Short-Term Bone Level Observations Associated with Platform Switching in Immediately Placed and Restored Single Maxillary Implants: A Preliminary Report

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**Purpose:** The aim of this study was to evaluate the short-term bone level response around immediately placed and provisionally restored implants using a platform switching concept. **Materials and Methods:** Twenty-two implants with a platform diameter of 5.5 mm were immediately placed in healthy maxillary sites in 22 patients. Resultant circumimplant spaces were filled with a mixture of bovine bone matrix and collagen. The implants were randomly divided into two equal groups: 11 implants connected with 3.8-mm-diameter abutments (test group) and 11 with 5.5-mm-diameter ones (control). Provisional crowns were adapted and adjusted for nonfunctional immediate placement on each implant and the final crowns were constructed 2 months later. Posttreatment assessments were carried out by an independent trained observer at the time of implant placement (baseline), at definitive prosthesis insertion, and every 6 months thereafter. These assessments included periapical radiographs, pocket probing depths (PPD), bleeding on probing (BOP), and modified Plaque Index (mPII) on both implants and first proximal teeth. An image analysis software application was used to compare the bone crestal heights at the mesial and distal aspects of the implants. **Results:** The mean follow-up observation period was 25 months and all implants were judged to be successfully osseointegrated. In the test group, radiographic analysis showed an average bone reduction level of 0.30 mm (SD = 0.16 mm). This mean value was statistically significantly different ($P < .005$) from the average reduction in the control group (mean = 1.19 mm, SD = 0.35 mm). No differences between the two groups in PPD, BOP, or mPII were found. **Conclusion:** This preliminary study suggests that immediate single implant restorations in specific maxillary sites with subsequent platform switching may provide peri-implant alveolar bone-level stability. *Int J Prosthodont* 2009;22:277–282.

Provisional restorations on implants placed into fresh extraction sockets are popularly regarded as providing both treatment convenience and advantage. Some authors maintain that this approach helps preserve or retard the otherwise inevitable and variable alveolar ridge reduction, which occurs around implants on a time-dependent basis. Regrettably, the influence of age, gender, systemic health, site specificity, and bone morphology on the outcome of the timing of implant placement, and indeed loading, is far from rigorously documented. Nonetheless, various hypotheses seek to maintain the integrity of circumimplant bone levels. One such interesting proposal\textsuperscript{1} suggests that a so-called platform switching protocol could ensure better bone levels, at least in the short term. This concept, if proven to be predictable, would certainly impact the esthetic outcome of implants placed in the esthetic zone and deserves to be tested.

The aim of this preliminary study was to measure traditionally studied bone levels around immediately placed and restored implants in specific maxillary sites using a platform switching protocol. It was designed as a prototype for a longer-term prospective, controlled, randomized, double-blind clinical investigation.