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For this issue of implants, we’ve assembled a collection of articles from a variety of respected names in dentistry. These expert clinicians are sharing their first-hand knowledge and expertise with you. In this issue, you can read about graftless solutions in implant dentistry, and you can also learn about the reseat implant impression technique.

We also have important information on upcoming implant-focused events, such as the AAIP and the AAID, and about new implant products and technology.

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Every issue of implants magazine also contains a C.E. component. By reading the set of articles (beginning on Page 8) on “Graftless Solution in Implant Dentistry: Part One” by Drs. Jivraj and Zarrinkelk and “The reseat implant impression technique” by Dr. Kalman and then taking short online quizzes about these articles at www.DTStudyClub.com, you will gain one ADA CERP-certified C.E. credit per article. Keep in mind that because implants is a quarterly magazine, you can actually chisel at least four C.E. credits per year out of your already busy life without any more lost revenue and time away from your practice.

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Graftless solutions in implant dentistry: Part 1

Authors_Saj Jivraj, BDS, MSEd, and Hooman Zarrinkelk, DDS

Diagnosis, treatment planning and delivery of the immediate load prosthesis

The predictability of successful osseointegrated implant rehabilitation of the edentulous jaw as described by Branemark et al\textsuperscript{1} introduced a new era of management for the edentulous predicament. Implant rehabilitation of the edentulous patient remains one of the most complex restorative challenges because of the number of variables that affect both the esthetic and functional aspect of the prosthesis.

The routine treatment for edentulism has been complete dentures. Epidemiological data has reported that the adult population in need of one or two dentures would increase from 35.4 million adults in 2000 to 37.0 million adults in 2020\textsuperscript{2}; and the researchers warn that their estimates may be "significantly conservative." Clinical studies have reported that patients with dentures have shown only a marginal improvement in the quality of life when compared with implant therapy.\textsuperscript{3} The common reasons for dissatisfaction in patients using dentures are pain, areas of discomfort, poor denture stability and difficulty eating as well as lack of or compromised retention capability.\textsuperscript{4}

A review of the literature noted that prostheses supported by osseointegrated implants significantly improved the life of edentulous patients when compared with conventional dentures.\textsuperscript{5} Many patients tolerate complete dentures despite the dissatisfaction. Reasons for this could be:

Fig. 1. Extra-oral factors in diagnosing the edentulous patient.

Fig. 2. Intra-oral factors in diagnosing the edentulous patient.
- **Anatomic.** They have been told they are not implant candidates because of pneumatized sinuses and severe resorption of the posterior mandible.
- **Cost.**
- **Lack of education.** They have not been educated about dental implants and do not visit a dentist because they feel nothing can be done for them.

Restoration of the edentulous patients with dental implants is costly whichever method is used to restore the patient. Fixed reconstructions require more laboratory assistance and implant parts and, thus, are a lot more expensive.

Due to economic factors, many patients have been provided with implant- and mucosa-supported overdentures.

However, cost needs to be considered not only during fabrication of the prosthesis but also during maintenance. Overdentures seem to have more post-insertion maintenance than their fixed counterparts. If this is consistent, it could be questioned whether an economic indication for choosing an overdenture could be justified when there is sufficient bone to support implants for a fixed prosthesis. The patient must be made aware that maintenance costs for removable prostheses on implants will be higher than that of a fixed prosthesis.

Today, clinicians are seeing an increasing number of dentate patients where the dentition is terminal. These patients would have been edentulous a long time ago if it had not been for the efforts of skilled restorative dentists. Clinical treatments have involved maintaining non-restorable teeth for as long as possible to avoid a removable appliance. Patients understand that maintaining a terminal dentition has consequences on the bone. However, the fear of edentulism forces them to ignore failing oral conditions.

In spite of the increasing numbers of edentulous or soon-to-be edentulous patients, there still appears to be many reasons why patients avoid treatment with dental implants. These reasons could include:
- The fear of wearing a removable appliance in the transitional phase.
- The notion that the proposed treatment is time-consuming and unpredictable.
- The number of visits involved and the fear of pain.
- Cost.

Most patients will look toward an implant rehabilitation hoping to acquire a fixed prosthesis. Treatment planning of edentulous patients with fixed restorations on dental implants has undergone a paradigm shift since the introduction of graftless solutions, and in particular, the All on 4 method.

