Scientific advances are happening at breakneck speed. The mere “ability to integrate” is no longer the sole measure of dental implant success. The new checklist is much more extensive and refined, including factors that allow clinicians to re-engineer the biology of the osteotomy. We can now enhance initial stability of the implant, resulting in faster integration. Bone remodeling can also be reduced, preserving tissue biotype and crestal bone. The result of this biological aggregate is shorter healing times to final reconstruction, along with creating more favorable esthetic environments.

The challenge for every dental implant manufacturer is to stay at the forefront of science and technology by engineering dental implant systems that meet or exceed clinicians’ expectations. Intra-Lock® International says it has shown itself to be committed to this ethic, and the BLOSSOM® design (patent pending) is one such example.

Intra-Lock discovered that a subtle but meaningful component of the “new measure of success” had gone largely unnoticed. Implant architecture, mostly in the form of body design, had seen dramatic changes while the role of thread design was largely
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overlooked. Following retrospective reviews of clinical outcomes, the shortcomings of standard thread design became evident. Diminished primary stability, increased micromotion, deleterious bone remodeling and higher failure rates were occurring. What were the factors responsible for these less than desirable outcomes?

Compression remodeling of bone was one of those factors. When implants are seated in bone, there is a significant increase in torque as the implant is being driven through the bone. If high torque forces remain at final seating, over compression of bone can lead to trabecular microfracture and excessive bone remodeling. This may result in fibrous encapsulation and subsequent implant failure, the company asserts.

Implant manufacturers attempted to address this problem by adding additional design features to the implant body. Most notable was the early introduction of a "self-tapping" feature that was machined into the apex of the implant. This tapping complex allowed the implant to enter the osteotomy with increased efficiency. However, this tap design had two undesirable consequences: There was a substantial loss of surface area in the apical third and the buildup of a large concentration of fractured bone in the cutting area (known as "crowding").

BLOSSOM cutting design (patent pending) reflects how the scientists and bioengineers at Intra-Lock tackled this problem and produced an implant that represents a major advance in implant design and biologic synergy. This design has now transformed self-tapping into a full-fledged asset — a complete operating system that is incorporated into the body of the implant.

The design consists of a series of strategically placed cutting surfaces and spiral channels that are designed to eliminate "crowding" and to produce fewer, more evenly distributed bone particles. In addition, BLOSSOM implants automatically generate a physiologic autologous micro-graft. The net result is a more gentle and precise delivery of the dental implant.

BLOSSOM cutting design moves us closer to the biologic paradigm of accelerated implant healing by minimizing bone trauma. It cuts efficiently through the osteotomy while preventing over-compression of bone.

By reducing compression-mediated microfracture, it shortens early bone remodeling with the net effect of faster integration and increased bone-to-implant contact, the company says.

The Blossom implant accomplishes this using finesse, not force, to achieve better initial stability1 and increased success rates in oral implantology. _

References