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Prof. Dr Norbert Gutknecht

ISLD President

30 years of ISLD—an anniversary, a milestone and a new beginning

Dear friends of laser dentistry,

Back in 1988, laser pioneers from different countries met in Tokyo, Japan, to discuss the application of laser technologies in dentistry. Since there were already scientific associations for general medicine at that point, the idea was formed to found one for dentistry as well. As a result, the International Society for Laser Dentistry (ISLD) was born. This year, the ISLD celebrated its 30th birthday with the 16th World Congress in Laser Dentistry, which was held at the RWTH Aachen University in Germany. The event lasting multiple days was hosted by three associations: The DGL, the WFLD (in 2006, the ISLD changed its name to WFLD) and the WALED, an alumni organisation of the RWTH Aachen University.

The congress welcomed over 540 participants from 49 countries, 38 speakers and virtually all major laser manufacturers. Over the course of three days, 125 short lectures and 89 digital poster presentations were given. Looking back, it is not without a certain pride that we can say that the event was the largest and most successful congress in laser dentistry of the last thirty years. At the closing ceremony and the membership meeting, it was proposed to bring the name ISLD and the association's original organisational structure back to life, thus embracing its former academic dignity and scientific objective. By an overwhelming majority, the proposal was accepted and put into practice. The vast amount of incoming membership applications from entire national laser societies, private laser practitioners, as well as scientists from all over the world has exceeded everyone's expectations.

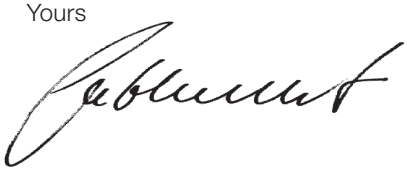
At last, the ISLD is the ISLD again. The society will continue to focus on scientific, academic and clinical issues regarding laser dentistry on a global scale—in medical, dental and social professional associations.

At this point, I would like to take the opportunity to express my deepest gratitude to all visitors, speakers, exhibitors and my entire organisational team, who have contributed to making the World Congress in Aachen such a great success.

I wish all our readers and our colleagues, who were not able to attend the anniversary celebrations, all the very best for the coming year 2019 and much success in the laser assisted treatment of patients and in conducting scientific research at universities. In addition, I wish all laser manufacturers, and our exhibitors in particular, a successful business year 2019.

On behalf of the ISLD Executive Board, I am sending you my warmest greetings and I am looking forward to welcoming you at the ISLD International European Congress in Plovdiv, Bulgaria, next June.

Yours



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Implant uncovering using the Er:YAG laser

Dr Piotr Roszkiewicz, Poland

Implantology, both in Poland and worldwide, is currently a strongly growing field of dentistry. In order to obtain long-term outcomes with the highest possible aesthetics, an implant must be placed as least invasively as possible. Another important factor is the implantation technique and the management of the surrounding soft tissue, both during the implantation procedure and in the prosthetic stage.

Literature

The technique used for flap incision and suturing the mucosa over the implant affects the wound healing time. The next important stage in the two-stage technique is implant uncovering. There are various ways to perform this procedure, for example by an incision according to the conventional technique, then uncovering the implant and attaching the healing cap. This, however, is often associated with suturing, which prolongs the time before impressions can be taken.

If bone grows on to the cover screw, its unscrewing is more difficult. Then, in order to place the healing cap, bone removal or scraping, as well as alveoloplasty, needs to be performed. Many implant companies offer special sets called bone profilers that facilitate the work, but the procedure time and the duration of the prosthetic stage are nonetheless prolonged.

An alternative method of uncovering an implant is with the use of laser. Diode, carbon dioxide, Nd:YAG or Er:YAG lasers can be applied for this purpose. Diode and Nd:YAG lasers can only be used if the bone has not grown on to the cover screw. The advantage of the Nd:YAG laser application is no bleeding during the preparation of the mucosa and after the procedure; however, there is the drawback of thermal effects on the bone surrounding the implant and on the implant itself. The optimal solution is the application of the Er:YAG laser, which works perfectly on the mucosa and bone without negative effects.

Both the first and second stages of implant treatment are associated with discomfort and temporary pain for the patient. In their pilot study, Arnabat-Domínguez et al. proved that the application of Er:YAG lasers in implant uncovering eliminated the necessity for local anaesthesia and minimised postoperative pain, as well as the healing time before the prosthetic stage.[1] In the study, no differences were observed regarding the success of implant treatment. Further advantages of laser application are the antimicrobial effect and the ease of the procedure.

The incision or removal of a mucosal fragment covering the cover screw leads to disruption of the microcirculation in the operation area. Kulakov et al. showed significant

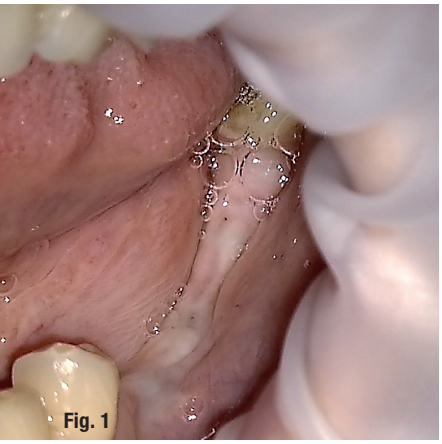

Fig. 1: Determining the location of the implants. **Fig. 2:** Uncovering of the cover screw with Er:YAG laser contra-angle handpiece H14 and a cylindrical tip of 1.3 mm in diameter. **Fig. 3:** Laser parameters used during the procedure.

differences in the critical time for restoring the microcirculation in the operation area.[2] After conventional implant uncovering—by the use of a scalpel—the time needed is 14 days, while with the use of an Er:YAG laser, it is only three days.

Esposito et al. showed that implant uncovering with the use of an Er:YAG laser compared with the classic flap technique led to smaller postoperative side effects.[3] This difference was statistically significant.

Fornaini et al. compared four wavelengths (532; 810; 1,064 and 2,940 nm) for implant uncovering in their study and registered thermal changes with the use of thermal cameras.[4] They concluded that the Er:YAG (2,064 nm) causes the smallest temperature increase in the implant and the surrounding tissue. The *ex vivo* study also showed that, during laser application with the recommended parameters, there is no risk of a dangerous temperature increase in the implant and tissue.

As observed by Maden, the Er:YAG laser works perfectly for contouring the bone surrounding the implant, gingival correction or implant uncovering in a two-stage technique, not causing thermal damage in soft and hard tissue, or in the implant itself.[5–7] Such damage occurs while using standard rotary tools. In accordance with the procedure, during implant uncovering with the use of the Er:YAG laser, there is no need to administer local anaesthesia. Another advantage is the possibility of taking impressions of the implant area in the same visit because the gingiva is not overheated and it will retain its shape and position later on. Owing to the application of the Er:YAG laser and cold ablation, there is no risk of damaging the bone surrounding the implant or the implant itself.

Case presentation

A 37-year-old female patient appeared for the planned procedure of implant uncovering in regions #35–37. TSIII implants (Osstem Implant) had been placed four months earlier by applying the classic flap technique.

In order to minimise the postoperative effects and to shorten the healing time, it was decided to apply an Er:YAG laser (LightWalker, Fotona) in this procedure. By means of a positioner used in the first part of implantation, the approximate location of the implants was established. Under local anaesthesia with articaine, the cover screws were located and their locations marked (Fig. 1).

In the procedure, the H14 contact contra-angle handpiece and a cylindrical tip with a 1.3 mm diameter were used. The tip, despite its name, was kept at 1 mm from the tissue (Fig. 2). The laser parameters used during the procedure are shown in Figure 3. In the final stage of implant uncovering, when the operation area was in the

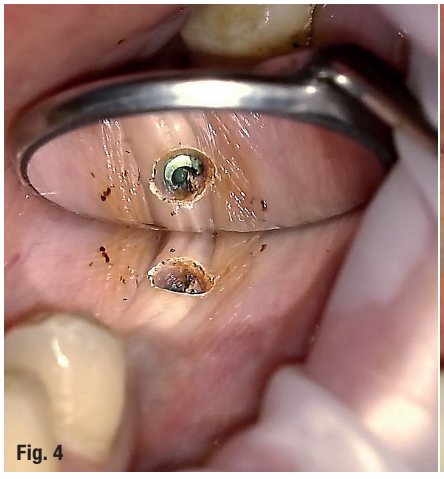
Fig. 4

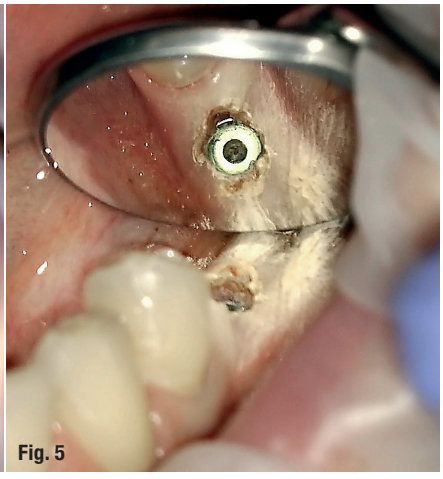
Fig. 5

Figs. 4 & 5: Final stage of implant uncovering with adjusted laser parameters to avoid thermal damage.

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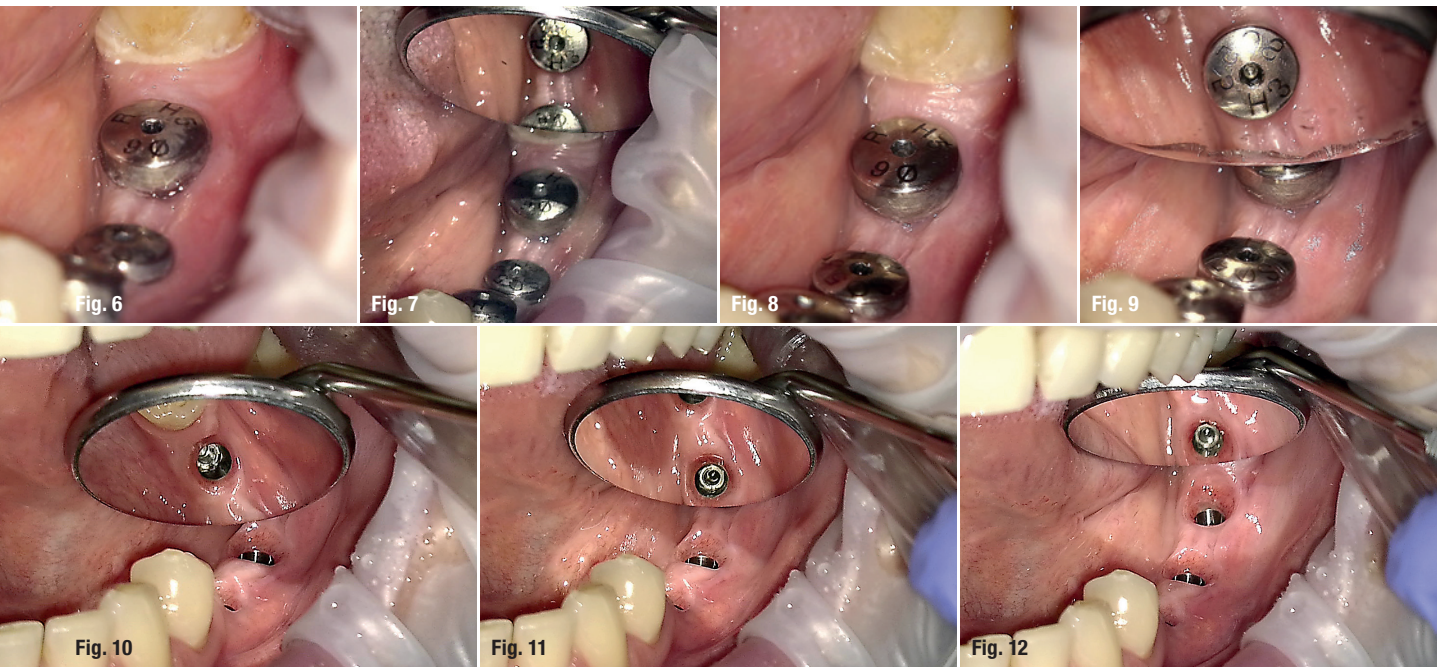

Figs. 6–9: Healing caps screwed on to the implants. Uneventful healing. **Figs. 10–12:** Properly healing tissue at the time of impression taking.

immediate vicinity of the implant-to-bone border, in order to avoid thermal effects, parameters were modified as follows: water to 2 and air to 4 (Figs. 4 & 5). Other parameters remained unchanged.

The healing caps were then screwed on to the implants. The patient did not complain of any discomfort. No inflammation or any abnormalities were reported during the healing time (Figs. 6–9). At the time of impression taking, properly healing tissue was observed (Figs. 10–12).

Conclusion

Implant uncovering in a two-stage technique using an Er:YAG laser is a faster method and better tolerated by patients than the classical flap technique. Through cold ablation, the Er:YAG laser allows the operator to significantly shorten the treatment time without causing thermal damage to the implant or the tissue surrounding it. It further considerably reduces wound healing time, as well as the risk of infection. Problems experienced by patients are also less significant.

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Kurz & bündig

Das Freilegen von Implantaten mithilfe des Er:YAG-Lasers stellt eine schnellere und besser verträgliche Alternative zur klassischen Zahnfleischöffnung mittels Inzision dar. Hat sich über dem Implantat bereits Knochen gebildet, wird diese konventionelle Behandlung weiter erschwert und die prothetische Phase verlängert. Durch Kaltablation ermöglicht der Er:YAG-Laser es dem Behandler, die Behandlungszeit deutlich zu verringern ohne Hitzeschäden am Implantat oder dem umliegenden Gewebe zu verursachen. Des Weiteren wird die Heilungsdauer beachtlich verkürzt und das Infektionsrisiko reduziert. Der Autor beschreibt dieses Vorgehen am Fallbeispiel einer 37-jährigen Patientin. Die Freilegung der Implantate erfolgte im Anschluss an eine viermonatige Einheilphase in einem zweiphasigen Verfahren. Die je Phase angewendeten Laserparameter zur Implantatfreilegung mithilfe des LightWalker Er:YAG-Lasers von Fotona werden detailliert wiedergegeben. Die Einheilkäppchen konnten im Anschluss problemlos aufgesetzt werden. Die Patientin klagte über keinerlei Beschwerden und die folgende Einheilzeit verlief unauffällig ohne Entzündungen. Nach Verwendung des Lasers zur Freilegung der Implantate ist keinerlei Wundnaht notwendig womit die notwendige Einheildauer vor Abdrucknahme weiter verkürzt werden kann.

