Immediate Full-Arch Restorations Supported by Conventional Implants Plus Uni- or Bilateral Zygomatic Implants: A Three to Five Years Retrospective Radiologic and Clinical Comparison

Giovanni-Battista Menchini-Fabris, Paolo Toti, Grandi Tommaso, Cesare Paoleschi, Luisa Paoleschi, Ugo Covani

Abstract

Purpose: The study aimed to compare the short-term outcomes (3.7±0.4yrs) of full-arch immediately loaded fixed maxillary prostheses supported by conventional and unilateral single zygomatic implants versus those supported by conventional and bilateral single zygomatic implants.

Methods: A retrospective analysis was conducted on patients suffering severe bone loss in the posterior area of the maxilla. The success of zygomatic implants was defined following Offset-Rhinosinusitis-Infection-Stability (ORIS) criteria. The criteria used to define success of standard dental implants were absence of mobility, pain, discomfort/neurologic disorder, and of persistent or chronic infection. The level of significance was 0.01.

Results: Thirty-eight patients received 2-5 standard implants plus two zygomatic implants (bilateral), whereas 10 patients had 3-5 standard implants plus a single zygomatic implant (unilateral). The cumulative success rate for standard implants was 99% and 97.3%, respectively, in the bilateral and unilateral groups. Four patients showed symptoms of acute rhinosinusitis (R-criterion): 1 in the unilateral and 3 in the bilateral group. Following the O-criterion, just 2 dental implants in the bilateral group showed a success grade 1. One zygomatic implant, belonging to the group bilateral, developed peri-implant mucositis with a success grade 3 (I-criterion). All zygomatic implants were checked individually and did not show either any signs of mobility or rotation after applying forces to the implant (S-criterion). The ORIS criteria divided the implants into three groups according to the success grades I,II,III: 32,36,8 for the bilateral, and 6,1,3 for the unilateral group, with no significant difference between the two groups. No zygomatic implant failure occurred so that the same zygomatic implant success rate (100%) was recorded for both groups. A prosthetic failure was registered in the unilateral group. The overall prosthesis success rates were 89.5% and 70%, respectively, in the bilateral and unilateral groups.

Conclusions: A high degree of success was achieved for both groups treated with zygomatic implants, although in group unilateral there was one failure of a standard dental implant placed in the posterior area. This suggested that the use of zygomatic implants could provide adequate support to the fixed full-arch prostheses even in the configuration with a single unilateral zygomatic implant.

Keywords: ORIS; Offset-Rhinosinusitis-Infection-Stability; full-arch fixed prosthesis; immediate loading; zygomatic implants; zygomatic success code.