of dental treatment may give an indication of socioeconomic status or likely country of residence.<sup>33</sup>

## Facial Reconstruction and Facial Superimposition

If the postmortem profile does not elicit the tentative identity of the deceased, it may be necessary to reconstruct the individual's appearance during life. This is the responsibility of forensic artists who utilize the dental profile to help with facial reconstruction.<sup>34-36</sup> The use of antemortem photographs to permit facial superimposition of skeletal and teeth fractures have been used in cases of identification. This technique requires the availability of suitable antemortem photographs showing the teeth. Often, angulations and magnification impose difficulties in positioning the images.<sup>37-39</sup>

***Using antemortem photographs for facial superimposition of skeletal and teeth fractures have been used in cases of identification.***

## Age Assessment

The evaluation of dental tissue has long been regarded as a good tool for the assessment of age, and therefore, age assessment techniques involving these tissues have been widely used by forensic dentists and anthropologists. The rationale for scientific evaluation of dental tissues for age estimation can be divided into three criteria: tooth formation and growth changes, postformation changes, and biochemical changes.

Tooth formation and growth changes involve the progressive morphological development of the crown, root and apex of any given tooth and/or its timed emergence and eruption sequence.<sup>40</sup> An advantage of tooth formation and growth techniques is that they are noninvasive with age assessment easily accomplished through visual and radiographic examination. Additionally, tooth development techniques are classically “thought to be the most accurate and reliable way of correlating growth and development” to age. Through the development of tooth maturation stages, researchers have developed dental age estimation techniques.<sup>41,42</sup> There are multiple staging systems that have been proposed and it is imperative that the forensic scientist always be mindful to utilize the appropriate staging system that is associated with a given study’s data set. Because tooth development is a maturation process, techniques that utilize this rationale are reserved for cases involving fetuses, infants, children, and adolescents. Naturally, as an adolescent individual approaches adulthood, they also approach the end of dental and skeletal development. Therefore, anthropological considerations that utilize bones of the hand and wrist, clavicle, ribs, and cervical vertebrae become more important in the age assessment process.

***Tooth development techniques are particularly useful for assessing the age of fetuses, infants, children, and adolescents.***

Once dental and skeletal growth has ceased, forensic dental investigators must use a technique that involves either biochemical tooth changes or dental postformation changes to assess age. There are two biochemical dental age estimation techniques: amino acid racemization method<sup>43</sup> and carbon-14 dating. They are both laboratory techniques that involve the sacrifice of tooth structure and are expensive and time consuming.

Postformation tooth changes are adult dental considerations and can be subdivided into gross anatomical and histological changes. The gross anatomical changes include but are not limited to attrition, periodontal condition, apical root resorption, pulpal size to tooth size ratios, root smoothness, and dentine coloration. The histological changes include secondary dentine apposition, cementum apposition, and root dentine transparency.<sup>44</sup>

Unfortunately, there are other factors at play in the scientific dental assessment of age other than the aforementioned criteria. They include the gender and ancestry of the individual in question. The classic anthropologic ancestries are European, Asian and Africa. However, many of the newer published dental age estimation studies are population specific versus being of ancestral specificity. Population specific studies help to eliminate questions of ancestral admix and the potential influence of a myriad of environmental considerations. Some of these environmental factors include climate, nutritional health, disease, lack of disease, habits, addictions, occupation, place of residence, and dental and skeletal abnormalities.

## DNA in Forensic Odontology

The resilient nature of the dental hard tissues to environmental assaults ensure that teeth represent an excellent source of DNA material.<sup>45</sup> When conventional dental identification methods fail, this biological material can provide the necessary link to prove identity. With the advent of the polymerase chain reaction, a technique that allows amplification of DNA at pre-selected specific sites, this source of evidence is becoming increasingly popular with investigators. Comparison of DNA from the teeth of an unidentified individual can be made to a known antemortem sample like stored blood, hairbrush, clothing, cervical smear and etc. or to a parent or sibling.<sup>5</sup> A recent study has found out that mitochondrial DNA can be sourced from dentine powder obtained via cryogenic grinding, and also via dentine in the case of rootfilled tooth.<sup>46-48</sup> In fact, Interpol has suggested using the teeth as a source of DNA in Disaster Victim Identification (DVI) because of the abundance of DNA materials in the tooth.

