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ICDigest

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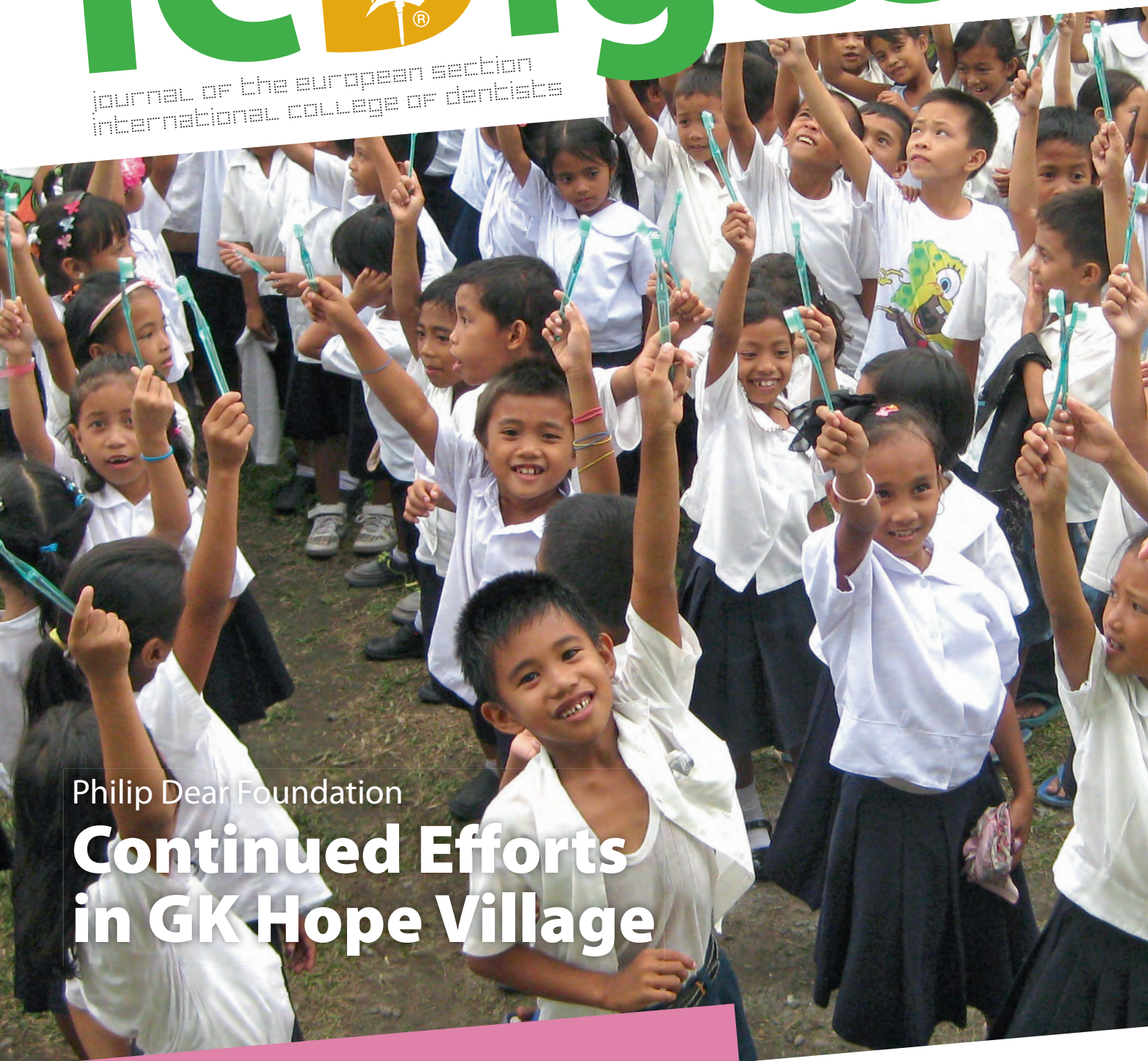

Philip Dear Foundation

Continued Efforts in GK Hope Village

SCIENTIFIC REPORT

Future Trends in Implant Dentistry

Paul Quinlan

Interview with Section President Corrado Paganelli

"Empowering Communication, Learning and Teaching"

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Keep Talking

Isn't it nice to get a compliment? No matter how old we are, or how long we have practiced dentistry, when patients or other people appreciate us and let us know, it makes us happy. Sometimes, when appreciation is expressed elaborately, it can even make us a bit embarrassed. In such cases, after thanking them, you may find yourself saying with a smile something like, 'Please, keep talking'.

In the company of Fellows, talking comes easily. There is a richness of diversity among us – culturally, professionally, personally – that makes it a pleasure to interact and share. And for as long as we are together at our meetings and conferences, conversations continue with genuine mutual interest and engagement.

I have on occasion wondered how much good would be achieved if those conversations continued after we get home and resume our daily routines. Have we been changed by our interactions, seen new perspectives, felt a still small voice inside us whispering how we too can make a difference in the lives of people, in our College, and in society? If so, perhaps one measure of the true value of our meetings and Fellowship lies in the degree to which we take the trouble, after we return home, to pick up those threads of exchange where we left off, continue our exposure to each other, and help and inspire each other to move worthwhile causes forward. As the German author Erich Kästner puts it: Es gibt nichts Gutes, ausser: Man tut es – no good is achieved until you do something. We can be each other's empowering tutors, with one thing leading to another, often with unimagined outcomes.

The benefit of one-on-one contact between meetings is illustrated amply in the success of our host District Italy, where current Regent Mauro Labanca makes a point of communicating personally with his Fellows and using that to create an atmosphere of pleasant and effective interaction. Read more about it in this Digest's interview with him on page 26.

One way our talking will be different this year at our Milan conference, is that it will be an open event attended by non-members also. I personally see this as a wonderful way to expand our horizon, demonstrate our relevance beyond our current circles, and attract undiscovered talent. Additionally, focus will not be on dentistry alone. We will also learn about things like collaboration, team-building etc., and ways to improve our personal and professional success.

Dear Fellows, modern technology now enables us to interact in ways undreamed of only decades ago. Small hand-held devices pack sufficient power and cleverness to bring us up close and personal with anyone, anywhere within reach of the networks – at low or no cost. We talk, we type, we blog, we skype... and with all the change happening in and around our College, there would seem to be a great opportunity and need for our continued deliberations and expression of opinions. The 2013 ICDigest included a 'talking' section I would love to make permanent in future issues: Speaker's Corner, where Fellows can speak their mind and suggest room for improvement. By all means, let's 'Keep Talking'.

Walter van Driel, Editor

With all the change happening in and around our College, there is a great opportunity and need for our continued deliberations and expression of opinions

The 60th Annual European Section Meeting

Dublin Revisited

The 60th Annual Meeting of the European Section was combined with the Annual Meeting of the International Council of the ICD. As the International Council meeting is normally planned in autumn, the European Section had proposed and decided to postpone its own June meeting to October. It made the presidential year of our Irish Fellow Tom Feeney a rather long one. He successfully delivered a splendid programme in which – at least at all social events – the members and partners of the International Council Members could meet the European Board members and Fellows.

Frans Kroon

Returning to Dublin after 12 years was in some aspects very special. As in the European Section, the International Council also concludes its meeting with the official 'change of the gavel' to the new President of the upcoming year. The current (2015) International President, Joe Kenneally has strong ancestral ties to Ireland. The incoming International President happened to be the European Fellow Phillip Dowell. So, Inductees of our Section received a special 'local' welcome from him.

A few Fellows attended the preconference golf tournament at the famous Portmarnock Golf Club. That same Wednesday, the Regents Dinner became the setting for a welcome dinner for the International Council members and their partners. Cliff Townhouse restaurant was a perfect location for a most enjoyable dinner, enabling the International Council and the European Board to meet and intermingle in a relaxed atmosphere.

Although located in the same venue – The Royal College of Physicians of Ireland – the Thursday Board meetings of the International Council and European Board unfortunately were separate and their schedules overlapped, except for the short lunches. So it was not until the Induction Ceremony that both Boards came together.

Thursday evening the first social meeting for the nominated Inductees and Fellows was held at the historic location of Trinity College. A wonderful place to meet old friends and welcome new Fellows. A walking dinner was arranged in one of the big Halls, combined with live Irish music. As the dinner tables were in the adjacent rooms, the attention for the musicians was somewhat 'low' initially. But the ever active dancing President Tom Feeney and his beloved wife Joan were able to inspire the crowd at the end of the evening to join them on the floor.

The scientific congress on Friday was titled "Learning without Limits". The subject matter of the

Honorary Fe

Master Ken Judy.

Inducte
and Jen

ellow Simon Gambold.

ees from Section XX Arthur Kemoli, Mathew Akama
hipher Ober-Oluoch installed by Jack Hintermann.

lectures is nicely reviewed elsewhere in this issue of the ICDigest. Some of the presentations in the 'Open Forum' are included in this issue as well, as are the reports of the ongoing activities of the various humanitarian projects of the Section. Abstracts and further details are also available on the Website (www.icd-europe.com).

The accompanying guests were treated to a most interesting castle tour, providing a sweeping view of the scenic coastal area, and including visits to beautiful gardens and historic small harbours and fishing villages.

The social event on Friday evening brought us together in the Jameson's Distillery, delightfully combining a presentation of the famous whisky with a pleasing and invigorating cultural production of Irish (violin) music, dance and singing. A most enjoyable evening with spontaneous interactions between the artists and the visiting guests.

On Saturday we were back at Trinity College for the Induction Ceremony, which was held in the Examination Hall. As usual, special attention was given to the Inductees by presenting them all individually through a personal introduction by the Regent of their District. The ceremony was impressively 'upgraded' with live music from the organ. Both Registrar Argirios Pissiotis and Master of Ceremony Walter van Driel deserve our praise for the perfect organisation of this event, which gave President Tom Feeney the opportunity to install the Inductees in the much appreciated solemn ritual. The new Fellows were addressed by the 'brand-new' President of the College at Large, Phillip Dowell. In addition to the installation of 37 European Inductees, three African Inductees from Kenya were installed into Section XX by the Secretary-General of the International Council, Jack Hintermann.

What followed was the introduction and installation as Honorary Fellow of the European Section of Simon Gambold of the Henry Schein Company. Simon has been the President of the UK Dental Trade Association as well as being intimately associated with the British Dental Health Foundation. He was the first point of contact for Henry Schein Inc. and facilitated his company being a Diamond Sponsor and is the Henry Schein Cares liaison for their generous grant to the College's Global Visionary Fund. Simon is now Vice-President of the Henry Schein European Northern Dental region.

In conclusion, Jack Hintermann presented a well-documented proclamation for the nomination of a Master Degree in the ICD to be bestowed on Ken Judy.

The Induction Ceremony was closed by the official installation of new officers, most notably of our incoming European President, Corrado Paganelli from Italy.

The Section Meeting came to a superb close with the Gala Dinner at the Royal Hospital Kilmainham. A wonderful venue that served a large group of attendees a perfect dinner, timely punctuated by heart-warming speeches to honour President Tom Feeney and his wife Joan for their excellent organisation of this Dublin Meeting. The Irish District can be proud of their team efforts and achievement.

Future Trends in Imp

Over the past few decades, implant dentistry has proven to be a very successful mode of tooth replacement. This success has, in part, been based on principles established by research into the bone-implant interface and dental implant materials and by co-opting prosthodontics techniques that have been long established for conventional tooth replacement. While these treatments were successful they were invasive and costly, resulting in some patients not accepting implant treatment. Recent developments in bone biology, dental materials and prosthesis manufacture are resulting in less invasive and costly implant treatments.

Paul Quinlan

Albrektsson noted that there were six factors that influence the bone implant interface: 1) Surgical technique, 2) Host bed, 3) Loading conditions, 4) Implant design, 5) Implant surface, 6) Material compatibility. These last three factors are directly related to the implant itself. What resulted from this initial research was a dental implant that was made of commercially pure titanium with a machined surface, was 3.75 mm or greater in diameter for most normal loading conditions to reduce the risk of implant fracture, and was 10 mm or greater to maximise available bone and reduce the risk of integration failure. Smaller dimensions could be used but these carried a higher risk of failure. In patients with reduced bone width or height or both, invasive grafting procedures like the sinus lift were required to increase available bone. Even in cases with 'standard dimensions', i.e. 3.75 mm or greater in width and 10 mm or greater in height, failures were not unknown.

Success Factors

One of the principal factors governing the success of osseointegration is the bone to implant contact (BIC). BIC is a quantitative way of measuring the surface area of an implant that is in contact with bone. The greater the BIC value, the more torque is required to remove the implant and the less likely the implant is to fail. BIC is governed by the micro- and macrotopography of the implant surface. Microtopography refers to the implant surface. Machined titanium is often mistakenly referred to as a 'smooth' surface. In fact, the original machined surface was rough but a lot less so than later generations of implants whose surfaces were treated to increase the surface roughness. Surface roughness is important in the early stages of implant healing. A less rough machined surface results in the blood clot in the osteotomy site contracting away from the implant surface and the new bone forms by distance osteogenesis. A rough surface encourages the blood clot in the osteotomy site to stabilise on the implant surface resulting in bone formation by contact osteogenesis. Novaes noted that sandblasting an implant surface can increase BIC by 27%. Research in implant surface technology continues to aim at improving the implant surface, by creating roughness at the nano level, coating the surface with materials like calcium phosphate and the incorporation of bioactive molecules and drugs onto the implant surface.

Macrotopography refers to the gross design of the implant itself. For the most part this refers to the thread pattern on the external aspect of the implant. The thread pattern modulates force transmission to the supporting bone. This has evolved from either no thread pattern, i.e. the press fit cylinder design of the Calcitek implant, or shallow, closely spaced thread pattern, i.e. the original Brånemark fixture. Over the past decades, different thread patterns have emerged and continue to emerge to allow for better force transmission. Examples of these are the current Straumann tissue level design or the Nobel Biocare Mark III Groovy design.

Implant materials are also changing. Prior to the work of Brånemark and Schroeder, implant dentistry was littered with examples of materials that had high failure rates; materials such as those of the vitreous carbon implant. Commercially pure titanium was established as the material of choice for implant manufacture. Its apparent biocompatibility resulted in the high success rates reported in the initial studies. However, commercially pure titanium is a weak material and implant fractures were noted. Alternatives to titanium were tried, however problems with release of ions resulted in them being

lant Dentistry

discarded. Recently a Titanium- Zirconium alloy (TiZr) has been brought to market. This alloy offers the prospect of similar biocompatibility with better strength. The future may see this trend continue with the development and introduction of Titanium alloys of Palladium, Tantalum, Indium and Niobium.

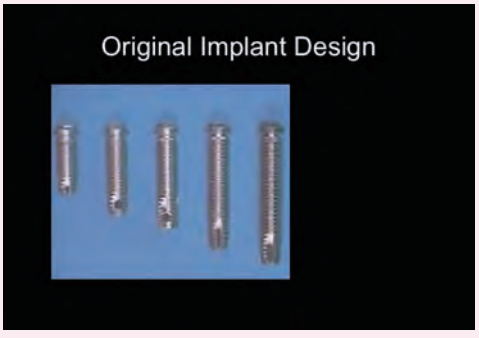
Practical Implications

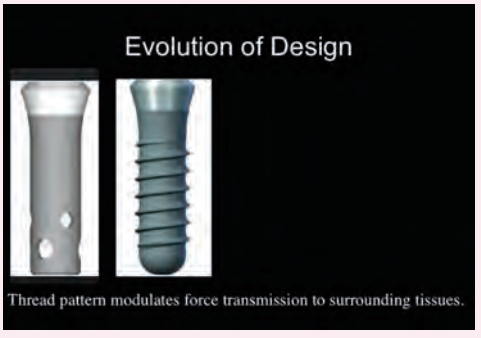
What are the practical implications of these developments in implant surface technology, design and material composition? These developments allow for the placement of shorter and/or narrower implants with similar or better success rates in terms of implant integration rates and implant fracture resistance as 'standard' dimensioned implants. Thereby reducing the invasive nature of treatment for those patients who previously would require bone augmentation and allowing placement of implants in those patients who previously would have been denied care due to osseous deficiency. For example, in the posterior maxilla shorter implants may allow implant placement without the necessity of the sinus elevation bone graft, and in the posterior mandible where the reduction in alveolar bone height and the presence of the inferior dental nerve may have previously precluded implant placement.