Today, patients have options whereby in the right indication complete rehabilitation can be accomplished by the use of four implants per arch. The huge advantage of this procedure is reduced number of implants and the ability to bypass extensive grafting procedures. This rehabilitation not only satisfies esthetics and function but also considerably reduces...
costs for the patient. This ultimately results in increased patient acceptance and an increased number of patients treated. Very few patients today are able to afford extensive implant rehabilitations on six to eight implants, and the All on 4 or graftless protocol is gaining popularity as being the treatment of choice for the edentulous patient.

In a world environment where the numbers of edentulous patients are increasing, there are not enough available dentists trained in these protocols to be able to treat them. Patients are not given these options because of the dentist’s reluctance to offer them. Reasons for this are lack of education and the notion that these treatment protocols are not predictable.

It is imperative that clinicians gain the available hands-on training and work with other experienced practitioners treating patients in a clinical setting to be able to implement graftless options for patients in their practices. It is the authors’ opinion that weekend courses without a practical hands-on component for the practitioner will not prepare the clinician adequately to treat patients. These protocols, although simplified, require meticulous attention to each detail to provide a successful outcome.

There are many options for the edentulous patient, ranging from fixed crown and bridgework on six to eight implants, implant-supported fixed dentures on four to six implants and implant-supported overdentures. Each type of restoration requires unique dimensional tolerances for biomechanical integrity. Adequate restorative space must be provided to ensure a robust prosthesis, which will provide longevity of service.

In this article, the focus will be on the fixed implant denture on four to six implants.

There has been no branch of dentistry that has undergone such a significant change during the last 30 years. Implant dentistry has undergone a transformation from the time when implants were buried, a healing time of four to six months elapsed, and then they were uncovered and loaded.

Today, we have immediate placement, immediate loading, different surfaces, a host of implant designs and CAD/CAM. Although many things have changed in the field of implant dentistry, two things have remained the same from the patient’s perspective:

• Patients do not want to wear dentures at the end of treatment.
• Patients do not want to wear dentures during treatment.

The fear of becoming edentulous and wearing a removable appliance has resulted in clinicians pushing the envelope and seeking solutions, which result in patients having teeth removed, dental implants placed and receiving fixed implant-supported resto-
implants

rations the same day. This option ultimately results in increased patient acceptance and an increase in the number of patients treated.

As in all phases of dentistry, diagnosis is critical in obtaining a predictable outcome. An incomplete or erroneous diagnosis can yield unsatisfactory results for both the patient and treating clinician.

The decision-making parameters when rehabilitating patients require the clinician to make a decision as to whether a fixed or a removable prosthesis would be more suitable.

Zitzmann and Marinello and Jivraj et al described in detail parameters that need to be evaluated. A fixed restoration should not be promised to a patient until all diagnostic criteria are evaluated. These criteria must include quality and quantity of bone available to support implants, lip line, lip support and esthetic demands. Implants should not be placed until a definitive treatment plan has been established, as implant positions may vary depending on type of prostheses to be delivered (Figs. 1 and 2).

Extra-oral examination

Facial and lip support

One of the best diagnostic tools is the patient’s existing maxillary denture. The clinician can evaluate the patient’s denture to determine what likes and dislikes there are regarding esthetics, speech and function. Each point should be noted for improvements in the new restoration.

There is always a tendency for patients to prefer fixed over removable prostheses. It is the restorative dentist’s responsibility to determine if this is feasible. Facial support is an important decision in this regard. Assessment of the patient’s facial support with and without the denture in place, with the patient facing forward and in profile, needs to be made so the clinician can determine which type of prostheses would be more suitable (Figs. 3, 4).

Facial support, if inadequate, is obtained mainly by the buccal flange of a removable restoration. (Figs. 5, 6) Lip support is derived from the alveolar ridge shape and cervical crown contours of the anterior teeth. Resorption of the edentulous maxilla proceeds cranially and medially and this often results in a retruded position of the anterior maxilla.

When evaluating a diagnostic set up with the anterior teeth in proper relation to the lip, the position of the anterior teeth are often anterior to the alveolar ridge.

Depending on the severity of the resorption, there can be a discrepancy between the ideal location of the teeth and the ridge.

This, in turn, leads to a discrepancy of the anticipated position of the implants in relation to the teeth. This discrepancy must be taken into consideration to achieve a prosthesis that satisfies the parameters of adequate speech, lip support, hygiene, sufficient tongue space and patient acceptance.

If the anticipated position of the teeth and implant result in a large horizontal discrepancy, a number of options must be considered before finalizing implant placement (Figs. 7–12).

