



NobelPerfect™ Esthetic Scalloped Implant: Indication for a **New Design Implant Placement** in the Partially Edentulous Patient

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Fig. 3 Baseline clinical evaluation 1 month post-insertion: Adequate soft tissue contours, clinical crown of the implant is shorter than the natural tooth. Mesial and distal papillae are not fully formed.

Timing of implant placement

Currently there is a trend of placing implants at the time of tooth extraction or soon thereafter. The rationale is the preservation of bone volume and soft tissue contours. The main goal of implant placement in the esthetic zone is to provide support for a restoration that mimics the natural dentition, providing harmony and continuity of form.

To maintain as much of the naturally occurring hard and soft tissue morphology as possible, implant placement is thus indicated earlier rather than later in cases with sound existing three-dimensional ridge topography, adequate buccal plate and small existing roots with sufficient space interproximally.

Coronal-apical depth of implant at time of placement

The coronal-apical implant depth is a critical factor when attempting to stabilize the surrounding

soft and hard tissues. Ideal coronal-apical implant position is multifactorial and involves a complex interplay between the diameters of the prosthetic table, the size of the crown as it emerges from the tissues, and tissue type present. The design of most dental implant designs necessitates compromises when irregular or scalloped bone topography is encountered.

Reasons for bone loss around the neck of the implant: biologic width

The concept of biologic width identifies a stable connective tissue zone between the bone and the overlying epithelium. Several studies have emphasized the importance of the biologic width and its relation to restorative and implant dentistry.

The deeper the implant is placed into the bone, the more bone loss is observed with traditional flat-top, two-piece implants. This is logical because countersinking the implant introduces the abutment-implant interface deeper into the bone. Dur-

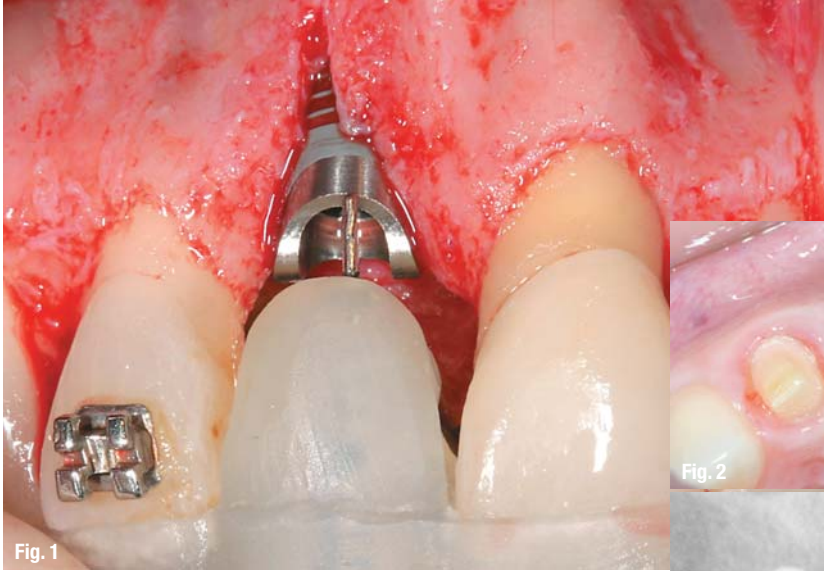


Fig. 1_ Coronal-apical implant placement is dependent upon size of prosthetic table in relationship to size and location of the crown as it emerges from the soft tissue, the type of gingiva, and the type of connection.

Fig. 2_ Occlusal view of a scalloped implant after maturation of tissues. Note the alignment of the interproximal peaks with the adjacent teeth. (Figures 2–6 are the same patient.)

Fig. 4_ Radiograph at baseline. **Fig. 5_** 42-month clinical evaluation: Fully formed mesial and distal papillae, adequate height of contour of soft tissues.