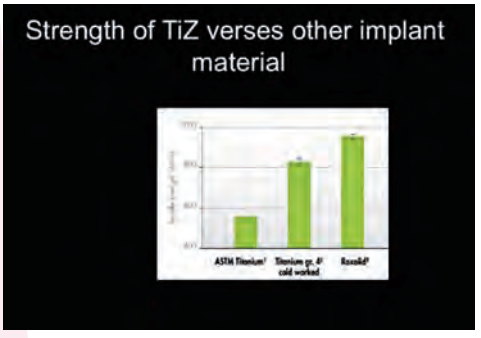
Prosthetics

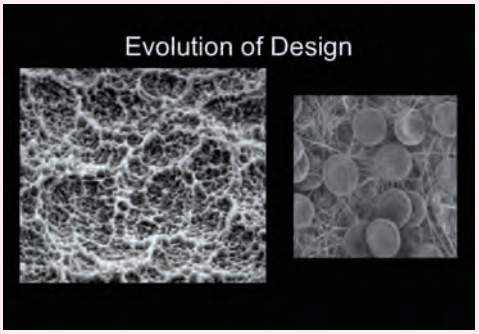
Implant prosthesis fabrication has undergone and is undergoing radical change. Traditionally an impression was made and forwarded to the dental laboratory, where the dental laboratory technician would fabricate a prosthesis using techniques and materials familiar to the technician of fifty years ago. The resulting prosthesis had a long record of proven success but was time- and cost-intensive. The digital dental revolution has moved beyond the information management and diagnostic spheres to impact all aspects of the dental workflow for prosthesis manufacture. Digital dental manufacturing is a term that has been used to describe the technological shift that has and is occurring in the processes and materials for dental prosthesis manufacture. There are three components to digital dental manufacturing. These are computer-aided acquisition (CAA), computer-aided design (CAD), and computer-aided manufacture (CAM).

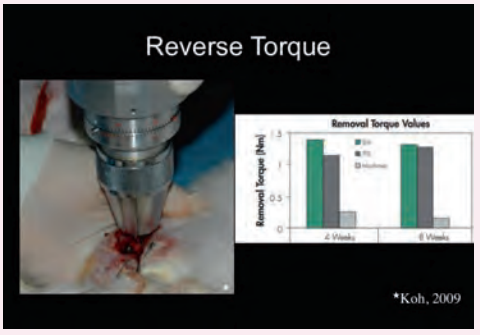
Computer-aided acquisition utilises an intra- or extraoral scanner to digitise patient information. A variety of intraoral systems use different light wavelengths to capture the relative position of the implant or tooth preparation. The principal advantages of using intraoral capture are the time saving in capturing the digital impression and transmitting the data to the dental laboratory, and the ability to correct that impression if areas of the impression appear to be suboptimal. Being able to quickly scan a preparation and determine if tissue retraction is warranted and only retract soft tissue at the deficient portion prior to correcting the digital impression has huge implications for tissue trauma and recession that can occur when conventional impres-

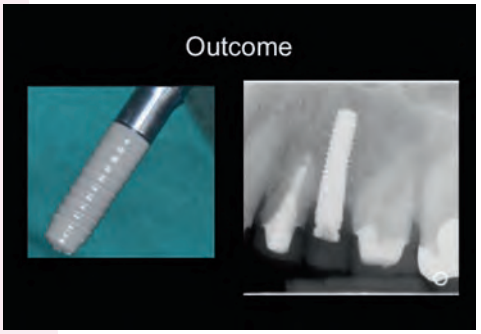












sions are made. One important question regarding digital impressions is whether they are more or less accurate than conventional impression materials like polyvinyl siloxane. The literature is not decisively in favour of digital impressions at this time, however there is a body of evidence indicating that digital technology is as good as if not better than conventional impression materials and techniques.

Alternative

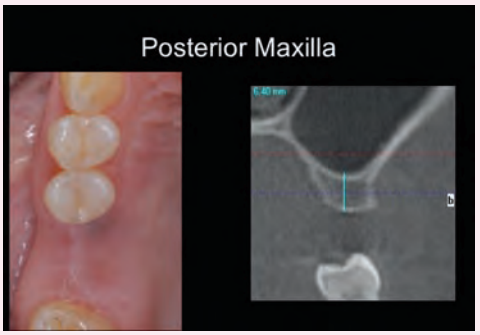
An alternative to intraoral capture of patient data is extraoral capture. Extraoral capture does not require that the dentist change current impression protocols or materials or invest in expensive new technology. Extraoral capture occurs in the dental laboratory using the master cast made from the impression made by the dentist. The digital workflow is entered after the conventional impression is made by digitisation of the master cast. In some instances, such as complete denture fabrication or digitisation of an edentulous jaw with multiple implants, this is the only current option for entering the digital workflow. Future trends for CAA should see faster, more accurate and less expensive scanners, and the ability to scan complete denture and multiple implant cases.

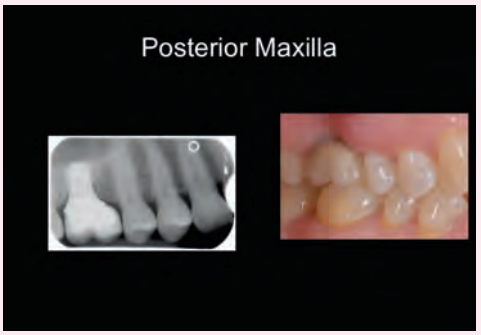
Once the digital impression is made, the prosthesis can be designed. Classically this was done as part of the manufacturing process with the prosthesis being waxed to full contour and then cut back to the approximate dimensions. Oftentimes a framework may be overcontoured to allow the technician a degree of freedom to compensate for any unforeseen errors. However, this often resulted in greater finishing times for metal frameworks after casting. Digital design can rapidly design a prosthesis calling on a library of designs in the software package. The ability to accurately measure and review the prosthesis design from multiple views results in a prosthesis fabricated to more ideal dimensions. The risk of making an undersized connector or too thin axial wall is eliminated. Future trends in computer-aided design should see more intuitive software allowing for faster design.

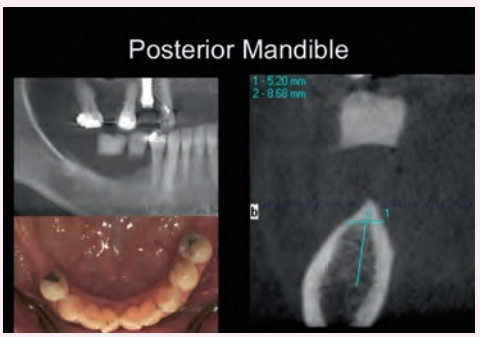
Once the design is completed, it can be forwarded to the manufacturing centre. This can be in the same laboratory or a large industrial facility with all the advantages of large-scale manufacturing. These advantages include reduced cost of manufacture and the ability to utilise a wider range of materials. Computer-aided manufacture can be either a subtractive process whereby the prosthesis is carved from a monoblock of material, or an additive process whereby the prosthesis is built up to full contour according to the design. Currently the subtractive process is the most advanced. Milling of materials such as e.max may produce highly lifelike restorations. There are a number of additive manufacturing processes.

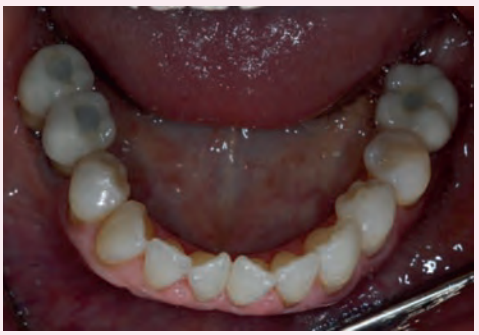
Three that are currently used in dentistry are stereo lithography used to make radiographic guide stents, laser sintering of metals used to fabricate metal substructures for porcelain fused to metal restorations, and jet printing used to print acrylic patterns for casting of metal frameworks. Of these three the last, jet printing, holds the most potential for the future. Coupling a porcelain system to a jet printer may allow for crowns with multiple layers similar to that produced by a dental technician rather than the monochromatic crowns produced by subtractive technology.

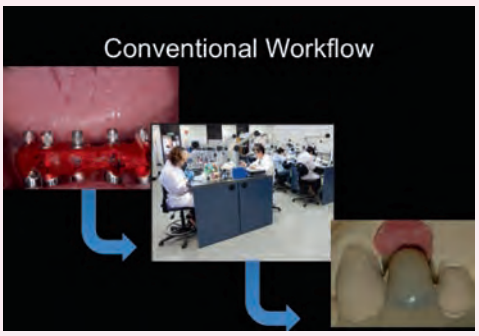
One important issue is whether these new fabrication techniques and materials are as good as or superior to those currently in use by conventional means. A











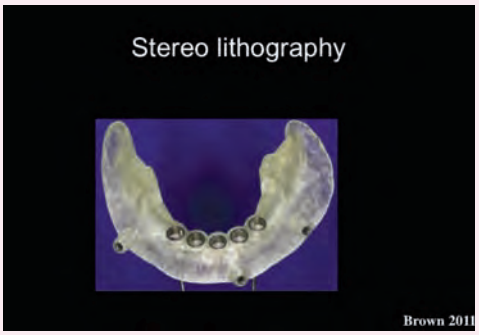
number of criteria can be used to judge the performance of these materials. These include marginal fit, wear characteristics, biocompatibility and longevity. It would appear from the dental literature that these materials and techniques perform at a similar level to more conventionally fabricated prostheses. However, as a note of caution, many of these newer materials and techniques have not been in use for long periods and are often superseded by newer materials as the science changes. Many of the studies researching these prostheses therefore have only 5-10-year data.

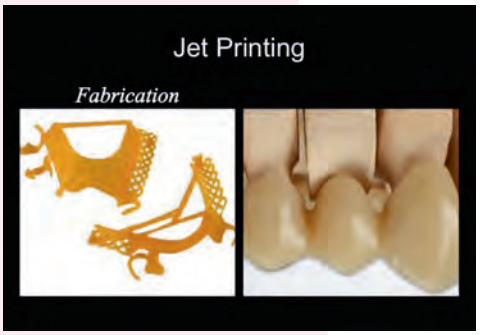
Conclusion

Innovations in implant dentistry will continue. The emergence of new technologies and the combination of current technologies such as intraoral and CBCT scans will make implant dentistry less invasive and require less time and material in the fabrication of implant-supported prostheses. This will benefit the dental patient, allowing for greater access to implant-supported tooth replacement. ■

Paul Quinlan runs a specialist practise limited to prosthodontics and periodontics in Dublin, Ireland

References available on the ICD European Section website: http://www.icd-europe.com/





Pain Control in Endo

Pain in all its facets plays an important role in endodontics. Awareness of how pain is experienced, tolerated and handled is a prerequisite for adequately informing and treating patients. This article addresses pain before, during and after root canal treatment. Also prevention and incidence of post-operative pain and treatment will be discussed.

Walter van Driel

Pain perception is a complex process. Chemically active substances, released when tissue is damaged, initiate a response that eventually results in the perception of pain. Intrasubject variability is significant as a result of biochemical and psychogenic factors. In dentistry, we are confronted with tissues damaged by infection or trauma. In endodontics, there are three moments that pain may be part of the problem: before, during and after the root canal treatment.

Pain Preceding Root Canal Treatment

A correct endodontic diagnosis is codetermined by pain factors: description of the pain by the patient; severity and localisation; impact on various pulp and periodontal tests; moment of occurrence; persistence; origin; and the pain response to selective anaesthesia. Table 1 shows the various components of the pain examination that together with the anamnesis and extra- en intraoral examination will help establish a diagnosis.

The following clinical diagnoses are relevant to pain control in root canal treatment:
1. painful irreversible pulpitis;
2. painful pulpitis and apical periodontitis, and
3. painful apical periodontitis (possibly with periapical abscess).

Table 2 lists characteristic responses to clinical tests (pulp and periodontal tests) in pain of endodontic origin and visible manifestations on radiographs. Importantly, infection of the pulp and periradicular tissues may be present simultaneously in and round one tooth.

Much of the subject matter of this article was reviewed during our 2015 Scientific Sessions. Unfortunately the presentation was not available for editing in this ICDigest. As this is a topic that ICD Fellows encounter almost daily, it has been presented here as scientific review, complemented with additional background and current opinions.

Table 1. Endodontic diagnostics

- Clinical tests
  - o palpation
  - o percussion
  - o mobility
  - o bite test
  - o transillumination
  - o pulp tests
    - electric
    - cold
    - heat
    - test cavity
    - selective anaesthesia
- Pulp circulation tests
- Radiographic examination

Healthy pulp

↓

Non-sterile pulp necrosis
+
apical periodontitis

Table 2. Characteristic response to tests

Pulpitis		Apical periodontitis	
cold	++	cold	-
heat	++	heat	-
electric	++	electric	-
test cavity	++	test cavity	-
X-ray	-	X-ray	++
percussion	-	percussion	++

In pain control prior to root canal treatment, correct diagnosis and localisation of the culprit tooth is essential. Only when this has been established with certainty, can pain be relieved.
If no pulpal or periapical pain of the tooth is found, the examination should be continued for correct diagnosis and therapy. Table 3 outlines painful disorders that may present as pulpal and/or periapical pain.

dontics

Table 3. Differential diagnosis of pulpal or periapical pain

Pulpal	Periapical
• painful periodontitis	• trigeminal neuralgia
• periodontal abscess	• herpes zoster
• periodontal overload	• atypical odontalgia
• CMD	• oral phantom pain
• maxillary sinusitis	• migraine-like neuralgia
• otitis media	• salivary glands
• trigeminal neuralgia	• thyroid gland
• angina pectoris	• osteomyelitis
• psychogenic pain	• cysts and neoplasms

from: Cohen's Pathways of the Pulp

Periodontal problems, problems at the level of the mandibular joint and masseters and problems of the maxillary sinuses are the most prevalent. The other disorders included in table 3 are markedly less common.

If there is any doubt about the most likely diagnosis or uncertainty about the culprit tooth, it is wise not to perform treatment but prescribe pain medication in order to avoid unnecessary root canal treatment. The situation will likely become clearer in time. However, patients should receive clear instructions on what to do and when.

In view of the close interrelationship between the endodontium and periodontium (endodontium-periodontium continuum), it goes without saying that disease processes in one tissue may impact the other.
In order to relieve the pain and achieve a cure, it is essential to treat the actual cause. For instance, in painful gingivitis, the tooth in question is painful on percussion and palpation and hypersensitive to cold and heat. These symptoms may also occur in a (multiroot) tooth with pulpitis and apical periodontitis. However, their origins are entirely different. The anamnesis (allow the patient to describe the symptom in his/her own words), oral examination and radiographs should clarify the matter. Selective anaesthesia could confirm the diagnosis. With mild anaesthesia to the gingival papillae, gingivitis pain should disappear immediately. Dental cleaning is then indicated. If marked pain persists despite anaesthesia, pulpal involvement should be investigated (quality of restoration, caries?).