***The resilient nature of the teeth preserves DNA material in the dentine, which can be extracted for forensic purposes.***

## Bitemark

In mortal combat situations, such as the violence associated with life and death struggles between assailants and victims, the teeth are often used as a weapon. Indeed, using the teeth to inflict serious injury on an attacker may be the only available defensive method of a victim. Alternatively, it is well known that assailants in sexual attacks, including sexual homicide, rape and child sexual abuse, often bite their victims as an expression of dominance, rage and animalistic behavior.<sup>49</sup>

A bitemark is a pattern created by teeth contacting a surface, most commonly food but also other objects and human skin. A bitemark on human skin is a patterned injury, and the examination and analysis of those injuries often become the responsibility of forensic dentists.<sup>50</sup>

The amount and degree of detail recorded in the bitten surface may vary from case to case. And even if it is assumed that the dentition is individual enough to warrant use in forensic context, it is not known if this individuality is recorded specifically enough in the injury. In situations where sufficient detail is available, it may be possible to identify the biter to the exclusion of all others. Perhaps more significantly, it is possible to exclude suspects that did not leave the bitemark.

Recognition, evidence collection, and analysis of a bitemark is challenging and complex. The comparisons of the teeth of putative biters, the reports of the results of these comparisons, and the subsequent expert testimony regarding those comparisons are the most controversial areas of forensic odontology.

***A bitemark on human skin is a patterned injury; depending on the degree of details available, one may be able to identify the biter, or exclude suspects that did not leave the bitemark.***

The analysis process involves the evaluation of the evidence quality and the features in that evidence. It is these analyses that enable forensic dentists to offer information to officials and others charged with the protection of society about the nature of those injuries. A separate and distinct activity is the subsequent comparison of bitemarks with the dentition of the suspected biters. All suspected bitemarks should be analyzed. Only those that reach a threshold of evidentiary value should be compared to suspected biters.

The most common analyses are those of suspected bitemarks on human skin. However, tooth markings have also been analyzed on numerous inanimate objects including various foods, chewing gums, Styrofoam cups, cigarette butts, wooden pencils, a steering wheel, and more.<sup>51,52</sup>

## Human Bites as Forensic Biological Evidence

During the process of biting and also during kissing and sucking, saliva is deposited on the skin's surface. It has been shown that this trace evidence is present in sufficient quantity and quality to enable PCR-based typing of the DNA that is present in saliva from white blood cells and possibly from sloughed epithelial cells.<sup>53,54</sup> Significantly, since high intensity alternative light sources and lasers are now widely used by the police to locate stains from bodily fluids at the crime scene, saliva stains deposited on the skin – even in the absence of marks from teeth – can be found and recovered. After analyzing the salivary DNA and establishing the depositor's DNA profile, this result can be compared with the DNA profile of any suspects obtained from buccal swabs containing saliva or whole blood taken using a lancet.<sup>55</sup>

## Child Abuse

Child abuse is a non-accidental trauma or abuse inflicted on a child by a caretaker that is beyond the acceptable norm of child care.<sup>56</sup> The head and facial areas are frequently injured in such cases. These areas are exposed and accessible and the face and mouth are considered representative of the whole being. Human bitemarks are often seen in child abuse cases, frequently accompanied by other injuries. Those found in infants tend to be on different locations from those in older children or adolescents, and reflect punitive measures.<sup>57,58</sup> The marks may be ovoid or semicircular. Bites from adults will often only mark clearly from one arch, while a child who has been bitten will frequently mark with both arches. Bites may be aggressive or sexual, the latter occasionally displaying suck marks. However, it is important not to overlook the fact that the child may have bitten itself or had the arm or hand forced into the mouth to silence it.<sup>59</sup>

***Bitemarks are often seen in child abuse cases and they may exhibit specific characteristics depending on the case nature.***

## Other Dental Evidence

Civil claims on personal injury due to traffic accidents, occupational accidents and other accidents which may involve insurance purpose will also need a forensic expert opinion and assessment. Recently, court will usually demand both parties to appoint two experts or even one expert to make a joint report so as to save the cost and time for both parties and the court. Although general dentists can also play the role as experts when dental evidence is required, it is more sensible to appoint a forensic dentist since he or she are trained to write legal reports and understand the words of lawyers and court.<sup>58,60</sup>

Dental evidence such as identification of tooth fragments and elucidation of their origins may play a critical role in court proceedings, as illustrated by several similar cases in which the author was involved. Foreign bodies found in food is not uncommon. It can be anything, including insects, blades, or even a tooth fragment. Food suppliers may be prosecuted

by the Food and Environmental Hygiene Department following complaints of discovery of foreign bodies in the food supplied. The author was appointed on several occasions as expert witness by the defence to examine tooth fragments in chocolate, fruit tarts, pineapple buns or even hamburgers. After careful examinations on the complainants, it was found out that the tooth fragments were indeed from the broken teeth of the complainants, who were having very poor oral hygiene. They did not even notice that the tooth fragments were from their own mouths and that they have retained roots in their oral cavities. The defendants of these cases were eventually acquitted.

