

Making Implant Dentistry Easier and Less Costly



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INTRODUCTION

The most challenging aspect of restoring dental implants is dealing with the location of the implant body. Although looking for the ideal bone, this valid pretext is often used by those placing the implants as an excuse for less than ideal location. Indeed, the surgeons are often unaware of the prosthetic requirements to make an implant both functional and aesthetic. Implant success is as much related to the implant placement as it is to the creation of the core and final crown.

I am proposing that implants, in a majority of cases, can be placed with much better accuracy so as to avoid the need for a custom abutment.

Background

I've been restoring dental implants for more than 20 years. Admittedly, I do not have the 98% success rate that my oral surgeon professes for his implant cases (actually, my shoes can't stay tied 98% of the time). With this in mind, I was reevaluating my technique and where and when problems have arisen. Indeed, most problems and a great deal of stress and much cost have arisen from imperfectly placed implant bodies.

If the implant is ideally placed, stock abutments can be used, saving a great deal of time and expense for both the patient and the dentist.

We all speak of the need for communication among the prosthetic dentist, the surgical dentist, and the dental laboratory team; here too, I am not 98% successful. More often than not, my implant cases would be returned to me uncentered, too close to each other or to adjacent teeth, and with the inability to use a standard stock abutment.

Surgeons seem to fall back on the standard, "I was placing the implant in the best possible bone." Often, this is in fact the truth. However, this is only convenient for the surgeon who does not have to restore an imperfectly placed implant body. Sometimes you may not need the *best* possible bone. Even when a stent was provided, I



Figure 1. The Delineator (Keating Dental Arts) and guide sleeve: aesthetic, convenient, and easy to use.

often wondered if it was actually used.

If the implant is ideally placed, stock abutments can be used, saving a great deal of time and expense for both the patient and the dentist. Implant dentistry can be predictable and profitable, with fewer surprise laboratory costs and steps.

A Multifunctional Implant Tool

In the end, the restorative dentist is the one who must take responsibility for sizing, height, emergence profile, etc. Certainly, this can be achieved by extremely talented dentists and dental laboratory teams, but, in reality, many of us are average; this is where an implant tool, such as the Delineator (Keating Dental Arts) comes in.

This tool allows the general dentist to control all phases of implant dentistry with one device. It acts as an immediate temporary or a long-term fixed temporary, a stent with a drill guide, and a vertical stop "for depth." It can also act as an implant locator for uncovering for second stage placement.

The Delineator is a very simple and inexpensive multipurpose device (Figures 1 and 2) for use throughout the entire process of implant fabrication and can resolve numerous problems in implant placement. Almost always, the implant body is narrower than the root it is replacing. The most ideal position is therefore not centered in an edentulous space, but buccal to the cen-



Figure 2. The Delineator on the working model.



Figure 3. Surgical placement of implant body using the Delineator.

ter of the ridge and centered medial distally. The Delineator is a multifunctional implant appliance acting as an aesthetic temporary surgical stent for placement and uncovering of implants. It is a space maintainer, and for extra security, it can easily be transformed into a screw-down temporary.

It can be used as a temporary, aesthetically replacing missing teeth in a fashion superior to that of a conventional flipper. The Delineator snaps into place, retained by the reinforced yet clear acrylic clasp design which firmly maintains its position but also allows for patient removal and hygienic cleansing.

Using the Delineator, the prosthodontist or dentist restoring the implants can exactly direct the surgeon as to the most ideal position for implant placement. The Delineator is used as a stent but with superior guidance and ease to that of most implant stents. Given adequate bone, the surgeon can exactly place the implant using the metal sleeve/drill guide which is located in the exact center of the proposed implant

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crowns, allowing for the most ideal emergence profile and tooth sizing (Figure 3).

The sleeve opening can be plugged after implant placement and the Delineator can continue to be used as a space maintainer and to replace teeth temporarily while osseointegration occurs. When the implant is ready to be uncovered for the healing cap placement, the plug in the sleeve opening is removed and the implant body is exactly and immediately located through the sleeve opening. Thus, this surgical stage is minimized.

Clinical Technique

The creation of the stent is done as follows: A quadrant alginate is taken of the section to receive the implant as well as the opposing arch. A bite registration is taken, and the shade is selected and recorded. The implant brand and type is specified because the inner diameter of the sleeve is identical to that of the pilot drill that the surgeon will use to place the implant.

The case is then sent to the dental laboratory team. The underside of the appliance can be altered easily by adding or removing acrylic resin as



Figure 4. Occlusal view of immediately placed implant body.



Figure 5. Mature sulcus after removal of adjusted Delineator long-term temporary.



Figure 6. Buccal view of the emergence profile of implant abutment.



Figure 7. Final crown placed using the Delineator.



Figure 8. Panoramic radiograph.

needed and when needed as the tissue may change. The sleeve hole will be plugged with a temporary material (such as Fermit [Ivoclar Vivadent]) that does not highly harden.

A computed tomography (CT) scan be taken of the patient's arch with the Delineator in place to assure adequate bone to maintain the implant. If the CT scan shows adequate bone along the desired path of placement of the implant (as designated by the incorporated sleeve), all is set for the surgical phase. If the bone is found to be inadequate, the orientation and location of the metal sleeve can be altered by the laboratory to assure adequate positioning.

Use of this appliance can eliminate the vast majority of required custom abutments, thus reducing the cost of implant fabrication significance.

CASE REPORT

A patient presented with vertical root fracture on tooth No. 31, requiring extraction.

After bone grafting and sufficient healing, a wide-platform implant (Replace Select [Nobel Biocare]) was placed into the edentulous site images (Figure 4). After 3 months, the implant was uncovered, and an adjusted Delineator provisional acrylic crown was used to begin shaping the soft tissue (Figures 5 and 6). This patient was definitively restored with a Gold-Hue Abutment (Atlantis) and a porcelain-fused-to-gold crown. Note the unique design of the final crown and how it blends in beautifully with the patient's existing gold work (which has been in place for 41 years!) (Figure 7). Positioning was ideal, and a standard stock abutment could have easily

been chosen over the custom abutment (Figure 8).

CLOSING COMMENTS

Through the use of the Delineator, as demonstrated in this article, many steps in implant fabrication have been eliminated or controlled. This simple tool ensures excellent and productive communication between the dentist, surgeon, and the dental laboratory team, and it saves the dentist and patient both time and money. Furthermore, this one implant tool acts as a stent, surgical guide, aesthetic temporary, long-term screw-down temporary, and implant locator all for one laboratory fee. This translates into predictable results for the restorative dentist. This device also significantly reduces

the need for custom abutments. Being able to use standard stock abutments increases reliability, reduces cost, and minimizes lab steps and fabrication time. A better result at a lower cost means both the dentist and the patient are happier. ♦

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Disclosure: Dr. Hertz is the developer of the Delineator and holds the patent pending on the design.

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