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Modern technologies in the treatment of periodontal disease

Synergistic benefits

Dr Carmine Prisco, Italy

A private healthcare activity follows the same principles that are applicable to any professional activity that interacts with a heterogeneous public. In fact, also for a dental office, knowledge and reputation are fundamental assets for a successful professional activity and need to act in synergy and are mutually reinforcing.[1] The graph shows how investing in technology is crucial for the optimisation of a dentist's activity (Fig. 1).

Hence, the digital transformation and the technological evolution of dental surgery represent an exceptional opportunity today for the general dentist to develop his or her activity.

Offering patients suitable therapies represents the ethical principle on which all medical, and thus dental, activities are based, guaranteeing patients predictable results, reduced treatment times, greater comfort, minimal invasiveness and better care. These are the guiding principles of technologically supported dentistry completely oriented towards patients' needs, well-being and comfort.

Standard laser-assisted full-mouth disinfection protocol

To show how modern technologies available to all dental surgeries can support the dental care by improving treatment protocols, periodontal disease and, in particular, a specific treatment, denominated laser-assisted full-mouth disinfection (LAFMD), are considered in this article.

The standard protocol for LAFMD treatment consists of the following four phases:

First phase:
- 0.2 % chlorhexidine
- Ultrasonic scaler
- Air polishing decontamination

Second phase (periodontal pockets of 5 mm or deeper):
- Deep ultrasonic and manual scaling
- Air polishing decontamination
- Laser debridement

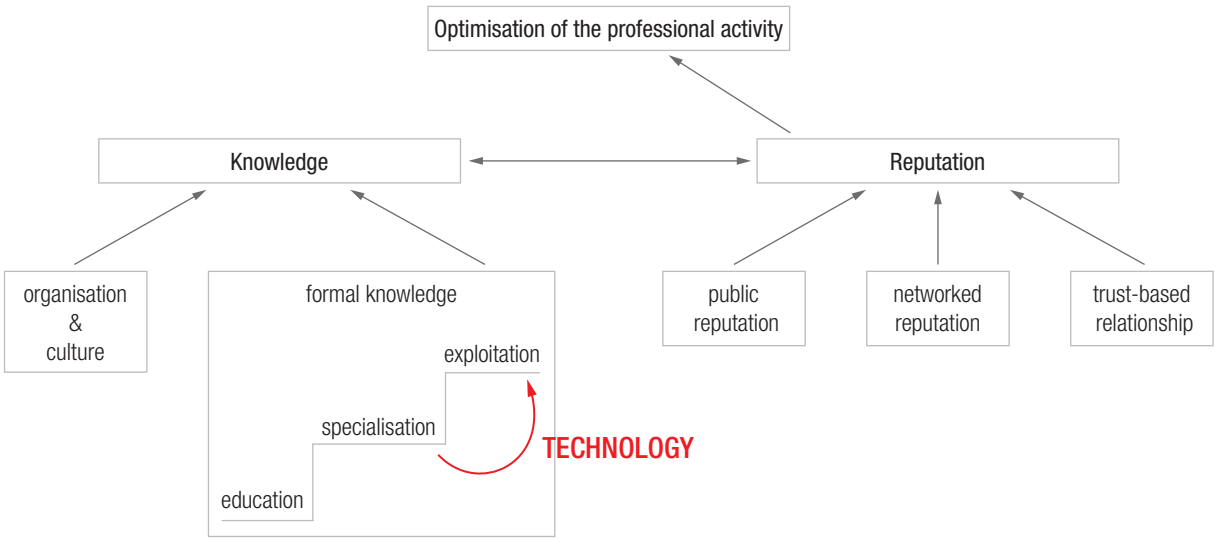

Fig. 1: Optimisation of the dentist's activity by investment in technology.

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 2: The patient is shown intraoral scans throughout all treatment phases. **Fig. 3:** Radiographic examination. **Fig. 4:** Periodontal probing. **Fig. 5:** 3D model shown to the patient for better understanding and motivation.

- Application of 1 % chlorhexidine gel to the pockets
- Laser analgesic treatment

Third phase:
- Photodynamic treatment
- Antibiotic treatment in the pockets
- Biostimulation

Fourth phase:
- Compliance check and follow-up

Periodontal disease is so prevalent that it is the sixth most common disease in the world. According to the data in the literature and to the 2018 classification,[2] considering all four stages of the disease, it is present in 70 % of the population aged between 35 and 44 years, in 90 % of 45- to 80-year-olds, and in 4 % of 18- to 34-year-olds.[3]

Hence, the treatment of periodontal disease constitutes an important part of the daily activity of a dental surgery. Offering effective therapeutic protocols that are affordable for the whole population thus represents a relevant social duty for the modern dentist.

It is particularly fundamental for periodontal therapy to be aimed at managing the inflammation that accompanies the disease, which has strong associations with systemic diseases such as diabetes, cardiovascular disease and other chronic illnesses.

LAFMD is a non-surgical minimally invasive protocol aimed at the treatment of the various forms of periodontitis, and it has been defined according to experimental scientific results in the literature. This protocol benefits from the use of different technologies and is performed by the dentist and the hygienist in collaboration.

The treatment is adapted according to the degree of periodontitis, and the age, and individual condition of the patient.

Application of the LAFMD protocol

When performing a periodontal treatment, it is fundamental that the patient fully complies with the dentist's instructions throughout the whole treatment plan. To achieve this goal, the intraoral scanner Condor (Biotech

Fig. 6

Dental) should be used in every stage of the treatment to engage the patient by showing him or her 3D colour models of the mouth (Fig. 2).

Hence, during the first visit, an intraoral scan of the sectors to be treated needs to be performed systematically, contributing to the diagnosis, which involves standard methodologies such as radiographic examination (Fig. 3) and periodontal charting (Fig. 4).

Showing the patient digital 3D models (Fig. 5) of his or her mouth and discussing his or her individual situation with the patient is the most effective way to motivate and retain him or her, as the patient becomes aware of the evolution of his or her mouth throughout the treatment plan.

Fig. 7

Fig. 8

Fig. 6: Subgingival air polishing performed with an AIR-FLOW Master Piezon unit. **Fig. 7:** A special disposable nozzle made from thermoplastic elastomer is used during the procedure. **Fig. 8:** Treatment with the ultrasonic scaler of the device.

First phase

The first phase of the LAFMD treatment is aimed at an initial mechanical removal of the main aetiological agents of the disease: calculus and biofilm. Air polishing decontamination is added to the standard initial preparation processes involving ultrasonic scalers and pharmacological therapy.

In the practice of the author, the AIR-FLOW Master Piezon unit (EMS; Fig. 6) is used to carry out subgingival air polishing with erythritol powder (AIR-FLOW PLUS powder, EMS; mean grain size of 14 µm) that contained 0.3 % chlorhexidine. During the procedure, a special disposable nozzle made from thermoplastic elastomer is used (Fig. 7).

The air–powder mixture exits from the previously mentioned nozzle horizontally, while the water exits from an outlet at the tip of the nozzle and simultaneously irrigates the pocket for five seconds. After the procedure with the AIR-FLOW Master Piezon unit is completed, instrumentation with the ultrasonic scaler of the same device is performed (Fig. 8). These treatments are commonly conducted without anaesthesia.

The international literature clearly shows the improved results in controlling the aetiological factors resulting from this procedure[4,5] and shows the ability to preserve the root cementum, as this methodology requires less use of manual curettes.[6]

Second phase

In cases of advanced disease, that is sites with periodontal pockets of 5 mm depth and more, a second phase to control the disease is necessary. In such cases, the dentist can apply a 980 nm diode laser of 10 W, which can be used not only in surgery, but also in the treatment of periodontal disease.

In the second phase, the PRIMO diode laser (MEDENCY; Fig. 9) is a main tool of the protocol, being used with single-use fibres of 10 mm in length and 400 µ in thickness. The programme is set on a pulsed modality of 30 on/70 off, 2.4 W and 25 seconds in order to conduct a deep debridement of the root surface and to remove the inflamed tissue inside the pocket (Figs. 10a & b).

The literature documents that diode lasers have a bactericidal, bacteriostatic and antitoxic function.[7] Significantly better results in bacterial reduction are thus achieved with diode laser therapy in comparison to therapy without laser. The bleeding index improved in 96.6 % of cases treated with the laser, compared with only 66.7 % of cases treated with standard methodologies. Pocket depth is also reduced more significantly in cases treated with laser.[7]

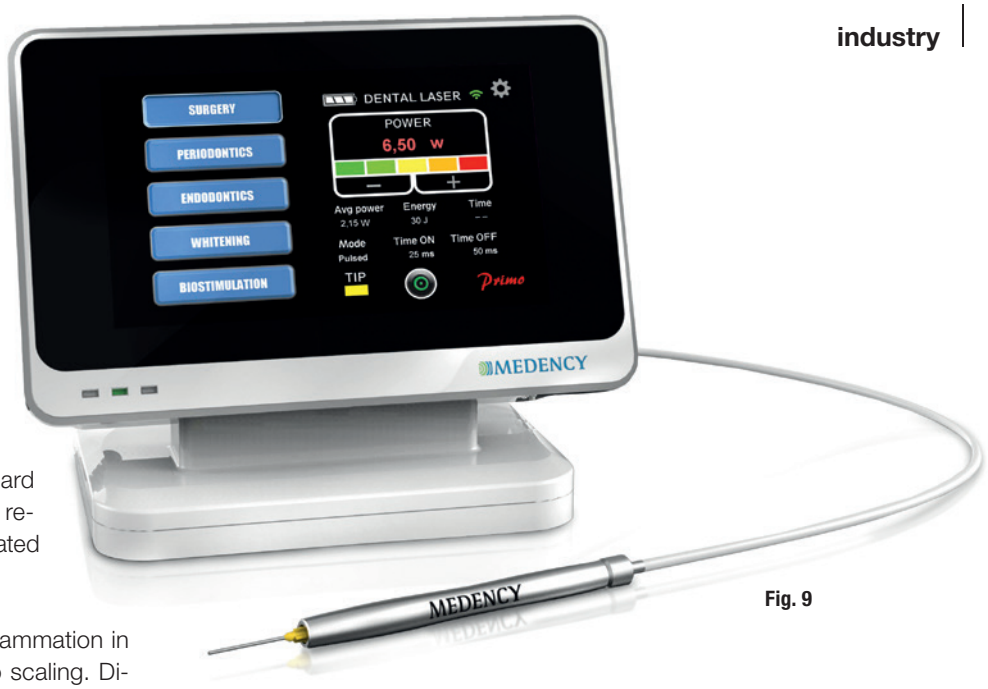

Fig. 9

The diode laser helps to reduce inflammation in the periodontal pockets in addition to scaling. Diode laser therapy, in combination with scaling, thus supports healing of the periodontal pockets through eliminating bacteria.

Various studies have shown that the predictability of the results obtained using a 980 nm diode laser of 10 W has improved.[8] They have also shown that ultrasonic air polishing decontamination and use of a diode laser improve both the efficiency of treatment and the prognosis, stopping the progress of the disease, gaining clinical attachment and decreasing pocket depth.[9]

In this phase, a 1 % chlorhexidine gel is used inside the periodontal pockets to extend and strengthen the effect of the 980 nm laser.[10] The versatility of the diode laser allows the operator to employ two preset programmes: analgesic therapy and biostimulation. These are especially practical and useful at the end of a particularly demanding therapeutic session.

A session of analgesic therapy, in particular, is usually performed after deep debridement using the dedicated

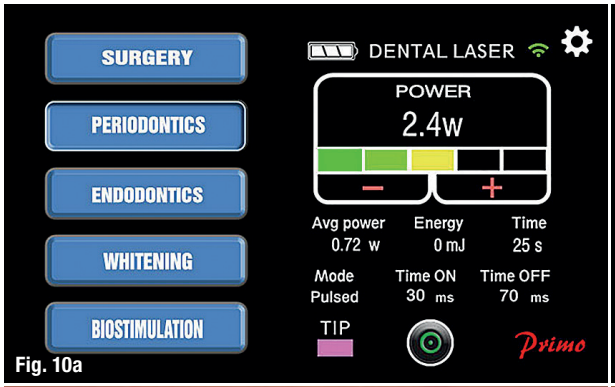

Fig. 10a

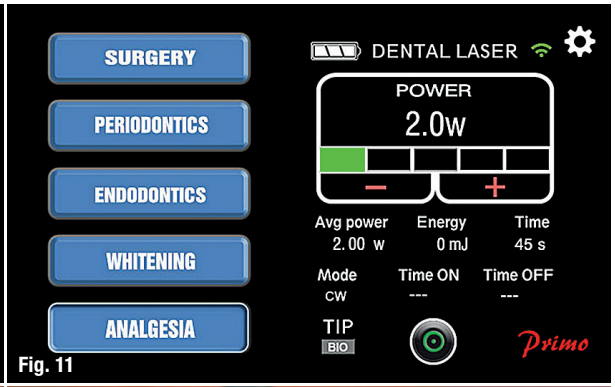

Fig. 11

Fig. 10b

Fig. 12

Fig. 9: The PRIMO laser can be applied in the second phase for treating deep periodontal pockets. **Figs. 10a & b:** Laser settings used during debridement of the root surface and the removal of the inflamed tissue. **Fig. 11:** Laser settings applied during analgesic therapy with the PRIMO laser. **Fig. 12:** Insertion of 10% iodopovidone solution with a laser fibre.

