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Perio News

*... this newsletter represents our opinion about
current periodontal technologies / procedures...*

2014

Peri-Implant Disease

Introduction

Dental implants represent the closest replacement of natural teeth. In healthy patients, success rates range from 96-98%. A "success" means the implant functions as intended; however, this does not mean that an implant is immune from complications like soft tissue and bone infection/inflammation.

Peri-implant disease research is still relatively new. While effective diagnoses and treatments do exist, standardized diagnosis and treatment criteria have yet to be formalized.

This newsletter covers the most current information on peri-implant disease and serves as a resource to help you correctly detect, diagnosis, prevent, treat, and, when needed, refer patients. As the subject develops, we will continue to provide you with the most current information.

Peri-Implant Disease

Peri-implant mucositis and Peri-implantitis occur due to infectious plaque accumulation on the dental implant. These disease processes are similar to pathogenesis of periodontal disease.

Peri-implant mucositis (similar to gingivitis) involves the presence of inflammation confined to the soft tissues around an implant with no signs of loss of supporting bone following initial bone remodeling during healing.

Peri-implantitis (similar to periodontal disease) involves soft tissue inflammation and progressive loss of support bone beyond initial bone remodeling during healing.

Prevalence

In 2013, an estimated one million implants were placed worldwide. A recent study found that **peri-implant mucositis had developed in 48% of implants after 9 to 14 years.** Peri-mucositis is quite reversible with early intervention.

Because various thresholds have defined peri-implantitis bone loss at different probing depth changes, the estimates vary widely. **The most accepted occurrence rate of peri-implantitis is about 10%.**

More Serious

The soft tissues attach to teeth forming a resilient barrier preventing plaque migrating along a tooth. With implants, soft tissues only adhere to the abutment and implant (above the bone) forming a perimucosal seal. This seal is sufficient to "protect" the implant as long as plaque control is achieved.

Also, infection infiltration around implants extends deeper than periodontal lesions causing pronounced soft tissue inflammation and bone destruction.

Causes of Peri-Implant Disease

Like Periodontal Disease, many factors contribute to the development of peri-implant disease. A single contributing factor is unusual. Contributing factors fall within one of three main categories. The factors under each category are listed in order of importance.

Dental Factors

- Excess Cement *
- Occlusal Overload
- Loose Implant Components
- Poorly Positioned Implants
- Inadequate Keratinized Tissue
- Untreated Adjacent Caries

Patient Health Factors

- Untreated Periodontitis
- Bruxism & Malocclusion
- Diabetes
- Osteoporosis
- Drugs & Medications

Patient Behavior Factors

- Smoking
- Poor Oral Hygiene
- Bruxism

*** Excess Cement**

Cement, the most common problem may not be visible on a radiograph. In addition, soft tissue tightness can hamper removal. Excessive cement can initiate disease anywhere from **4 months to 9.3 years** after prosthetic cementation. Fortunately, removal of this excess cement alleviated the condition in 76% of those treated.

Because so many factors contribute to peri-implant disease, it can even occur in patients who pay a great deal of attention to their oral hygiene. Periodic dental exams and routine cleanings are the best preventive measures.

Implant Evaluation Criteria

Once an implant has integrated, completing all baseline measurements establishes a good reference point to determine the health status of a dental implant. Patient histories and behaviors along with clinical and radiographic assessments are the standard way to evaluate changes and are necessary to determine the cause(s) of disease.

We will review the pertinent baseline measurements and the assessment frequency in the next sections.

Peri-Implant Examination Initial Baseline Measurements

Patient history and behavior

- Oral hygiene assessment and review
- Current medication review
- Pain and/or tenderness check
- Para-functional habit

Clinical Examination (Each Visit)

- Redness, Swelling, Inflammation
- Tissue color
- Tissue Consistency
- Signs of excess cement
- Signs of mobility
- Presence/absence of keratinized/attached gingiva
- Mobility / looseness
- 6 point probing depths (light force)*

Probing Depths (Each Visit)

- Bleeding on probing
- Exudate / suppuration
- Change from baseline
- Can use a plastic or metal probe

Other Tests (Annual or as needed)

- Periapical radiographs
- Check occlusion

Healthy Dental Implant

- No plaque
- No pain or tenderness
- Soft tissue pink and tight
- Attached/Keratinized tissues present
- Probing depths 1-5mm; no BOP
- Bone level from implant shoulder to 2mm apical to implant shoulder
- No radiographic cement
- Closed restorative margin
- Shim stock pulls through in CO/CR
- No excursive or protrusive contacts
- No mobility

Peri-Implant Mucositis

- **Reversible if detected early**
- Redness, swelling, inflammation
- Bleeding on probing
- Exudate / Suppuration
- No bone loss
- No change in baseline findings

Peri-Implantitis

- **Any signs below—increase maintenance/cleaning intervals**
- Signs of peri-implant mucositis
- Changes from baseline findings
- Probing depth changes > 2mm
- Bone loss > 1mm
- Mobility of implant possible

Periodic Maintenance

Pocketing around dental implants can naturally be 4-5 mm because of implant remodeling during initial healing. Professional implant maintenance and cleanings at least every 6 months is important for plaque control and to identify any problems as soon as possible.

Maintenance frequency should be changed to every 3-4 months for any implant with signs of peri-implant disease.

Peri-Implant Mucositis Treatment

- Similar to prophylaxis therapy
- Non-surgical debridement
- Possible chemotherapeutics
- Oral hygiene review
- 30 day follow-up
- Tight Maintenance follow-up

Peri-Implantitis Treatment

- Surgical Debridement
 - Implant surface detoxification
 - Bone grafting of osseous defects and / or
 - Laser Assisted Implant Therapy
- Adjunctive Systemic Antibiotics
- 30 Day Follow-Up
- Tight Maintenance follow-up
- 6 month healing then reassessment

The loss of a dental implant is traumatic. Peri-implant disease can develop rapidly due to many factors. Periodic evaluations and maintenance therapy are highly recommended to prevent peri-implant disease and to diagnose issues as quickly as possible. The beginning stages of peri-implant mucositis can typically be treated in the general dentist setting. Since peri-implantitis causes bone loss due to plaque accumulation on the roughened implant surface, detoxification of the implant surface is critical. The Nd:Yag laser (laser assisted implant therapy) and guided bone regeneration (bone grafting around the implant) are excellent options for slight—moderate and moderate—severe bone loss, respectively. We feel our understanding and training on peri-implant disease can offer your patients options to stabilize an ailing or failing implant. Our goal is to reverse as much of the bone loss if possible. Implant removal may still be a recommended in some situations.

We are happy to evaluate, diagnose, and treat peri-implant disease cases. Of course, you may wish to refer the patient back to the surgeon who originally placed the implant(s) for evaluation. Please contact us if you have any questions regarding the newsletter or recommendations in this newsletter.

1. Peri-Implant Mucositis and Peri-Implantitis: A Current Understanding of Their Diagnosis and Clinical Implications. Journal of Periodontology, 2013. Vol 84, #4.
2. The Positive Relationship between Excess Cement and Peri-Implant Disease: A Prospective Clinical Endoscopic Study. Thomas G. Wilson Jr. Journal of Periodontology, 2009. Vol 80, #9.
3. The Case for Routine Maintenance of Dental Implants. Thomas G Wilson Jr, Pilar Valderrama, Danieli BC Rodrigues. Journal of Periodontology, 2013.

***If you have any questions or comments, please call or email drvank@trvperio.com.
We appreciate any feedback and will be happy to discuss in further detail any
thoughts or questions you may have. www.trvperio.com***

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