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Editorial

Patient Specific Implant – A Reliable Alternative to Atrophic Maxillas

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Editorial

The increasing demand for fixed teeth brings new challenges for the oral surgeons to fulfill the patient's desires. More and more often the clinician faces hard and soft tissue atrophies which are very difficult to treat with the conventional root-form implants. In these cases, a not-so-new approach has been more widely used in alternative to zygomatic implants or major bone grafts: The Patient Specific Implant (PSI).

This type of implant, the customized subperiosteal implant, was first described by Dahl in 1943. However, at the time the technique brought many disadvantages starting with the relatively low survival rate of the structures and patient morbidity. This can be explained because Dahl used an over-the-mucosa impression technique which resulted in a poor fit and the implant was not made in titanium thus leading to poor osteointegration and soft tissue response [1]

Technology has evolved and we currently have better imaging devices and CAD-CAM systems, as well as 3D printing hardware. Therefore, we are now able through tissue engineering to treat orthopaedic diseases or trauma problems by manufacturing biocompatible scaffolds [2]. Hence the development of the Patient Specific Implants.

Figure 1: Patient Specific Implant - placed by Dr. Vítor Brás and Dr. César Vieira, Smile.up Clinic Lisbon.

Even though there are some disadvantages associated with this approach, such as a larger incision and flap opening and a more complex technique, PSI bring some advantages like the possibility of

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immediate function and no bone graft surgery is needed prior to its installation [3]. Furthermore, some studies suggest that PSI have a lower psicossocial impact on patients and higher levels of oral health related quality of life [4].

PSI's have been around the array of peer-accepted treatments for the last decades, but just now has it been given more attention by the researchers. One of the longest longitudinal studies has been performed at the University of Missouri Kansas City (UMKC) School of Dentistry which have looked back 18 years to discover that of the 40 PSI's placed 39 had survived with stability and function, the only one who didn't survive was due to the death of the patient with a heart attack [5].

Nevertheless, we must keep in mind that even though we now have more sophisticated means, there's no perfect artificial system in the human body and more studies are needed to improve this technique [1].

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