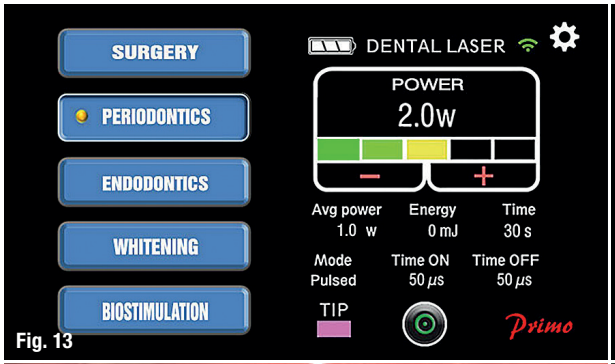

Fig. 13

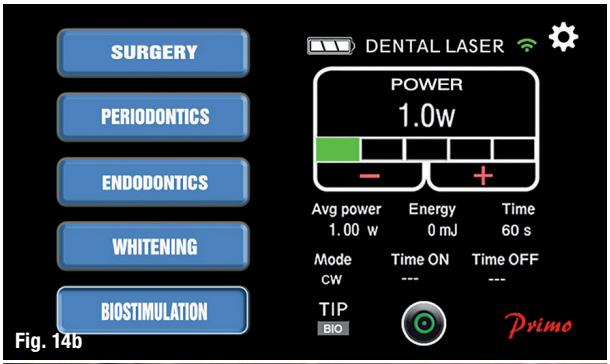

Fig. 14b

Fig. 14a

Fig. 15

Fig. 13: Laser settings used for photodynamic-photothermal therapy. **Fig. 14a:** Biostimulation using the laser. **Fig. 14b:** Laser parameters for biostimulation. **Fig. 15:** Situation at the end of the third phase: reduction of pocket depth and no inflammation.

handpiece of the PRIMO laser in continuous mode for 60 seconds at a power of 2 W (Fig. 11).

Third phase

The third phase is aimed at controlling the activity of the bacteria present in the periodontal pockets. The results of experimental research have demonstrated the inability of surgical scaling and root planing to obtain a total mechanical removal of the aetiological factors. Resorting to systemic antibiotic therapies does, however, not meet unanimous approval of dentists. Hence, photodynamic therapy has recently evolved by applying past knowledge to laser technology.[11]

Therefore, photodynamic-photothermal therapy, having a bactericidal effect, is associated with the suitable topical antibiotic medications. A 10 % iodopovidone solution is conveyed inside the pocket before inserting the fibre of the PRIMO laser (Fig. 12), employing a pulsed modality of 50 on/50 off for 30 seconds per pocket at a power of 2 W (Fig. 13).[8, 12]

The objective of using this technique is to achieve a drastic reduction of the bacterial load inside the pocket. The laser also plays a fundamental role in the regeneration of the fibroblasts and in gingival attachment. The results of some studies in the literature have demonstrated that non-surgical laser applications modulate behaviour of gingival fibroblasts, which leads to inducing growth factor mRNA expression as a consequence. These applications can be used to improve periodontal wound healing.[13] To aid tissue healing, this procedure is completed with biostimulation executed for 60 seconds with power set to 1 W using the dedicated handpiece of the laser (Figs. 14a & b). The LAFMD protocol is especially suitable in the treatment of peri-implantitis, a specific form of periodontal disease, which is increasingly occurring with the evolution of modern dentistry.

Scientific studies have demonstrated better short-term results when protocols involving diode lasers are applied for the treatment of peri-implantitis compared with protocols that do not involve them.[14] Therefore, in the decontamination of sites affected by peri-implantitis, this protocol is a valid auxiliary instrument. As tests conducted six months after the protocol was performed showed a partial bacterial recolonisation,[15] it should be recommended to the patient to undergo the protocol twice a year.

At this stage of the treatment, the absence of inflammation and the reduction of pocket depth in the absence of bleeding are evident results (Fig. 15). The patient can maintain these results over time by complying with the correct guidelines provided by the dentist and by receiving adequate assistance.

Fourth phase

In the fourth phase, the patient's compliance plays a particularly fundamental role in the success of the ther-

Fig. 16

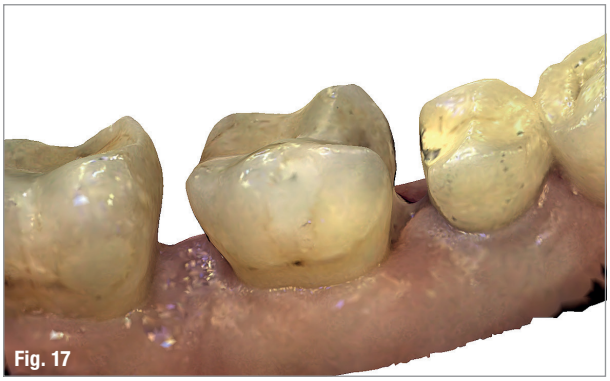
Fig. 17

Fig. 16: Final situation after treatment: stable mucosa and no bleeding. **Fig. 17:** 3D colour model of the final result used to strengthen patient motivation regarding follow-up compliance.

apy of periodontal disease. It is important to establish an individual and specific follow-up schedule for each patient to check the results over time, monitor the evolution of the disease and schedule the next follow-up sessions.

In this phase, it is fundamental to show the results achieved to the patient in order to strongly motivate him or her to maintain correct oral hygiene at home and to attend the follow-up sessions. A correctly performed LAFMD provides an immediate sensation of well-being to the patient, who experiences the absence of inflammation and bleeding, together with a new-found dental stability (Fig. 16). To support this, the 3D colour models obtained thanks to the Condor scanner are of exceptional motivational function (Fig. 17).

Conclusion

The LAFMD is a perfect example of a therapeutic protocol in which modern technology supports the dentist's activity, allowing him or her to provide patients with minimally invasive, comfortable non-surgical treatments with predictable results. Patients are the fulcrum of the dental professional activity. Correct usage of modern technologies to adequately answer to their needs and expectations through effective and high-quality therapies is the principle on which modern dentistry is founded.

Literature

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Kurz & bündig

Parodontitis ist die weltweit sechsthäufigste Krankheit. Dies ist der Grund dafür, dass die Behandlung von parodontalen Erkrankungen ein integraler Bestandteil der alltäglichen zahnärztlichen Praxis ist. Parodontale Therapien sollten im besten Falle immer darauf abzielen, krankheitsbegleitende Entzündungen einzudämmen. Im vorliegenden Artikel wird das nichtoperative und minimalinvasive LAFMD-Protokoll vorgestellt, mit welchem effektiv und kostengünstig verschiedenste Formen der Parodontitis behandelt werden können. Das Protokoll profitiert von dem Einsatz verschiedener Technologien und wird gemeinsam vom Zahnarzt und Hygieniker durchgeführt. Das Standardprotokoll der LAFMD-Behandlung besteht aus vier Phasen: Zunächst wird 0,2%iges Chlorhexidin verabreicht und anschließend sowohl mit einem Ultraschallscaler als auch einem Air-Polishing-System gearbeitet. Die zweite Phase definiert sich durch den Einsatz von Ultraschallscalern und manuellen Scalern, Laser Debridement, die Verabreichung von 1%igem Chlorhexidin-Gel in die zu behandelnden Zahnfleischtaschen sowie den Einsatz eines Lasers zur Schmerzlinderung. Die anschließende dritte Phase besteht dann aus einer photodynamischen Behandlung, der Verabreichung von Antibiotika und dem Einsatz von Biostimulation. Die vierte und damit letzte Phase der Therapie beinhaltet einen Compliance-Check und eine Nachsorgeuntersuchung. Das LAFMD-Protokoll ist ein Paradebeispiel für ein therapeutisches Protokoll, in welchem verschiedene moderne Technologien im Rahmen der Behandlung einer parodontalen Erkrankung zusammenfinden und miteinander harmonieren, wodurch der Patient eine minimalinvasive, schmerzarme und nichtoperative Behandlungsalternative erfahren kann. Das LAFMD-Protokoll ist somit ganz im Sinne der modernen Zahnheilkunde, die sich anschickt, mithilfe von effektiven und hochqualitativen Behandlungsmethoden den individuellen Ansprüchen von Patienten gerecht zu werden.

Removal of a fibroma using an Er:YAG laser

Dr Sigalit Blumer, Israel & Prof. Roly Kornblit, Italy

Case presentation

A healthy 8-year-old boy was referred to the Department of Pediatric Dentistry at Tel Aviv University in Israel for lesion removal and excisional biopsy. The boy came to our clinic complaining about a lesion on the lower lip. A few months prior to that, he had sustained an injury to the lower lip that was followed by the appearance of a raised lesion on the inside of the lip on the left. According to the father, the boy would bite on the protruding lesion, resulting in secondary trauma that caused the lesion's growth and thickening. However, the lesion was not painful. According to the parents, the boy apparently had a high pain threshold and thus did not feel pain when biting on the lesion. Upon intraoral examination (Fig. 1), a lesion of 6 mm in diameter and protruding approximately 3 mm from the mucosa was visible. The lesion was round, symmetrical, not ulcerated, pinkish in colour and firm to the touch. The patient had no underlying diseases, nor did he take any medications on a regular basis.

Treatment options

We had two possible options for treatment at our disposal: either a surgical removal of the lesion by excision with a scalpel and suturing to stop the bleeding or surgical removal by laser. The option of laser-assisted treatment was chosen because of its significant advantages over the use of a scalpel. Firstly, this modality has a marked capability of disinfection of the treated and surrounding tissue during surgery, which results in a reduced risk of postoperative inflammation and thus the need for anti-

Fig. 1

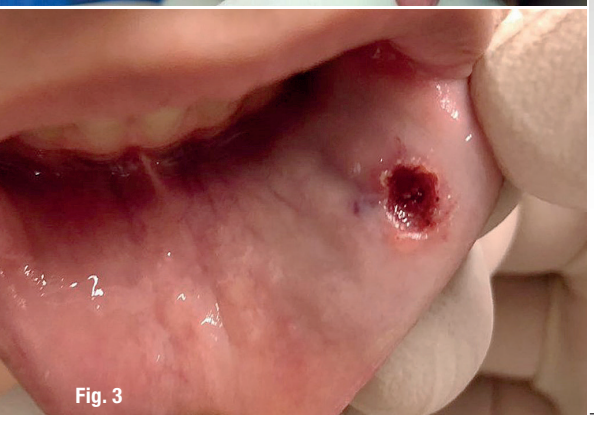

Fig. 3

Fig. 2

Fig. 1: The lesion prior to its removal. **Fig. 2:** The LiteTouch Er:YAG laser from Light Instruments. **Fig. 3:** The lesion immediately after the surgery.

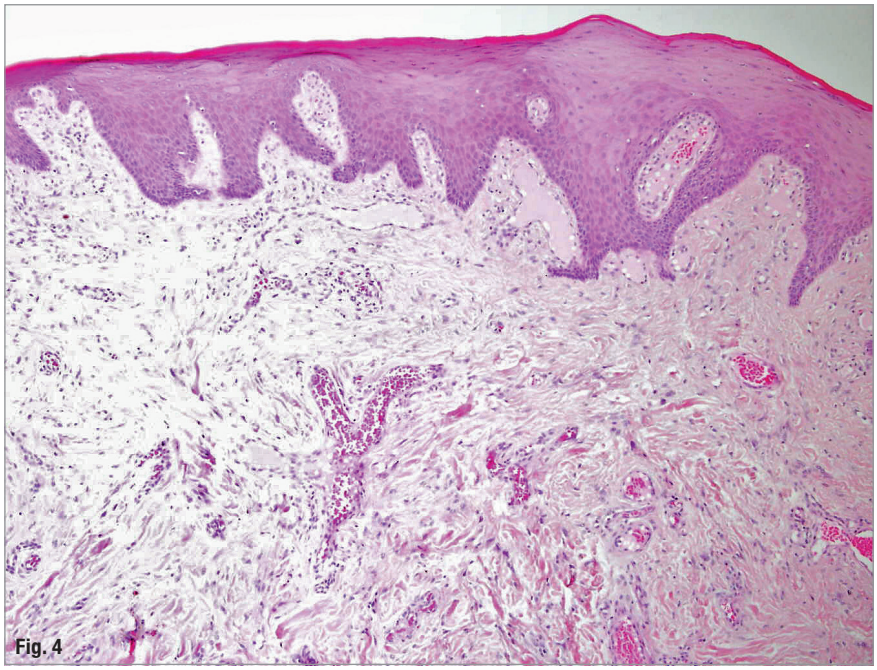

Fig. 4: Histology of the lesion.

biotics. Secondly, a laser treatment has the ability to increase the metabolic activity, resulting in faster healing. Thirdly, there is the advantage of the rapid stopping of postoperative bleeding and, therefore, no sutures are needed. Lastly, postoperative pain can be avoided with a laser treatment.

On the Er:YAG laser

We chose to use the 2,940 nm Er:YAG laser (LiteTouch, Light Instruments; Fig. 2) for the surgery. The energy of this wavelength is well absorbed by water and hydroxyapatite. Regarding paediatric dentistry, this wavelength can be used for treatment of hard tissue, such as sealing pits and fissures, and removing caries and tooth pulp. Moreover, it can be used for the treatment of soft tissue, such as fraenectomy, gingivectomy, gingivoplasty, operculectomy, disinfection of periodontal pockets, irradiation of aphthous lesions and removal of other lesions. Furthermore, the Er:YAG laser was chosen owing to its advantages in soft-tissue surgery in comparison with other wavelengths: the energy does not penetrate too deep into the tissue and does not disperse into or damage the surrounding tissue, which results in the treatment being minimally invasive and very quick, yet effective. When treating soft tissue, the Er:YAG laser can be used with or without air or water spray cooling.

The operative phase

Firstly, we used nitrous oxide in order to reduce the patient's fear regarding the operation and to improve his cooperation. We then began locally anaesthetising the area surrounding the lesion, using 0.9 ml of 2 % lidocaine with a vasoconstrictor. With regard to the surgery, we used low-energy surgical parameters of 150 mJ, 1.5 W and 10 Hz, and omitted the spraying of air or water. The use of the lowest effective energy parameters should always be preferred in order not to traumatise the treated tissue and to avoid any damage to the surrounding area. If needed, the energy parameters can be gradually raised.