Another example. In the event of severe pain of the first molar in the mandible with a superficial restoration and healthy periodontium, painful irreversible pulpitis is unlikely. Even though the symptoms of pulpitis are (partially) present, the diagnosis is not obvious and root canal treatment should not be initiated. At this point the cause of the pulpal inflammation is unclear. Additional examination is required to account for the pain. The tooth in question could be overloaded (wear facets). Overloaded teeth also have symptoms of pain on cold and heat, chewing or touch. Therapy is (restorative) repair of occlusion and articulation.
Additionally, cracks may also cause significant pain that is difficult to localise, both for patients and dentists.
The first molar in the mandible is also the region where the masseter muscle inserts. Pain in this muscle may suggest tooth pain in e.g. tooth 46. In addition to the usual static and dynamic provocation tests, selective anaesthesia may provide a solution here. Anaesthesia of tooth 46 with conduction anaesthesia does not control the pain (entirely). Table 4 lists the characteristics of the mandibular joint and masseter problems.

Table 4. Mandibular joint and masseter muscles

- local anaesthesia does not provide relief
- occasional nocturnal awakening
- pain and stiffness in the morning
- sometimes worsening during the day
- sometimes as a result of certain habits (pencil between the teeth, chewing much gum, much talking and such)

Therapy comes under another domain entirely, that of craniomandibular dysfunction, and will usually consist of physiotherapy and modification of the occlusal ratios (splint therapy).

There may of course be situations where cause and effect cannot be elicudated. Pain in teeth with extensive restorations may cause diagnostic problems. If the diagnosis of irreversible pulpitis in tooth 46 is incorrect and if the patient is prepared for canal treatment with the administration of mandibular conduction anaesthesia, be on the alert. If all symptoms of adequate mandibular, lingual and ▶

buccal nerve blockade are present but the pain persists, ask yourself whether the diagnosis is correct. Is the culprit tooth perhaps located in the maxilla?

Maxillary sinusitis and otitis media may induce symptoms of pulpitis and apical periodontitis. Here again, the anamnesis and specific symptoms in disorders mentioned above, and selective anaesthesia, will usually help to identify the cause of the pain.

In the diagnosis of painful pulpitis, differentiating between reversible and irreversible pulpitis remains problematic. The distinction is clinically essential seeing therapy differs markedly; restoration versus pulpal or root canal treatment. Unfortunately, there are no instruments to show this difference. The following serves as a guide in patients with pulpitis pain: *if the administration of a pain stimulus, e.g. cold, significantly aggravates the pain and persists longer than ten seconds after removal of the stimulus, this suggests irreversible pulpitis.* Pain treatment consists of pulpal treatment or full root canal treatment.

In reversible pulpitis, the pain immediately returns to the original level after removal of the stimulus. Treatment will consists of excavation of the caries lesion and restoration. An exception to this rule is if the diagnosis of reversible painful pulpitis is made in this way and during excavation the pulp is exposed. In such cases, full root canal treatment is recommended. This as opposed to situations where there was no prior pain and excavation of the lesion resulted in exposure. In that case, the indication is partial pulpotomy. Only if after repeated amputations the underlying pulp continues to bleed, should full pulpal extirpation be undertaken.

Pulp tests are difficult in fully crowned teeth. In gold porcelain crowns, a gold rim is usually accessible lingually. Rubbing against it with a rubber polishing cone at high rpm generates friction heat. This can be used to perform the pulp test. If this is unsuccessful, a test cavity preparation will have to be performed.

If the typical pulpitis symptoms are long-standing and the pain increases spontaneously, the patient will not always be able to identify the culprit element. Also, with the various tests, it may seem like multiple teeth are involved. Ask the patient where the pain originally started. He or she can usually remember. This is an important pointer to the pain location. If not, selective anaesthesia can be used here also.

This is more easily realised in the maxilla, seeing individual teeth can be briefly anaesthetised using infiltration anaesthesia. In view of the position of the patient and the anatomical configuration of the nerves involved, it is recommended to start anaesthesia in the most dorsal suspected tooth. In the mandible, intraligamentary anaesthesia is administered (0.2 cc) in the distal sulcus of the primary suspected tooth. This should quickly relieve the pain. If not, the next tooth is anaesthetised in the same way. Please remember that anaesthesia will not be limited entirely to one tooth only. Note down the effect immediately therefore, before the anaesthetic spreads.
Selective anaesthesia is a useful tool in the diagnosis and localisation of a disorder. First and foremost, the cause of the disease, e.g. caries, must be explained. In the absence of such an explanation, no certain diagnosis can be made and the culprit tooth cannot be localised. In that case: no invasive therapy!

Teeth that have previously undergone root canal treatment may also cause pain. These symptoms are commonly associated with apical, lateral or interradicular periodontitis. The cause of unsuccessful root canal treatment should be ascertained by anamnesis and clinical and radiographic investigation.
For pain resulting from treatment imperfections (resulting in leakage of bacterial products into surrounding tissues), repeated root canal treatment is primarily indicated (re-treatment).

Sometimes endodontically treated teeth may also cause symptoms consistent with pulpitis. This can of course be confusing if the (heavily) restored surrounding teeth are also located in the pain region. For example, an entirely overlooked canal containing inflamed pulpal tissue.

A traumatised tooth with persistent pain (generally the incisors) may present a dilemma. The force applied to the frontal teeth is transmitted to the surrounding periodontal tissues. Damage to these tissues may cause pain (bruise pain). However, even weeks after the trauma, symptoms may still resemble those of apical periodontitis.
The radiograph may add to the confusion, seeing minor apical blackening is often observed with external root resorption. These may also be symptoms associated with painful apical periodontitis. The problem is in the fact that the diagnostic tests for such teeth are unreliable and generally do not induce a sensitive response, whereas the pulp is vital (with normal blood circulation).

The tooth is in shock, as it were, suggesting a possibly infected necrotic pulp, which would explain the symptoms. The histological reality could be that there is a vital pulp with transient apical breakdown as part of a remodelling process, originating in the periodontium (compare this with resorption in orthodontically treated teeth), even if the tooth is somewhat discoloured as a result of extravasation into the pulp. When in doubt, a test cavity could provide needed information.
There is a technique for this specific problem to register pulpal perfusion, the so-called pulpal circulation tests, including Laser Doppler Flowmetry. In practice, however, the equipment is rather laborious.

In all these cases where pain is caused by pulpitis, the timing of the root canal treatment is essential. Unrecognised painful irreversible pulpitis where the pulp reaches a

necrotic and infected state has a less favourable treatment prognosis than root canal treatment that has been initiated immediately. On the other hand, unnecessary root canal treatment always weakens the tooth versus a tooth that has not been opened endodontically.

Correct diagnosis
- Listen to the patient!
- Have patient describe symptoms in own words
- Take your time
- Plan follow-up appointment if situation remains unclear
- Use common sense

During Treatment

If pain persists during the canal treatment, this can mean three things: 1. the administered anaesthesia is suboptimal, 2. the culprit tooth is located outside the anaesthetised area, or 3. the cause of the pain is not dentogenic.
If the pain persists in the presence of adequate anaesthesia, additional examination is needed to either confirm or exclude the diagnosis of the tooth in question.

Take Your Time

In order to achieve pain-free extirpation of the painful infected pulp, conduction anaesthesia (mandibular block and/or mental block) in the mandible and infiltration anaesthesia in the maxilla and the lower incisors will generally suffice. Take your time, particularly in conduction anaesthesia. The anaesthetic will need at least ten minutes to take effect.
In conduction anaesthesia it is recommended to separately anaesthetise the buccal nerve. If pain-free opening with a sharp diamond stone in the airotor is not possible, additional injections may be needed to achieve adequate anaesthesia, e.g. using intraligamentary anaesthesia. The Ligmaject, a syringe designed specifically for this purpose, provides convenient administration. Good results were also obtained with The Wand®. This computer-guided device administers very precise dosages into the periodontal ligamentary space.
If pain persists during endodontic opening, with typical pain in certain locations of the lower molars, additional anaesthesia may be applied around the mylohyoid nerve. In some situations (anatomical variability), this nerve comediates sensory innervation. The needle is inserted lingually from the distal radix of the first molar towards the apex. If this anaesthetic strategy enables painless continuation of opening, limited initial exposure is recommended, as this allows for effective intrapulpal anaesthesia. In most cases, extirpation can then be performed without pain.
The problem of inadequate anaesthesia is markedly less common in infiltration anaesthesia in the maxilla. However, in very painful pulpitis, palatinal conduction anaesthesia is primarily recommended.
Anaesthesia rarely poses a problem in the treatment of teeth with painful apical periodontitis. Some dentists even prefer to omit anaesthesia. However, in necrotic pulp, even in the presence of radiolucence on X-ray, functional nerve fibres may still be present.

It makes many patients insecure and afraid if they experience more pain during treatment than before. It is therefore important to reassure them prior to treatment and then administer adequate anaesthesia.

Nerve Pain

The treatment of non-painful apical periodontitis (palpation, percussion and bite tests are negative) can usually be performed without anaesthesia. But here again, pain can be experienced during initial preparation of the root canal due to the presence of nerve fibres. Ask the patient if the pain is actually felt in the tooth or molar that is being treated. Patients will often recognise this as nerve pain. The pain usually disappears quickly with a few file motions. If the patient does not tolerate this, intrapulpal anaesthesia may be administered first. If this does not suffice either, infiltration or conduction anaesthesia is administered.

If the patient indicates the pain is not sharp, but rather feels like pricking into the gums, first find out if there is a perforation into the periodontium. This could be the case if the suspected canal entry continues to bleed. Connect an electronic apex locator to your instrument. If the placement of the file is still considerably shorter than the estimated length of the initial image, and the electronic apex locator gives off a signal past the apex, then take radiographs from two different angles with the file in position. This will confirm a perforation into the periradicular space. Close the perforation immediately and only then continue the canal treatment.

Pain may also be experienced constantly during treatment if there is a penetration past the apical foramen. This should be confirmed by the electronic apex locator and radiograph verification.

If pain suddenly develops during localisation of the root canal in a tooth with a diagnosis of non-painful apical periodontitis and obliterated root canal, it is wise to leave the file in position. At that moment it is unclear whether this is a stimulation of still functional fibres in a necrotically infected root canal or whether it is a perforation.
Many dentists tend to immediately retract a root canal instrument when pain develops when logically no pain is expected. Do not do this, but first check the position of the file. If perforation is confirmed, then withdraw the instrument. Once the file is precisely centred in the root canal, make a few short file movements. The pain will rapidly subside and the canal can easily be located again. It can be very difficult or even impossible to localise the obliterated canal again when the instrument is retracted ▶

too quickly in a reflex and it turns out there is no perforation.

Pain can still develop while the sodium hypochlorite takes effect in the periradicular space. This can happen in previously overlooked strip perforations. Sometimes patients develop other symptoms in addition to pain, such as an unpleasant feeling, nausea, burning in the cheek and nose bleeds. Never ignore this, but stop the root canal treatment and investigate the cause.

Sodium Hypochlorite Accident

Acute severe pain at any moment during treatment may indicate a so-called sodium hypochlorite accident. When the irrigation needle is positioned in the root canal and there is no free coronal escape route for the fluid, the remaining portion of the canal is in fact an extension of the needle. The sodium hypochlorite enters the periapical space with high pressure and speed, causing a severe pain reaction. This is a very unfortunate complication with a high level of tissue response caused by the cytotoxic properties of sodium hypochlorite on vital tissues, usually followed by severe bleeding from the root canal and swelling. Paraesthesia of the affected area may occur, and also visual disturbances. Stop the root canal treatment, temporarily close the tooth and remove the rubber dam. Patients will feel the effects for a long time, perhaps two to three weeks. Reassure the patient and prescribe rest and pain medication. Prepare them for ulceration and bruising over the upcoming days. If the pain remains severe, an anaesthetic should be administered immediately. Seeing the root canal is likely still infected and local immunity may be compromised, there is a danger of bacterial spread in the periradicular space. Maintain (telephone) contact with your patient and prescribe an antibiotic if disease symptoms and fever develop. If symptoms worsen or unknown reactions develop, the physician should be notified, possibly for referral to the specialist.
Always avoid this sodium hypochlorite complication by making sure that the needle does not get stuck in the root canal and by not inserting them in perforations.

Post-Operative Pain

Pain may develop or worsen after each phase (biomechanical preparation and after application of the canal filling) of the root canal treatment. Also the diagnosis that prompted the root canal treatment is not specific to the development of post-operative pain. It is important to give patients prior information on the development of post-operative pain, and to indicate that its severity cannot be predicted accurately. This information is particularly important if no pain was felt before the treatment. The patient could think that the treatment has failed and could start worrying. Roughly speaking there are three causes of post-operative pain:

- mechanical (preparation too deep, points pushed in too far); chemical (effect of disinfectant fluids); and/or microbial (compounded debris) damage or irritation of the periodontium, giving rise to severe apical periodontitis or flare of a previous non-painful infection;
- pulpitis of residual tissue after incomplete extirpation, whether or not as continuation or aggravation of prior pulpitis; and
- continuation of prior, severe apical periodontitis.

Familiarity with the cause of post-operative pain is important in order to prevent such pain where possible. The list of five generally applies:

1. Create a good definitive endodontic access cavity.
2. Determine the correct preparation length using an electronic apex locator and radiograph.
3. Extirpate the infected pulpal tissue completely (by hand or mechanically).
4. Always use coronal-apical-oriented preparation technique.
5. Use at least 10 ml 2-5% NaOCl per root canal to ensure sufficient cleaning.

Time Pressure

The daily agenda of general practice will not always allow sufficient time to carry out definitive treatment of patients with acute pain and an endodontic treatment indication. Therapy will be aimed at pain control. The root canal treatment can then be completed in the subsequent visit(s).
Importantly, errors during emergency treatments under time pressure which would seriously impede completion of treatment, must be avoided. After the diagnosis, and in line with the list of five, only those procedures are performed within the limited time that are required to make the patient pain-free:

- Painful pulpitis. Full extirpation requires preparation at least up to the master file. A one-root tooth is usually relatively straight with a wide root canal; if this is the case, the procedure can be performed quickly and correctly. A multi-canal tooth usually has somewhat curved and narrow canals. Preparation of these canals to at least the master file takes much time. In such situations, which occur regularly in practice, it would be wise to deliberately leave these canals untouched and only amputate up to about 2 mm under the canal entry. If a multi-canal tooth only has narrow curved canals that require difficult preparation, a crown amputation is indicated for pain control.
- Painful apical periodontitis. If after opening all canals are found to be necrotic (and therefore likely infected), very thorough cleaning is indicated. In practice this means that in a one-canal tooth, preparation is performed so as to have the irrigation needle reach up to about 3 mm from the preparation limit. The preparation of a multi-canal tooth with narrow curved canals is best performed up to the curve, in order to avoid the risk of preparation errors. Then temporarily close the tooth as per usual procedure.
- Painful apical periodontitis with periapical abscess. Pus drainage is preferably achieved through the canal or one of the canals. If pus does not flow spontaneously during opening, penetrate carefully behind the apex using thin

files. Never use more than ISO 20 files to avoid unnecessary damage to the apex, which could cause problems with the definitive canal treatment. If pus does not drain, it is unlikely this will come with higher file numbers. Cleaning is performed as described under apical periodontitis. If fluctuating swelling already exists, incision and drainage may be performed after this procedure.

Analgesics

Post-operative pain following a completed root canal treatment may vary from somewhat tender on touching the treated tooth up to very severe pain. Instruct the patient immediately after treatment that they may need to use painkillers that have worked well for them. If shortly after treatment the pain is so severe that common painkillers (e.g. paracetamol) are ineffective and even sleep is disturbed, more potent painkillers may need to be prescribed.

