

Immediately loaded zygomatic implants vs conventional dental implants in augmented atrophic maxillae: 1-year post-loading results from a multicentre randomised controlled trial

ABSTRACT

The presence of insufficient bone volume can limit dental implants placement and so several bone augmentation procedures with different grafting materials have been developed in order to allow a correct implant anchorage. In case of severely atrophic maxillae, zygomatic implants can be an alternative to conventional bone augmentation and implant rehabilitation. The aim of this randomised controlled trial (RCT) of parallel group design was to compare the clinical outcome of immediately loaded cross-arch maxillary prostheses supported by zygomatic implants vs conventional implants placed in augmented bone. Patients with totally edentulous atrophic maxillae were randomly allocated to bone augmentation with a bone substitute and six to eight conventionally loaded dental implants (augmentation group), or to receive four zygomatic implants, or two zygomatic and two conventional implants to be immediately loaded (zygomatic group). In the augmentation group, collagenated blocks (OsteoBiol® Sp-Block, Tecnos®, Giaveno, Italy) of equine cancellous bone were used as onlays. To fill the gaps between the recipient bone and the bone blocks, OsteoBiol® mp3® bone substitute granules were used. All the grafted areas and the maxillary windows were covered with OsteoBiol® Evolution resorbable barriers from equine pericardium. After implant insertion, the surgeon was allowed to cover exposed implant threads using (OsteoBiol® mp3®, Tecnos®) and resorbable collagen barriers (OsteoBiol Evolution, Tecnos®). Patients were followed up to 1 year after loading. No augmentation procedure failed. Five patients dropped out from the augmentation group. Six prostheses could not be delivered or failed in the augmentation group vs one prosthesis in the zygomatic group, with a statistically significant difference. Eight patients lost 35 implants in the augmentation group vs two patients who lost four zygomatic implants, with a statistically significant difference. A total of 14 augmented patients were affected by 22 complications vs 28 zygomatic patients (40 complications), the difference being statistically significant. Both groups had significantly improved quality of life (OHIP-14) scores.

CONCLUSIONS

Based on the results, Authors concluded that *“preliminary 1-year post-loading data suggest that immediately loaded zygomatic implants were associated with statistically significantly fewer prosthetic failures (one vs six patients), implant failures (two vs eight patients) and time needed to functional loading (1.3 days vs 444.3 days) when compared to augmentation procedures and conventionally loaded dental implants. Even if more complications were reported for zygomatic implants, they proved to be a better rehabilitation modality for severely atrophic maxillae. Long-term data are absolutely needed to confirm or dispute these preliminary results”*.

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