In this particular case, the use of cooling water spray was not necessary because the laser was applied to soft tissue that was relatively distant from the teeth and, thus, there was no risk of overheating the pulp. The lack of water cooling and the long laser pulse duration contributed to energy accumulation in the underlying tissue, thus avoiding bleed-

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ing. The lesion was held with surgical forceps, and the laser beam was focused around the lesion using a tip of 0.6 mm in diameter and 17.0 mm in length in contact, while leaving safety margins of approximately 3.0 mm for a correct subsequent histological examination. The working movements were continuous and repetitive, in contact with the lesion, which resulted in quick and efficient disengagement of the lesion. Moreover, the treatment was accompanied by high-intensity suction.

After the operation

After its removal, the lesion was sent for histological examination. Furthermore, the laser parameters were then lowered to sub-ablative energies of 20 mJ, 0.2 W and 10 Hz (gentle treatment mode), and a larger tip of 1.3 mm in diameter and 17.0 mm in length was used in order to disperse superficial heat to stop the bleeding, and as a result, coagulation in the area could be achieved. In this regard, the movements were slow and repetitive, and a gauze pad was used to check whether the bleeding had stopped. After 60 seconds, the bleeding had stopped and no coagulating agent was needed. We decided not to suture the area in order to prevent potential scarring, to reduce the accumulation of food residue around the suture, to reduce interference when eating and talking, and to decrease secondary trauma to the tissue and the patient.

The boy's behaviour throughout the treatment was excellent. He felt comfortable and did not feel any pain. He stated that he was relaxed throughout the surgery and had an overall pleasant experience. Four days after the treatment, the lesion area had been covered by fibrin, and the lesion margins appeared to have contracted (Fig. 3). After about a week, a crust formed and there were no signs of scarring. The tissue healed entirely. The biopsy of the lesion showed that it was in fact a fibroma (a high-density connective tissue with multiple blood vessels, chronic inflammatory cells and several nerve fibres; Fig. 4).

Conclusion

The use of the LiteTouch Er:YAG laser proved to be an excellent alternative to two procedures in paediatric dentistry. In this particular case, we reported the removal of a raised lesion (fibroma) that was formed after an injury to the lower lip followed by constant irritation. The lesion, which was of considerable proportions, bothered the child and interfered with his oral activities. Hence, it was necessary to remove it and to obtain an accurate diagnosis regarding its nature. The success of the treatment was manifested by the fact that it was both conservative and quick, did not have to be repeated and did not involve any fear or pain. The child was very cooperative and he and his parents were very satisfied with the treatment being relatively uncomplicated and the tissue healing very rapidly.

Editorial note: We were provided with a short video recording of the surgery portrayed in this article, which can be watched online using the QR code on the right.

Video of case report

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Kurz & bündig

In dem hier dargestellten Fall klagte ein achtjähriger Junge über eine Läsion auf der Innenseite seiner Unterlippe. Der Läsion war eine Verletzung an der Lippe einige Monate zuvor vorausgegangen. Aufgrund seiner hohen Schmerztoleranz hatte der Junge die Läsion regelmäßig zerbissen und zerkaut, wodurch sich die Läsion stetig verhärtete und zunehmend an Größe gewann.

Zur Entfernung der Läsion entschied sich das Ärzteteam um Frau Dr. Sigalit Blumer für den Einsatz eines LightTouch Er:YAG-Lasers der Firma Light Instruments, da dieser signifikante Vorteile gegenüber dem Skalpell hat. Der Eingriff mithilfe eines Lasers birgt beispielsweise kein Risiko einer postoperativen Gewebeentzündung und es müssen selten Antibiotika im Rahmen einer anschließenden Behandlung verabreicht werden. Darüber hinaus regt der Laser die metabolische Aktivität an, was eine schnellere Wundheilung zur Folge hat.

Der operative Eingriff war von kurzer Dauer, sehr effektiv und schmerzfrei für den zu behandelnden Jungen, da diesem im Vorfeld Distickstoffmonoxid verabreicht und die betroffene Stelle im Mundraum lokal betäubt worden war. Im Anschluss wurde eine histologische Biopsie der entfernten Läsion durchgeführt, wodurch festgestellt werden konnte, dass es sich um ein Fibrom – also dichtes Bindegewebe –, bestehend aus einer Vielzahl an Blutgefäßen, chronischen Entzündungszellen sowie mehreren Nervenfasern, handelte. Der Erfolg der Behandlung zeigte, dass der Einsatz des LiteTouch Er:YAG-Lasers eine gute Alternative zu konventionellen Behandlungsmethoden darstellt.

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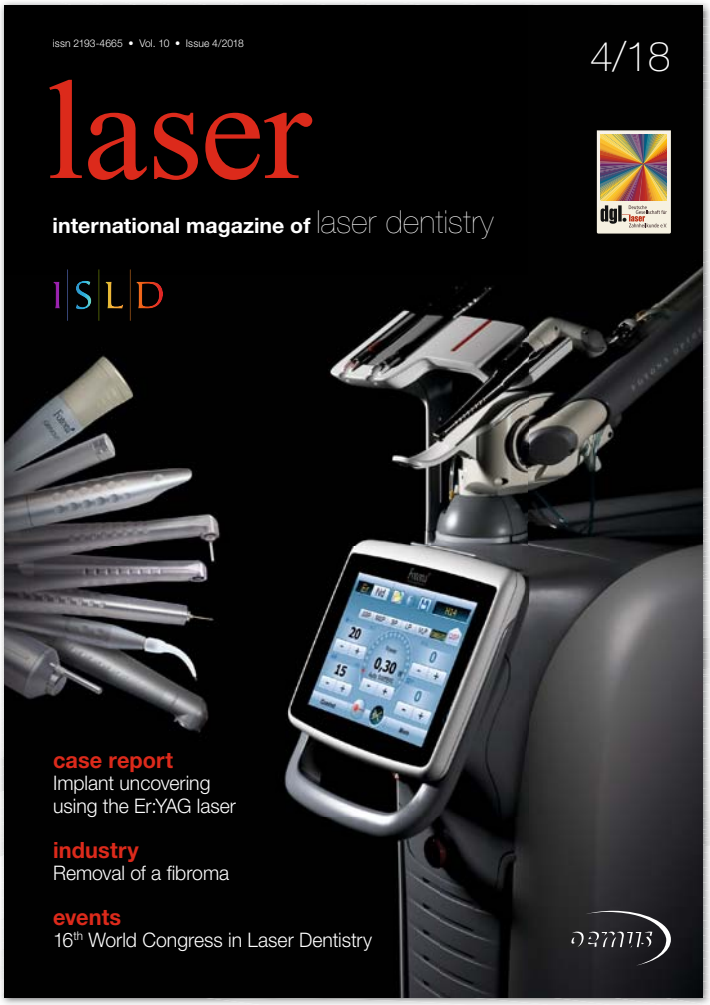

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Successful communication in your daily practice

Part VIII: How to take away the patient's fears

Dr Anna Maria Yiannikos, Germany & Cyprus

Hi! I am Dr Anna Maria Yiannikos and I am excited to welcome you to the 8th part of this loved series filled with communication protocols. This series includes the most popular and challenging scenarios that might occur in your dental practice and presents successful ways of how to deal with them—so your patients will always leave your practice feeling satisfied and thinking: "My dentist is THE BEST!"

Each article of this series will teach you a new, easy to use specialised protocol, which can easily be customised and adapted to your own dental clinic's requirements and needs right from day one.

I am here to provide answers to the communication problems you might come across with your patients in your daily practice. These problems can put you in a difficult position, make you lose sleep or, even worse, make you lose faith in yourself and your abilities, which is very common in our field of expertise. Today's challenging topic is… how to transform an anxious patient into a loyal one.

5 revolutionary tips

I am going to share five revolutionary tips with you that guarantee the transformation from an apprehensive patient into a long-term friend of your dental practice. You should always keep the following points in mind when dealing with fearful patients!

1. Prepare yourself

Before your patients arrive at the practice, make sure to inform yourself and develop and in-depth knowledge of each patient's individual fears. Also check with your assistants whether they are aware of the patient's anxieties. In case you are already sitting down with your patients during an appointment, pay particular attention to their facial expressions, their body language, and their reactions in general—if they, for instance, start sweating for no apparent reason.

2. Do not make your patients wait

Let's state the obvious: No one likes to be kept waiting. In addition, being kept waiting in the waiting room for longer than necessary only results in anxious patients getting even more anxious. Every minute they spend alone with their fearful thoughts is a harmful minute.

3. Talk to your patients

By speaking to your patients and engaging them in conversation, you can make them feel more at ease. Use encouraging phrases like 'bravo, the step that you took today is so essential for your health!' or comforting ones

such as ‘don’t worry, I will explain everything you want to know as detailed as possible’ or ‘I will inform you ahead of time in case you are about to feel any sensation or discomfort’. However, do avoid criticism regarding their individual fears by any means possible. For instance, refrain from derogatory or patronising phrases like ‘come on, behave like an adult’. Moreover, discuss the treatment plans with your patients in detail before you start with the therapy. Encourage them to ask questions by saying ‘is there anything more you would like to know? I am willing to give you anything you need in order to make you feel as comfortable as possible’. Take your time to win their trust.

4. Give demonstrations

Take away the patient’s fears by demonstrating the tools that you are about to use in the upcoming treatment. For instance, if you would like to use a drill, a laser, an ultrasound or an airflow—demonstrate the sounds of these tools beforehand. Furthermore, remember to minimise the time your patients spend in the dentist chair. If your patients are already anxious, they most likely want to spend as little time in there as possible.

5. Motivate your patients

After the treatment is finished, advise your patients to immediately book a follow-up appointment and motivate them to take part in a pleasant activity that same day. This will help them to associate their dentist visit with a positive experience. Thus, they are more likely to attend another appointment shortly thereafter, fostering a loyal dentist–patient relationship in the long run.

Isn’t that easy?

Implement the above-mentioned steps into your daily practice and you will notice a significant increase in the number of your patients. If fearful patients had a positive experience at your dental clinic, they will share the story everywhere and with everyone, from friends and relatives to colleagues. If you want to attract more patients, there is no way that is more effective than the sheer power of the spoken word!

This is very useful insight, wouldn’t you agree? I am sure that you are looking forward to the next issue of laser magazine, where I will present the ninth part of this unique series of communication concepts and touch on even more beautiful and interesting topics. Are you curious about what’s next? We will take an honest look at how to deal with your own delays and, in addition, how to transform someone who is constantly complaining into a loyal patient. This is a common and challenging situation that we as dentists face in our clinics on a constant basis. In this regard, I will provide 5 essential tips that will help to cope with these situations more effectively.

Until then, remember that you are not only the dentist of your clinic, but also its manager and leader. For further questions and requests for more information and guidance, keep in touch by sending me an e-mail to dba@yiannikosdental.com or via our website www.dbamastership.com. I am looking forward to our next trip of business growth and educational development!

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Kurz & bündig

Viele Menschen auf dieser Welt haben Angst vor dem Zahnarzt und drücken sich oft gekonnt vor wichtigen Untersuchungen und Behandlungen. Im achten Teil der Serie „Erfolgreiche Kommunikation im Praxisalltag“ stellt Dr. Anna Maria Yiannikos fünf Tipps vor, die leicht umzusetzen sind und es Zahnärzten ermöglichen sollen, Patienten die Angst vor dem Zahnarztbesuch zu nehmen und sie in langfristig wiederkehrende loyale Praxisfreunde zu verwandeln. Als ersten Schritt betont die Autorin die Wichtigkeit der Vorbereitung eines jeden Zahnarztes. Um Ängste effizient in Angriff nehmen und neutralisieren zu können, muss sich der Zahnarzt im Vorfeld umfangreich über die individuellen Ängste seiner Patienten informieren und während des Gesprächs im Behandlungszimmer besonderes Augenmerk auf ihre Reaktionen und die Körpersprache legen – Sensibilität ist hier gefragt. In den folgenden Schritten geht die Autorin darauf ein, dass es wichtig ist, ängstliche Patienten nicht warten zu lassen, mit ihnen zu reden, die zu verwendenden Instrumente im Vorfeld zu demonstrieren und die Patienten im Anschluss an die Behandlungen dazu zu motivieren, den Tag mit angenehmen und entspannenden Tätigkeiten zu verbringen. Am Ende profitiert natürlich nicht nur der Patient, sondern auch der Zahnarzt von den in diesem Artikel dargestellten Maßnahmen. Ein ängstlicher Patient, der bei einem Zahnarztbesuch eine angenehme und positive Erfahrung macht, wird dies vermutlich innerhalb der Familie, des Freundeskreises oder seines Arbeitsumfelds weitererzählen – und die Praxis kann somit neue Patienten gewinnen.

Communication skills in the dental practice

Dr Imneet Madan, UAE

Practice principles are usually confined to each individual practice. Yet, there are some fundamental principles of business interaction that are widely accepted and can be considered universal. In the following, an overview of clinically proven, modified and researched principles will be given that can improve both interpersonal and dentist-to-patient communication skills.

Core principles of dental practice

The concern of the patient and the reason for his or her visit should always be the main focus of the appointment. The consulted dentist should give an opinion on the health status of the patient and guide him or her through the different possible treatment options, with the aim of resolving the reason for the patient's visit. Moreover, the patient should always leave the dental office with his or her questions answered, thus feeling satisfied with the outcome of the visit. Apart from that, there should be a strong focus on the individual needs of every single patient. For example, there is a wide variety of reasons for a patient being apprehensive regarding dentist appointments, which include concerns about his or her dental health and possible high treatment expenses. Since the patient is, of course, usually no expert in the field of dentistry, he or she can have a hard time understanding all information that is provided by the dentist. From a patient's point of view, the ideal dentist should meet the following requirements:

1. The dentist should be empathetic. He or she needs to truly understand the patient and his or her point of view in order to treat the patient in the best possible way. Only by being empathetic and by putting himself or herself in the shoes of the patient can the patient's concerns and needs be sufficiently taken care of.

