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3D Printing/Additive Manufacturing Single Titanium Dental Implants: A Prospective Multicenter Study with 3 Years of Follow-Up.

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Abstract

This prospective 3-year follow-up clinical study evaluated the survival and success rates of 3DP/AM titanium dental implants to support single implant-supported restorations. After 3 years of loading, clinical, radiographic, and prosthetic parameters were assessed; the implant survival and the implant-crown success were evaluated. Eighty-two patients (44 males, 38 females; age range 26-67 years) were enrolled in the present study. A total of 110 3DP/AM titanium dental implants (65 maxilla, 45 mandible) were installed: 75 in healed alveolar ridges and 35 in postextraction sockets. The prosthetic restorations included 110 single crowns (SCs). After 3 years of loading, six implants failed, for an overall implant survival rate of 94.5%; among the 104 surviving implant-supported restorations, 6 showed complications and were therefore considered unsuccessful, for an implant-crown success of 94.3%. The mean distance between the implant shoulder and the first visible bone-implant contact was 0.75 mm (±0.32) and 0.89 (±0.45) after 1 and 3 years of loading, respectively. 3DP/AM titanium dental implants seem to represent a successful clinical option for the rehabilitation of single-tooth gaps in both jaws, at least until 3-year period. Further, long-term clinical studies are needed to confirm the present results.