As a rule, pain will subside after two days and the severe pain will be better tolerated. If after the second day pain intensity persists or even worsens, the patient will have to return to the practice for follow-up examination. A periapical abscess may be developing, and currently be in the phase of periostitis (subperiostal abscess) and right before mucosal penetration (submucosal abscess). If no fluctuating swelling is present on inspection, the pain can be controlled by administering anaesthesia. This gives the patient time to recover; he/she will generally be receptive to advice again and willing to eat something. The patient regains strength, as it were. This is important in order to get through a difficult period with much pain. Have the patient come back the next day and re-evaluate.

The moment a fluctuating swelling appears, perform an incision; the severe pain will subside and gradually disappear. At times the pain can be so intolerable and the patient completely at the end of his or her strength, that intervention is needed. Even before the swelling appears, the area around the apices may be curetted by trepanation of the corticalis.

If in severe pain no obvious buccal swelling develops after about five days, but the patient has problems swallowing, feels sick and runs a fever, an abscess should be suspected. The patient should then be referred to an oral surgeon.

Post-operative pain may develop during the first two weeks after canal treatment. Therapy is aimed at pain control. After two weeks, pain is considered to be chronic. Additional examination must show whether the correct diagnosis has been made. If so, canal treatment revision, surgery or extraction should be considered as therapy. ■

Walter J. van Driel
specialist practise limited to endodontics

References available on the ICD European Section website: http://www.icd-europe.com/

Higher risk of post-operative pain with:
- prior pain in necrotic pulp
- size of lesion on the radiograph
- more canals

Pain after endo
- usually 2-3 days
- 25-40% have some degree of post-operative pain
- 3-5% have significant post-operative pain

Cracked tooth symptoms
- sharp brief pain
- rebound pain
- partial transillumination
- pain on lateral percussion

Vertical root fracture characteristics
- specific radiolucent oval shape: lateral or combination of lateral and periapical ('halo' image)
- fistula, usually in proximity of marginal gingiva
- occasionally double fistula
- narrow, very deep pocket, usually buccal
- pain or abscess

Post-operative pain therapy
- pain control

~~- remove canal filling~~
~~- perform surgery~~
~~- prescribe antibiotics~~

Therapy for persistent pain
- correct tooth and diagnosis?
- retreatment
- surgery
- extraction

Dental Functional Re
Endodontic and Rest

In the preparation of a root canal, the space being created – with preservation of sufficient dental tissue – must be thoroughly cleaned and hermetically sealed off with a canal filling. Surrounding periradicular tissues should be able to heal and remain healthy, and provide support and grip to the remaining dental structure for the final restoration.

Walter van Driel

Root canal treatment is frequently indicated for teeth with extensive caries lesions and restorations with defective margins between the filling and the tooth structure. Restoration of function (occlusion and articulation) and aesthetics will sometimes require a crown mounted on a supportive core. The function of the core is to replace the lost dentine in order to provide resistance and retention to the crown. The core is made preferably without a post, but in some cases it will be required to serve, together with the core, as a foundation for a crown restoration (Figure 1a-1g).

Indication for Posts

The function of a post is to provide retention to the core material in a tooth with extensive tissue loss. Additionally, the post adds firmness to the stump, making it resistant to lateral forces. Simply put, the post serves to prevent detachment or fracture of the core. Factors determining the use of a post include the remaining tooth structure and functional requirements of the tooth.

Frontal Teeth

Frequently, in frontal teeth requiring a crown, a post must be used. The remaining coronal tooth structure after canal treatment and after crown preparation is usually very thin. The core material in the pulp chamber is often too weak to withstand lateral forces, particularly when biting food, and will therefore break easily. If sufficient dentine remains after preparation (both endodontic and after crown preparation) or if the core material in the pulp chamber has sufficient mass, retention and resistance will obviously not require a post.

Much of the subject matter of this article was reviewed during our 2015 Scientific Sessions. Unfortunately the presentation was not available for editing in this ICDigest. As this is a topic that ICD Fellows encounter almost daily, it has been presented here as scientific review, complemented with additional background and current opinions.

Molars

In most cases, the large pulp chamber and the various canal entries in a molar provide sufficient retention and resistance for the core material (Figure 2a-2b). Additionally, masticatory forces here are mostly vertical, as opposed to the frontal teeth. The focus here is therefore more on providing grip for the supportive core. Posts will therefore rarely be needed in molars, unless there has been excessive coronal tissue loss with virtually no space in the pulp chamber. A post is generally inserted in the largest and least curved canal. In upper molars this is generally the palatinal canal; in lower molars in the distal canal or one of the distal canals.

Premolars

Premolar pulp chambers are usually smaller than those of the molars, and forces are predominantly lateral here. In endodontically treated premolars requiring a crown, again the determining factors for the use of a post are the remaining coronal tooth structure and the functional requirements of the crown in the mastication process.

Complications

The use of root posts involves significant risks, including bacterial leakage and weakening of the root. This may cause deterioration of the apical seal, additional tissue loss due to preparation of the post space, lateral or strip perforations of the root, and root fracture.

storation –
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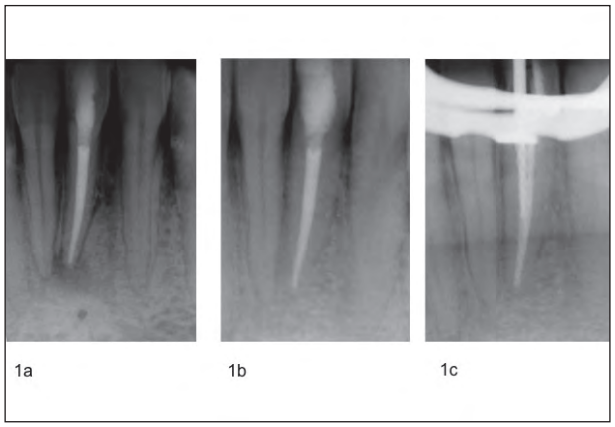
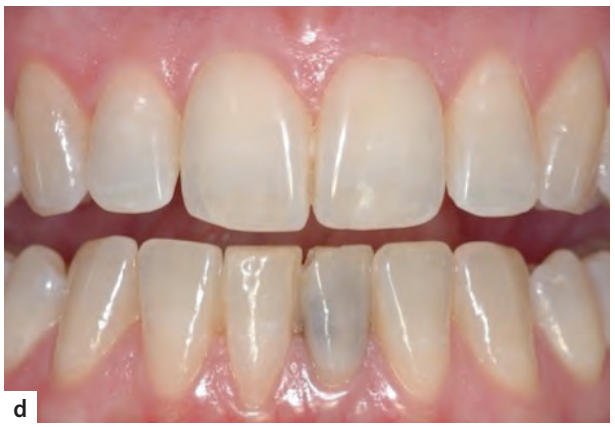


1a. Root canal treatment central left mandibular incisor
1b. Periapical healing after 1 year
1c. Post space preparation leaving 5 mm apical seal
1d. Buccal view of the clinical situation after failed bleaching procedures and defective incisal ridge
1e. Lingual view of the defective margin of the composite restoration and cervical discoloured enamel
1f. Glass fiber post and composite core placed with an adhesive procedure and a crown preparation with a long bevel to create enough ferrule effect
1g. Clinical view after two weeks of the full ceramic crown in place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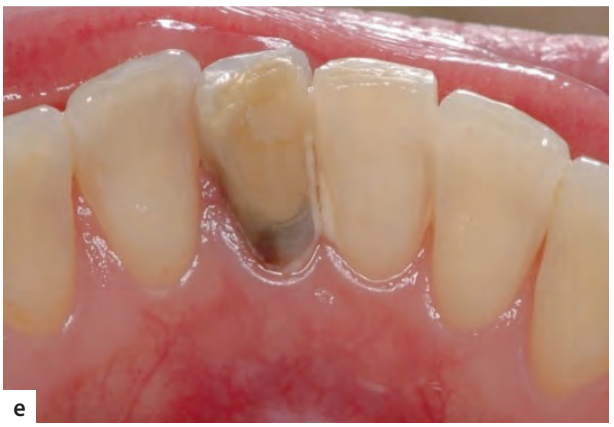
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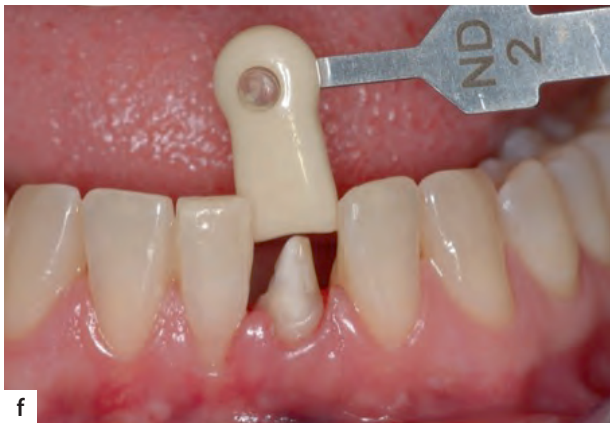

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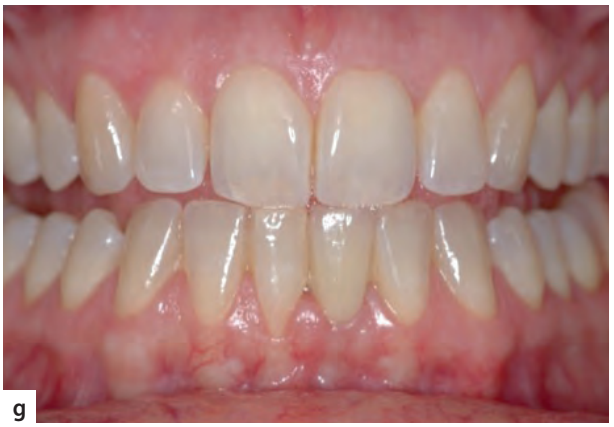
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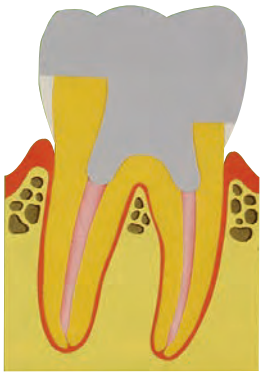
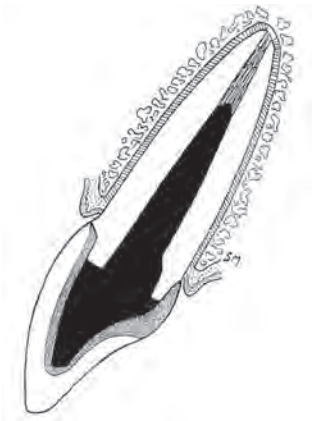
Restoration made by Dr. R.E.M. Smit, The Hague, the Netherlands



2a. Sufficient retention for composite filling material in the pulp chamber to serve as a core. The cusps have been capped.

2b. The crown was prepared using sufficient ferrule.



3a. Schematic representation of a post core and full crown with sufficient ferrule.

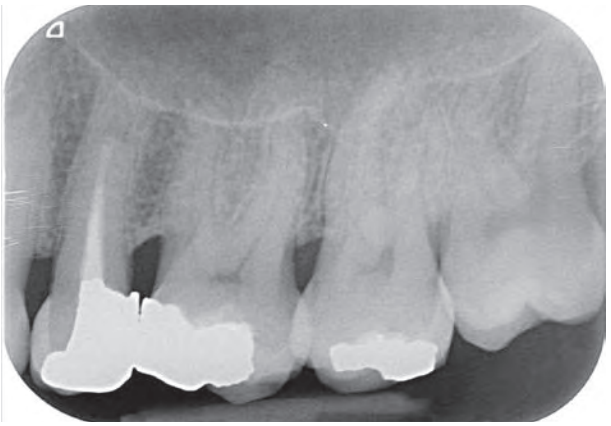
3b. Schematic representation of a post core and full crown with insufficient ferrule palatinal.

Bacterial Leakage

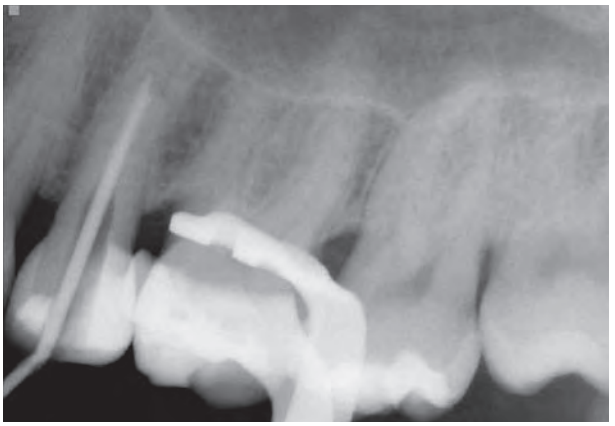
In order to prevent bacterial contamination of the filled root canal, the tooth should preferably be restored immediately after application of the canal filling, irrespective whether the restoration serves as supportive core for a crown or as a filling. Filled root canals exposed to the oral environment quickly become infected. Bacterial products are able, even with a canal filling, to reach the periapical tissues and there induce (or maintain) an inflammatory response (Figure 4a-4d). When using a post, the space required is also prepared immediately after the application of the canal filling. The post can then be placed directly and the tooth can be built up, e.g. with composite. This ensures a good seal. In order to maintain adequate apical closure of the canal filling, 5 mm or more of canal filling should preferably remain after preparation of the post space. In rare cases with a very short root, 3 mm is an absolute minimum. If it is not possible to restore the tooth immediately, precautionary measures should be taken in order to avoid contamination.

If a post is not needed, a protective base or liner is applied to the gutta-percha stumps, which end about 2 mm below the canal entries. This could be glass ionomer cement or a flowable composite. The pulp chamber is filled with easily removable temporary soft filling (e.g. Cavit, Coltosol or Tempit) and covered with a harder layer (e.g. Fuji-II glass ionomer material or Luxacore Dual Cure composite).

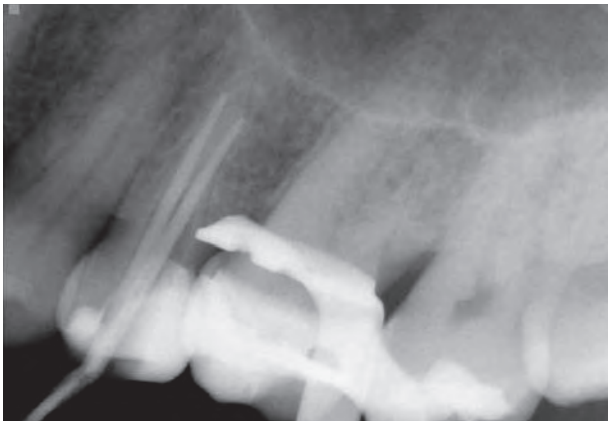
If a post is used, always prepare the space for the post immediately after the root canal filling procedure. The benefit of this is that all information about the root canal, such as direction and dimensions, is fresh in the mind. This allows for optimal orientation for the dentist, minimising the risk of errors. Additionally, the root canal sealer has not hardened yet in this phase. The friction heat generated in preparation provides additional vertical compaction, ensuring good adaptation of the apical canal filling. The space is cleaned and the smear layer is removed. If the apical depth of the gutta-percha stump can be reached before application of a liner, this is done immediately. A chemical hardener is obviously used for this. The use of a needle tube (Centrix) to apply e.g. Fuji-II glass ionomer material is very practical. The space for the post is temporarily filled with an antibacterial agent, usually calcium hydroxide paste or chlorohexidine gel. The pulp chamber is then filled with a soft, temporary filling and sealed with a



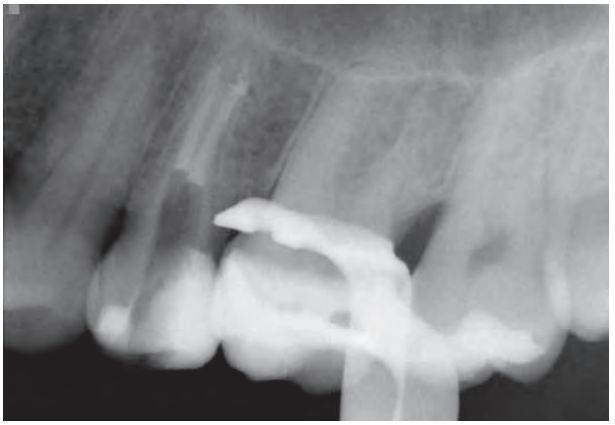
4a. The preoperative radiograph shows a root canal filling with obviously no signs of apical pathosis, but moderate loss of supportive periodontal tissue. The class II amalgam restoration reaches below the cementoenamel junction at the distal side.



