Extended Abstract Advances in Antibiotics & Antibodies 2021
Vol.5 No.3

The concept of CAI allows a surgical- prosthetic therapeutic approach different from a so-called "conventional"?

Zenati
University Saad Dahlabof Blida, Algeria

Abstract:

Implantology has made a huge progress in recent years, not only through the development of implants (design, surface finish, connections...) but even because of CAD/DAM. CEREC system coupling to CBST helps to determine the implant site but also the choice of type of implant, the design and positioning in 3D. The prosthetic project is modeled virtually (digital wax up) and the surgical guide is designed by (CAD)
This new implant approach ensures speed, accuracy with many limitations: lack of access to post sites, the surgical guide depends on the type of tooth loss (dental, mucous, bone) with its risk of fracture. Apical deviation of the position of the implant between the virtual planning and actually obtained implant position ranging between 0.6mm and 1.2mm. The Concepts have evolved and today IAO seems to be emerging as a sub discipline through the many contributions and interest it conveys: it could well sign the evolution of a new era.

A full-arch rehabilitation of the edentulous upper jaw without grafting procedures exploits the residual alveolar or the basal bone, with the necessity of long implants placed with a particular orientation. The precision in planning and placing the fixtures is fundamental to avoid clinical problems and to allow an acceptable connection with the prosthesis. The computer-aided Implantology resulted in more accuracy than the traditional one, with a high standard of correspondence between the virtual project and the real outcome. This paper reports about the two different digital protocols, static and dynamic, as support to implant-borne prosthetic rehabilitation of edentulous maxillae. Two pterygoid and two/four anterior standard implants were seated in both cases by two different operators, without flap rising, and immediately loaded. This approach avoided the posterior cantilever by-passing the maxillary sinus and was adequately planned and realized without any surgical or prosthetic error. The two digital flow-charts were described step by step, underlining each other's advantages and drawbacks compared to a free-hand approach.

Staphylococcus comprises up to two-thirds of all pathogens in orthopedic implant infections and they are the principal causative agents of two major types of infection affecting bone: septic arthritis and osteomyelitis, which involve the inflammatory destruction of joint and bone. Bacterial adhesion is the first and most important step in implant infection. It is a complex process influenced by environmental factors, bacterial properties, and material surface properties and by the presence of serum or tissue proteins. Properties of the substrate, such as chemical composition of the material, surface charge, hydrophobicity, surface roughness and the presence of specific proteins at the surface, are all thought to be important in the initial cell attachment process. The biofilm mode of growth of infecting bacteria on an implant surface protects the organisms from the host immune system and antibiotic therapy. The research for novel therapeutic strategies is incited by the emergence of antibiotic-resistant bacteria. This work will provide an overview of the mechanisms and factors involved in bacterial adhesion, the techniques that are currently being used studying bacterial-material interactions as well as provide insight into future directions in the field.

In recent years, dental implant rehabilitation has faced demands from prosthetic and aesthetic arenas that call for increasingly ideal outcomes, which require a precise surgical planning and placement. Anatomic limitations and bone quantity and quality can now be evaluated by using more sophisticated radiographic techniques, although transferring this information to the surgical phase has been at best a difficult task. Recently, computer-aided design and manufacturing have made it possible to use data from computerized tomography to not only plan implant rehabilitation, but also to transfer this information to the surgery. One of these techniques uses stereo lithography, a laser-driven polymerization process that fabricates an anatomic model and surgical templates. This novel approach not only allows the precise translation of the treatment plan directly to the surgical field, but it also offers many significant benefits over traditional procedures.

The production of reformatted cross-sectional and panoramic image data which is presented as life-sized on an X-ray film or as a booklet of photographic-quality prints has long been practiced. A new alternative is now available: a surgery which is planned on the computer can be translated to the operation itself. That is, the 3D data which is obtained can be fed into a computer to assist with fulfilling the following primary objectives of implant planning: determination of available bone quantity and quality, identification of nearby critical anatomic structures, detection of pathology, selection of actual implants from soft-ware-based libraries and catalogs, and simulation of the surgical placement of implants which have been superimposed on 3D images, at their planned host sites.

Correct management of the tissues with minimal trauma and minimization of the need for decision making at the time of implantation. 3D technology allows a precise evaluation of anatomic points such as the size of the maxillary sinus in the upper jaw and location of the alveolar nerve in the lower jaw.

When it is fabricated on diagnostic study casts, the soft tissue is a rigid, non-functional representation and it does not provide information on the varying thickness of the mucosa, topography of underlying bone, or vital anatomical structures that lie within. In addition, the limitations of conventional dental radiography with regards to dimensional accuracy and inability in visualizing anatomical structures in parasagittal sections further hinders accurate evaluation.