By AAID

The American Academy of Implant Dentistry (AAID) announces the attendance of Dr. Ninette Banday, Dr. John Minichetti, Dr. William Locante, and Dr. Robert Schroering at the AAID MaxiCourses®-UAE 2016 – 2017, which will begin August 30, 2016.

The AAID MaxiCourses®-UAE 2016 – 2017 will offer participants a comprehensive, non-sponsored, non-commercial program that focuses on the latest advancements in the field of implant dentistry. The program is divided into five modules, each covering a specific area of implant dentistry, and concludes with a comprehensive examination.

Module 1: Basic Science and Prosthetics
Module 2: Surgical and Prosthetic Protocols
Module 3: Implant Placement and Rehabilitation
Module 4: Advanced Topics in Implant Dentistry
Module 5: Case Examinations

The AAID MaxiCourses®-UAE 2016 – 2017 will be held at the Dubai Dental Center, Dubai, UAE, and is open to all dental professionals interested in implant dentistry. The program is accredited by the Health Authority of Abu Dhabi for 252.75 CME hours.

AAID is attending
11th CAD/CAM & Digital Int’l Conference and
8th Dental Facial Cosmetic Int’l Conference

A UNIQUE OPPORTUNITY
DENTAL IMPLANTOLOGY
In Fulfillment of the Educational Requirement for the Examination for Associate Fellow Membership for the American Academy of Implant Dentistry

The AAID is the only professional organization dedicated to the advancement of implant dentistry. Its mission is to promote excellence and safety in implant dentistry through education and research.

The American Academy of Implant Dentistry has provided comprehensive training programs in implant dentistry for over 30 years. The AAID has over 8000 members worldwide, with over 3000 members in the United States.

The AAID’s MaxiCourses®-UAE 2016 – 2017 is designed to provide comprehensive training in all aspects of implant dentistry, from the basic sciences to advanced clinical procedures. Participants will receive hands-on surgical and prosthetic training, as well as exposure to the latest technologies in the field.

AAID is committed to ensuring that all participants receive the highest level of education and training in implant dentistry. The AAID MaxiCourses®-UAE 2016 – 2017 is an ideal opportunity for dental professionals to expand their knowledge and skills in implant dentistry.

AAID is also attending the 11th CAD/CAM & Digital Int’l Conference and the 8th Dental Facial Cosmetic Int’l Conference, which will be held in Dubai, UAE. The conferences will feature over 15 speakers from the international community who are experts in their respective fields.

AAID is committed to continuing its support of dental education and research, and the AAID MaxiCourses®-UAE 2016 – 2017 is an important part of that commitment.

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Treatment of Peri-Implantitis with the Picasso Diode Laser

A long-term follow-up after debridement and grafting

By Gregori M. Kurtzman, DDS, MAGD, Markus Wolzt, DDS, Ron Kaminer, DDS, Daniel D. Gober, DDS

The prevalence of peri-implant complications is rising significantly as implant treatment increases. Periodontal disease associated with implants can range from gingival inflammation in the absence of bone loss to significant bone loss and mobility of the fixture. The latter can occur when the disease process is not identified early in the process or a “watch and wait” attitude is taken. Treatment has traditionally involved flap elevation and mechanical debridement with surgical hand instruments to remove any granulation tissue present on the implant threads. As a result of the limitations of surgical tools, removal of additional bone might be required to reach areas that are not visible. Success diminishes as more surface area is left untreated.

Diode lasers have several benefits related to peri-implantitis treatment. The small diameter of the flexible glass fiber allows easier and more complete access without the need to remove as much bone as when only surgical instruments are utilized. Additionally, the diode has the ability to sterilize the implant’s contaminated surface, eliminating any existing bacteria and keeping them from preventing healing after treatment. The added benefit of using a diode in these procedures is bioactivation of the mesenchymal stem cells in the surrounding bone and soft tissue, an important tool for regenerative therapy and tissue engineering to provide better healing. Thus, the diode laser is a good adjunct in the treatment of peri-implantitis, improving the clinical results observed with more traditional methods.8

Case Presentation

A 64-year-old male patient presented in June 2000 with a fistula draining on the buccal of the upper right canine. The fistula was located distal to the canine medially in close proximity to the gingival margin (figure 6). A gutta-percha cone was inserted into the fistula to localize the origination point of the draining infection and a radiograph was taken. It was determined that the fistula traced to the apical of the implant situated at site No. 6. Implants had been placed and restored for teeth Nos. 3 through 7 several years previously. The implant was identified as a Branemark Mark III RP (Nobel Biocare, www.nobelbiocare.com) at site No. 4 through 6, and a NobelReplace (Nobel Biocare) at site No. 7. A radiograph was taken to evaluate the underlying osseous structure around the implant, which demonstrated radiolucency associated with the apical of implant No. 6 and residual bone loss with thread exposure under the soft tissue on implant No. 7. Clinically, no recession was noted and no implant mobility was detected.

The patient was informed of the gingival issues and the available options, including removal of the ailing implant, grafting the site, and placing and restoring a new implant after an appropriate healing period. The other option would be elevating a flap, cleaning out any granulation tissue, and treating the site with a diode laser and graft to replace any lost bone.

He was also informed that the latter option meant that the site would need to be evaluated once entered and there was a possibility that the implant would need to be explanted should it exhibit mobility following debridement. The patient chose peri-implantitis repair.