***Foreign bodies found in food is a common complaint. However, on some occasions the foreign bodies were actually fragments from the complainants' own teeth!***

## References

1. Keiser-Neilsen, S., Person Identification by Means of Teeth. 1980, Bristol: John Wright & Sons.
2. Keiser-Nielsen, S., Forensic odontology. *Int Dent J*, 1968. 18(3): p. 668-83.
3. Tobias, P., The Skulls, ebone and teeth of Homo habilis. 1990, New York: Cambridge University Press.
4. Holden, J.L., J.G. Clement, and P.P. Phakey, Age and temperature related changes to the ultrastructure and composition of human bone mineral. *J Bone Miner Res*, 1995. 10(9): p. 1400-9.
5. Sweet, D. and J.A. DiZinno, Personal identification through dental evidence--tooth fragments to DNA. *J Calif Dent Assoc*, 1996. 24(5): p. 35-42.
6. Body identification guidelines. American Board of Forensic Odontology, Inc. *J Am Dent Assoc*, 1994. 125(9): p. 1244-6, 1248, 1250 passim.
7. INTERPOL. Disaster Victim Identification. 2015; <http://www.interpol.org/>.
8. Bajaj, A., Disaster victim identification: Tsunami. *Br Dent J*, 2005. 198(8): p. 504-5.
9. Berketa, J.W., H. James, and A.W. Lake, Forensic odontology involvement in disaster victim identification. *Forensic Sci Med Pathol*, 2012. 8(2): p. 148-56.
10. Levine, S., Forensic odontology-identification by dental means. *Aust Dent J*, 1977. 22(6): p. 481-7.
11. Taylor, J., Development of the Australian Society of Forensic Odontology disaster victim identification forensic odontology guide. *J Forensic Odontostomatol*, 2009. 27(2): p. 56-63.
12. Steyn, M. and M.Y. Iscan, Sexual dimorphism in the crania and mandibles of South African whites. *Forensic Sci Int*, 1998. 98(1-2): p. 91-6.
13. Burris, B.G. and E.F. Harris, Identification of race and sex from palate dimensions. *J Forensic Sci*, 1998. 43(5): p. 959-63.
14. Hsu, J.W., et al., The effect of shovel trait on Carabelli's trait in Taiwan Chinese and Aboriginal populations. *J Forensic Sci*, 1997. 42(5): p. 802-6.
15. Solheim, T., A new method for dental age estimation in adults. *Forensic Sci Int*, 1993. 59(2): p. 137-47.
16. Shapiro, H.L., Forensic anthropology. *Ann NY Acad Sci*, 1978. 318: p. 3-9.
17. Noble, H.W., The estimation of age from the dentition. *J Forensic Sci Soc*, 1974. 14(3): p. 215-21.
18. Whittaker, D.K. and L.W. Rawle, The effect of conditions of putrefaction on species determination in human and animal teeth. *Forensic Sci Int*, 1987. 35(2-3): p. 209-12.
19. Sweet, D., D. Hildebrand, and D. Phillips, Identification of a skeleton using DNA from teeth and a PAP smear. *J Forensic Sci*, 1999. 44(3): p. 630-3.
20. Adachi, H., [Studies on sex determination using human dental pulp. I. The observation of Y-chromatin for the paraffin section using quinacrine mustard staining]. *Nihon Hoigaku Zasshi*, 1988. 42(1): p. 38-41.
21. Adachi, H., [Studies on sex determination using human dental pulp. II. Sex determination of teeth left in a room]. *Nihon Hoigaku Zasshi*, 1989. 43(1): p. 27-39.
22. Harley, K., Tooth wear in the child and the youth. *Br Dent J*, 1999. 186(10): p. 492-6.
23. Murray, M.O. and N.H. Wilson, Ecstasy related tooth wear. *Br Dent J*, 1998. 185(6): p. 264.
24. Bartlett, D., Regurgitated acid as an explanation for tooth wear. *Br Dent J*, 1998. 185(5): p. 210.
25. Nunn, J., L. Shaw, and A. Smith, Tooth wear-dental erosion. *Br Dent J*, 1996. 180(9): p. 349-52.
26. Robb, N.D. and B.G. Smith, Prevalence of pathological tooth wear in patients with chronic alcoholism. *Br Dent J*, 1990. 169(11): p. 367-9.
27. Milosevic, A. and P.D. Slade, The orodental status of anorexics and bulimics. *Br Dent J*, 1989. 167(2): p. 66-70.
28. Smith, B.G. and J.K. Knight, A comparison of patterns of tooth wear with aetiological factors. *Br Dent J*, 1984. 157(1): p. 16-9.
29. Lochary, M.E., P.B. Lockhart, and W.T. Williams, Jr., Doxycycline and staining of permanent teeth. *Pediatr Infect Dis J*, 1998. 17(5): p. 429-31.
30. Livingston, H.M. and T.M. Dellinger, Intrinsic staining of teeth secondary to tetracycline. *Ann Pharmacother*, 1998. 32(5): p. 607.