If the horizontal discrepancy is quite large, options include bone reduction and a deeper implant...
placement to allow the contours of the restoration to allow the contours of the restoration to satisfy the parameters of lip support and hygiene (Figs. 13, 14). Without bone reduction, undesirable contours in the restoration are developed, which make it very difficult for the patient to maintain hygiene (Figs. 15, 16).

When deemed too large, the discrepancy can only be managed with the flange of a removable prosthesis (Figs. 17, 18).

**Smile line and lip length**

The movement of the upper lip during speech and smiling should be evaluated. Tjan et al described the average smile as having the position of the upper lip such that 75 percent to 100 percent of the maxillary incisors and interproximal gingival are displayed. In a high smile line, additional gingival was exposed, and in a low smile line, less than 75 percent of the maxillary anterior teeth are displayed. Lip length should also be evaluated because it influences the position of the maxillary anterior teeth. In a patient with a short upper lip, the maxillary anterior teeth will be exposed in repose; whereas in patients with a long upper lip, the anterior teeth will usually be covered. A long upper lip is a more favorable situation for the restorative dentist.

Patients should be asked to smile with and without the denture in place. If the soft tissue of the edentulous ridge cannot be seen, the transition between an implant-supported prosthesis and the residual ridge crest will not be visible, resulting in flexibility for color matching and the contour change of the prosthesis at the junction of the soft tissue (Figs. 19–23).

If the alveolar ridge crest is displayed during smiling, the esthetics can be very challenging because the junction between the restoration and the gingival complex will be visible and bear esthetic consequences.

If the patient has minimal resorption, conventional metal ceramic restorations supported by implants can be planned and the existing soft tissue can be developed to enhance esthetics. However, if an implant-supported denture (hybrid/profile prosthesis) is being planned, the alveolar ridge display will detract from the esthetics.

In situations like this, alveolectomy as part of a pro-active protocol must be considered prior to implant placement. If alveolectomy is not performed, the restorative outcome will display the transition zone, which, ultimately, is very difficult to retreat (Fig. 24).

If the patient refuses alveolectomy, a removable appliance with a flange that overlaps the gingival junction must be planned.

This prosthesis can be removed by the patient, so oral hygiene is not compromised. In the mandible,
similar pre-treatment evaluations exist.

Two types of patient present:

- Edentulous.
- Dentate patients with a terminal dentition who would prefer not to wear a removable appliance.

For edentulous patients, the amount of bone resorption will dictate which type of prosthesis is to be fabricated. If there is minimal bone resorption, then conventional crown and bridgework on implants must be considered. If the treatment plan is for a fixed implant-supported denture (hybrid), then an evaluation must be made to determine if sufficient restorative space exists to fabricate a biomechanically robust prosthesis.

Alveolectomy may be required to satisfy the unique dimensional tolerances of the prosthesis design. The transition line is not an issue in the mandible as the drape of the lip will make the final esthetics of the mandibular prosthesis acceptable for most patients.

For dentate patients who are to become edentulous, additional considerations are required.

In most situations, dentate patients present with:

- Anterior teeth (maxillary and mandibular) present and posterior teeth missing. In these situations, a diagnosis of lack of posterior support is often made and the teeth are usually splayed forward and over-erupted (Figs. 25, 26).
- Mandibular anterior teeth and an opposing maxillary denture. Over-eruption of the mandibular anterior teeth is also present in these types of patients.

A thorough evaluation must be made of the existing mandibular incisal edge position.

In most instances, the mandibular incisal edge

---

**Fig. 24** Restoration showing transition zone. Esthetic failure.

**Fig. 25** Over-eruption of mandibular anterior teeth. Above level of occlusal plane.

**Fig. 26** Excess bone as a result of over-eruption of mandibular anterior teeth.

**Fig. 27** Level of incisal edges is above the level of the intended occlusal plane. Anatomic guidelines serve as references to position occlusal plane.

**Fig. 28** Marking on ridge displaying amount of alveolectomy required to provide adequate restorative space.

**Fig. 29** Alveolectomy completed.
is in the incorrect position and the correct position must be planned. Conventional prosthodontic guidelines will place the mandibular incisal edge just at the level of the lower lip with 0.5-1.0 mm of the incisal edge visible.

Guidelines in relation to the lower mandibular occlusal plane can also be sought from anatomical landmarks such as the retromolar pad (Fig. 27). If the mandibular incisal edge is excessively visible and if the height of the mandibular incisal edge is significantly above the level of the retromolar pad, the clinician must reposition it.

If the clinician is planning a fixed implant-supported denture (hybrid), adequate restorative space must be provided.

