In Practice

The Expanding Esthetic Practice: Implant Maintenance—Part 1

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When you think about maintaining esthetic restorations, implants may not come to mind. Originally, implants were considered the last option for providing limited oral function for mastication and speaking. Little, if any, thought was given to esthetics beyond what was necessary to achieve the functional goal. In fact, patients were willing to settle for nonesthetic and exposed implant components so they may eat and speak without their teeth falling out. With the advances that have been made in osseointegration technology, implant design, and biocompatible materials, implant use has expanded from purely functional to now include esthetic considerations.

During the past 15 years, the indications for implant placement have fully evolved. Previously, a patient who had lost teeth because of periodontal disease or neglect was not considered as an implant candidate, much less a candidate for esthetic dentistry. After all, if their teeth were lost because of poor oral care or periodontal disease, then why would they be considered for implants? Why would a patient with periodontal disease care about how their smile looks? With a myriad of implant systems now available more patients with tooth loss can have healthy and beautiful smiles.

For example, a 3-unit anterior bridge may have once been the most esthetic option for replacing a missing tooth. Now, 2 single crowns or veneers placed along with an implant can now yield a beautiful esthetic result with the implant being nearly undetectable (Figures 1 and 2). We now know that a history of periodontal disease or dental neglect does not necessarily predispose implants to failure or loss. With proper professional and patient care, esthetic implant dentistry can be a beautiful, long-term, and successful alternative to more traditional restorative options.

Proper Implant Maintenance

In-Office Hygiene Care

Hygiene maintenance visits can involve the care of dental implants integrated with a patient's other esthetic dentistry. The techniques and instruments used by the hygienist in maintaining dental implants are slightly different than traditional maintenance protocols. Periodic periodontal probing is not recommended, unless there is a specific clinical indicator. And where as selective coronal polishing may be indicated, routine scaling may not.

Without proper instruction given by the hygienist, a patient may wrongly assume implant care is the same as their natural teeth or more conventional restorations. Coordinated professional care and patient education about dental implants aids in the maintenance of esthetically restored implants.

Probing

A baseline periodontal probing and charting should be done when osseointegration has been confirmed and the final restoration is complete. The perimucosal seal of the implant is fragile and more susceptible to trauma from probing than a natural periodontal ligament; therefore, this author and her employers believe that subsequent implant probings should be based on a clinical indication such as a change in the tissues, mobility, patient-reported symptoms, or radiographic indications.

When a periodontal probing is indicated, it must be done using a plastic or plastic-coated probe specifically designed for implants. These probes, such as Colorvue (Hu-Friedy Manufacturing Company, Inc) or PDT Sensor Probe (Pro-Dentec [Professional Dental Technologies, Inc]) (Figure 3), help to ensure that only the necessary amount of pressure is used during probing. Plastic probes will lessen the likelihood of scratching the implant's titanium surface implant or damaging the epithelial fibers surrounding the implant. The plastic probe should only be used with the implant and not around the natural teeth—minimizing the introduction of bacteria into the peri-implant area.

Another recommendation is to dip the probe tip into chlorhexidine before and during probing.

Figures 1 and 2—*A major change in dental practice includes the esthetic demand for natural appearing restorative results involving implants. Now 2 single restorations placed along with an implant can yield a beautiful esthetic result.*

Figure 3—*A plastic, pressure-sensitive probe can be used safely around implants.*

Radiographs

Radiographic evaluations are more valuable for implant assessment than probing. Annual vertical bitewing x-rays can still be diagnostic for areas of 1 to 4 implants, but should be supplemented with periapical films as well. If a patient has 5 or more implants, a panoramic radiograph should be taken every other year and supplemented with periapical films as deemed necessary. Implant radiographs should be screened for any changes in the bone-to-implant interface and for bone level (height) changes. An implant that is losing bone on the mesial or distal surface will show a radiolucent area where the periodontal ligament is typically located. Bone loss on the facial or lingual surface will not be observable radiographically, but typically a tissue change will be observed and further evaluation required.

Guest Author
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Digital radiographs are perhaps the best tool for examining implants. Digital radiography provides a clear and easily studied image. The digital radiograph can be manipulated to provide contact, color, and magnification. The "eagle-eye" feature on the Sirona system [**QA: Which system?**] is especially helpful when examining bone-to-implant surfaces.

Intraoral Examination

Whereas the periodontal probe is the instrument of choice for assessing the health of gingival tissues and the underlying bone supporting natural teeth, implants require a more subjective clinical examination. The tissues surrounding an implant should be checked during routine hygiene visits for redness, swelling, tenderness, bleeding, suppuration or "pulling away" from the implant. Any changes, even minor ones, should be noted and investigated. It is helpful to document the tissue status, healthy

Figure 4—When indicated, subgingival irrigation around implants should be accomplished using a plastic irrigation tip. This pocket probe tip is attached to the ProDentec irrigation handpiece.

or not, by using an intraoral camera so that accurate comparisons can be made during periodic hygiene visits.

The implant exam should also include a check for mobility. Mobility can be the result of several things and, if noticed, should be referred to the dentist for evaluation. If the implant or the abutment appears to be loose, a radiograph can help determine the cause of the looseness. Common causes include cement washout or loosening of a retention screw. Access holes for screw-retained fixtures should be checked and relined as needed. Changes in the patient's occlusion may also affect the stability and lifespan of an implant. A simple occlusal screening using articulating paper or the T-Scan II (Tekscan, Inc) is suggested annually.

Locally Applied Chemotherapeutics

If tissue inflammation or radiographic bone level changes are observed, it does not necessarily mean the implant has or will fail. Early intervention with a locally applied antibiotic or antimicrobial, such as Arestin (OraPharma, Inc), Atridox (CollaGenex Pharmaceuticals, Inc), PerioChip (Omni Oral Pharmaceuticals) or Dentomycin (currently only available in Europe and Canada [**QA: Who is the manufacturer?**]) may help to slow or reverse the inflammation. Another alternative to localized treatment with anti-infectives is subgingival irrigation with an antiseptic agent such as peroxide, Listerine (Pfizer, Inc) or chlorhexidine. Peri-implant irrigation should be done with a plastic irrigation tip specifically designed for safe use around implants (Figure 4).

For patients prone to occasional tissue inflammation, an at-home regiment of daily cleansing with Listerine or chlorhexidine using a soft manual (Nimbus Microfine, Nimbus Dental) or power toothbrush may be helpful. The Rotadent (Pro-Dentec [Professional Dental Technologies, Inc]) plaque removal instrument is ideally suited for applying medications directly under and around the tissues of an implant during daily cleaning. The densely compacted microfilaments of a Rota-dent are hydrophilic (ie, absorb liquid). When gentle pressure is applied to the implant tissue margin with the Rota-dent brush head, previously dipped into a liquid medicament, Listerine or chlorhexidine is expelled gently under the tissues and at the site needing treatment. Site-specific application of chlorhexidine or another anti-infective solution is better than rinsing, as it will not only treat the exact area indicated but will help to remove plaque, control staining, and decrease tartar buildup at the same time. ■

Next month, the author will focus on scaling, polishing, at-home care, interproximal cleaning, brushing and using intraoral cameras for proper implant maintenance.