4b. The amalgam restoration has been replaced by composite material with an adhesive dentin bonding agent and an incremental procedure. The root canal treatment was revised because of a defective amalgam restoration and the presence of debris at the root canal orifices confirmed by access cavity diagnostic.



4c. Radiographic view from a mesial angle of the cone fitting of gutta-percha.



4d. Root canal filling by the warm vertical compaction technique.

hard layer. When building up the tooth in the next session, it is important to first insert a rubber dam to avoid contamination. The temporary filling material in the pulp room is safely and easily removed using ultrasonic equipment. Removing calcium hydroxide paste is a little more difficult. Use irrigation with sodium hypochlorite (preferably ultrasonic) and EDTA. If after drying with paper posts calcium hydroxide paste is still visible on the canal wall, rinsing is repeated. The space is then conditioned for cementing of the post.

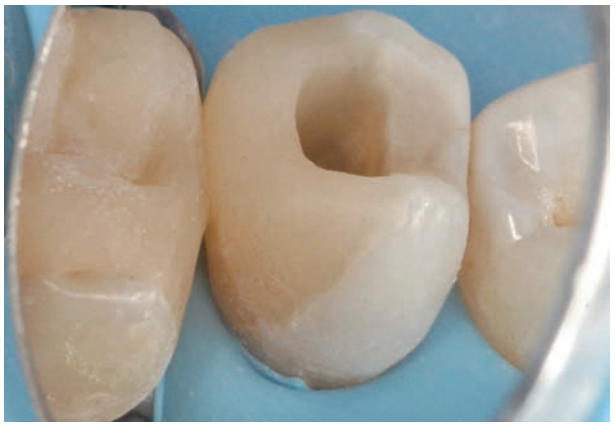
Weakening of the Root

The incidence of cusp and root fractures is higher in endodontically treated teeth than (restored) vital teeth. This is caused by tissue loss from caries and restoration material and creating the endodontic opening. The structure of the axial walls and cusps is severely compromised by the loss of marginal ridges and the penetrated pulpal roof.

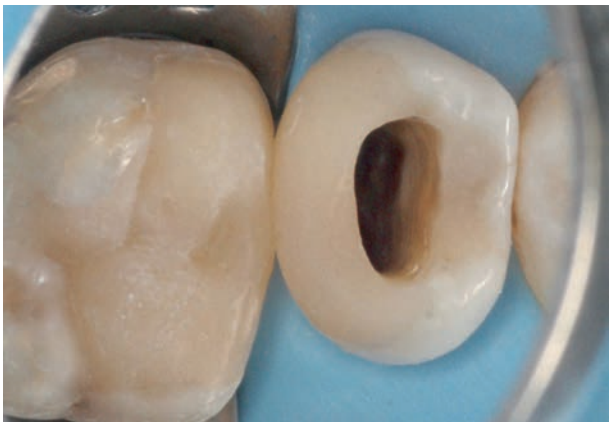
To prevent cusp and root fractures, the cusps should be lowered prior to endodontic treatment and then protected at the end of the first session with restoration material. If something breaks, this is generally the filling material or the cusp. This usually happens in a way that the tooth can be repaired (favourable fracture mode). Without cusp-capping restoration, cusps often break off together with the axial walls at an angle under the marginal bone ridge (unfavourable fracture mode). In such cases, the teeth cannot be repaired anymore, or can only be salvaged with difficult and costly additional treatments like orthodontic or periodontal procedures. In (pre)molars with extensive tissue loss and where definitive restoration is not possible in one session, it would be wise to place an orthodontic band and restore temporarily (with cusp capping) using a glass ionomer material.

If a post is needed, the post preparation will further weaken the root. Additionally, the post itself may cause the weakened root to fracture. The selection of the post type is essential here. Generally, a conical shaped glass fibre post representing the anatomical shape of the root canal (the smallest diameter apically and the broadest coronally) is preferred nowadays. This to avoid the 'splitting effect' caused by parallel wide diameter metal posts. So-called screw posts are advised against, as in comparison to passive posts they create much more tension in the root, increasing the risk of 'stress fractures' in the radix. Screw posts do however have more retention and can ▶

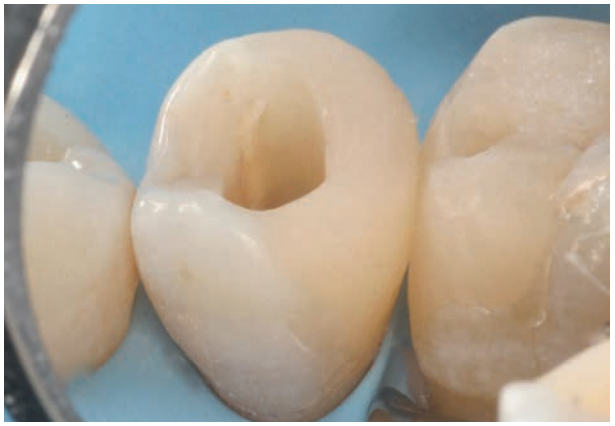
How to restore this symptomless second maxillary right premolar?



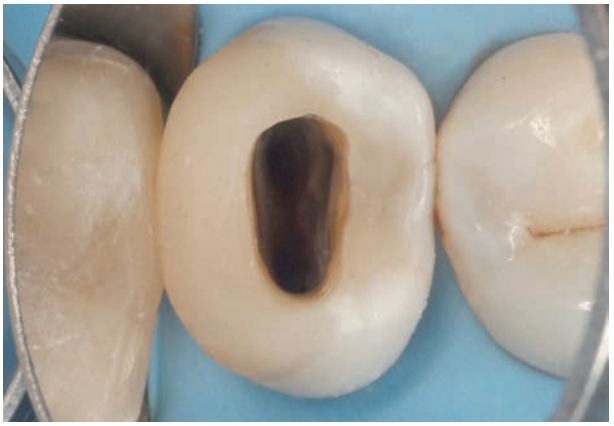
4e. Lingual view with an endodontic access cavity made in the composite restoration. Approximately half of the coronal tooth structure lingual is lost, but the crown height is intact at the mesial side.



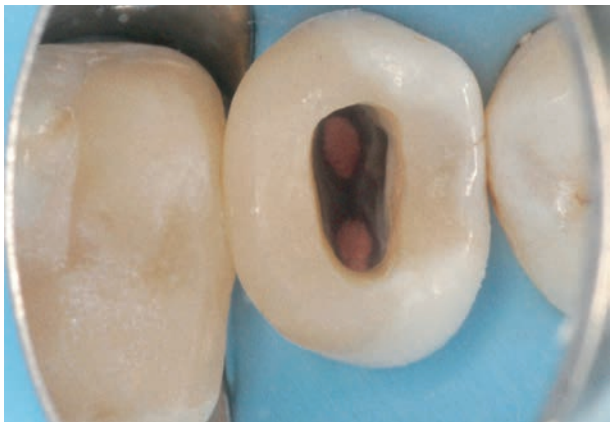
4f. Occlusal view which shows the extent of tooth structure loss to the mesial side with a marginal ridge of only 1 mm. The access cavity is fully prepared in the composite material.



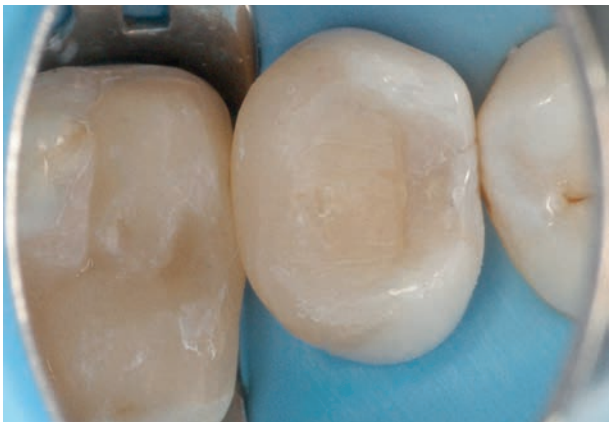
4g. Buccal view which shows one quarter of coronal tooth structure loss of the buccal cusp.



4h. Occlusal view after endodontic retreatment which did not cause any extra loss of coronal tooth structure.



4i. Occlusal view which shows the sealed root canals at the orifices and the cleaned pulp chamber from residual root canal sealer which is mandatory for dentin bonding agents and adhesive procedures.



4j. The access cavity has been temporarily filled with composite material awaiting the decision making of the final restoration.

therefore be reserved for e.g. very short root canals. With respect to retention with passive posts, increased length contributes more to retention than increased diameter. High-diameter posts are better not used, as they increase the risk of weakening and the development of perforations. Use stainless steel posts if only very thin posts can be inserted into the canal. These posts in their thinnest sizes are significantly stronger than titanium alloy posts.

The risk of fracture when using a post is significantly reduced by a so-called ferrule (Figure 3a). This is a vertical dentine wall of about 2 mm high at the level of the cervical limit of the crown preparation. The crown is then placed around the stump as a band, 'holding together'

this weakened area and the underlying radix. This contributes much more to resistance than retention. If a fracture occurs, it will in many cases be more favourable than in the absence of a ferrule (Figure 3b). In oval root canals, as in single-canal premolars and root canals of lower molars, localisation of the post space is vital. Never do this in the root centre, as the risk of perforation in the approximal concavities is highest here. The obvious choice is the buccal or lingual side as the root dentine mass is much higher there.

Post Preparation

The preparation of the post space is preferably performed immediately after application of the canal filling. The dentist applying the canal filling has the best knowledge of the canal anatomy in question, minimising the risk of iatrogenic damage. As a guide to the depth of the post preparation, the apical root canal filling closure of 5 mm length should be respected. The post diameter more or less equals the diameter of the coronal portion of the endodontically prepared canal. Creating space in advance in the gutta-percha for canal preparation using specific drills is easiest done using heat and mechanical instrumentation. A waxing instrument, spreaders and pluggers in a Touch 'n Heat or System-B device or with a nickel titanium rotary are suitable for this purpose. The GT 35/.12 Accessory File is very practical in this setting.
If there is no time for placement of the post and definitive building of the tooth, the space is filled temporarily with Ca(OH)2 paste or chlorohexidine gel. This is to prevent re-infection of the canal space. The benefit of chlorohexidine gel is that it is more easily removed during the next session.

Luting Cements and Core Material

With the advent of the new generation of glass fibre posts, interest in composite cements is high. Various in-vitro studies claim better closure, higher resistance against post fracture and root reinforcement for the fibre post and composite cement combination. In the event of fracture, the fracture line would be more favourable, allowing repeated restoration of the tooth in most cases. They could be removed using specific spiral drills if retreatment is indicated. A drawback of the composite cements versus cements like zinc phosphate and glass ionomer is that its application requires specific technique.
In principle, composite is used as adhesive core material, both with and without post. Specific core composites include Clearfil Photo Core (Kuraray) and Luxacore (DMG America). Glass ionomer material is generally too weak to serve as core material if much lost dentine must be replaced.

Endodontically treated teeth can be restored in several ways. The prognosis of these teeth does not only depend on adequate endodontic treatment, but also on a solid (partial indirect) restoration that protects the weakened tooth against fracture. Adhesive core build-up procedures, possibly with the application of new generation glass fibre posts, are increasingly favoured. ■

Recommendations

1. Use rubber dam also during the phase of the core (and post as needed) to prevent contamination of the root canal.
2. Create cusp-capping restorations in (pre)molars.
3. Apply a ferrule.

And as needed

4. Use posts of sufficient length and diameter corresponding where possible to the space after root canal preparation.
5. Use posts that can be safely removed and have a favourable fracture mode.

This case history illustrates considerations when opting for either a restoration with composite filling (whether or not with cusp capping), or a crown with a core with or without post. Always consider:

- is the tooth protected by canine guidance, or is there group guidance with unfavourable lateral forces during articulation
- residual tooth tissue – does the pulp chamber alone provide sufficient grip for the core material, or is a crown needed
- how much tissue remains after preparation – tooth tissue/core material ratio: more tooth tissue, then use a ferrule rather than a post; more core material, then use a post for strength.

Walter J. van Driel
specialist practise limited to endodontics

References available on the ICD European Section website: http://www.icd-europe.com/

The decision making analysis in this case report should include relevant information of the clinical condition to make a proper recommendation for a composite core with or without a post or a direct composite restoration:

1. *Canine guidance and normal function versus group guidance with or without parafunctions,*
2. *Size of the cavity and amount of tooth structure loss (less or more than half of residual tooth structure, reduced walls less or more than half of crown height),*
3. *Type of restoration needed (aesthetic indication, conservative approach or protective), e.g. direct composite (with or without cusp capping) or crown (full ceramic or porcelain fused to metal),*
4. *If a crown is needed, estimation of the amount of residual tooth structure left after preparation compared to the core material and the size of the ferrule.*

Adding Value to Fellowship

Move to the People

Passion and temperament are what Italians do well. Milan-based oral surgeon and key opinion leader, and ICD Fellow and Regent Mauro Labanca is no exception to the rule. In his case, however, these virtues are refined and augmented by a deep love and respect for life and well-being, and a determined dedication to science and sharing his knowledge for the benefit of society, producing a unique Mediterranean blend of perfectionism, people-orientation and practicality. It is empowering qualities as these that have allowed him to implement far-reaching improvements in the already highly successful Italian District – and provide instructive pointers for the College's future readiness.

Mauro Labanca interviewed by Merryn Jongkees

Trained as a doctor and general surgeon, Mauro, like most students, worked hard on low budgets to master the science of medicine and surgery and complete his general training. Needing to supplement his modest income, and putting his manual skills to good use, he started helping out in a friend's private dental practice. He pursued both lines of education for some time, obtaining his medical degree in 1986 from the University of Milan. But feeling irresistibly drawn towards reconstructive surgery and implantology, he decided to pursue dentistry, taking courses in the US and Sweden, and moved from a public hospital setting to private practice.

Privilege to Be Responsible

'I'm very much a man who needs to do his own thing, an independent spirit, so to speak,' Mauro explains. 'The team process is a wonderful thing, deciding how to best treat a patient, and outcomes have been great. But it can be complex also, when you have a strong feeling how to move forward but you are not in charge. It is a privilege to be the one responsible for the chosen solution, and I wanted that, which is why at some point I decided to move to dentistry entirely, and be responsible for the totality of treatment decisions and outcomes. If you make a bad decision, you pay the price; if you make a good one, you get the merit.'

'The decision to switch from general surgery to dentistry was a tortured one. The surgical profession is wonderful and intense – you make life-or-death decisions, you feel horrible when you lose a patient, but you are ecstatic when you save one. I miss that intensity at times, my involvement is definitely less emotional now than before. But it is a consequence of what I chose, and on balance I'm very happy with it.'

Change = Opportunity

'I certainly don't look back on this course change as a failure of my previous objective, but rather as a wonderful opportunity to use my specific skill set to serve people in a way that makes them and myself happy.' With a smile he continues, 'And even though now my work is less emotionally intense than before, and patients hardly ever risk their lives anymore in my hands, I do have an opportunity now to develop more long-term relationships with my patients, becoming something of a counsellor to them, which I find very enjoyable and fulfilling.'