31. Cuff, M.J., et al., The presence of nicotine on root surfaces of periodontally diseased teeth in smokers. *J Periodontol*, 1989. 60(10): p. 564-9.
32. Gupta, B.N., Occupational diseases of teeth. *J Soc Occup Med*, 1990. 40(4): p. 149-52.
33. Maupome, G. and M.I. MacEntee, Prosthodontic profiles relating to economic status, social network, and social support in an elderly population living independently in Canada. *J Prosthet Dent*, 1998. 80(5): p. 598604.
34. Austin-Smith, D. and W.R. Maples, The reliability of skull/photograph superimposition in individual identification. *J Forensic Sci*, 1994. 39(2): p. 446-55.
35. Turner, W., et al., Computer-aided forensics: facial reconstruction. *Stud Health Technol Inform*, 2006. 119: p. 550-5.
36. Vanezi, P., et al., Facial reconstruction using 3-D computer graphics. *Forensic Sci Int*, 2000. 108(2): p. 81-95.
37. Dorion, R.B., Photographic superimposition. *J Forensic Sci*, 1983. 28(3): p. 724-34.
38. Brocklebank, L.M. and C.J. Holmgren, Development of equipment for the standardization of skull photographs in personal identifications by photographic superimposition. *J Forensic Sci*, 1989. 34(5): p. 1214-21.
39. Maat, G.J., The positioning and magnification of faces and skulls for photographic superimposition. *Forensic Sci Int*, 1989. 41(3): p. 225-35.
40. Anderson, D.L., G.W. Thompson, and F. Popovich, Age of attainment of mineralization stages of the permanent dentition. *J Forensic Sci*, 1976. 21(1): p. 191-200.
41. Gustafson, G., Age determination on teeth. *J Am Dent Assoc*, 1950. 41(1): p. 45-54.
42. Gustafson, G. and G. Koch, Age estimation up to 16 years of age based on dental development. *Odontol Revy*, 1974. 25(3): p. 297-306.
43. Arany, S. and S. Ohtani, Age estimation by racemization method in teeth: application of aspartic acid, glutamate, and alanine. *J Forensic Sci*, 2010. 55(3): p. 701-5.
44. Drusini, A., I. Calliari, and A. Volpe, Root dentine transparency: age determination of human teeth using computerized densitometric analysis. *Am J Phys Anthropol*, 1991. 85(1): p. 25-30.
45. Schwartz, T.R., et al., Characterization of deoxyribonucleic acid (DNA) obtained from teeth subjected to various environmental conditions. *J Forensic Sci*, 1991. 36(4): p. 979-90.
46. Sweet, D. and D. Hildebrand, Recovery of DNA from human teeth by cryogenic grinding. *J Forensic Sci*, 1998. 43(6): p. 1199-202.
47. Sweet, D.J. and C.H. Sweet, DNA analysis of dental pulp to link incinerated remains of homicide victim to crime scene. *J Forensic Sci*, 1995. 40(2): p. 310-4.
48. Hutchison, C.A., 3rd, et al., Maternal inheritance of mammalian mitochondrial DNA. *Nature*, 1974. 251(5475): p. 536-8.
49. Barsley, R., et al., Bitemark analysis. *J Am Dent Assoc*, 2012. 143(5): p. 444, 446; author reply 446, 448.
50. Bowers, C.M., Bitemark analysis. *J Am Dent Assoc*, 2011. 142(12): p. 1334-5.
51. Bernitz, H. and B.A. Kloppers, Comparison microscope identification of a cheese bitemark: a case report. *J Forensic Odontostomatol*, 2002. 20(1): p. 13-6.
52. Nambiar, P., et al., Identification from a bitemark in a wad of chewing gum. *J Forensic Odontostomatol*, 2001. 19(1): p. 5-8.
53. Sweet, D. and G.G. Shutler, Analysis of salivary DNA evidence from a bite mark on a body submerged in water. *J Forensic Sci*, 1999. 44(5): p. 1069-72.
54. Sweet, D., et al., PCR-based DNA typing of saliva stains recovered from human skin. *J Forensic Sci*, 1997. 42(3): p. 447-51.
55. Sweet, D. and D. Hildebrand, Saliva from cheese bite yields DNA profile of burglar: a case report. *Int J Legal Med*, 1999. 112(3): p. 201-3.
56. Ambrose, J.B., Orofacial signs of child abuse and neglect: a dental perspective. *Pediatrician*, 1989. 16(3-4): p. 188-92.
57. Beckstead, J.W., R.D. Rawson, and W.S. Giles, Review of bite mark evidence. *J Am Dent Assoc*, 1979. 99(1): p. 69-74.
58. Verma, A.K., et al., Role of dental expert in forensic odontology. *Natl J Maxillofac Surg*, 2014. 5(1): p. 2-5.
59. Wagner, G.N., Bitemark identification in child abuse cases. *Pediatr Dent*, 1986. 8(1 Spec No): p. 96-100.
60. Pashinian, G.A., et al., [Forensic medical expert evaluation in connection with civil actions of patients complaining of improper dental care]. *Sud Med Ekspert*, 2000. 43(6): p. 8-13.