2. The dentist should be approachable. When explaining treatment plans to the patient, it is vital for the dentist to use language that is easy to understand. He or she should be able to break down a complicated medical procedure into its simplest components. Naturally, the dentist is exposed to subject-specific jargon on a day-to-day basis; however, there are patients who are not familiar with even the simplest dental terms, such as "enamel" or "dentine". The dentist must not make the mistake of presuming the patient's complete understanding when explaining a treatment.

   Employing pictorial visualisations or video presentations can be very useful in order to help the patient to better understand certain medical procedures. While explaining, the dentist should pause from time to time to check with the patient whether he or she has any questions. By doing that, the provided information is

more likely to be thoroughly understood by the patient. These pauses can furthermore help the patient in making a clear and informed decision regarding the treatment option to be chosen. Moreover, the dentist needs to give the patient space and must not pressure him or her into making any hasty decisions. After all, the consent to a treatment plan is referred to as "informed consent" and not "imposed consent".

3. The dentist needs to be confident and well informed. It is vital for the dentist to possess an in-depth knowledge of the particular treatment options that he or she is proposing with regard to his or her previously made diagnosis. If the dentist's professional knowledge and confidence are limited in some way, the patient will most likely perceive that. Moreover, the dentist should offer different possible treatment options in order for the patient to develop a feeling of control and involvement, as no one likes being patronised or merely being told what to do. In order to provide the best possible treatment and to improve on his or her confidence, the dentist is encouraged to update his or her skills and professional knowledge on a regular basis.

4. The dentist needs to be patient. Even if questions are asked repeatedly, the dentist needs to tackle them with respect and answer them calmly. Patience is the key to winning the patient's trust and is required at all times during the appointment.

5. The dentist needs to be open to financial questions. It has been frequently noticed that many dentists tend to leave the financial matters to coordinators and many practices encourage this system. It is not wrong to do so as long as both the dentist and patient are happy to have assigned third parties involved in their discussions. In order to save a great deal of time and effort, however, the dentist should be open to financial questions during the appointment. Any questions in this regard should be treated with respect and should not be taken personally, as money is an important factor contributing to the patient's decision regarding treatment options.

6. The dentist needs to be experienced. Naturally, reading the newest literature and attending conferences or lectures can contribute significantly to both the dentist's skill set and his or her overall experience. Furthermore, it is essential for the dentist to learn from other people's failures. With regard to a specific treatment plan, the possibility of failure can even be discussed with the patient. Failure is nothing to be afraid of and a risk that needs to be openly discussed. As long as the patient is financially secured and a good relationship with the consulted dentist has been

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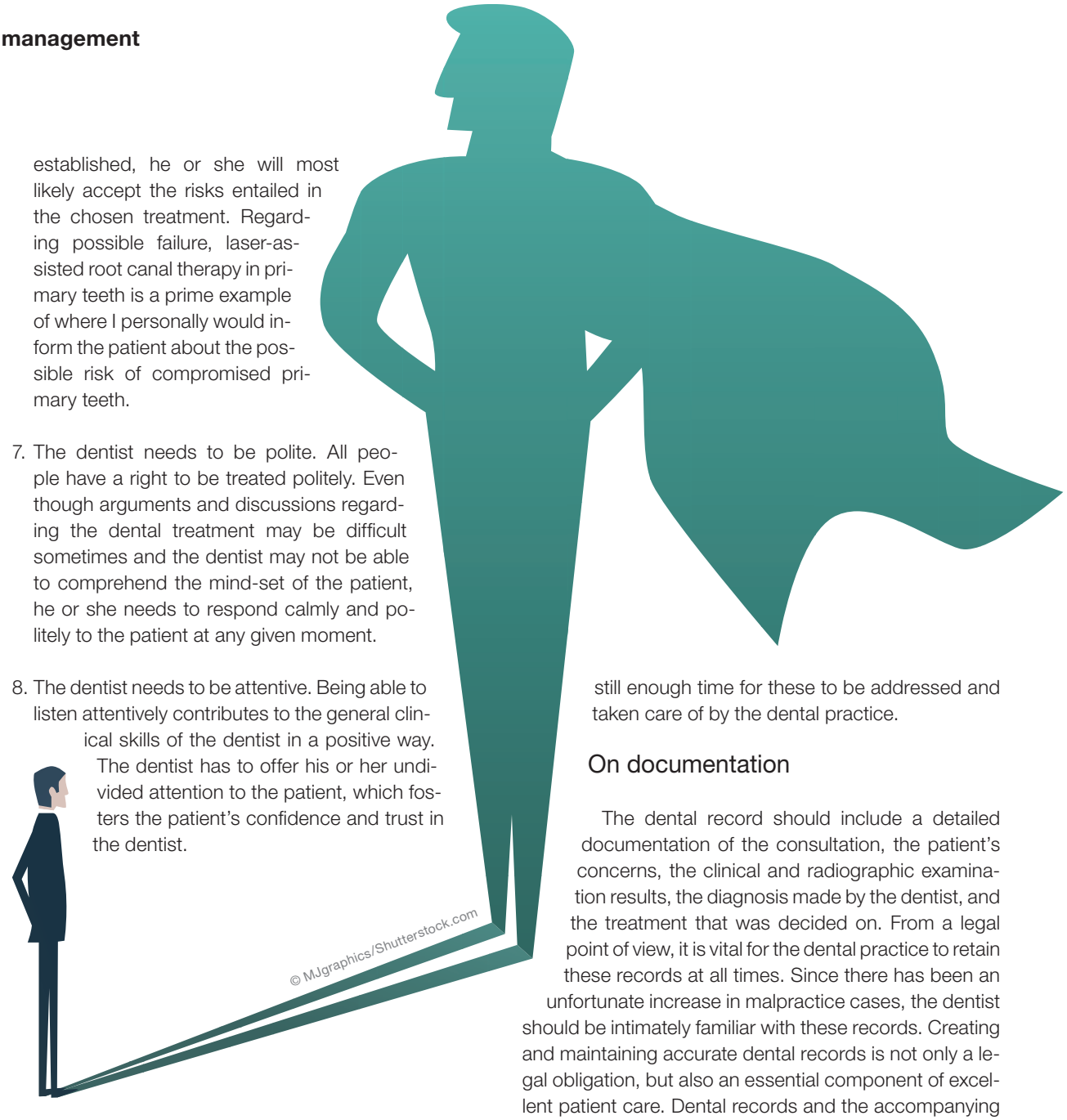
established, he or she will most likely accept the risks entailed in the chosen treatment. Regarding possible failure, laser-assisted root canal therapy in primary teeth is a prime example of where I personally would inform the patient about the possible risk of compromised primary teeth.

7. The dentist needs to be polite. All people have a right to be treated politely. Even though arguments and discussions regarding the dental treatment may be difficult sometimes and the dentist may not be able to comprehend the mind-set of the patient, he or she needs to respond calmly and politely to the patient at any given moment.

8. The dentist needs to be attentive. Being able to listen attentively contributes to the general clinical skills of the dentist in a positive way. The dentist has to offer his or her undivided attention to the patient, which fosters the patient's confidence and trust in the dentist.



After the initial appointment, but before the treatment

Both the communication approach of neurolinguistic programming and the techniques of Six Sigma can help in articulating and planning the medical treatment during the appointment at the dental office. Once the patient has understood the entire treatment plan, the first step should be for him or her to complete and sign the informed consent form, which states the understanding of the medical treatment. Afterwards, copies of the treatment plan should be given to the patient and further scanned copies should be kept for the clinic records. In order to aid the patient's decision regarding a particular treatment option, relevant literature should be given to him or her afterwards. The patient should use the interim period between the initial consultation and the actual treatment to think about his or her decision. In case of potential questions arising during that period, there is still enough time for these to be addressed and taken care of by the dental practice.

On documentation

The dental record should include a detailed documentation of the consultation, the patient's concerns, the clinical and radiographic examination results, the diagnosis made by the dentist, and the treatment that was decided on. From a legal point of view, it is vital for the dental practice to retain these records at all times. Since there has been an unfortunate increase in malpractice cases, the dentist should be intimately familiar with these records. Creating and maintaining accurate dental records is not only a legal obligation, but also an essential component of excellent patient care. Dental records and the accompanying clinical notes need to be well written and sufficiently detailed and should include the following information:

1. clinical findings;
2. descriptions of radiographs;
3. proof and documentation if radiographs were handed out to the patient;
4. record of the main points of the verbal discussion with the patient;
5. relevant and meaningful comments made by the patient;
6. explanation of treatment options;
7. the patient's attitude towards the proposed treatment;
8. a summary of the course of the appointment (for example, a child's behaviour during the appointment);
9. signed consent forms regarding the treatment that was finally decided on;
10. copies of the consent forms; and
11. re-signed consent forms in case of deviations from the original treatment plan.

How to document properly

Owing to a tight schedule and thus a lack of time, dentists often tend to scribble their notes quickly onto a mere piece of paper. However, typing their notes on computer is a better alternative. Proper documentation results in a stress-free daily practice. Proper documentation can be quite time-consuming at first, yet it will most likely save a great deal of time and energy in the long run. With regard to the proper documentation of dental records, the following points can be of help:

1. Always use the same font and format when typing the records.
2. Use the same headings and titles throughout the entire record.
3. Put any comments by the patient in quotation marks if verbatim.
4. Elaborate on concerns that you have expressed. Document any concessions towards the patient. If a patient has unobtainable and unrealistic demands, genuine gestures of good-will and kindness can help in a possible malpractice case.
5. Avoid derogatory and unprofessional remarks in the notes. Any negative comments, such as the patient being late for an appointment, or any other disruptive behavior should be noted in an objective and rational fashion.
6. Use standardised and internationally accepted abbreviations in order to make your documentation comprehensible for dental professionals from around the globe.

Conclusion

The attributes of the ideal dentist as detailed in this article should be taken to heart by every dentist who aims to create his or her dream practice. A clear communication strategy is vital for developing a patient's understanding of subject-specific topics, with regard to his or her dental treatment options. Moreover, both the dentist's empathy and in-depth professional knowledge play a key role in providing the best possible treatment. Furthermore, he or she needs to provide information in a generous and comprehensive fashion in order for the patient to feel like the most important person in the practice. It is essential that information is provided in such a way that the patient is able to understand everything in detail, even though he or she is not a dental professional himself or herself. This results in growing trust and a long-term bond between the patient and the dental practice. After all, it is not the number of patients being theoretically attracted to a particular practice that is important, but rather the number of patients who return to that practice on a regular basis.

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Kurz & bündig

Die Autorin nähert sich in diesem Artikel dem Blickpunkt des Zahnarztpatienten und stellt in diesem Zuge einige Kernpunkte dar, die bei der Wahl des „idealen Zahnarztes" helfen können. So sollte der aufzusuchende Zahnarzt zunächst empathisch sein, da nur durch aufmerksames Zuhören und das Verstehen der Sorgen und Ängste des Patienten am Ende die bestmögliche Behandlung erfolgen kann. Darüber hinaus sollte der Zahnarzt unter anderem nahbar, selbstbewusst, geduldig und offen gegenüber finanziellen Fragen sein. Auch sollte er dem Patienten Behandlungsoptionen zu Verfügung stellen, um ihm das Gefühl zu vermitteln, er könne aktiv mitentscheiden, was die Wahl der durchzuführenden Behandlung betrifft. All dies schafft eine langfristige Bindung zwischen dem Patienten und der aufgesuchten Zahnarztpraxis.

In einem weiteren Schritt umreißt die Autorin einige Punkte, die bei der korrekten Dokumentation von Arztkonsultationen und Patientenakten helfen sollen. Diese Punkte schließen unter anderem die Aufnahme von Röntgenbild-Beschreibungen, eine elaborierte Zusammenfassung des Gesprächsverlaufs, aussagekräftige Momente während der Diskussion sowie unterschriebene Einverständniserklärungen hinsichtlich der geplanten Behandlung mit ein. In einem letzten Schritt präsentiert die Autorin einige formale Kriterien, die zur erfolgreichen und richtigen Dokumentation von Zahnarztkonsultationen beitragen sollen, bevor sie ein abschließendes Fazit formuliert.

Fig. 1

Fig. 1: The congress was expected to be the most successful WFLD conference ever.

International dental laser community gathered for World Congress

In October 2018, laser specialists from more than 50 countries were travelling to Aachen, Germany. Being hosted at the RWTH Aachen University Hospital from 1 to 3 October, the 16th World Congress in Laser Dentistry offered them the opportunity to share, interact and explore with practitioners, researchers, educators and manufacturers. The event, for which around 400 people had registered beforehand, saw 38 plenary speakers from all different fields of research and clinical applications. Additionally, there were 125 oral presentations, 89 digital poster presentations and an accompanying industry exhibition. “This will be the most successful, the highest scientific level, the biggest and most international World Federation for Laser Dentistry conference ever,” said Prof. Dr Norbert Gutknecht, Federation Chairman, prior to the event. He continued by saying that “this congress will integrate science and practical experience on different levels of presentations and demonstrations, including highly ranked international keynote speakers, on-stage live patient demonstrations, interactive digital poster presentations, oral presentations combined with relevant clinical skill training, short presentations on the latest research findings, outstanding clinical case presentations, rotating company-sponsored supporting workshops, and last but not least continuing education certificates.” In addition to the scientific programme, the organisers had planned a welcome cocktail event and a gala dinner at Schloss Rahe, a German castle that is one of the most remarkable historic buildings in Aachen, situated only 3 km from the city centre. While in 1988, there were fewer than 30 people worldwide exploring the use of lasers in dentistry, today there are hundreds of ongoing

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 2: From left: Dr Dimitris Strakas, Dr Riman Nasher, Prof. Adam Stabholz. **Fig. 3:** Prof. Dr Norbert Gutknecht, Chairman of the organising committee. **Fig. 4:** From left: Prof. Dr Lynn Powell, Prof. Dr Kosmas Tolidis. **Fig. 5:** Assoc. Prof. Dr Rene Franzen, member of the scientific committee. **Fig. 6:** Dr Christina Karanasiou of the Aristotle University of Thessaloniki. **Fig. 7:** Participants experienced a wide range of presentations and demonstrations. **Fig. 8:** A fine choice of reading material: *laser—international magazine of laser dentistry.*

research projects and thousands of practitioners trying to improve the lives of patients, according to Scientific Committee Chairman Prof. Dr G. Lynn Powell. “Come and learn from each other,” he encouraged dental professionals. “Come share, interact and explore with practitioners, researchers, educators and manufacturers from around the world.” More information on the congress can be found at www.wfld-aachen2018.com.