'Change is actually the essence of life. We see change everywhere, constantly and all around us, and the speed of change is increasing. This can be disconcerting to some, but let's try to welcome change as an opportunity for improvement. Change has brought so much good in this world, in every aspect of life. Change is also happening in the ICD. We need to address it, move forward wisely, and we should certainly not shy away from it.'

'One of my favourite books is "Who Moved My Cheese?", a practical guide and example of the importance of feeling the need for change and timing it properly. I'm totally prone to changes, trying to apply my past dean's suggestion:

try to be always one step ahead and one step next to all the others!'

Small Things Key to Success

In addition to being a successful dental surgeon, Mauro Labanca also has a life as a teacher. 'I'm passionate about sharing my knowledge with others, helping them to be the best they can, allowing my experience to benefit others.' Teaching started early for him, in the first year after his degree as a consultant professor. In teaching his students the importance of relentless concentration and accuracy, he is guided by a very simple philosophy: it is easier to stay out of trouble than to get out of trouble. And the key to staying out of trouble, is to focus on the small things. 'People tend to overlook the small things. But it's there where the mistakes start. So first and foremost I teach my students at the university, just graduated or more aged, how to avoid mistakes. Everyone seems to be more concerned about the difficult and impressive, not considering that this must come from a solid basis and proper knowledge of fundamental rules. But teaching the basics may not give teachers the satisfaction they want, and attendants are not always humble enough to take one step back!'

Mauro now fulfils two academic positions: Consultant Professor of Oral Surgery in the department of Dentistry at Vita e Salute University, San Raffaele Hospital in Milan (where the Dean is Professor Enrico Gherlone); and Professor of Anatomy in the Department of Medicine at the University of Brescia (where the Dean is Professor Rita Rezzani).

Mauro feels strongly about the importance of anatomy: 'You cannot be a good surgeon, either general or dental, if you do not know the anatomy by heart. It's key to being a good dentists and surgeon.' His passion for anatomy has led to various publications and DVDs, as well as to the 'Anatomical Surgery Course with Cadaver Lab', now in its 18th edition and considered one of the best in the world.

Commenting on this great recognition, Mauro explains: 'There is a Latin saying, *mortui vivos docent,* meaning "the dead teach the living". As a surgeon, despite theoretical knowledge, you often learn through your mistakes. That is not the best way to learn. Therefore I teach anatomy-guided surgical procedures on human specimens, pointing out the major anatomical structures and landmarks.'

Holy Ground

Considering such teaching settings a sort of holy ground, Mauro enforces a discipline of utmost respect on his students: 'Before I start the class, I explain what we will be doing. Of course, in learning and practising, students make mistakes, and that is not a problem; but when I detect the slightest lack of respect for the human specimen in any of my students, he or she is immediately removed from the class room. It is a huge generosity when people decide to give their body to science after their death, which enables us to learn from them. That deserves nothing less than total respect.' Mauro's work has instilled in him an almost religious feeling about life and the human body: 'The more you work with it, the more you get a sense of how ▶

incredibly perfect the body is, and of the mystery of life, the genius of the inventor of such a great system, however you wish to see it or whatever name you want to give to it. That is why I can get very upset when I see courses done suboptimally, with high commercial and economical interests, sometimes in most unsuitable locations with poor conditions of hygiene, etc. It would seem there are other motivations there than wanting to share with people how to learn anatomy and to work appropriately.'

Other educational and scientific achievements include being the Founder (2011) and President of the Labanca Open Academy, devoted to the improvement of all aspects of dentistry and created as an open network among all participants of his courses; and the Co-Founder (2009) and Vice-President of the Italian Society for the study of Oro-Facial Pain (SISDO).

When asked how he came to be in such a privileged position in many fields, not only limited to dentistry, he answers modestly: 'I have always tried to do things the right way, which enabled me to meet the right people, and earn the respect of the right persons, giving them the assurance that I could be entrusted with this. It was a very fortunate combination of factors that eventually put me on this path.'

Involved in Innovation

Another aspect of his work Mauro thoroughly enjoys is working with excellent materials. 'When you're a psychologist, all you need is your brain and a chair. As oral surgeons, we also need the very best materials available to do our job. As a key opinion leader to most leading international companies over the last 20 years, it was my privilege to be part of the innovative process that led to the development of superior materials that I can now offer my patients, something I am very proud of. This effort involved much travel around the world, attending conferences, giving lectures, sharing ideas, and working with people from diverse cultures. It gave me great pleasure and fulfilment, and has led to the development of innovative materials that are now used in many parts of the world to benefit our patients. Additionally, I develop very good relationships with companies, a helpful support to some of my cultural activities, ICD included!'

Commenting on his collaborations, Mauro points out: 'Sharing is actually one of my favourite words. I love to share. To me, it means to give what I can and to receive what I can, listening and looking to people, trying to grasp what they are trying to express.' Then reflecting a theme that is common among many ICD Fellows, he goes on: 'Another favourite word is "privileged". I feel tremendously privileged with what life has given me. I can feel disappointed when some people argue or complain, as if they forget how privileged we are with the life we have. And because of my privileges, I have a desire to give something back and to live in a thankful attitude.'

Into ICD

So how did he become involved in the ICD? 'Well, about ten years ago, the Section President was Dr Giorgio Blasi, a wonderful man, and Corrado Paganelli became the Italian Regent. He had always been a very good friend of mine, and when he had accepted the position he came to me and said, "I will take on this role, but you must be my vice-Regent. I didn't know much about the ICD at the time, but seeing it was Corrado who asked, I of course said yes. I soon realised that here again was a great opportunity and privilege, allowing me to meet people like Walter van Driel, Dov Sydney, Phillip Dowell and many others of course, who I'm pleased to say have become very good friends of mine.'

'I will admit I was flattered to be asked. Recognition from such high-level people means you must be doing something right. It's a wonderful thing to be part of such a worldwide group of people, and it gave me an even greater sense of wanting to be responsible for my actions. It has made me more proud to be a dentist, and it motivated me to spread the objectives of the College all over the world, letting others know what ICD is about, and that it's a good thing to be a part of and help move forward.'

Successful District – Respectful and Personal

The Italian District of ICD Europe is arguably a very successful district in the Section in terms of membership and financial stability. How does he explain its success? 'I must say that the previous Italian Regent, Corrado Paganelli, is a wonderfully diplomatic person (I think he could have had a great career in diplomacy or politics!). I'm not. I'm a typical surgeon. Everything must be "cut and dried", so to speak, and that is how I do things. So when I accepted the Regency, I explained to the Board I had to do things my way, meaning very disciplined structures for membership, finances, attendance, etc., and being tough at times. One of the first things I did was to remove people who were obviously not interested in Fellowship. They never attended, didn't even pay their dues. I explained to them: "Look, this is an honorary organisation, you should feel privileged to be a member, and serve and respect the College. That respect starts with paying your dues. If you don't, it obviously doesn't mean anything to you and you have no business here. I don't mind how important you are, what your name is, if you are not active, I cannot keep you on the list of Fellows." So, our membership quickly dropped from 70 to 40… Obviously this is not a politically correct thing, but it was my way. Many of my colleagues pay a fortune on golf clubs and things like that, and they accept their rules. It's not mandatory to be a member. But if you want to be part of the College, you have to accept College rules.'

Adding Value to Fellowship

'My goal is to have personal contact with all my Fellows. I'm a people person. I find that personal, one-on-one contact is a key to the atmosphere and connectivity in the District. We started organising District meetings in a new way, with a scientific session, gala dinner, music – it was my way of giving something back to them. Also, Italian companies were able to make exclusive offers and discounts available for our Fellows, which helped to make ICD membership attractive to them. So it became a two-way thing: you are happy to give something to ICD, and it's nice to get something in return. I tried to combine as many elements as possible to add value to the ICD membership for our Fellows, and create a win-win situation.'

Recruitment Strategy – a More Practical Mix

'ICD is great at suggesting humanitarian strategies. That is wonderful and something to cherish and preserve. However, sometimes we must move forward and add some practicality also. Humanitarian work is excellent for all, particularly perhaps for older Fellows who are approaching the end of their careers. But we also need new forces, younger people, with a shorter CV or less impressive background. Perhaps we shouldn't expect younger dentists to be attracted by the humanitarian aspect or prestige only. Perhaps we need to offer them something more practical, more short-term opportunities, like conference attendance, or journal subscriptions. Lower level, more immediate benefits.'

And then Mauro reveals another side to his character – that of the business man. 'For instance, take our project Tailor-Made for ICD. My lovely fiancée Mercedes had introduced me to several people from the fashion world, including a tailor who created special designs for Dolce & Gabbana. I contacted him, and he made ICD Italy a unique offer: call a designated telephone number, and a tailor comes to your house or office; takes your measure for a suit; comes back for a second fit; and after the third fit you have a beautiful custom-made outfit at a very reasonable price. It really makes you feel like a VIP. Additionally, I use the project to generate some extra income for the ICD that can be used on humanitarian or other initiatives. Being a member of the Non Dues Revenue Task Force and Ambassador for the Global vision found in the ICD, I feel driven to do my best for a proper fundraising for my College! Again, a win-win situation.'

Vision for the Future

'I think it is now time we take the ICD out of the golden cage. We may have been too content with ourselves and the way we did things and the places we met. I would hope that ICD can move from the more elite position to a more human-oriented approach. We can't stay where we are, we need to move to the people. On the one hand we work hard to include people from, say, Eastern Europe, but on the other we also want to stay exclusive – the 5-star hotels, lovely, but very expensive. Let's make it more accessible to other people and not think that the College will benefit only from older and richer people. The less rich colleagues from less affluent countries can give us huge support: smart people and brilliant ideas come from everywhere and do not depend on economical status! Let's welcome these people, and be open to the new generations and the new reality.'■

Continued Efforts in GK Hope Village

In June 2015, Hani Farr visited Gawad Kalinga Hope Village (Philippines) again in order to finalise the construction of the planned hygiene corner. The second stage of this project has been financially supported by ICD Europe and members of ICD Austria who generously provided donations.

Hani Farr

The new hygiene corner contributes significantly to the overall dental health of the children living in GK Hope Village. Opportunities for dental hygiene in their homes are strongly limited as they are missing the necessary instruments and – even more importantly – the appropriate sanitary equipment. Both can now be found in the newly built hygiene corner, which consists of four washbasins. It is directly connected to the dental clinic and readily accessible at any day of the week.

Moreover, the hygiene corner supports the teachers in GK Hope Village in their educational and nurturing work. A key element of the dental overall concept is to help the children help themselves by teaching them how to properly exercise dental care. This is designed to alleviate the children's groundless fear of dental practitioners and to – instead – make oral care as well as their regular visits to the dentist an integral part of their lives. The hygiene corner helps the children put their newly acquired

knowledge into practice more easily, effectively supporting the educational effect and, in turn, the intended change of mindset.

On 24 June 2015, the hygiene corner was finally opened in a solemn ceremony attended by the mayor of Negros Island, local officials of GK, volunteering dentists and teachers, as well as myself. It was a great success, as the children are delighted with their new opportunity and greatly motivated to take care of their teeth.

Generally speaking, our attempts to lead the children to a dental health-conscious lifestyle seems to have been successful – thanks also to the significant efforts of the local teachers and dentists. On the basis of this accomplishment, a further extension of the dental clinic and the construction of a second hygiene corner are already being planned.

In addition, other schools in this region view the GK Hope Village as the role model for successful application because of its numerous achievements obtained through a prophylaxis-oriented strategy. ■

10 Years, 500,000 Smiles!

On the 18th of April 2015, Mundo a Sorrir ('Smiling World') celebrated its 10th anniversary with a memorable dinner at Palácio da Bolsa, in Oporto in the presence of Phillip Dowell, president of the ICD.

Miguel Pavão

The mission of Mundo a Sorrir over the past 10 years has been to make health and oral health a universal right; in order to achieve that, our strategy is to implement both preventive and clinical measures, as well as to provide training for health professionals.

Mundo a Sorrir develops projects both in Portugal and in the Portuguese-speaking countries: Cape Verde, Guinea Bissau, St. Tome and Principe and Mozambique.

Over the past 10 years, the organisation has seen tremendous growth, involving over 1,400 volunteers. It has been an important part of our work trying to implement changes in the political decision processes and to make the lack of oral care as a public health problem more relevant in each of these countries.

Unfortunately, the lack of oral health continues to be a problem, which means there is still much to be done. Nowadays, considering the impact and accomplishments of Mundo a Sorrir's activities, we are able to have volunteers in the field all year long, making a tremendous difference for the local populations.

The International College of Dentists is one of our main partners in the growth of our international projects, mainly in **St. Tome and Principe**. In 2015 it was a great honour to welcome ICD Fellows Gil Alcoforado and Sofia Lopes and ICD President Phillip Dowell as volunteers in this project. They were able to work together with the rest of the Portuguese team in the field, evaluating the needs of the population and participating in the activities.

Our interventions focus on 3 areas: prevention, clinical and training. Nearly 5,500 children benefited from the preventive activities, and more than 800 treatments were performed.

With the financial support of ICD in 2016, we plan to extend the project to nearly all primary schools, giving all the children the same access to tooth brushes and pastes and dental treatments.

We truly believe that this type of integrated activities will, in the future, make a significant difference in the current oral health conditions of the population.

Additionally, three other projects were supported by the ICD:
Cape Vert, where Mundo a Sorrir works as a consultant for SOS Village Mindelo. Mundo a Sorrir helped this institution to implement a social dental clinic. This project was inspired by the social clinic that Mundo a Sorrir owns in Oporto and that already provided more than 20,000 treatments to the population most in need. The focus of the project is to promote social inclusion, with oral health as one aspect of this integration.

The project had very high impact, and the model for developing a dental social clinic was fully established. SOS Village now has a structural model and strategic plan for the implementation and maintenance of the project and Mundo a Sorrir will continue to assist the project by sending volunteers and providing consultancy support.

Guinea-Bissau, where we have been working since 2015 and where we established the first properly equipped dental laboratory in the entire country. The impact of this on the population is tremendous, giving them access to prosthetic treatments.

Moreover, in 2016 together with the Public Health institute of Guinea, we will integrate primary oral health care classes in the courses of health technicians, aligned with our effort to implement new measures in the local political and educational systems. These technicians will later be deployed to the various health centres in the country, giving the population access to preventive care and basic treatments such as ART fillings.

In Mozambique, Fellow Gil Alcoforado was in the field for some weeks evaluating the needs of the population; it was decided to focus this intervention on the training of the local dentists, who lack basic materials and knowledge to properly treat the patients. As Gil points out: 'Mundo a Sorrir is trying to establish good and sound continuing education for local dentists in Mozambique with the help of ICD. Giving them a fishing rod and teaching them how to fish is more sustainable and efficient than giving them a fish.'

10 years of hard work, 10 years of fights, 10 years of achievements! This Non-Governmental Organisation for development founded by myself and Mariana Dolores, both ICD Fellows, after 2 months volunteering in Cape Vert helped over 500,000 people and works together with governments and other civic and societal organisations to accomplish the mission that oral health and global health should be a universal right, with free access for all. ■

Giving them a fishing rod and teaching them how to fish is more sustainable and efficient than giving them a fish

Strategic Planning a Prevention in ICD Vo

In recent ICD European meetings, the term 'dental tourism' has been bandied about. To an American, this term has a different meaning from that implied in the European meetings. In the American context, the term refers to traveling to another country for less expensive oral health care. For ICD Europe, the concept is of volunteerism turning into a tourism event for the volunteer. In this presentation the author seeks to demonstrate the possibility of strategic planning, rapid assessment, and goal setting to implement change, avoiding 'dental tourism', and presents some results that can be achieved in oral health and in social health.