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# **Programme of the 24<sup>th</sup> Annual General Meeting**

**28 November 2015, Saturday**

**Hong Kong Academy of Medicine Jockey Club Building,  
99 Wong Chuk Hang Road, Aberdeen, Hong Kong**

<b>1:00 p.m. – 5:00 p.m.</b>	<b>The 11<sup>th</sup> Trainee Presentation Session</b>
<b>5:00 p.m. – 5:30 p.m.</b>	<b>The 24th Annual General Meeting</b>
<b>5:30 p.m. – 6:00 p.m.</b>	<b>Reception</b>
<b>6:00 p.m. – 6:50 p.m.</b>	<b>Conferment Ceremony</b>
	<b>Admission of New Fellows and Members and Presentation of Fellowship and Membership Certificates</b>
	<b>Conclusion of Conferment Ceremony</b>
<b>6:50 p.m. – 7:00 p.m.</b>	<b>Group Photo of Stage Party</b>
<b>7:00 p.m. – 8:00 p.m.</b>	<b>The 24th T. B. Teoh Foundation Lecture: “The Allergy Epidemic” <i>Dr CHAN Yuk Tat, Eric Consultant Pathologist (Immunology) Department of Pathology and Clinical Biochemistry Queen Mary Hospital Hong Kong</i></b>
<b>8:00 p.m. – 10:00 p.m.</b>	<b>Chinese Banquet Dinner</b>

# Announcement from the Education Committee

## CME/CPD ANNUAL RETURN MOVING TOWARDS PAPERLESS!

The Education Committee (EC) has implemented a go-green policy for the CME/CPD annual return since 2014. Now, we are taking one step further to save the planet. With effect from the coming CME/CPD annual return (i.e. CME/CPD annual return for 2015), only a notice issued by the EC Secretary will be sent to Fellows by postal mail. The iCMECPD summaries and CME/CPD Annual Return Form will be sent only by e-mail. Fellows are strongly encouraged to return the CME/CPD Annual Return Form electronically.

For the first and second cycle year of a CME/CPD cycle, it is not mandatory to return the CME/CPD Annual Return Form to the College. Fellows should only submit their Annual Return Form if: (i) there is discrepancy between the iCMECPD record and the Fellow's own record; or (ii) the CME/CPD requirement is not fulfilled based on the iCMECPD record. For the third cycle year, all Fellows must submit CME/CPD Annual Return Form to the College. Nil return is required.