Fig. 7

Fig. 8

contact

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The World Congress as a turning point for laser dentistry

From 1 to 3 October, the 16th World Congress in Laser Dentistry was hosted in Aachen, Germany, giving international dental professionals the opportunity to network and learn about the latest developments in their field of expertise. Leon Vanweersch, member of the organising committee, spoke to Dental Tribune Online about the event, being promoted as the largest ever, and about his commitment to laser education as Business Development Manager at the Aachen Dental Laser Center (AALZ).

Mr Vanweersch, this year's World Congress in Laser Dentistry was expected to be the most successful, of the highest scientific level, and the biggest and most international World Federation for Laser Dentistry conference ever. Did it meet the attendees' expectations?

First of all, it was our intention to make this congress a turning point in the set-up and structure of executing such congresses. This congress integrated science and practical experience on different levels of presentations and demonstrations, including by highly rated international keynote speakers, on-stage live patient demonstrations, interactive digital poster presentations, oral presentations combined with relevant clinical skill training, short presentations on the latest research findings, outstanding clinical case presentations, company-supported workshops, and certificates for continuing education credits. We welcomed participants from all over the world travelling to Germany from 49 countries, such as Canada, Australia, China and Argentina. There were more than 200 presentations spread over the three days in a huge programme. In addition, our social events have certainly beaten those of all past World Federation for Laser Dentistry congresses.

> "I personally think that every high-standard dental clinic today should have integrated laser or laser-assisted dentistry in their therapies."

What were your personal programme highlights?

Besides the fact that I am proud to have welcomed so many international attendees, I am personally very happy and excited to have welcomed back so many Aachen graduates from our mastership and MSc courses all over the world, which made this event also a kind of reunion

Fig. 1: Leon Vanweersch, member of the organising committee.

Fig. 2

Fig. 3

Fig. 4

Fig. 2: The attendees were enjoying a great number of programme highlights such as the get together in the exhibition area on the first day of the congress. **Fig. 3:** Ever since, *laser—international magazine of laser dentistry* is the official media partner of DGL/ISLD. **Fig. 4:** Prof. Dr Norbert Gutknecht, President of the International Society for Laser Dentistry (ISLD).

of the AALZ–WALED [World Academy for Laser Education and Research in Dentistry] family. Besides the high scientific level of the plenary speakers we secured for the congress, I am sure that the gala event was an absolute highlight.

The congress was held under the theme "Three decades of laser innovation". What is the status of laser technology in international dentistry at present?

I personally think that every high-standard dental clinic today should have integrated laser or laser-assisted dentistry in their therapies, in order to claim to be innovative and state-of-the-art.

How did you initially become involved with laser dentistry?

I started already in 1992, together with Prof. Dr Norbert Gutknecht, the first laser safety officer courses for dentists in Germany at RWTH Aachen University. Over the next few years, we started to offer laser workshops in Germany and later also internationally. From 1994 on, we additionally organised the national congress of the German Society of Laser Dentistry every year. Under the leadership of Prof. Gutknecht, we did many research projects for various laser companies. An absolute highlight was the worldwide initiation of the first Master of Science in Lasers in Dentistry programme at RWTH Aachen University in 2004. For many years, we have been organising one-year mastership courses in dental laser therapy in many countries worldwide, and have produced more than 1,000 laser dentists in the time at the AALZ.

Mr Vanweersch, thank you for your time.

contact

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Aachen Dental Laser Center – AALZ
Pauwelsstraße 17
52074 Aachen, Germany
www.aalz.de

Fotona

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Following its launch at IDS in March 2011, Fotona's dual wavelength (Er:YAG and Nd:YAG) LightWalker laser system quickly earned widespread industry appreciation and highly respected technology and innovation awards. Today, it is a preferred laser system of dental perfectionists and forward-thinking professionals who wish to upgrade their dental experience with new treatment possibilities that only the latest technology can offer. Owing to Fotona's advanced R&D capabilities which regularly introduce new features, software updates and usability improvements that further enhance the system's comprehensive feature set, it remains one of the most leading edge and reliable laser systems on the market. With the most state-of-the-art design, engineering and patented technologies, offering a wide range of highly effective TwinLight® hard- and soft-tissue treatments, aiming at providing the most extensive list of applications of any dental laser made today, LightWalker will continue to set standards for cutting-edge laser technology in years to come.

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All products are designed, engineered and manufactured in Italy—with passion and commitment. "Our overall mission is to deliver a combination of cutting-edge products, services and interaction with customers drawing on a wide network of academic partners," said Boschi.

The company supports its partners with tailor-made educational courses in different countries in order to gain practical experience in the use of the system in daily practice. Using dental laser technology has never been so easy.

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Health labels might prevent

Consumption of sugary drinks

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Cigarette packets are labelled with warnings and graphic images to deter people from smoking. In a new study, researchers from Australia's Deakin University have investigated whether a similar labelling approach could dissuade people from buying sugary drinks. They found that young adults were less likely to purchase sugar-sweetened beverages that had health labels.

To investigate the possible effects of adding a health label to sugary drinks, an online experiment to examine the drink choices of almost 1,000 Australians of a diverse range of socio-economic status and education levels aged between 18 and 35 was conducted. Participants were asked to imagine that they were entering a shop or cafe or approaching a vending machine to purchase a drink, and should then choose between one of 15 bottles, with both sugary and non-sweetened options available. The drinks had either no label (control group) or one of four labels on sugary drinks: graphic warnings, text warnings, sugar information (including the number of teaspoons of added sugar) or a Health Star Rating—the national front-of-pack labelling system used in Australia and New Zealand.

According to the results, participants were far less likely to select a sugary drink when a front-of-pack label was displayed, regardless of their level of education, age or socio-economic background. "Our findings highlight the potential of front-of-pack health labels, particularly graphic images and Health Star Ratings, to change consumer behaviour, reduce purchases of sugar-sweetened drinks, and help people to make healthier choices," said Prof. Anna Peeters, Director of the Institute for Healthcare Transformation at Deakin University.

Source: DTI

Acupuncture could reduce

Dental anxiety

Fear of the dentist is something some people suffer from more than others. With multiple reasons for dental anxiety and its effects, there is, however, limited research on its impact and possible treatment methods. In an effort to look deeper into the topic, researchers from the University of York, UK, have recently reviewed a number of studies on treating dental anxiety with acupuncture.

For the systematic review and meta-analysis, six trials with a total of 800 patients were chosen from almost 130 eligible trials. The researchers used a points scale to measure anxiety, and in the studies included, anxiety was shown to be reduced by eight points when dental patients were given acupuncture as a treatment. According to the researchers, this level of reduction is considered to be clinically relevant, indicating that acupuncture could be a possibility for treating dental anxiety.

Co-author of the study, titled "Acupuncture for anxiety in dental patients: Systematic review and meta-analysis", Dr Hugh MacPherson, Professor of Acupuncture Research at the University of York's Department of Health Sciences, expressed that the scientific interest in the effectiveness of acupuncture both as a standalone and as an accompanying treatment to more traditional medications was increasing.

"If acupuncture is to be integrated into dental practices, […], then there needs to be more high-quality research that demonstrates that it can have a lasting impact on the patient. Early indications look positive, but there is still more work to be done," summarised MacPherson.

Source: DTI

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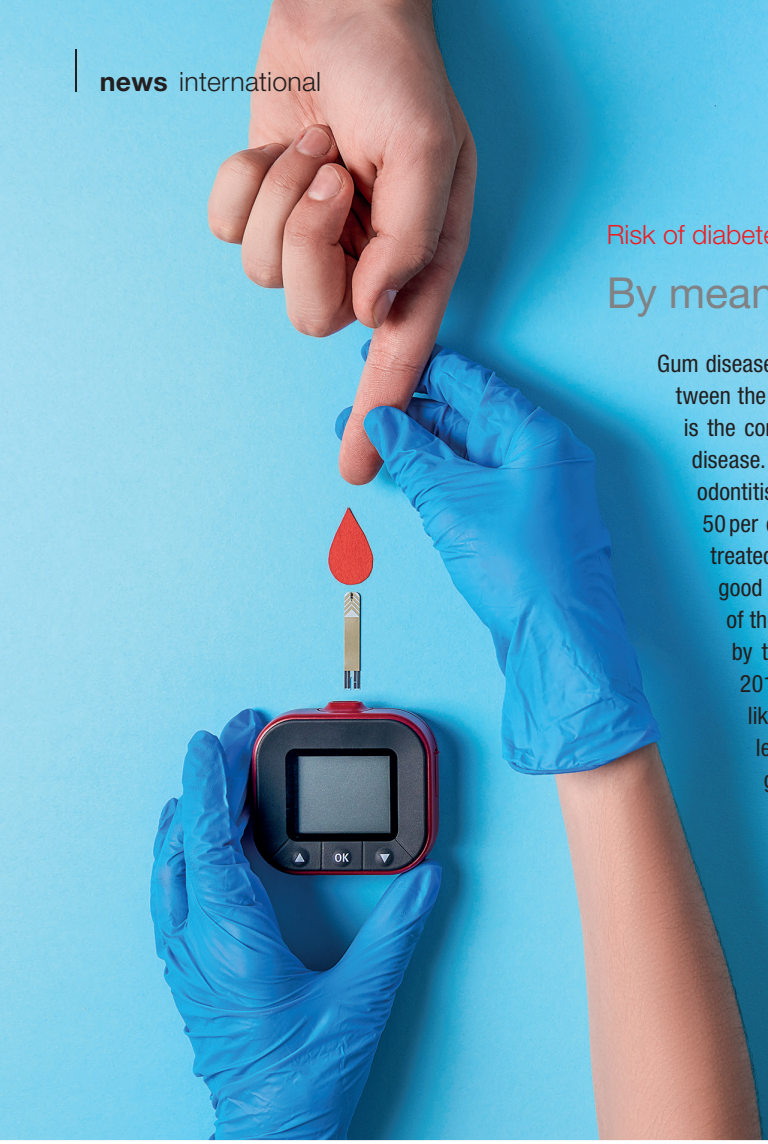

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Risk of diabetes reduced

By means of good oral health

Gum disease and diabetes are chronic conditions that increase with age. The link between the two diseases goes both ways. It is thought that inflammation in the body is the connection. In fact, periodontal disease is the most common inflammatory disease. Gum (periodontal) disease includes gingivitis (inflamed gums) and periodontitis (inflammation of the gums and structures supporting the teeth). About 50 per cent of people over 30 have periodontitis, which causes tooth loss if untreated, and it is this type of gum disease that is linked with diabetes. Then again, good oral health may play a key role in reducing the risk of diabetes, which is one of the main messages of the Perio & Diabetes campaign launched just recently by the European Federation of Periodontology (EFP) on World Diabetes Day 2018. Further core messages include that uncontrolled diabetes triples the likelihood of gum disease and successful gum treatment reduces blood sugar levels. Moreover, it is stated that people with diabetes have poorer blood glucose control, more heart, brain, eye and kidney complications, and a shorter lifespan, in case they also have gum disease. In this regard, Prof. Filippo Graziani, president elect of the EFP, said: “Bleeding gums are not normal—do not just rely on a mouth rinse but go see a dentist. The earlier we catch periodontitis, the better.” Gum disease can be prevented by cleaning between your teeth every day with an interdental brush or floss, brushing your teeth for at least two minutes, twice a day, avoiding smoking and enjoying a healthy diet, controlling your blood sugar in case of diabetes, and obviously, visiting your dentist regularly.

Source: European Federation of Periodontology

Caries prevention aided by

Fluoride varnish in primary dentition

Permanent teeth may be affected by caries at an early stage in the case of caries-affected primary teeth, as the enamel has not yet fully hardened. Because oral hygiene and caries prevention can be challenging in young children, the use of fluoride varnish can be beneficial. Researchers of the Institute for Quality and Efficiency in Healthcare (IQWiG) investigated whether the application of fluoride varnish to primary dentition has advantages over standard care without fluoride application by comparing the findings of 15 randomised controlled trials. The development of caries was investigated in all 15 studies; side effects were investigated in nearly all of the studies. However, owing to a lack of conclusive data, it is unclear whether fluoride application also has advantages regarding further patient-relevant outcomes, such as tooth preservation, toothache or dental abscesses. A clear advantage of fluoride varnish was determined despite the very heterogeneous study results: The fluoride treatment could completely prevent caries in approximately every tenth child and would at least reduce progression of caries in further children. Apparently, whether the children already had caries or whether their teeth were completely intact made no difference regarding the benefit of fluoride varnish application. The report, titled “Assessment of the application of fluoride varnish on milk teeth to prevent the development and progression of initial caries or new carious lesions”, was published online by the IQWiG in April 2018.

Source: DTI

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Teeth give insights into

Feeding habits of dinosaurs

Recent research has offered a new understanding of dinosaurs' feeding behaviour by means of their tooth wear. To kill their prey, bird-like theropod dinosaurs from the Upper Cretaceous (100.5–66 million years ago) of Spain and Canada all relied on a puncture-and-pull bite strategy, in which parallel scratches formed while they bit down into prey, followed by oblique scratches as the head was pulled backwards with closed jaws. Close examination of patterns of wear and modelling of their teeth suggest that these dinosaurs were not necessarily in direct competition for their next meal. Apparently, some of the dinosaurs preyed on larger, struggling prey, while others stuck to softer or smaller fare. "All these dinosaurs were living at the same time and place, so it is important to know if they were competing for food resources or if they were aiming for different prey," said lead author Dr Angelica Torices. The evidence suggests that Dromaeosaurus and Saurornitholestes were well adapted for handling struggling prey or for processing bone as part of their diet and, furthermore, that troodontids may have preferred smaller or immobile prey that required a less powerful bite. The study, titled "Puncture-and-pull biomechanics in the teeth of predatory coelurosaurian dinosaurs", was conducted in collaboration with researchers from the Royal Ontario Museum in Toronto in Canada, the University of Alberta and the University of Zaragoza in Spain in May 2018.