Robert Morris

Example 1. Rapid Oral Health Assessment, Chiang Rai, Thailand

is a simplified, rapid assessment of oral health in an orphan population of Karen refugees in rural Thailand, to develop an oral health plan for this group of environmentally-challenged school children.

Oral health care is not available on site or in the community's public health sector.

Goal: Assess Oral Health Needs Rapidly

This rapid form of assessment is not a method of data collection, but an approach to data gathering, encouraging simpler data collection, analysis, and reporting for planning purposes. Rapid assessments emphasise practicality and compromise with the environment and milieu. They give quick insights into a community's needs. Many communities do not have funds or access to professionals for health survey purposes and may even not appreciate such exercises.

Number Examined		Caries Yes	Caries No*	Treatment Needed	Treatment Not Needed	Immediate Treatment Needed **	Other Significant Findings
Girls	33 (43%)	26 (79%)	7 (21%)	26 (79%)	7 (21%)	5 (15%)	
Boys	44 (57%)	27 (61%)	17 (39%)	27 (61%)	17 (39%)	7 (16%)	
Total 77 (100%)		53 (69%)	24 (31%)	53 (69%)	24 (31%)	12 (16%)	rampant caries 4 (5%) significant calculus 2 (2.5%) orthodontic referral 2 (2.5%) stain/fluorosis 1 (1.3%)

* No caries present at time of examination, past caries may have been filled
**Includes for rampant caries, heavy calculus, severe gingival inflammation

Table 1. Simplified Oral Health Survey Results, Grades 1 & 2, Camillian Social Center. Caries, Treatment Needed and Other Significant Findings. Numbers and Percentages.

nd lunteerism

By simplifying data collection, experts can report back quickly to the community to initiate policy actions and implementation. This rapid assessment was completed in two hours utilising readily available non-dental equipment at the site (Figures 1-3). The goal was to identify fluoride levels in the drinking water (off-site), and to provide the directors with a simple oral health assessment for planning purposes (disease vs no disease). The results showed that 69% of the examined children had oral disease and needed treatment, and 16% needed immediate treatment (Table 1). Tests of the fluoride content of the drinking water showed that, at 0.11 ppm, the fluoride level was not sufficient for optimal prevention of caries. Recommendations were provided to develop an in-house oral disease programme with attainable goals. A serendipitous outcome was achieved when the report was presented to the local public health authorities who agreed for the first time ever to provide care to these Karen refugees carrying Myanmar identification documents.

Example 2: Rapid Assessment for a Fluoride Lozenge Programme for an Island in the Portuguse Atlantic Archipelago

Example 2 is a theoretical exercise to demonstrate simple strategic planning to establish a fluoride lozenge prevention programme for school children in a small isolated population in the Portuguese Atlantic archipelago, using limited epidemiological and statistical skills of a dental practitioner volunteer. The practitioner/planner is aware through published data that drinking water fluoride levels are too low for an optimal caries-preventive effect. The national published population data indicates a population of 15,000 individuals, with 25% in age group 25 and under, or an estimate of 150/age group targeted – 300 age 4-5; 1050 age 6-12.

Based on published scientific reports, the planner takes the considered best cost-effective preventive approach to develop a plan to provide fluoride lozenges immediately to all at-risk children age 6-12. As lozenges provide a surface effect, they are less valuable in K1-K2 group.

The approach is to develop a school-based fluoride lozenge programme, teacher-based, during school year or all year, with minimal costs to the health department, and minimal teacher time utilised.

Figure 1. Data recorders arriving for exams

Figure 2. Karen woman in dress regalia at orphanage

Figure 3. Examination by author, utilising flat table, natural light, Thai soup spoon, no insertion of hands into mouth, soap and running water available, volunteer recorder and trainer assisting

This intellectual exercise demonstrates that a dental team wishing to provide volunteer public oral health care can use basically available population data and known scientific facts to prepare a long-term preventive programme in an isolated community.

Volunteerism in Action to Effect Social Change

Example 3: NoMoreVictims.org

In the aftermath of the 2003 US invasion of Iraq, NoMoreVictims.org was established in the United States to bring war-injured children in Iraq to the USA for free reconstructive medical care. Care is provided primarily in the US. As the Northeast US Representative for NoMoreVictims, my role was to receive and advocate for an Iraqi family, severely injured by a US Army attack on their vehicle on a public road.

The case: The family car was shot up by US Army forces in northern Iraq on a public road. The mother and a cousin were burned to death. The husband was permanently injured by bullets and shrapnel in the spine. The older brother escaped without visible injury. Little Omar age 3 was severely burned, survives, and was eventually medically evacuated to Children's Hospital Boston.

Omar's Story

NoMoreVictims brought Omar to the US for medical care in 2007 (Figures 4-5). He had sustained severe burn injuries of the scalp, the right side of his face and his right ear. He lost his right thumb, index finger and his right ear to the flames. His right arm, torso and leg were burned through to the muscle. A severe palmar burn on the left hand fixed his left thumb to his palm. These injuries caused unimaginable physical suffering to a three-year old boy. He was left severely disfigured, maybe for life, and with minimal, crude use of his hands and arms.

Results

Support is ongoing but there is no light at the end of the tunnel. At this time, the family is experiencing hardship in coping with life in the US. There is an inability to manage interpersonal relationships. Both father and son are receiving free and ongoing physical and psychological attention in Boston. In fact, Omar is receiving extraordinary care in Boston as a child victim of war, perhaps more so than any other children in similar situations. Despite the volume of support and care to the family, their future remains daunting from this standpoint.

As a US Navy Veteran (USN 1965-71) who served with the Marines in the Vietnam conflict, I felt drawn to return to Vietnam to share my knowledge and expertise with those who might benefit. The opportunity of a lifetime was offered to my wife Jill and me to work with Vietnamese nationals and a Boston-based religious organisation and to provide the start-up seed money for an orphanage and centre for HIV/AIDS-positive infants, being rescued from the back streets and alleys of Ho Chi Minh City.

Example 4: The Mai Tam House of Hope

As part of our strategic plan we established our project goals and objectives to provide the necessary start-up seed money.

Goals: To provide necessary medicines and food within a controlled environment to a targeted group of HIV/AIDS-positive young children (and widowed mothers) in order to ensure a quality of life consistent with their healthy peers and surroundings; first priority is to the children.

Objectives: To provide start-up funds, to provide ongoing funding through www.maitamhouseofhope.com, to provide public health expertise as possible.

Results after 10 Years

The mission is accomplished. The full range of social services are provided to assure the children live at the standard of their peers-food, medicines, medical services, housing, social services, schooling, job training. Mai Tam is recognised as the premier centre of its kind by the government and international experts. In 2014 there were

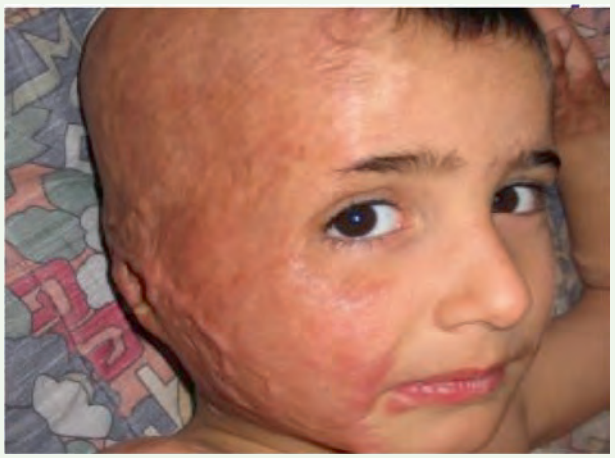


Figure 4. Omar's face and body were severely burnt after the family car was shot up by US Army forces

Figure 5. Little Omar after initial surgery

zero deaths among the targeted population, + 350 HIV/AIDS-positive infants, children and widowed mothers. The oldest client is now entering nursing school.

The 19th-century Vietnamese philosopher/phy-sician and father of modern medical ethics stated that we (the healers) will be measured by how we treat the orphaned child and the widowed mother and that healing occurs through love, compassion and mercy. The Mai Tam House of Hope represents the paradigm of love, compassion and mercy in Vietnam. ■

This article is dedicated to the memory of Be Ly Dang, who passed away in 2015 after near 10 years as a client and, as one of the first clients, was the force that led to the creation of Mai Tam. She fought courageously only to pass away from a stroke at the tender age of 18. Her life at Mai Tam was full of love, compassion, and mercy. May she rest in peace.
Donations received at www.maitamhouseofhope.com

About the author: Dr Robert Emmet Morris is a retired international health consultant and resides in Boston, Massachusetts. He spent the greater part of his professional career living in three continents and advising national clients in health development. In 2014 Harvard University honoured Dr Morris with its highest Alumni/ae award 'The Award of Merit' for, inter alia, his commitment to vulnerable populations, particularly children, refugees, victims of conflicts, and those affected by HIV/AIDS.

MAI TAM HOUSE OF HOPE

Example 4: maitamhouseofhope.com

Figure 6. 'A little coffin is a terrible thing'

Figure 7. Happiness is being alive

Figure 8. Jill Morris and a happy client

Empowering Commu Learning and Teachi

Corrado Paganelli, European Section President, interviewed by Frans Kroon

1. When did your association with dentistry and ICD Europe start, and how do you look back on it now?

I was accepted in the College in Monaco in 2004. I still remember how privileged I felt to be able to serve in such an emotionally involving environment like the one that Peter Pré organised that year. It resonated well with my initial approach to dentistry: an inspiring environment where a mixture of 'self-made man' and scientific knowledge can be expressed and exchanged.

2. As the Section President, you are preceded by various Italian Presidents such as Giorgio Blasi. How have they influenced you, both personally and professionally?

I would like to think that Giorgio Blasi deeply influenced me in terms of human behaviour; I think he is still my master in many aspects of our College management. Mauro Labanca (Regent Italy) too is following in his footsteps in leading the Italian District and we have made some improvements that he had in mind. Giorgio always tries to be discrete and stay out of the limelight, but most of our initiatives are always with the 3 of us jointly chairing the events together.

3. Many people find society as a whole becoming less personal and increasingly hardened. Do you feel there is a role to play for dentists and the ICD?

I am prone to ICT and new media because of my role as Dean of the dental school, so I 'surf' on new technologies in order to find opportunities for a human touch in education, communication and service. I hope to be successful, but we need everyone's help in Milan to reduce the influence of misleading behaviours. We all prefer to be actors

nication, ng

of this 'Dolce vita' film and not be scared off by Paris, Brussels or any other madness around us.

4. You have a strong university background and involvement. How would you describe the role of science in your life?

I teach evidence-based and team approaches to first-year students of dentistry at the University of Brescia, but I tend to use all the events in which I am invited to test how different people respond to various didactic materials, so actually I am always in the middle of a didactic experiment, even now in this interview. It's amazing how much feedback I receive in different environments, and I apply it immediately in my life. This has been happening since the start of my teaching experience in 1986, translating books and comparing the results of using different teaching materials.

5. Teaching and education figure prominently in your career, including digital learning environments. How do you see this develop into the future? Would you go so far as to envision something like a virtual university?

Yes, certainly. I deeply believe in learning and e-learning and I think virtual environments will be the future of teaching and knowledge sharing. We already worked with King's College on Udente, a virtual university we very much want to make happen. I think knowledge sharing by technologies and media tools plays a key role in the 'new teaching and learning'. Our International President Phillip Dowell started to revitalise a UK Government's Health Department-funded project, originally named Ivident, now adapted to the Italian term for Hearing or Udente.

6. What do you see as the primary challenges facing dentistry and our college at this time? Do you have personal objectives as President in this respect?

Nowadays the greatest challenge is to reach all the professionals and colleagues with all instruments and tools we have. It is crucial to spread knowledge-based content and evidence, forging consensus and identifying the best path forward in order to further the aims of our College.

7. The induction age, recruitment and invitation-only discussion continues – where do you stand and do you intend to take steps during your term as President?

We would like to involve in our College also young people in order to empower communication, learning and teaching and receive upgrading suggestions and requests to an updated College. As you might remember, this year's scientific session of the meeting in Milan is the first one open to non-Fellows. Let's cross our fingers that it will be a new way to open up our meetings and let people feel the need of the College on a broader basis.

8. How do you feel about the ICD's humanitarian focus? Are we on track? Do you have specific ambitions or objectives?

Italy has founded the Addis Ababa dental school many years ago and it is still active, I think because it is in the hands of Ethiopians; we have not provided one fish, but addressed the goal of teaching how to fish.

9. You will be hosting this year's annual conference in Italy. What are your primary objectives, and what can you share with us about the programme?

We worked hard on this event and would like to show a new aspect of ICD in the meeting: be open and build up a team, exactly as the Frecce Tricolori do every year with changing pilots. In the first presentation of the scientific session, the Italian national aerobatic team leader will motivate us to feel the need of a strong team approach, not only in the extreme conditions of their daily job, but also in our professional and educational environment. We focused on the importance of dentists in a real-life and varied context, such as that of healthcare professional and not only oral caregiver. It is essential that we better understand our opportunity to be crucial in patients' lives, but to do so, we have to consider the professional background and not only the purely dental aspect. ■

International College of Dentists

European Section

61th Annual Meeting European Section
Milan, Italy
30 June - 2 July 2016

WELCOME

Dear Fellows and Guests,

It is a great honour and a pleasure to welcome you all to the 2016 Milan 61st Annual Meeting of the European Section of the International College of Dentists. The whole world knows Italy as the cradle of art and good food, the traditions that blend with the pleasures and enjoyment of life: the same traditions that are our strength and our engine. On this background we are building a meeting where the moments of pleasure will interact with those of learning, science and opportunities.

That is why I want to involve you in our project for 2016.

A conference that is open to Fellows and non-Fellows. A symposium in which to expand your knowledge and broaden your horizons. For this, we have selected a scientific programme, perhaps a bit unusual, but, in our opinion worthy of your interest. Considering that we are a College, not a scientific society, and therefore a large group of scientific, cultural and professional specialties, we have created a scientific day that would provide each participant, regardless of its specific discipline of belonging, something new and interesting. Something that is worth to be heard, something that would lead you to stay in the room. We have selected those who can help us improve not only as dentists, but as human beings and professionals: experts who are able to develop in our elective affinities and skills that have remained dormant. This is because our international event will not only be a great moment of conviviality but also an opportunity for cultural and scientific growth to justify the effort, also economic, to be present. The background of this revolutionary and, at the same time, traditional meeting is worthy of the most beautiful and dreamed Italy, of great museums and 'dolce vita', where beauty blends with tradition and the colours have the taste of great memories and good food. It is with great fervency and joy that I hope to see you all in Italy in 2016. To be able to share with you the traditions which we wanted to marry to innovation. Hoping you too can be the protagonists of the movie that we are writing, a collegial greeting.

Corrado Paganelli, *President ICD-Europe 2016*

ICD European Section 2016
Complete overview of the programme on www.icd-europe.com

SCIENTIFIC AND SOCIAL PROGRAMME

WEDNESDAY, 29 JUNE 2016
Golf Tournament
The Barlassina Country Club is a course designed in 1956 by John Morrison, and it is located in the Groane Park, between Milan and Como.
The 18-hole course sits along a lush vegetation and is surrounded by a beautiful forest.

THURSDAY, 30 JUNE 2016
Reception of Fellows and guests, Lobby Starhotel Rosa Grand
Welcome Dinner, El Brellin Restaurant
El Brellin Restaurant is located in one of the most traditional canals districts of Milan, on the Naviglio Grande. The venue is home to an unusual collection of the "Game of the Goose" and offers varied and carefully selected Milanese specialties as well as a splendid selection of wines. Al fresco dining as well as cosy and warm indoor dining rooms divided on two floors.

