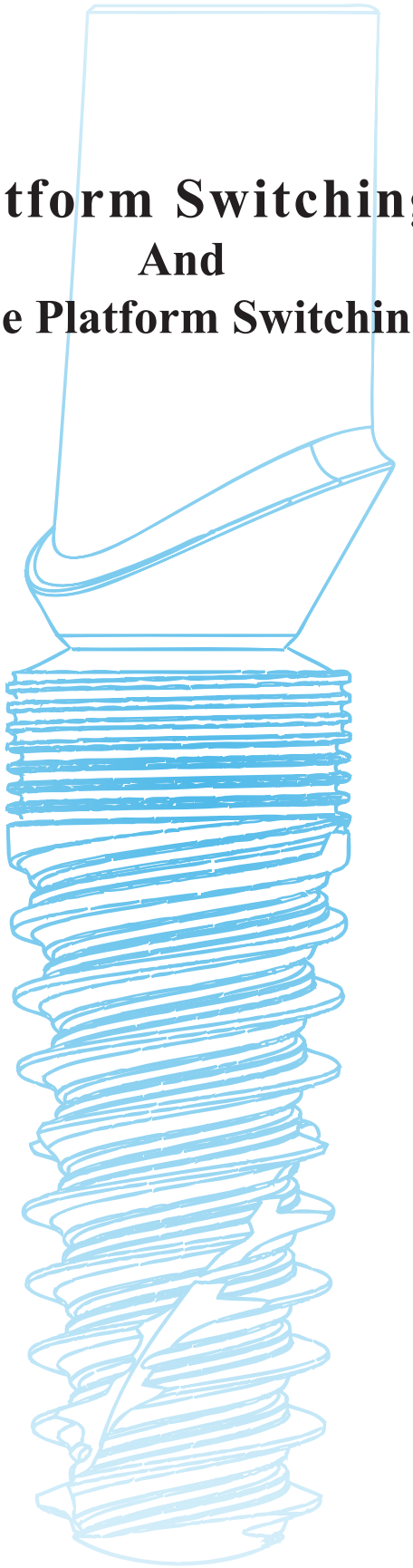
Platform Switching
And
Bone Platform Switching



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Platform Switching

Bone platform switching involves an inward bone ring in the coronal part of the implant that is in continuity with the alveolar bone crest.

The platform-switching concept was developed to control bone loss after implant placement. This refers to the use of an abutment of a smaller diameter connected to an implant neck with a larger diameter. This connection shifts the perimeter of the implant-abutment junction (IAJ) inward, toward the central axis (the middle of the implant), in order to improve the force distribution. Quirynen et al. [1] suggested that bacterial leakage occurs through the microgap of the IAJ. Ericsson et al. [2] found histologic evidence that an inflammatory cell infiltration is located 1 to 1.5 mm adjacent to the IAJ after implant placement. To protect the underlying bone from this inflammatory cell infiltration and microbiologic invasion, 1 mm of healthy connective tissue is needed to establish a biologic seal comparable to that around natural teeth [2,3]. This movement of the IAJ is also believed to shift inflammatory cell infiltration to the central axis of the implant and away from the adjacent crestal bone, which is thought to restrict crestal bone resorption [4]. Indeed, Hurzeler et al. [5] reported that the concept of platform switching does appear to limit crestal resorption and preserve the peri-implant bone level. They found that the amount of bone loss was significantly lower in the platform-switching group.

Lopez-Mari et al. [6] found that platform switching is capable of reducing or eliminating crestal bone loss to 1.56±0.70 mm. It also appears to help to maintain the width and height of crestal bone and the crestal peak between adjacent implants, and reduces circumferential bone loss. It was concluded that the implant design modifications involved in platform switching offer multiple advantages and potential applications, including situations in which a larger implant is desirable but the prosthetic space is limited, and some implants are desirable in the anterior zone where preservation of the crestal bone can lead to improved esthetics.

From a review in the literature, Kwon et al. [7] concluded that the marginal bone loss associated with a flat-top implant is 1.0 to 1.3 mm at 1 year post-implantation, even in the presence of an improved surface [8-10]. In contrast, the marginal bone loss with a microthread, conical seal, and platform-switched design was found to be 0.11 to 0.24 mm [11,12]. Those authors concluded that the marginal bone levels of the subjects in their study (0.16 to 0.17 mm) were comparable to those of previous studies. Similarly, in the present study, the mean amount of marginal bone loss was smaller, and it can therefore be assumed that microthreaded and platform-switched implants have the ability to reduce marginal bone loss because of specific features in the implant design.

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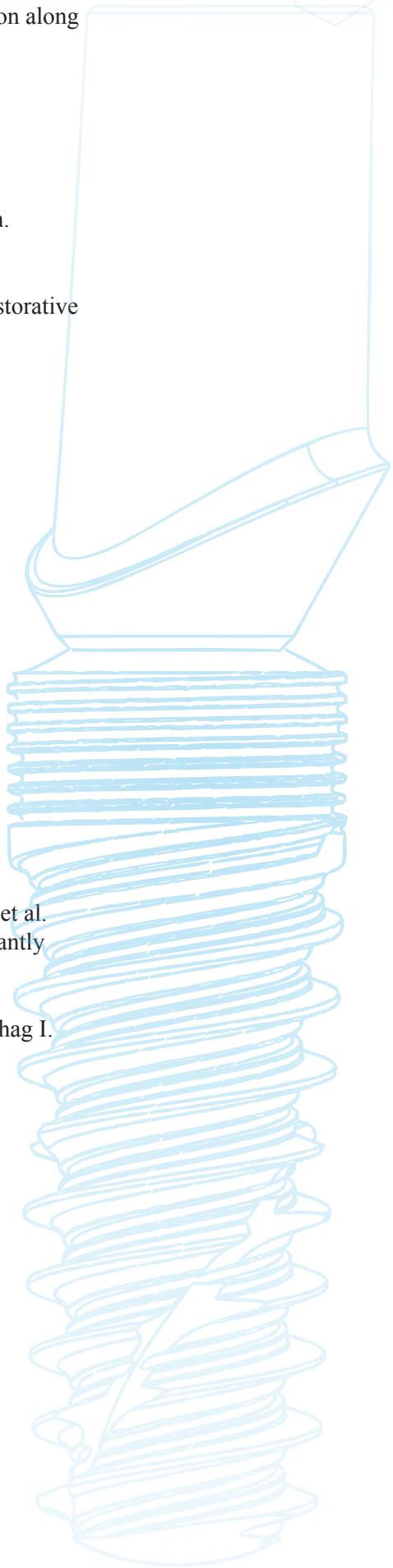
13. Francesco Carinci, MD; Giorgio Brunelli, MD; Matteo Danza, MD Platform Switching and Bone Platform Switching Department of Maxilofacial Surgery, University of Ferrara, Italy Matteo Danza, MD, University of Chieti Italy Journal of Oral Implantology. Vol 248 /2009



Dentalis Bio Solutions USA
9650 E 148th St
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