Source: DTI

Application form

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Neutron tomography offers

Insights into interior of teeth

Imaging techniques based on neutron beams are rapidly developing and have become versatile non-destructive analysing tools in many fields of study. Researchers at the Helmholtz-Zentrum Berlin (HZB) have recently published a comprehensive overview of neutron-based imaging processes titled "Advances in neutron imaging". Neutron tomography has facilitated breakthroughs in diverse areas, including dentistry. The advantage of this method lies in the fact that neutrons can penetrate deeply into a sample without destroying it. In addition, neutrons can distinguish between light elements such as hydrogen and lithium, and substances containing hydrogen. Because neutrons themselves have a magnetic moment, they react to the smallest magnetic characteristics inside the material. This makes them a versatile and powerful tool for materials research. 2D or 3D images, called neutron tomograms, can be calculated from the absorption of the neutrons in the sample. The researchers described how improvements in recent years have extended the spatial resolution down to the micrometre range. This is more than ten times better than the typical medical X-ray tomography. Including the examination of teeth, applications are of a wide range: "Neutron tomography is extremely versatile. We are working on further improvements and hope that this method, which is in great demand, will also be available in modern spallation sources in the future," said lead author Dr Nikolay Kardjilov.

Source: DTI

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Prof. Dr. Norbert Gutknecht

Präsident der ISLD

30 Jahre ISLD – ein Jubiläumsjahr, ein Meilenstein, ein Neuanfang

Liebe Freunde der Laserzahnheilkunde,

im Jahre 1988 trafen sich Laserpioniere aus verschiedenen Ländern in Tokyo, Japan, um über die Anwendung von Lasern in der Zahnheilkunde zu beraten. Dabei entstand der Gedanke, wie in der Medizin auch in der Zahnmedizin eine wissenschaftliche Gesellschaft zu gründen. Das war die Geburtsstunde der ISLD, der International Society for Laser Dentistry, die in diesem Jahr ihren 30. Geburtstag feierte. Das Jubiläum wurde in Form eines Weltkongresses an der Universität in Aachen, von drei Organisationen, der DGL als gastgebender Gesellschaft, der WFLD (ISLD wurde im Jahr 2006 in WFLD umbenannt) und der WALED als Alumni Organisation der RWTH Aachen University, ausgerichtet und von deren Mitgliedern gefeiert.

Mit über 540 Besuchern aus 49 Ländern, 38 geladenen Referenten, 125 Kurzvorträgen, 89 Digitalen Poster-Präsentationen und allen namhaften Laserherstellern kann man mit Freude und Stolz sagen, dass es der größte und erfolgreichste Laserkongress in der Zahnheilkunde in den letzten 30 Jahren gewesen ist. Bei der Abschlussveranstaltung und Mitgliederversammlung wurde der Vorschlag gemacht, den Namen und die Organisationsstruktur der ISLD, verbunden mit deren akademischer Würde und ihrer wissenschaftlichen Zielsetzung wieder neu zu beleben. Mit überwältigender Mehrheit wurde dieser Vorschlag angenommen und in die Tat umgesetzt. Die laufend eingehenden Mitgliedsanträge, sowohl von ganzen nationalen Lasergesellschaften, als auch von individuellen Laseranwendern und Wissenschaftlern aus der ganzen Welt, haben alle Erwartungen übertroffen.

Die ISLD ist wieder die ISLD und wird als solche die wissenschaftlichen, akademischen und klinischen Fragestellungen in der Laserzahnheilkunde global in allen zahnärztlichen Standesorganisationen und anderen medizinischen und sozialen Organisationen vertreten.

An dieser Stelle darf ich mich nochmals bei allen Besuchern, Referenten, Ausstellern und meinem Organisationsteam ganz herzlich bedanken, die alle zum großartigen Erfolg des Weltkongresses in Aachen beigetragen haben.

Ich wünsche Ihnen allen und all den Kolleginnen und Kollegen, die nicht mit uns dieses Jubiläum begehen konnten, alles erdenklich Gute für das Jahr 2019 – vor allem Gesundheit und Erfolg bei Laserbehandlungen an Patienten oder bei wissenschaftlichen Untersuchungen in den Universitäten. Allen Laserherstellern, und insbesondere unseren Ausstellern, wünschen wir ein erfolgreiches Geschäftsjahr 2019.

Im Namen des ganzen Vorstandes der ISLD grüße ich Sie und hoffe, Sie im Juni 2019 beim ISLD International European Congress in Plovdiv, Bulgarien, willkommen heißen zu dürfen.

Ihr

Prof. Dr. Norbert Gutknecht

16. Weltkongress in der Laserzahnheilkunde

30 Jahre Laserinnovationen

Prof. Dr. Dr. Siegfried Jänicke

Der 16. Weltkongress in der Laserzahnheilkunde fand in diesem Jahr unter dem Motto „drei Jahrzehnte der Laserinnovation“ vom 1. bis 3. Oktober 2018 im Universitätsklinikum Aachen statt. Der Kongress markierte das dreißigjährige Jubiläum der internationalen Fachgesellschaften ISLD und WFLD und war gleichzeitig ein integrativer Kongress zusammen mit der 27. Jahrestagung der Deutschen Gesellschaft für Laserzahnheilkunde (DGL) und dem 6. Internationalen WALED Kongress. Mit über 500 Teilnehmern aus aller Welt sowie 38 eingeladenen Hauptrednern, 108 Vortragsrednern und 89 digitalen Postern wurde ein sehr umfangreiches und anspruchsvolles wissenschaftliches Programm bewältigt. Zusätzlich dazu wurde eine umfassende Industrieausstellung mit 18 namhaften Laserherstellern angeboten.

Das imposante Gebäude des Universitätsklinikums Aachen, mittlerweile seit 34 Jahren in Betrieb, bot mit sieben Hörsälen und einer großen Ausstellungshalle mit Cateringbereich den geeigneten Rahmen für den anspruchsvollen wissenschaftlichen Kongress. Gleichzeitig konnte durch die Nutzung der Räumlichkeiten auf die Inanspruchnahme teurer Kongresshotels verzichtet und so eine im internationalen Vergleich erfreulich günstige Gestaltung der Kongressgebühren erreicht werden. Hierfür ist dem Organisationskomitee unter der Leitung von Prof. Dr. Norbert Gutknecht sowie Herrn Leon Vanweersch, Dr. Dimitris Strakas und Dr. Stefan Grümer ausdrücklich zu danken. Dank gilt weiterhin auch Frau Eva Speck, Sekretariat der DGL, für die ausgezeichnete organisatorische Betreuung der vielen Teilnehmer im Vorfeld des Kongresses.

Abb. 1: Über 500 Teilnehmer aus aller Welt kamen zum Laserkongress nach Aachen.

Der Kongressauftakt

Die feierliche Kongresseröffnung fand nach einer musikalischen Darbietung des Streichorchesters der RWTH Aachen am Montag, dem 1. Oktober 2018, um 9.30 Uhr durch Prof. Dr. Norbert Gutknecht und Prof. Dr. Lynn Powell (USA) sowie dem Dekan des Uniklinikums Aachen, Univ.-Prof. Dr. Stefan Uhlig, und der Prorektorin, Univ.-Prof. Dr. Ute Habel, statt. In seinem Eröffnungsvortrag beleuchtete Prof. Dr. Gutknecht die neuen Möglichkeiten von ultrakurz gepulsten 9.600 nm-CO_2-Lasersystemen, die zukünftig insbesondere bei der Schmelz- und Knochenbearbeitung eine Rolle spielen werden. Diese Systeme sind hochpräzise und atraumatisch und werden voraussichtlich nicht nur für die Zahnheilkunde, sondern auch für chirurgische Anwendungsbereiche eine deutliche Bereicherung darstellen. Prof. Dr. Jens Baron, Universitätsklinikum Aachen, wies in seinem Eröffnungsvortrag auf die biologischen Effekte der Laserbehandlung an menschlicher Haut hin und erläuterte die Unterschiede zwischen CO_2- und Er:YAG-Lasersystemen. Besonders interessant war die Studienvorstellung von In-vitro-Modellen, in welchen der Lasereinfluss auf Zellkulturen menschlicher Haut untersucht wurde.

Die Vorträge des ersten Sitzungstages fanden in den Hörsälen 1, 2 und 3 statt. Durch die disziplinierte Ablauforganisation der Vorträge war es den Teilnehmern möglich, punktgenau Kongressbeiträge in den einzelnen Hörsälen zu verfolgen. Aktuelle internationale Probleme, beispielsweise in puncto Visa-Erteilung, haben es einigen Kongressteilnehmern schwer gemacht, die Veranstaltung zu besuchen, und umso mehr ist die hohe Kongressbeteiligung dieses Jahr hervorzuheben. Prof. Dr. Georgi Tomov (Bulgarien) gab im Rahmen des ersten Sitzungstages Hauptvorträge über die laserbasierte Diagnostik und die Therapie intraoraler Mukosaläsionen mithilfe von unterschiedlichen diagnostischen Lasersystemen (Stichwort: Autofluoreszenz „VELscope“).

Ferner präsentierte Dr. Dimitris Strakas (Griechenland) in seinem Hauptvortrag eine ausgezeichnete Übersicht über 100 Jahre Licht in der dentalen Ästhetik. Darüber hinaus referierte Dr. Stefan Grümer (Deutschland) über die Einsatzmöglichkeiten des Lasers in der Implantologie. Das Programm bot eine Fülle an hochinteressanten wissenschaftlichen Beiträgen aus aller Welt, welche intraorale chirurgische Anwendungsmöglichkeiten, endodontologische Indikationen und parodontale Therapien mit dem Laser zum Inhalt hatten. Abgerundet wurde der erste Kongresstag mit einem Willkommenscocktail im Ausstellungsbereich, bei dem sich die Kongressteilnehmer sowohl untereinander als auch mit den Ausstellern ausführlich austauschen konnten, und gegen 21 Uhr endete das offizielle Programm schließlich.

Parodontologie im Fokus

Am folgenden Kongresstag, Dienstag, dem 2. Oktober 2018, wurden weitere anspruchsvolle wissenschaftliche Präsentationen gehalten. Hier muss man zunächst den ausgezeichneten Vortrag von Prof. Dr. Akira Aoki

Abb. 2

Abb. 3

Abb. 2: Prof. Dr. Norbert Gutknecht im Gespräch mit Teilnehmern. **Abb. 3:** Die Mitarbeiter an der Kongressanmeldung hatten alle Hände voll zu tun.

Abb. 4

Abb. 5

Abb. 4: Vertreter der Laserzahnheilkunde aus aller Welt kamen zusammen. **Abb. 5:** Dr. Stefan Grümer (Mitte) mit Kollege und Dr. Sharonit Sahar-Helft (r.).

(Japan) erwähnen, der die Behandlung parodontaler Erkrankung mit Er:YAG-Lasersystemen erläuterte und diese insbesondere der mechanischen, elektrochirurgischen Behandlung von Parodontalerkrankungen gegenüberstellte. Dieser überaus systematische Vortrag wurde durch eine Reihe an histologischen Untersuchungen, klinischen Ergebnissen und durch zahlreiche Laservideos bereichert. Es war überraschend, zu sehen, wie selbst aussichtslos erscheinende parodontale Probleme erfolgreich durch lasergestützte Behandlungen gelöst werden können.

Ein weiteres Highlight des zweiten Kongresstages war das Hauptreferat von Prof. Dr. Matthias Frentzen (Deutschland), in welchem die Möglichkeiten der antimikrobiellen Therapie von Laserlicht in Abhängigkeit unterschiedlicher Wellenlängen untersucht wurden, mit besonderem Blick auf die mögliche zukünftige Reduzierung von Antibiotikatherapien. Hierbei handelt es sich um ein hochinteressantes Zukunftsfeld der Laserzahnheilkunde – allerdings sind noch einige Studien erforderlich, um den Effekt einzelner Wellenlängen wissenschaftlich hinreichend zu belegen.

Abb. 6: Der Tisch der DGL beim Galadiner am Dienstagabend.

Abb. 6

Prof. Dr. Dr. Anton Sculean (Schweiz) referierte in seinem Hauptvortrag über die Möglichkeiten der photodynamischen Lasertherapie und legte dabei großen Fokus auf die Behandlung von Parodontitis und Periimplantitis. Mithilfe von zahlreichen histologischen Untersuchungen und klinischen Studien konnte er die Effektivität des Lasers bei der Beseitigung von Biofilm – im Vergleich zu anderen Verfahren, wie etwa der Chirurgie oder konservativen Therapie – belegen. Die transgingivale photodynamische Therapie birgt großartige zukünftige Anwendungsmöglichkeiten, allerdings muss diese Therapieform schlichtweg auch noch eingehender studiert werden. Mit Blick auf die aktuelle Diskussion über die S3-Leitlinie „Subgingivale Instrumentierung“ der Deutschen Gesellschaft für Parodontologie stellt sich zudem die Frage, ob die Untersuchungen von Prof. Sculean bei der Leitlinienerstellung berücksichtigt worden sind.

Abwechslungsreich und informativ

Als Parallelveranstaltung zum Hauptkongress wurde von der DGL ein Kurs zur Aktualisierung der Laserschutzqualifikation durch Priv.-Doz. Dr. Rene Franzen angeboten. Der zweitägige Kurs war in den Kongressgebühren enthalten, was außergewöhnlich war, da derartige Kurse normalerweise für mehrere Hundert Euro angeboten werden. Von den zahlreichen weiteren wissenschaftlichen Präsentationen muss der Beitrag von Dr. Detlef Klotz (Deutschland) besonders gelobt werden: Dr. Klotz sprach über die Möglichkeiten des Morita Er:YAG-Lasers mit unterschiedlichen Tip-Designs im endodontischen Bereich. Sein Vortrag beeindruckte unter anderem durch ausgezeichnete Hochgeschwindigkeitsaufnahmen im Wurzelkanalbereich, die durch Laserlicht ausgelöste Stoßwellen der Spülflüssigkeit in diesem Bereich zeigten. In einem weiteren Hauptvortrag berichtete Prof. Dr. Andreas Braun (Deutschland) über die Möglichkeiten und Grenzen des blauen 445 nm-Diodenlasers, welcher insbesondere im chirurgischen Bereich bisherige Diodenlasersysteme ersetzen könnte.