The over-eruption of teeth brings with it an excess of bone, which must be reduced prior to the implants being placed (Figs. 28 and 29).

Intra-oral examination

Bone quality and quantity

Upon consideration of bone quantity, bone quality, resorptive patterns and maxillomandibular relationship, it usually becomes apparent that the actual amount of bone available for placement of implants in the edentulous patient may not only be limited but may also be present in areas remote from the original site of the natural teeth.

In the pre-maxilla, the tooth position may be much further forward than the implant position, and this may pose certain biomechanical disadvantages. In the posterior maxilla, the resorption pattern may be so severe that a cross-bite relationship may have to be utilized or, alternatively, the tooth position may have to be cantilevered facially so as to re-create the vertical and hori-
horizontal tooth relationships that existed prior to extraction. The clinician’s ability to evaluate the bone, both quantitatively and qualitatively, makes this one of the most challenging sites for successful implant placement. When adopting graftless options, there is a paradigm shift in thinking. The clinician is looking for bone masses to anchor the implants in the patient’s native bone without subjecting the patient to any grafting procedures whatsoever. This often requires tilting implants and correcting angulations with multi-unit abutments.

When evaluating the patient’s bone quantity, a number of diagnostic tools are required:

- Panoramic radiograph
- CT scan
- Clinical evaluation

Panoramic radiograph

A panoramic radiograph serves as an initial survey to diagnostically assess the quantity of bone. Bedrossian describes dividing the maxillary bone into three zones, which allows systematic assessment of the available bone and the surgical approach required. The relationship between alveolus, nasal floor and the position and size of the maxillary sinus is evaluated. Bedrossian describes the zone between canine to canine as zone 1, the premolar region is zone 2 and the molar region is designated as zone 3.

The authors propose an additional zone being the zygoma region designated zone 4 (Fig. 30). The presence or absence of these zones influences the surgical approach. If zones 1, 2 and 3 are present, axial implants may be placed (Fig. 31). If zones 1 and 2 are present, the tilted implant approach may be considered (Fig. 32). If only zones 1 and 4 exist, then the zygomatic implant approach should be considered (Fig. 33).

In the mandible, the goal of implant placement is to have the largest possible antero-posterior spread. The position of the mental foramen limits the placement of the two distal implants. Tilting the
A safe clinical guideline would be to place the implant 2 mm anterior to the most anterior aspect of the inferior alveolar loop. The intended diameter of the implant must be kept in mind; in most clinical circumstances, a 4 mm diameter implant is placed, the radius of the implant being 2 mm so the implant must be placed 4 mm anterior to the loop of the inferior alveolar nerve. Most surgeons will dissect out the position of the nerve and identify it clinically prior to implant placement (Fig. 35).

CT scans are extremely useful in evaluating the trajectory of the bone in the maxilla. When a patient has been edentulous for a significant period of time, pneumatization of the sinuses makes placement of implants very difficult.

With information from the CT scan, implants can be inclined to avoid the maxillary sinuses, or alternative procedures that utilize existing anatomical sites offering reduced morbidity and minimal invasion of the existing structures can be utilized.

Various software programs can be utilized to further enhance the treatment-planning process by allowing the clinician to plan surgical placement of the implant virtually and to identify any possible complications that might occur (Fig. 36).

Zygomatic implants can be placed to engage the zygomatic bone inferolateral to the orbital rim and provide anchorage for a fixed prosthesis in conjunction with anterior implants.

To obtain maximal benefit from such a scan, a radiographic template is highly recommended. Titanium pins or gutta-percha markers should be incorporated into an acrylic resin duplicate of the diagnostic denture set up. The markers are oriented perpendicular to the occlusal plane and should end apically at the height of the prospective clinical crown margin.
Clinical evaluation

The mucosal quality and thickness can be assessed by palpation, sounding or with the help of CT scans (Fig. 38). In patients with periodontal disease and pocketing, there may be an excess of gingival tissue when the teeth are extracted. This must need to be excised, so when the implants are placed, they are not too deep beneath the tissue. In almost every dentate patient, alveolectomy will be required when treatment planning for a fixed implant-supported denture (hybrid). Following alveolectomy, there will be an excess of tissue. It is the surgeon’s responsibility to ensure that when the patient is ready to immediate load, the abutment margins are all supragingival.

Incisal-edge position

The incisal-edge position is determined utilizing the principles taught in complete denture fabrication. Traditional guidelines tell us when the patient makes the “F” sound, the incisal edge should touch the vermilion border of the lower lip.