Fellows are encouraged to monitor their CME/CPD points through the iCMECPD portal, accessible through the Hong Kong Academy of Medicine webpage: <http://www.icmecpd.hk/>. The CME/CPD Annual Return Form for 2015 will be ready for download soon (<http://www.hkcpath.org/>).

## COLLEGE MEMBERSHIP REACHES 400!

Our College was established in 1991 with 90 Founder Fellows. Today, the current membership of our College including Honorary Fellows [HF], Founder Fellows [FF], Fellows [F], Overseas Fellows [OF] whether retired or active, Members [M] and Associates [A] has just reached a milestone of 400! Here is a table showing the growth of our College over the years:

**Membership Growth (as of 9 October 2015):**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
HF	7	9	11	11	14	13	13	13	13	12	13	13	14	15	16	15	15	15	16	17	16	15	15	15
FF	89	88	88	88	87	83	81	76	76	75	73	73	72	72	72	71	71	71	68	68	68	68	67	66
F	18	38	43	62	70	85	89	89	89	96	109	109	118	124	139	148	155	159	167	175	187	196	205	215
OF		14	14	13	14	19	19	22	22	22	21	21	24	23	23	23	22	23	23	23	23	22	21	22
M		26	27	13	11	9	13	16	16	16	17	17	25	30	27	27	25	31	35	38	32	37	34	32
A		30	33	43	43	31	30	29	29	36	40	40	28	22	28	26	30	36	36	41	47	39	45	50
<b>Total</b>	<b>114</b>	<b>205</b>	<b>212</b>	<b>230</b>	<b>239</b>	<b>240</b>	<b>245</b>	<b>245</b>	<b>245</b>	<b>257</b>	<b>257</b>	<b>273</b>	<b>281</b>	<b>286</b>	<b>305</b>	<b>310</b>	<b>318</b>	<b>335</b>	<b>345</b>	<b>362</b>	<b>373</b>	<b>377</b>	<b>387</b>	<b>400</b>

## A PICTURE PAINTS A THOUSAND WORDS

by Dr Ioy CHUNG  
Department of Pathology  
Princess Margaret Hospital

Every time I visit art museums, it gives a sense of permanence that could not be easily explained. There is always something unique in each artist's work. An exhibition named "Van Gogh at Work" was held in 2013, which explored a number of in-depth themes on his use of colours, materials and techniques. You may know Vincent Van Gogh as the gifted artist who painted *The Starry Night*, the mad man who cut off his ear after a quarrel with his valued friend Gauguin or the sick patient who shot himself. Yet, his journey of finding his own voice to express life through art is the most intriguing to me.



*"What would life be if we had no courage to attempt anything?"*

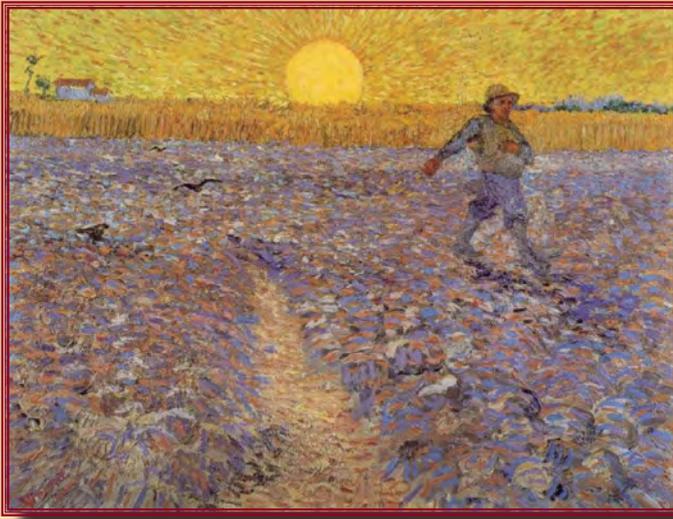
Van Gogh was an art dealer, teacher and missionary, before he made the decision to become an artist at the age of 27. He had no income of his own and only had a box of watercolours and a sketchbook when he first started. With no understanding of any drawing theory, he was self-taught by first copying prints, photographs and artworks by other artists. It was not because he thought he was talented that he chose this path - he wrote to his brother Theo that "I always saw the thing as impossible and beyond my reach". It was five years later when he presented his first large figure painting *The Potato Eaters*, but only to be criticized mercilessly. He struggled to find the right materials and models for practice and travelled from place to place, hoping to gain new perspectives and methods in mastering his skills.