Abb. 7: Prof. Dr. Akira Aoki referierte über Er:YAG-Laserbehandlungen. **Abb. 8:** Dr. Dimitris Strakas und Prof. Dr. Lynn Powell.

Der zweite Kongresstag wurde durch das Galadiner im herrlich gelegenen Schloss Rahe am Rande von Aachen abgerundet, an welchem über 400 Gäste teilnahmen. Das ausgezeichnete Programm umfasste Auftritte von Live-Bands und DJs sowie ein anspruchsvolles Feuerwerk als krönenden Abschluss gegen 22 Uhr. Danach bestimmten Tanz, angeregte Unterhaltungen und eine Menge Spaß das Programm bis Mitternacht.

Auch am dritten Kongresstag, Mittwoch, dem 3. Oktober 2018, konnten die Teilnehmer zahlreichen hochkarätigen Vorträgen beiwohnen. Besonders hervorzuheben ist der Vortrag von Prof. Dr. Hisashi Watanabe (Japan), der über Innovationen im Feld der Er:YAG-Laserbehandlung von parodontalen Erkrankungen und Periimplantitis berichtete. Animationen und Laservideos begeisterten das Auditorium nachhaltig und auch hier wurden ein weiteres Mal klinische Fälle aufgezeigt, die trotz anfänglich schlechter Behandlungsvoraussetzungen hervorragend mithilfe von Er:YAG-Lasern gelöst werden konnten. Das Spektrum an Vorträgen umfasste die Bereiche Endodontie, Parodontitis, Periimplantitis, Photodynamik, Implantologie sowie Laser- und Lichtstrahltechnologien im Allgemeinen. Als sich der Kongress seinem Ende neigte, wurden im Rahmen einer Abschlusszeremonie Preise an Dr. Konstantinos Tzimas (Griechenland), Dr. Manoela Martins (Brasilien) und Prof. Dr. Márcia Martins Marques (Brasilien) verliehen und der nächste Kongressort bekanntgegeben. Zudem fand an diesem Tag sowohl die Generalversammlung der WFLD als auch die Mitgliederversammlung der DGL statt.

Abschließend muss man neben den wissenschaftlichen Hauptvorträgen auch die zahlreichen durch die Industrie geförderten wissenschaftlichen Workshops hervorheben, die von der DGL angeboten wurden: Highlights waren in diesem Zusammenhang die Anwendung eines Sirona Diodenlasers durch Dr. Johannes-Simon Wenzler und Prof. Dr. Andreas Braun, die Anwendung des Lasers in der Implantologie durch Dr. Stefan Grümer und Dr. Ute Gleiß sowie die Darbietung von Möglichkeiten der Laseranwendung in der (Kinder-)Zahnheilkunde durch Dr. Gabriele Schindler-Hultzsch und Dr. Ralf Borchers. Weitere interessante Workshops wurden von Dr. Marco Vukovic (Fotona Er:YAG-Laser) sowie Dr. Detlef Klotz (Morita Er:YAG-Laser) angeboten. Der Lasersicherheitskurs wurde erfolgreich von allen Teilnehmern im Rahmen einer Klausur am Mittwoch um 12 Uhr abgeschlossen.

Fazit

Durch sein ausgezeichnetes und wissenschaftlich anspruchsvolles Programm auf internationalem Niveau ist der Kongress jetzt schon ein Meilenstein und wird mit Sicherheit zu einem Wegweiser für künftige Kongresse zur Laserzahnheilkunde avancieren. Ein Rahmenprogramm, welches die Kongressteilnehmer ausnahmslos in Begeisterung versetzte, hinterließ einen rundum positiven Nachgeschmack und dürfte allen Beteiligten noch lange im Gedächtnis bleiben. Besonders loben muss man abschließend noch einmal die Möglichkeit der kostengünstigen Teilnahme an einem Aktualisierungskurs zum Laserschutz. Dem Organisationskomitee und allen an der Organisation beteiligten Personen aus Aachen ist ausdrücklich und herzlich zu einem gut besuchten und überaus erfolgreichen Kongress zu gratulieren.

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Aufnahmeantrag

Forschung

Wirksamkeit von Lasertherapie bei Parodontitis und Periimplantitis

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Die American Academy of Periodontology (AAP) ist anhand der aktuellen Studienlage der Frage nachgegangen, ob Lasertherapie allein oder in Kombination mit klassischer Parodontaltherapie bei parodontalen Erkrankungen überlegen ist. Ziel war es, Vorteile und Grenzen beim Einsatz von Lasern zu eruieren, um im besten Fall Leitlinien für die klinische Praxis zu formulieren. Die Wissenschaftler führten eine umfassende Literatur- und Datenbanksuche durch, und relevante Studien wurden für die Untersuchung herangezogen. Insgesamt zeigte sich eine teilweise widersprüchliche Studienlage, jedoch gab es Evidenzen, dass bei mittlerer bis schwerer Parodontitis eine konventionelle Therapie ergänzt durch Laser bezüglich der Sondierungstiefe und klinischer Attachmentniveaus leicht bessere Ergebnisse lieferte. Dies zeigte sich insbesondere beim Einsatz der antimikrobiellen Photodynamischen Therapie (aPDT). Die AAP spricht sich unter anderem für die Vereinfachung von Protokollen und eine kontinuierliche Pflege der Datenbank aus, um die Evaluation klinischer Studien weiter voranzutreiben.

Quelle: ZWP online

Wissenschaft

Alkohol bringt orales Mikrobiom aus dem Gleichgewicht

Amerikanische Forscher haben in einer Beobachtungsstudie herausgefunden, dass Alkoholkonsum erheblichen Einfluss auf das orale Mikrobiom hat. Dabei zerstört Alkohol gesunde Bakterien und fördert gleichzeitig das Wachstum schädlicher Bakterien, so die Ergebnisse der Studie. Über 1.000 Probanden wurden für die Analyse untersucht, wobei sie in starke Trinker, moderate Trinker und Nichttrinker eingeteilt wurden. 160 Teilnehmer galten als starke Trinker, da sie ein oder mehrere alkoholische Getränke (gilt für Frauen) bzw. zwei oder mehrere alkoholische Getränke (gilt für Männer) am Tag zu sich nahmen. Moderate Trinker (614 Teilnehmer) konsumierten regelmäßig Alkohol und Nichttrinker (270 Teilnehmer) nie. Bei der Analyse des oralen Mikrobioms der Testpersonen stellten die Wissenschaftler fest, dass sowohl bei den starken als auch bei den moderaten Trinkern besonders die Laktobazillen reduziert waren. Diese sind nachweislich für eine gute Mundgesundheit förderlich. Im Gegensatz dazu fanden sich vermehrt Bakterienarten von Streptococcus, Actinomyces, Leptotrichia und andere, die schädlich für die Mundgesundheit sind. Bei Nichttrinkern konnte dieses Ungleichgewicht des oralen Mikrobioms nicht festgestellt werden. In weiteren Untersuchungen wollen die amerikanischen Forscher nun herausfinden, ob auch die Art des konsumierten Alkohols (Wein, Bier, Schnaps) unterschiedliche Auswirkungen auf die Bakterienpopulationen im Mund hat.

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Quelle: ZWP online

Strahlenschutzverordnung

Tattoo-Entfernungen per Laser eingeschränkt

Die Entfernung von Tätowierungen mit Lasern oder vergleichbaren hochenergetischen Verfahren darf in Zukunft nur noch von qualifizierten Ärztinnen und Ärzten durchgeführt werden. Das sieht eine Verordnung vor, die das Bundeskabinett kürzlich beschlossen hat. „Im Sinne der Patientensicherheit ist das die einzig richtige Entscheidung. Hochleistungslaser sind kein Spielzeug. Sie gehören in die Hände von Ärztinnen und Ärzten“, kommentierte Prof. Dr. Frank Ulrich Montgomery, Präsident der Bundesärztekammer, den Beschluss. Die ursprünglich in der Verordnung vorgesehene Möglichkeit, die Entfernung von Tätowierungen mit Lasern an Nicht-Ärztinnen und -Ärzte – also zum Beispiel Kosmetikerinnen – zu delegieren, wurde ersatzlos gestrichen. Der Gesetzgeber folgte damit der Argumentation der Ärzteschaft. Sie hatte in einer Stellungnahme darauf hingewiesen, dass die Tattoo-Entfernung mit Lasern bei unsachgemäßer Ausführung ein sehr hohes Gefährdungspotenzial für die Behandelten besitze und zu dauerhaften Schäden an Augen und Haut führen könne.

Quelle: Bundesärztekammer

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DGL-Einführungskurs 2019

„Laser in der Zahnheilkunde“ neu aufgelegt

Nach wie vor ist der Einsatz von Lasergeräten in der zahnmedizinischen Therapie, trotz inzwischen fast dreißigjähriger Nutzung in Deutschland, kein Bestandteil des zahnärztlichen Curriculums an bundesdeutschen Universitäten. Die Deutsche Gesellschaft für Laserzahnheilkunde e.V. (DGL) hat es sich zur Aufgabe gemacht, Laser in das zahnärztliche Therapiespektrum zu integrieren und den Einsatz dieser modernen Behandlungsmethode zu verbreiten. In diesem Zusammenhang wird ein Einführungskurs an mehreren Terminen im kommenden Jahr gehalten. Ziel des Kurses ist es, die Teilnehmer produktneutral über die Einsatzmöglichkeiten und Indikationen verschiedener Dentallaser zu informieren. Neben der Vermittlung physikalischer Grundlagen und der biohpysikalischen Interaktion der aktuellen Wellenlängen mit unterschiedlichen Geweben werden vor allem die klinische Anwendung und der Mehrwert für Patient und Behandler in dieser Fortbildung herausgestellt. Eine Vielzahl an Fallbeispielen und ein Hands-on-Training an Präparaten sollen den direkten Bezug zur Praxis sicherstellen. Neben der Vermittlung von Basiswissen wird mit allgegenwärtigen Vorurteilen aufgeräumt und durch erfahrene Spezialisten die Chancen und Behandlungsoptionen des Lasereinsatzes dargestellt. Zielgruppe sind Studierende der Zahnmedizin, Assistenzärzte und interessierte zahnärztliche Kollegen.

Zur Auswahl stehen folgende Kurstermine:
- **16. Februar 2019** (Erwitte)
- **01. März 2019** (Grimmen)
- **22. März 2019** (Köln)
- **29. März 2019** (Berlin)
- **06. September 2019** (Köln)
- **20. September 2019** (Berlin)
- **12. Oktober 2019** (Erwitte)
- **15. November 2019** (Grimmen)

Anmeldung

Die Kursdauer wird pro Termin etwa 4 Stunden betragen. Bestandteil sind eine kurze Lernkontrolle und ein Hands-on-Training. Gemäß den DGZMK-/BZÄK-Richtlinien wird dieser Kurs mit 6 Fortbildungspunkten bewertet. Der Kostenbeitrag liegt bei 30 Euro, allerdings ist die Teilnahme für Studierende mit einem gültigen Studentenausweis frei. Die Kursanmeldung erfolgt über die Geschäftsstelle der DGL, das Anmeldeformular ist entweder auf dgl-online.de oder über den anbei stehenden QR-Code zu finden. Falls Sie teilnehmen möchten, senden Sie uns bitte das ausgefüllte Anmeldeformular entweder per E-Mail an sekretariat@dgl-online.de oder especk@ukaachen.de, per Fax an 0241 803388164 oder per Post an folgende Adresse: Uniklinik Aachen, Abt. für ZPP/DGL, Frau Eva Speck, Pauwelsstraße 30, 52074 Aachen.

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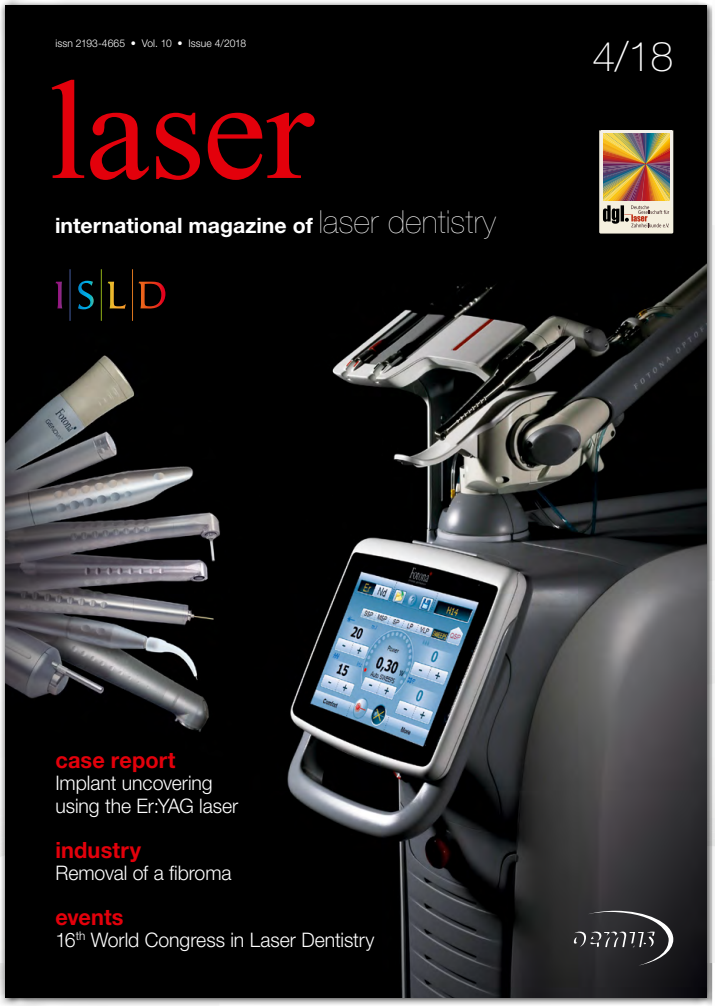

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