Fig. 6_ 42-month follow-up radiograph: Maintenance of interproximal bone well above the threads, along the peak of the interproximal height of the hard-tissue apposition area.

ing the restorative phase, the epithelial layer reaches the outer shoulder of the abutment-implant interface, causing remodeling of the bone immediately underneath it. Bone height is reduced to make room for the connective tissue zone, which separates the epithelium from the bone.

The loss of bone that occurs during healing after implant or abutment placement ultimately leads to loss of soft tissue support. This, in turn, negatively influences the esthetic outcome of the implant-supported restoration.

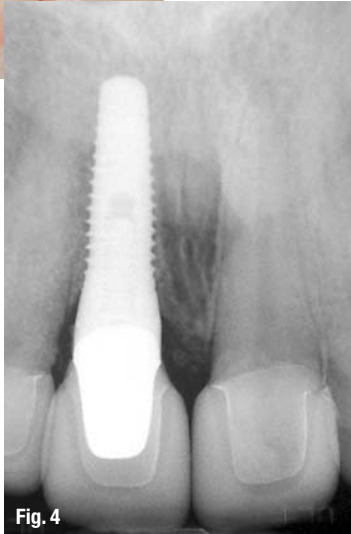
Scalloped implant design: NobelPerfect

The scalloped implant exhibits numerous desirable design features. Each feature attempts to address a common problem encountered in the treatment of the three-dimensional osseous morphology with conventional flat prosthetic table implants.

Scalloped hard tissue apposition area

The hard tissue apposition area, the surface where osseointegration takes place, has been designed to take the physi-

ologic bone contours around the teeth into consideration. The current design uses a broad base rise, which culminates inter-proximally into a gentle scallop. This design provides sufficient width for bone apposition, while keeping it narrow enough for ease of inter-proximal alignment.



Scalloped soft tissue apposition area

The height of the soft tissue apposition area and contour is based on biologic width considerations and allows for the approximation of the connective tissue zone with reduced need for osseous remodeling. At the same time, it provides a subgingival margin for the restoration. The crown margin is equidistant along its entire circumference from the osseous structures.

Scalloped prosthetic table

The abutment-implant connection is within the confines of the crown, the most apical interface. The shoulder of the implant, also the shoulder of the restoration, has a three-dimensional configuration to conform to the osseous anatomy. Prefabricated straight or angled abutments are seated within the confines of the implant shoulder and restored using the traditional protocol. Prefabricated ceramic copings are also available.

Scalloped implant placement

The scalloped implant design enables the surgeon to place the implant into residual three-dimensional bone. The surface of the implant intended for bone apposition is in contact with bone and the surface intended for soft tissue apposition is in contact with soft tissue. The implant is aligned so that the inter-prox-

imal peaks of the bone apposition area are in contact with the inter-proximal peaks of the residual bone. The soft tissue apposition area extends above the osseous crest.

Indications for use

The scalloped implant is the implant of choice for patients with a three-dimensional ridge morphology. By providing long-term predictability of soft tissue support it improves the esthetic outcome where maintenance of interproximal osseous structures is beneficial.

Using a scalloped implant in a single-tooth application has the potential to maintain inter-proximal bone even after the adjacent tooth has been lost. In patients with scalloped profiles, these benefits are greatly enhanced because inter-proximal bone remodeling is decreased. Even greater impact can be expected in sites where multiple implants are placed. The design allows for the maintenance of existing inter-proximal peaks while offering the potential to regain previously lost inter-proximal osseous structures after appropriate grafting procedures.

Conclusion

The rationale for placement of the scalloped implant is compelling. It can be used for implant placement in the esthetic zone, for immediate implant placement after tooth extraction, and when multiple implants are placed in sequence.

The advantages of this implant are preservation of inter-proximal bone when the implant is placed between teeth, and creation of bony peaks when the teeth have been extracted prior to implant placement, and when grafted at the time of placement.

When the scalloped implant is correctly placed, excellent soft tissue contours are maintained or created as a result of the bone-preserving scalloped design.

contact

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