Preoperative antibiotics (2.0 g amoxicillin) were given orally 1 hour prior to the intimation of treatment. A local anesthetic (Septodont, www.septodont.com) was administered for local infiltration on the buccal and palatal of the treatment area. A horizontal incision was made from the distal of the first incisor several millimeters apical to the gingival margin to limit post-treatment recession potential. A vertical releasing incision was made at the mesial and distal extent of the incision to the apical of this implant. Additionally, some dehiscence was noted on the apical of implant. Additionally, a flap, cleaning out any granulation tissue and any horizontal incision and a full-thickness flap was elevated. Upon flap reflection, it was noted that a large dehiscence was present on teeth No. 6 from the crest to several millimeters beyond the apical of this implant. Additionally, some dehiscence was noted on the buccal of implant No. 5 with threads minimally covered with bone over the apical half of the implant.

Site No. 7 presented with 30% to 50% of the threads unreamed and denuded of bone with complete soft tissue coverage. A hand instrument was utilized to remove any gross granulation tissue adherent to the bone and exposed implant threads (figure 5). An activated 300-μm diode tip on the Picasso laser (JADL Lasers, www.jadlaser.com) set at 15 W in continuous mode was used to remove any residual granulation tissue on the exposed threads at the defect and sterilize the defect area. The diode’s fiber tip was placed into physical contact with the implant surface to remove any residual granulation tissue and sterilize the area of any bacteria that contributed to the peri-implantitis, leaving clean threads.

Following debridement and sterilization points in the osseous walls were created.

Geistlich Bio-Oss® (Geistlich Pharmaceutics Inc., www.geistlichusa.com), a bovine bioocompatible porous bone mineral substrate, was placed into the defect around the implant and allowed to absorb blood from the surrounding tissue to form a coagulated mass. The bone graft was built out buccally to create a new buccal plate covering the entire implant below the crestal level (figure 4). A piece of resorbable membrane (Osseos®, Plus, OraPharma, Inc., www.orapharma.com) was trimmed to overlap the osseous graft and end on native bone and was placed over the graft under the flap. The flap was repositioned and secured with nine interrupted sutures using 4-0 VIC to achieve primary closure. A radiograph was taken to document the bone fill of the osseous graft (figure 5). Hemostasis was confirmed and the patient dismissed. A prescription for a Z Pak (Z Pack, Pfizer, www.pfizer.com) was given with the instructions to use as directed until finished. Additionally, a prescription was given for Dolobid® (Merrick & Co, Inc., www.merrick.com) 500 mg for pain to be taken twice daily for the initial 3 days post-surgically. The patient returned after 1 week for suture removal and indicated no significant postoperative discomfort. The site appeared to be healing normally and he was ap- pointed for a follow-up to check healing. At the next postoperative visit, the site appeared healed with a lack of inflammation and the patient was placed on periodontal recall alterna- tive with his general dentist office.

At 5 years post-peri-implantitis treatment, cone-beam computed tomography (CBCT) was used to evaluate the long-term status of the repaired area. The cross-sectional view at the right maxillary canine demonstrated that the grafted buccal plate remained at the position completely covering the implant with no sign of further infection noted (figure 6 and 7). A periapical radiograph confirmed osseointegration (figure 8).

Discussion

Managing peri-implantitis can be a challenge. As this case illustrates, bone loss may be progressing for an extended period of time before the clinician becomes aware of it. Treatment requires a surgical approach to remove the affected tissue that has replaced bone overlaying the implant to achieve any success.

The benefit of the Picasso diode laser is the fiber can be extended into hard-to-reach areas around the implant to achieve better sterilization and debridement without the need to remove additional bone for access, which would be necessary if only debridement with surgical hand instruments was utilized.

Traditional methods have reported mixed results in removing all of the granulation tissue from the exposed implant threads without altering or gouging the implant’s surface or coating. A pulsed Er:YAG laser has also been reported to cause implant surface alterations.

Scanning electron microscope analysis has demonstrated no dam-

Figure 1: Fistula present at the distal of the maxillary right canine in close proximity to the gingival margin.

Figure 2: Initial radiographic presentation demonstrating a large radiolucency around the apical half of the implant at site No. 6.

Figure 3: Following a full-thickness flap and removal of the granulation tissue with the Picasso diode laser, a lack of buccal bone is noted down the entire length to the apical. Figure 4: Osseous graft material was placed into the defect that had been cleaned with the Picasso diode laser and built out to the proper contour for the buccal plate.

Figure 5: Peninsular radiograph taken post-surgically demonstrating defect filled with the osseous graft material.

Figure 6 & 7: CBCT of a cross section (6) and coronal slice (7) of site No. 6 taken 5 years after peri-implantitis treatment demonstrating maintenance of the buccal plate and no return of the initial periodontal problem.

Figure 8: Perimplant radiograph at 5-year follow-up.
Multidisciplinary approach

age or alteration of titanium surfaces from a diode laser, regardless of the power setting. No visible difference between lasered and non-lasered titanium surfaces after irradiation has been reported, ensuring that the result yields the best surface-guided tissue regeneration compared to other mechanical debridement or a Er:YAG laser.

Success in peri-implantitis treatment is strongly linked to the ability to eliminate the bacteria in the site that could hamper regeneration. This becomes more critical with implants that have been surface treated. Treated implant surfaces exhibit micro roughness that are advantageous for initial integration, but also will harbor bacteria when peri-implantitis has occurred. Removal of bacteria in these micro irregularities is difficult by mechanical means.

The diode laser has the ability to decontaminate the exposed surface and threads without any negative effects.

Conclusion

The key to successful peri-implantitis treatment is early identification to limit bone loss from inflammation and infection. The diode laser is a powerful adjunct to treating periimplantitis, allowing better access to eliminate more granulation tissue than when only mechanical means are utilized. This case demonstrates that the protocol can provide long-term predictable results showing 5-year maintenance of the grafted area and an absence of inflammation over that time.

Acknowledgement

Treatment for the case performed by Dr. Markus Weitz.

References

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3. Authors, the reviewer requested an additional reference for this statement. Can you please provide one? Perhaps Dörtbudak O?

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