FRIDAY, 01 JULY 2016
Scientific programme, Starhotel Rosa Grand
Accompanyning Person Tour options: Bergamo tour, Discovery Milan or Serravalle Outlet & Monferrato
Dinner in the countryside at Torre dei Gelsi Restaurant
The restaurant Torre dei Gelsi is located just a few minutes out of the city, in the small village of Cisliano. It dates back to the era of the Sforza (the end of '400) and was built as a hunting lodge. Throughout the centuries, the Torre has been used as a farm for the cultivation of silkworms, hence the name "Torre dei Gelsi ". 20 years ago, it was converted into a restaurant and is now a preferred place to organise special events.

SATURDAY, 02 JULY 2016
Induction Ceremony, Cinema Odeon (walking distance from Conference Hotel)

SUNDAY, 03 JULY 2016
Optional Post Conference Tour, Lake Maggiore (minimum 30 persons)

From the Minutes of the Board of Regents Meeting, Dublin, Ireland, 8 October 2015

Austria

The Regent of Austria, Werner Lill reported that the Austrian District has 37 Active Members, 2 Life Members and 1 Master. As he reported last June, they had their local Meeting in the spring and an informal one in the home of Barbara Thornton, their Vice Regent. On Saturday they will present 2 Inductees, Dr. Mazevski and Dr. Mayr, and they will have a large delegation in Dublin of around 30 people. One of their Life Members, Helmut Kinast, passed away last February. Dues have been paid for 2015 and the District is in good order.

Benelux

The Regent of Benelux, Mies Buisman, reported that everything is going well in the Benelux District. As the new Regent since last June she thanked Walter van Driel for his work as Benelux Regent during his term of duty. All the dues have been paid for 2015. They plan to have their Regional Meeting on the 5th of November where their Past President of the Royal Dental Society will speak about his experiences from his 9 years on the Board. They have 2 Inductees for Dublin and 2 running for Milan. On the 6th of November they will organise a charity dinner for the "Kenya Project" of their Fellow Annelies Kraaijenhagen, who was interviewed in the 2015 ICDigest. She concluded her report saying that District 2 has 37 Fellows, 3 Life Members and 1 Master, with one resignation for medical reasons.

Scandinavia

Past President of the Section and Regent of the Scandinavian District Henrik Harmsen reported that the District is in excellent order as usual and all fees have been paid on time. They have 32 Active Fellows and 3 Life Members; 1 Life Member, Jann Brevig, has passed away; they have 4 Inductees for the Dublin meeting. They will have a Meeting in mid-April next year. The District is in good order, he said concluding his report.

England Scotland and Wales

Vice-President of the Section and Regent of the District Shelagh Farrell reported that they now have 66 Active Fellows, 4 Life Members, 2 of whom are also Masters, and they will have 6 Inductees in Dublin. She said that for the 2017 Meeting she has scouted various venues but she cannot book them yet (they don't take bookings yet for 2017); the Royal Society at Carlton House Terrace for the Scientific Day can therefore not be confirmed yet either. She asked the Board to approve the nomination of Dr. Bruce Mayhue, who was their Regent for 10 years from 1995 to 2006, as a Life Member. The nomination was approved.

France

The Regent of France, Jean-Louis Portugal reported that the District of France is in the same order as he reported last June. It has 47 Active Members, 6 Life Members and 1 Master who is also a Life Member, and they are presenting 1 Inductee in Dublin. They have two Past Regents that decided to retire. Since the last Board of Regents Meeting in London they did not have a social or scientific Meeting but they are planning one for the coming January or early February depending on the speaker who is from the south of France, he said concluding his report.

Germany

The Regent of Germany Matthias Bimler reported that they now have 47 Active Fellows, 2 Life Members and 1 Master and they will have 6 inductees in Dublin. They have 1 resignation because of retirement. He introduced his Vice-Regent Joerg Schroeder and said that with his help they will have a Meeting next spring in Berlin. Since they are one of the countries where Fellows pay directly to the Treasurer, he has not asked the Treasurere which dues are still outstanding, he said concluding his report.

Greece and Cyprus

Ilia Roussou, Vice-Regent of Greece and Cyprus presented the report because Regent Heraklis Goussias could not attend this Meeting. She proposed Dr. Vrotsos, who has been an active member for many years, for Life Membership. In view of comments on Life Membership, she said that one of the Life Members asked to resign due to old age, so the proposal will not affect economically the ICD. The past year they had to ask some Fellows to resign for not paying their dues, creating a problem to the District and the Treasurer. They cleaned up their list and now have 31 Active Fellows, 7 Life members and 1 Master. They are planning to have a Meeting in the winter this year. Otherwise the District is in good order. Dr. Vrotsos' Life Membership was approved.

Ireland

The President of the Section and Regent of Ireland Tom Feeney presented the report for Ireland. The Irish District has 43 Active Members, 2 Masters, 2 Life Members and one Honorary Fellow, making them 48 in total with 5 inductees in Dublin. They have 2 members with unpaid dues; if they do not pay they will be asked to resign. They are planning a local Meeting for January next year. Generally, the District is in good order.

Israel, Malta and Baltic States

Dov Sydney, Editor of the College and Regent of Israel, Malta and the Baltic States was detained in the ICD Executive Committee Meeting and was therefore unable to present his report.

Italy

The Regent for Italy, Mauro Labanca reported that they have 47 Active Fellows, 4 Life Members, 1 resignation due to age, 3 Fellows passed away and 2 Inductees in Dublin. All dues are paid for 2015. Starting next year, when their Annual Meeting coincides with the Section's Meeting in Milan, he intends to enforce the rules they have set, meaning that all members of the Italian District who will not attend the European Section Meeting and have not attended the last four Italian Regional Meetings, will automatically be cancelled as Fellows. His objective is to maintain an active District, not wanting numbers but people. All Fellows have agreed to that and signed for it when they became Fellows. It is better to start with a smaller group of active members and then try to increase it. As he reported last November they had their Regional Meeting in September 2014, they didn't have one this year due to the dates change of the Section's Meeting (they usually have their regional Meetings in the autumn), so they announced in 2014 that they will not have a regional Meeting in 2015 but they will have the next one during the Saturday morning of the 2016 European Section Meeting in Milan. He concluded his report saying that the District is in good order.

Portugal

The Regent of Portugal, Gil Alcoforado reported that they have 38 Active Fellows and 5 Life Members and will have 3 Inductees in Dublin. They had a dinner which was also reported in the ICDigest and they are going to have another one in early 2016 to see if they will be able to collect some dues, which appears to be extremely difficult lately. They have paid in advance for some Fellows who did not pay, and they are hoping to be able to recuperate that. Otherwise the District is in good order.

Spain

The Regent of Spain, Jané Santiago reported that the District now has 24 Active Fellows, 2 Life Members and one Inductee in Dublin. They had two resignations of Fellows who retired and had not paid their dues, so they were asked to resign. They will present a project for the Philip Dear Fund and hope it will be funded, he said concluding his report.

Switzerland

The Regent of Switzerland, Christian Robin reported that the Swiss District is in good order. They have 25 Active Fellows and 4 Life Members. Since the last Board of Regents Meeting in London, 1 Fellow resigned, Catherine Stramm following retirement. Last July the Vice-Regent of Portugal, Miguel Pavão, visited Geneva. They have 2 Inductees in Dublin. Since the last Meeting in June, when it was decided that District 13 was invited to organise the 2018 Meeting, they have been very busy establishing an organising Committee and are now in the process of selecting a PCO with the help of the Tourist Information Office. A preliminary report has been drafted and more information will be presented during the next Board of Regents Meeting.

Eastern and Central Europe

The Past President and Regent of District 14 Eastern and Central Europe, Ljubo Marion reported that ICD Europe's youngest District has 38 active Fellows and is spread out over 12 countries. It used to be 13, but one member from one country was asked to resign because he did not pay his dues. They have no Life Members, no Masters and no Honorary members. They have only 1 Inductee in Dublin from Georgia, which might be a surprise because they usually have more. 15 people from the 12 countries of the District are present in Dublin, half of them are from Slovenia. With his Vice-Regent Tomi Jukic they will try to install more Vice-Regents in countries like Poland and Ukraine, and will try to increase the number of new Inductees from District 14.

College at Large President Phillip Dowell addresses the 2015 Inductees

Ladies and gentlemen, members of the International Council, Fellows, guests, and most importantly, Inductees. Over the years I have given lecture tours from South America to Africa, and from Asia to Europe. At each event we have contacted and been hosted by Fellows from the different countries.

In Gaelic: *Ta se iontach a bheith anseo i mBaile Atha Cliath*, which translated means: It is wonderful to be here in Dublin! I cannot let this opportunity pass without thanking Dr Tom Feeney and his lovely wife Joan for organising such a great meeting! I am at the same time thrilled and humbled to be addressing you today as International President of the ICD. I remember very well my first European Board of Regents meeting as the new Regent for England, Scotland and Wales, sitting next to the new Regent for Ireland, Frank Shields. When the discussion came around to nominating a new Vice-President for Europe, for various reasons I was chosen. Frank turned to me and said in his inimitable style, 'My God, you've been promoted from parish priest to Pope at your first meeting!'

Well, today I am delighted to share with you something about my journey with the ICD and perhaps translate it into a future for you, our new Fellows. Both my wife Sheila and I belong to many societies, she as a physician in occupational and aviation medicine, and me as a periodontist, researcher and teacher. I am proud to tell you that from the outset of my Fellowship in the College, both Sheila and I have embraced it as our favourite group of friends and colleagues. Looking out at the audience and at the dais behind me, so many of you have become real friends. Friends from different countries, Friends speaking different languages, and Friends from different cultures. United by our profession!

These annual meetings of the European Section are and have always been the highlight of our year. Apart from the scientific content, we visit beautiful cities and get to admire the sites that most tourists don't see, we have wonderful meals together and get to meet old friends and make new ones.

Indeed, we've just completed a Danube river cruise where our ICD colleagues Werner Lill, Past President Peter Brandstaetter, and Dr Johannes Kirchner facilitated and lectured to our group in Vienna; our colleague Paul Gerlockzy did the same in Budapest. So the question I ask myself is, could I have done this without the ICD?
The answer is a resounding NO!! The reception we get from our Fellows abroad is nothing short of outstanding! I have travelled to sections outside Europe, last year to Sydney Australia, where we were given a wonderfully warm welcome, and the year before where the IC was kindly hosted by China in the city of Chengdu.

So why am I giving you this International travelogue? Well, the clue is in the title, your new title! Fellow of the INTERNATIONAL College of Dentists, FICD. I am proud of your achievements and I welcome you into the College. The theme of my presidential year is 'Internationalism' and it is defined as the principle of cooperation among nations for the promotion of their common good. The College mission states that the ICD is the leading international honorary society for dentists, dedicated to the recognition of outstanding professional achievement, meritorious service, and the continued progress of the profession of dentistry for the benefit of all humankind. Our core values and goals include:

Leadership, Recognition, Humanitarianism, Professional relations and Education.

So, to you Inductees, congratulations on joining the 12,000 ICD Fellows in 122 countries. Let this be the beginning of your journey! Embrace the College and it will embrace you. Whenever you travel you can find an ICD Fellow in every corner of the world. They are waiting to hear from you and help in any way. Remember that what you put in directly correlates with what you get out! Be involved! Be active! And share your pride in being a Fellow of the International College of Dentists!

And to end in Gaelic: *Bain taitneamh as an Cholaiste, bain taitneamh as an Fellowship, agus bain taitneamh as an Craic:* get enjoyment from the College, get enjoyment from Fellowship, and get enjoyment from the Craic!

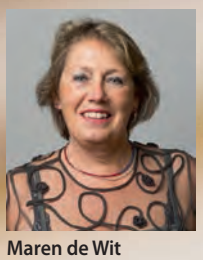
Thank you!

The European Section 2015 Inductees


Hans Mayr


Peter Mazevski


Rik Beerman


Maren de Wit


Kaspar H. Hermansen


Jens Laetgaard


Kirsten Schwung


Annika Torbjörner

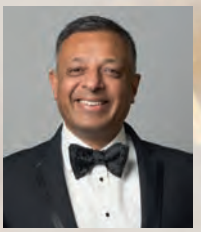

Subir Banerji


Nigel Carter


Linda H. Greenwall


William G. Jenkins


Christopher Lynch


Rasesh Patel


Richard Losfeld


Clarissa Benz

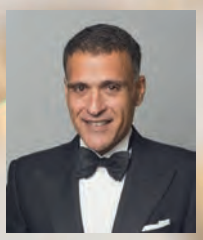

Petra Brunner-Ibbels


Elmar Ibbels


Robert M. Kirmeier

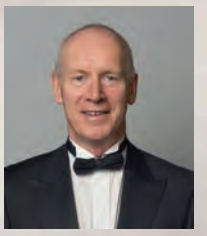

Ana F. von Rotenhan


Peter H. Seehofer


Emmaoouil Symeonidis


Donal Blackwell


Dermot Canavan


Brendan Fanning


Sinead McEnhill


Helen Whelton


Alexander Schembri

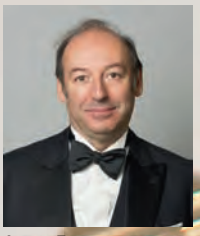

Nicola Carretta


Francesco G. Mangano


Celia Coutnho Alves


Isabel Poiares Baptista


Francisco Vale


Jorge Ferre


Panagiotis Christou


Marc E. Grossen


Ketevan K. Gogilashvili


Simon Gambold

From left to right: Tom Feeney, Corrado Paganelli, Phillip Dowell and Joe Kenneally

Thoughts on ICD Core Values

From Phillip Dowell's address to Mexican Inductees, November 2015

LEADERSHIP Field Marshall Viscount Montgomery, a major WW2 soldier and leader, defined leadership as 'the will to dominate, together with the character which inspires confidence'. Perhaps a more modern definition would be 'a process of social influence in which one person can enlist the aid and support of others in the accomplishment of a common task'. Some understand a leader simply as somebody who people follow, or as someone who guides or directs others, while others define leadership as 'organising a group of people to achieve a common goal'! Whichever way your definition goes, it is clear that you are all leaders, whether it be as a clinician, teacher or researcher. A good leader needs vision, and as Jonathan Swift said, 'Vision is the art of seeing the Invisible'!

RECOGNITION We aim as Fellows to recognise distinguished service to the profession and the public worldwide, which brings me to the marketing slogan MGM. No, it's not Metro Goldwyn Meyer! It is Member Gets Member, or in our case FGF, Fellow Gets Fellow. I challenge all of you to recognise and nominate someone, like yourself, who you feel is deserving of the honour of Fellowship. We need to increase our numbers, but without dropping our high standards.

PROFESSIONAL RELATIONS provide a universal forum for the cultivation of cordial relations within the profession worldwide, and assists in preserving the highest perception of the profession.

HUMANITARIANISM and **EDUCATION** are in many ways interrelated. Whilst it is not specifically our remit to educate those in well developed countries, it is certainly important to contribute to the advancement of our profession by fostering the growth and diffusion of dental knowledge worldwide. In this respect I want to mention getting a Memorandum of Understanding with The Organization for Safety, Asepsis and Prevention (OSAP), and founding the Dental Safety Program (DSP). This was rolled out in China in May and will be repeated in India, Vietnam and Cambodia next year. From every perspective we want to be universally recognised as the 'GO TO' people for both humanitarian and educational aid!

European Section Officers and Regents

October 2015 at the Annual Congress of ICD-Section V, Europe (from left to right)

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Shelagh Farrell, Vice-President European Section, Regent United Kingdom
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Current Officers and Regents of the European Section on www.icd-europe.com

Future Annual Meetings of the European Section International College of Dentists

2016 Milan, Italy • 30 June - 2 July

2017 London, England • 14-18 June

2018 Geneva, Switzerland • 21-23 June