

ON ONE OF THE LATEST FASHIONS: ZYGOMATIC IMPLANTS

One of the procedures which is currently more discussed in courses and conferences is the use of pterygoid, transnasal and zygomatic implants in the rehabilitation of maxillary edentulism. I wish to focus more specifically on zygomatic implants.

Zygomatic implants were invented by Prof. Brånemark in the attempt to rehabilitate extremely atrophic maxillae, since previous attempts with large autogenous bone grafts from the iliac crest did not provide the hoped for results. A revaluation of bone grafting procedure after 20 years of experience showed results which were not particularly encouraging, since these procedures are time-consuming, painful, prone to complications, expensive and not really long lasting. Therefore, Brånemark had the idea of using a different type of a bone which had the ideal characteristics to host dental implants when compared to atrophic or grafted maxillae: the zygomatic bone.

Since zygomas are not close to the crestal bone, it was necessary to design very long implants (4 to 5.5 cm long), longer than the conventional dental ones in use. The main problem with these, however, was the exit point of the implants in the maxilla. The original idea was to keep the implants completely inside the maxillary sinus; however, implants were exiting more on the palatal side than on the crestal bone accompanied by all the related difficulties in making cleanable prostheses accepted by the tongues of patients. Complications were common and often difficult to manage, though this remained the most reliable solution for patients with severely atrophic maxilla.

At that point, many authors began working to improve the technique, which was achieved by moving the insertion point more crestally moving and the implant body more vestibularly so that the implants only partially penetrate the sinuses; the implant design was changed, leaving the implant threads only in the apical portion that should engage the zygoma; drills were made more precise, less traumatic, and special inserts for piezosurgery were designed, and more effective angulated abutments were created. This drove the marketing by companies and opinion leaders to be more and more aggressive, and zygomatic implants started to be used "off-label" (the original indications were strict, i.e., only when any other form of conventional short or tilted implants could not be used). This induced a widespread use of zygomatic implants also in those situations where a more conservative and safe approach might have been more appropriate.

Complications of zygomatic implants are under reported in the scientific literature, and more and more less experienced operators are approaching this technique. However, the placement of zygomatic implants requires accurate planning, a great deal of surgical and prosthetic experience and, moreover, the surgical skill to deal with complications which may occur at the zygoma, orbit, in the maxillary sinus, etc. Therefore, in my personal view, treatment of the very small number of patients who require zygomatic implants should be left to a few very experienced maxillofacial surgeons who have had specialist training with this technique. Wisdom dictates that even skilled dentists should focus on alternatives to zygomatic implants, first among which the careful insertion of few strategically placed conventional implants in atrophic maxillary bone. After all, it is always better to be safe than sorry.

Wishing you a thought-provoking read,

Marco