

# Peri-implant Diseases

## A Review of Treatment Interventions



Georgios E. Romanos, DDS, PhD, Prof. Dr. med. dent<sup>a,\*</sup>, Fawad Javed, BDS, PhD<sup>b</sup>, Rafael Arcesio Delgado-Ruiz, DDS, MSc, PhD<sup>c</sup>, José Luis Calvo-Guirado, DDS, MS, PhD<sup>d</sup>

### KEYWORDS

- Guided bone regeneration • Laser • Nonsurgical • Peri-implantitis
- Peri-implant mucositis • Surgical • Treatment

### KEY POINTS

- Risk factors of peri-implant mucositis and peri-implantitis are comparable to those of gingivitis and periodontitis.
- The ideal management of peri-implant diseases focuses on infection control, detoxification of implant surfaces, regeneration of lost tissues, and plaque control regimens via mechanical debridement.
- Implantoplasty (modification in implant surface topography), when used in combination with resective surgery, has been reported to significantly reduce the clinical parameters of peri-implantitis.
- A new technique, laser-assisted peri-implantitis protocol, is under investigation.
- There is lack of standardized treatment protocols for peri-implant disease.

Several studies<sup>1–6</sup> have reported that dental implants are functionally stable and have long-term success rates, and are therefore increasingly being used in the oral rehabilitation of partially and completely edentulous individuals. However, with the increasing number of patients receiving dental implants, the prevalence of inflammatory conditions around a dental implant has also escalated.<sup>7</sup> The consensus report from the 6th European Workshop on Periodontology has defined peri-implantitis as the presence of inflammation of the peri-implant mucosa and simultaneously loss of supporting bone.<sup>8</sup> In addition, it has also been described as a site-specific infection that

---

Conflict of Interest and Financial Disclosure: None declared.

<sup>a</sup> Department of Periodontology, School of Dental Medicine, Stony Brook University, 106 Rockland Hall, Stony Brook, NY 11794-8700, USA; <sup>b</sup> Engineer Abdullah Bugshan Research Chair for Growth Factors and Bone Regeneration, 3D Imaging and Biomechanical Laboratory, College of Applied Medical Sciences, King Saud University, Derriyah, P.O. Box 60169, Riyadh 11545, Saudi Arabia; <sup>c</sup> Department of Prosthodontics and Digital Technology, School of Dental Medicine, Stony Brook University, 1103 Westchester Hall, Stony Brook, NY 11794-8712, USA; <sup>d</sup> Faculty of Medicine and Dentistry, Hospital Morales Meseguer, University of Murcia, 2º Planta Clínica Odontológica Calle Marques de los Velez S/n, Murcia 30007, Spain

\* Corresponding author.

E-mail address: [Georgios.Romanos@stonybrook.edu](mailto:Georgios.Romanos@stonybrook.edu)

Dent Clin N Am 59 (2015) 157–178  
<http://dx.doi.org/10.1016/j.cden.2014.08.002>

[dental.theclinics.com](http://dental.theclinics.com)

0011-8532/15/\$ – see front matter © 2015 Elsevier Inc. All rights reserved.

exhibits features comparable to those of chronic adult periodontitis.<sup>9</sup> In indexed literature, there is a variance in the prevalence of peri-implantitis. Mombelli and colleagues<sup>10</sup> estimated the prevalence of peri-implantitis to be in the order of 10% implants and 20% patients during 5 to 10 years after implant placement; and Koldland and colleagues<sup>11</sup> reported the prevalence to range between 11.3% and 47.1% in their study population. Moreover, in a recent study on Belgian adults, the prevalence of peri-implant mucositis and peri-implantitis was 31% and 37%, respectively.<sup>12</sup> It has been suggested that peri-implant mucositis and peri-implantitis are analogous to gingivitis and periodontitis, respectively.<sup>13</sup> However, it is pertinent to mention that biologic differences exist between natural teeth and implants. Therefore, the progression of infection around implants and natural teeth is also divergent. Moreover, tissues around implants are more prone to plaque-associated infections that spread into the alveolar bone.<sup>14</sup>

The ideal management of peri-implant diseases focuses on infection control, detoxification of implant surfaces, regeneration of lost tissues, and plaque-control regimens via mechanical debridement (with or without raising a surgical flap).<sup>15,16</sup> However, a variety of other therapeutic modalities also have been proposed for the management of peri-implantitis. These treatment strategies encompass use of antiseptics and/or antibiotics, laser therapy, guided bone regeneration, and photodynamic therapy.<sup>16-23</sup> The aim of this article was to review indexed literature with reference to the various therapeutic interventions proposed for the management of peri-implant diseases.

#### PERI-IMPLANT DISEASES: PERI-IMPLANT MUCOSITIS AND PERI-IMPLANTITIS

Peri-implant diseases are categorized into 2 types: peri-implant mucositis and peri-implantitis. Peri-implant mucositis is characterized by inflammation of the soft tissues surrounding the implant without any signs of bone loss (Fig. 1).<sup>8</sup> The clinical signs of peri-implant mucositis include bleeding on probing (BOP) and/or suppuration, which are usually associated with probing depth (PD) of at least 4 mm with no evidence of radiographic loss of bone.<sup>24,25</sup> It has been reported that inflammatory cell lesions in sites with peri-implant mucositis are dominated by T cells and have an apical extension that is restricted to the barrier epithelium.<sup>26</sup> Peri-implant mucositis is usually reversible (when early diagnosis and removal of etiology are implemented)<sup>27,28</sup>; however, it is considered as a precursor to peri-implantitis.<sup>8</sup>

The term “peri-implantitis” was introduced in literature more than 3 decades ago.<sup>9</sup> This term was modified in the 1990s to describe an inflammatory process around an implant that includes both soft tissue inflammation and progressive loss of supporting bone beyond biological remodeling (Figs. 2 and 3). In general, the clinical definition of

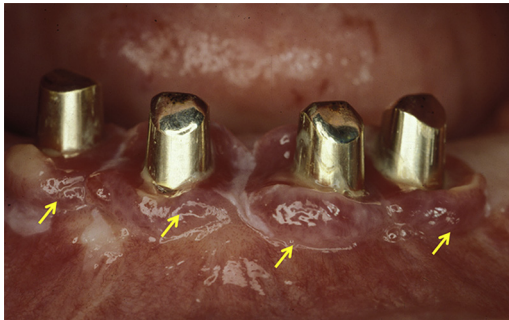


Fig. 1. Clinical presentation of peri-implant mucositis (yellow arrows).

Download English Version:

<https://daneshyari.com/en/article/3130540>

Download Persian Version:

<https://daneshyari.com/article/3130540>

[Daneshyari.com](https://daneshyari.com)