



20 Years of Zygoma Implants: Editorial

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Editorial

Everything related to zygomatic implants started to me in 1998, when a young patient showing a totally atrophied maxilla came to my office asking for an implant based therapy. She was an “oral handicapped” person and she was asking for a predictable treatment. It was surprising to me to see we had no documented tools or techniques to solve this problem. As a very young medical doctor and Oral and Maxillofacial surgeon I was familiarized with more dramatic problems (facial deformities, oncological and reconstructive surgery...) and it was really confusing to see there were very little clinical studies and/or research on this topic: the extremely resorbed maxilla.

By chance, one sales representative from Nobel Biocare told me about zygoma implants. Dr Malevez, from ULB was starting to give courses in Brussels and had been working on them in collaboration with Gotheborg Branemarck Osseointegration Center: they all had very high survival (nearly 100%) rates and showed very promising results.

I attended a course in March 1999 and started with this technique one month later. It was really impressive to check the predictability of this concept, and from 1999 to 2004, I was using these implants by means of a two-stage approach, waiting 6 months to load the prosthesis.

From 2002 to 2004 some clinical studies started to be published (Bedrossian, Malevez), including multicenter studies involving 16 centers (Hirsch et al): all of them showed very high survival rates with low level of complications. That's why, encouraged by my own results and by the Scientific literature, we started with the immediate function protocol in 2004. It was the topic of my PhD dissertation and the origin of different clinical studies, papers and training and education activities.

In those days, zygomatic implants were used in combination with standard implants, but the problem of the total absence of bone remained unsolved, because we still needed a graft for the anterior maxilla.

Dr Chantal Malevez had experience in the placement of 4 well distributed zygomatic implants using a 2-stage approach, and with her collaboration, I decided to start a prospective study on the quad zygoma concept using immediate loading protocol (2006) Very promising results have been published on that (Davó).

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During the last decade, advantages of zygomatic implants in terms of avoiding the need of bone grafting, shortening treatment duration and reduction of morbidity have been extensively recognized. However, despite the high short- and long-term success rates of these implants, there is no consensus in the literature about the ideal surgical technique for their placement. The goal of all these different approaches is to insert the apical part of the implant at the level of the zygoma bone. Nevertheless, the relationship of the rest of the implant with the sinus membrane and sinus cavity and with the lateral wall of the maxilla varies from one technique to the other. So the different approaches have represented an evolution of the technique in order to:

1. Minimize the potential sinus complications, and
2. Improve the emergence of the implant on the alveolar crest, without compromising the reported high survival rates for this implant.

Further more different changes on the design of the implant have been performed in order to facilitate these approaches, and more and more manufacturers of implants are interested on the development of new designs.

In 2011, Aparicio developed a classification system based on basic skeletal forms of the zygomatic buttress-alveolar crest complex and implant pathways present in different clinical situations. The Zygoma Anatomy Guided Approach (ZAGA) and proposed a logical and electrical way of placement the implants depending on the anatomy of the patient (Aparicio).

It has been clearly stated it is necessary to check the sinus health before the placement of the zygoma implants, and the Functional endoscopic Nasal Surgery is the appropriate therapy for patients presenting recurrent sinus problems wearing zygoma implants.

The first randomized clinical trial comparing zygoma implants and grafts (biomaterials) was published last year. (Expósito, Davó) In this study, we showed better results for zygomatic implants, not only from the survival rates perspective but from the time of treatment. Zygoma implants rehabilitate patients presenting extremely resorbed maxillae in 1 day and biomaterials in more than one year. The Oral Health related quality of life parameters are normal when the patient is wearing zygoma implants.

Guided surgery and navigation remains controversial but promising, since very little studies have been performed on this topic. We have learned that with a good planning and a good selection of patients, the complications can be prevented and managed.

For all these reasons “zygoma concept” is now spread all over the world and many patients are rehabilitated in a safe, quick and predictable way by using it.