

# Immediate implant placement and immediate loading after a complicated tooth extraction

author\_Xavier Vela, Spain

## \_Introduction

As implant dentistry continues to evolve to meet our patient's demands for aesthetic tooth replacements with minimal downtime or inconvenience, the dental implant industry has responded with new technological advancements and research. For example, the development of enhanced implant surfaces, such as the Osseotite® Dual-Acid-Etched Implant Surface, improved on the results seen with machined surfaced implants. Studies demonstrated long term Cumulative Survival Rates (CSRs) with Osseotite implants in the range of 95% to 98%<sup>1-3</sup> (at five years<sup>4</sup>) which represented an improvement over the CSRs of machined surfaced implants (85% to 95%).<sup>5-6</sup> With these enhanced implant surfaces, clinicians felt confident to perform early loading protocols and to place implants in compromised clinical situations. With multicenter, long term prospective studies and the ten year history of Osseotite, good long term success with negligible periimplant concerns has been demonstrated.<sup>3</sup> With such positive results, why do researchers and the dental implant industry continue to look for advancements in implant surface technology and designs? Implants typically demonstrate good initial primary stability at the time of placement, however, when bone remodels in the first few weeks following implant placement, primary implant stability can degrade with initial

bone resorption which in turn might impact the ability to successfully perform immediate loading protocols. To potentially address this concern, new nanotechnology in implant surface topography has been explored. BIOMET 3i has been the first implant company in introducing a nano-textured implant surface, the NanoTite™ obtained by applying nano-scale crystals of calcium phosphate onto the Osseotite surface by using a Discrete Crystalline Deposition (DCD™) Process. This process creates a more complex surface topography which renders it a Bone Bonding® surface by the interlocking of the newly formed cement line matrix of bone with the implant surface. The result: a more rapid bone formation with improved bone-to-implant contact (BIC) as demonstrated in animal studies and human histology.<sup>7,8</sup> What is the significance of these findings in clinical practice? Clinicians can immediately load the implants, reduce the time to loading and treat more patients even in compromised clinical situations, such as poor bone quality, limited bone quantity, or in grafted sites.

## \_What about Crestal Bone Preservation?

Preservation of crestal bone has proven to be critical for long term implant success. This is especially true in the anterior aesthetic zone for support of the peri-implant soft tissues, as well as in areas

**Fig. 1 and 2\_** Initial situation: caries destruction of upper milk canine and included canine underneath.

**Fig. 3 and 4\_** Extraction of the milk and the included canines.



Fig. 1



Fig. 2



Fig. 3