

Dental Implants

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Introduction

Since my research interest is surface modification of dental implant, let me throw my thought on dental implant surfaces onto future authors ground. When any two (either similar or dissimilar) material surfaces are in contact, an interfacial layer (or zone, depending on its thickness) can be created. The interface between placed foreign dental implant and receiving vital hard/soft tissue is not an exception in this category, and the thus formed interface between implant and bone should play a crucial role for controlling the longevity of placed implants. There are two ways to investigate such an interface; one is biomaterial science approach, looking at the interface from material science and engineering viewpoint, and the other is biological approach. Results from both disciplines should be integrated to elucidate the implant surface which is fused by vital bony cells (in one word; Osseo integration). To establish successful Osseo integration, there have been various surface modifications

proposed including mechanical surface grinding and machining (which is recognized as the 1st generation of surface modification of Titanium dental implant), sand-blasting, acid-etching and/or anodic oxidation to conduct a morphological alteration (as the 2nd generation), HA coating and alkaline treatment as physiochemical surface activation (as the 3rd generation), and biochemical surface activation such as immobilization of collagen, BMP, peptide, gelatin, etc. (as the 4th generation and we are just in this generation). This trend should be followed by the next generation of biological surface coating of tissue, stem cell and others. Valuable information obtained throughout the aforementioned surface activation and engineering can also be applied to orthopedic implant systems including total hip or knee replacements. Although I have been talking only about the implants, there could be more areas in dental oral health care where interdisciplinary or Tran's disciplinary approach is highly required. We are looking forward to seeing your excellent research works in all areas within the scope of this journal.

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