Smart Tempcap

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Technology description

Background

A number of biomechanical and biological factors contribute to the success of dental implants. Although many factors influence osseointegration, implant design is particularly important in determining the success of an implant. Researchers at Western University have developed a novel abutment, combining a healing cap/cover screw and provisional abutment, termed the Tempcap (U.S. Patent No. US9408677B2, 2016).

This novel abutment and process for temporization addresses the functional, esthetic, and financial disadvantages of many mainstay provisional prosthetics. The Tempcap construct and workflow allows for optimal gingival healing and sulcus formation around the implant, and minimizes the transfer of micro-vibrations and heat associated with the fabrication of provisionals.

Keywords

dental implants, implants, smart tempcap, biomaterials, prosthetics

Application area

• The Tempcap presents a novel approach that simplifies the provisional process by providing a predictable, efficient and cost-effective treatment alternative.
• Coupling of the smart abutment will allow for assessment of key parameters
• This will result in early detection and intervention with the patient seeking a professional dental examination
• Effective alternative to implant provisionals

Advantages

The Tempcap is a dental abutment and process that has been researched and patented. To further advance the technology, researchers at Western University are proposing coupling the abutment with a sensor within the substructure to create a novel smart abutment. A smart abutment would assess key parameters. Variations from normal would alert the patient to seek a professional dental examination. Currently, patients are only assessed at fixed intervals. With the smart abutment, early detection would prompt timely intervention and resolution, resulting in a more predictable and successful treatment

outcome. The current advancement will enable uniqueness in design, functionality, early detection and timely intervention.

Institution

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