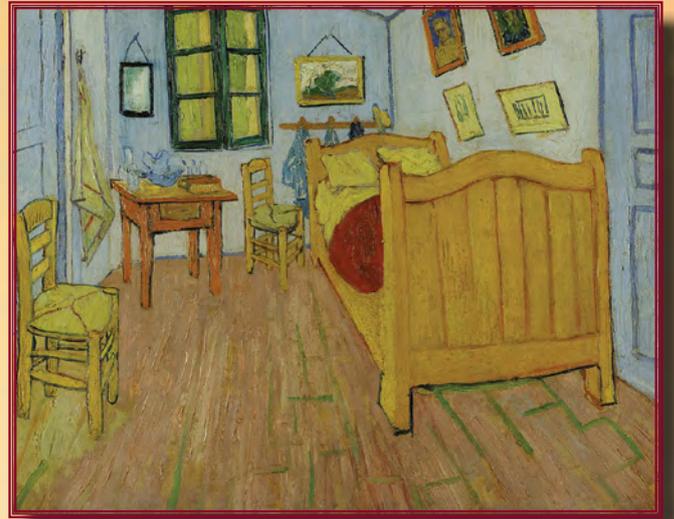
▲ *The Potato Eaters*. 1885.  
Oil on canvas, 82 cm x 114 cm  
Van Gogh Museum, Amsterdam.

*"Great things are not done by impulse, but by a series of small things brought together."*

It is a misconception that Van Gogh is a spontaneous artist - he actually went on improving his techniques with discipline and experimenting purposefully with colours and brushstrokes. The reason why there were countless variations of his self-portrait is not that he was narcissistic, but given how scarce his resources were, he himself was the most readily available model to practise upon. Through technical examination of his paintings, it was found that he regularly over-painted existing works and reused his canvases to create new works. The under-paintings were revealed by X-radiographs and were shown at the exhibition. He also described in his letters about how



▲ *The Sower with Setting Sun. 1888.*  
*Oil on Canvas, 64 cm x 80.5 cm*  
 Kröller-Müller Museum  
 Otterlo, The Netherlands.



▲ *The Bedroom. 1888.*  
*Oil on canvas, 72 cm x 90 cm.*  
 Van Gogh Museum, Amsterdam.

he did calculations in estimating the amount of paint in different colours he needed for a painting - it may sound a bit extreme when he said, "If all my colours run out at the same time, isn't that proof that I can sense the relative proportions like a sleep-walker?", but it was actually necessary as paints were not easy to get hold of in those days and it could take days for his orders to arrive.

*"There is no blue without yellow and without orange."*

Van Gogh was very specific in using what types of, for example, yellow paint. He mentioned in his letters about *The Sower with Setting Sun* that "the sun is chrome yellow 1 with a little white, while the rest of the sky is chrome yellow 1 and 2 mixed, very yellow". He used expressive colours and contrasts in *The Bedroom* to translate emotion into paint. He elaborated in his letter to Theo that "the colour has to do the job here... in short, looking at the



▲ *Almond Blossoms. 1890.*  
*Oil on canvas, 73.3 cm x 92.4 cm*  
 Van Gogh Museum, Amsterdam.



▲ *Sunflowers. 1888.*  
*Oil on canvas, 92.1 cm x 73 cm*  
 National Gallery, London.

painting should rest the mind, or rather, the imagination". He applied simultaneous therapy where the primary colours of red, yellow and blue had to contrast with the secondaries orange, green and purple. It was found that the present colours of the painting do not match with the description in his letters to Theo, which could be explained by the fading of original colours. Another example was *The Almond Blossoms*, we see white almond tree flowers against a baby blue background nowadays, but it was speculated that there was originally a shade of pink in the flowers which was lost over the years.

*"As we advance in life it becomes more and more difficult, but in fighting the difficulties the inmost strength of the heart is developed."*

I remember a true story about *The Sunflowers* told by a museum tour guide - she once had the opportunity of leading a tour for a group of visually impaired people, and she recalled that one of them shared her views on this particular painting. It was an indoor still life painting, and Van Gogh added a final touch of thick white paint onto the reflecting surface of the vase, with a suggestion of sunshine coming through the window. To the girl, she saw light and hope.

# 香港病理學專科學院

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