Once the incisal-edge position has been established, the length for the central incisors is determined. On average, the length of the central incisors is 10.5 mm; this can be more in elderly patients who exhibit gingival recession.

The axial inclination of the central incisor should be placed so as to provide adequate support for the upper lip. Once the crown length, angulation and coronal form have been determined, the distance between the cervical crown margin and residual bone crest can be assessed.

To determine if a fixed or removable restoration would be appropriate, a wax try-in is done without a flange. For a fixed restoration, the clinical crown should ideally end up at the soft-tissue level of the alveolar ridge. In this situation, minimal resorption would have occurred, interarch space will be favorable and an optimal tooth-lip relationship is present (Fig. 39).

When a large vertical distance exists between the cervical aspect of the tooth and the alveolar ridge but the tooth-lip relationship is favorable, pink ceramic may be utilized to disguise the tooth length and a fixed restoration is still possible (Figs. 40 and 41).

When there is both a vertical and horizontal discrepancy between the ideal position of the tooth and the alveolar ridge, and the tooth lip relationship is not optimal, this may be an indication for use of a removable prosthesis. The flange will provide adequate lip support.
Inter-arch space

Jaw shape has a significant influence on prosthesis design. The resorption of alveolar bone has been a considerable issue in prosthodontics for as long as clinicians have tried to replace missing intra-oral structures.

To accommodate adequate designs, different types of restorations require different dimensional tolerances. Accurately mounted casts are critical in assessing prosthetic space limitations. Spatial constraints must be considered as a matter of practicality. The limiting factor in edentulous patients is the available inter-arch space. An efficient method of evaluating inter-arch space in a patient with an edentulous maxillary arch is to construct a diagnostic putty cast. A facebow record is made with the patient’s denture in-situ. Putty is inserted into the intaglio of the patient’s denture, and this is then mounted on the upper member of an articulator. In this manner, we now have a replica of the patient’s maxillary denture bearing area.

An impression is then made of the opposing arch and a diagnostic cast poured. Occlusal registrations are made between the mandibular arch and the opposing denture and, subsequently, the mandibular cast is mounted.

This technique can be utilized for fully edentulous patients also (Figs. 42-50). The mounted casts can now be utilized to evaluate the available inter-arch space, and decisions can be made with regard to the anticipated prosthesis design.

An alternative method is to duplicate the patient’s existing denture in clear acrylic resin. Thickness of the maxillary denture base and the flange will give the clinician an idea of the amount of resorption that has taken place. The clinician will also be able to view the position of the ridge in relation to the cervical position of the teeth. In patients where no space exists between the cervical position of the teeth and the residual ridge, alveolectomy is advised if treatment planning a fixed implant-supported denture (Fig. 51).

Adequate restorative space is critical, and guidelines exist depending upon the type of prosthesis being treatment planned. For the purpose of this article, the focus will be on the implant-supported fixed denture.

There must be adequate space for bulk of restorative material that also permits a prosthesis design to establish esthetics and hygiene. If space is limited, re-establishing a patient’s vertical dimension or altering the opposing occlusion should be considered.

Guidelines for space requirements are between 14-16 mm. (Fig. 52). Heat-processed resin requires 2-3 mm to provide adequate strength as a denture base material. Space is also required for the prosthetic tooth and the titanium framework. If restoring both arches, a minimal space requirement of 32 mm is needed from the head of the fixture in one jaw to the head of the fixture in another.

Communicating bone reduction to the surgeon

Adequate restorative space often requires the surgeon to perform an alveolectomy. In most situations, this is decided through clinical judgment. There are no specific objective guidelines to perform alveolectomy, but information can be gained from a number of techniques:

- CT guided and measured. In this technique, a CT scan is taken with the patient wearing a duplicate acrylic appliance with radiographic markers at the correct vertical dimension of occlusion. The patient is asked to smile so the lip position is visible in the CT scan.
image. Software is required to allow the soft tissue to be visible in the image.

With software manipulation, the inter-arch distance can be accurately measured and the amount of reduction calculated, so as to hide the transition zone below the highest smile line (Fig. 53).

Window in duplicate of denture. In this technique, a duplicate denture made of clear acrylic resin is positioned intra-orally. The surgeon then asks the patient to smile.

After anesthesia, the surgeon makes a window in the duplicate denture, scoring the bone at the position of the highest smile line. On raising the flap, this marking serves as an indication of the amount of alveolectomy required (Fig. 54).

• Intra-operative determination. In a patient with excessive display of the residual ridge crest, the surgeon may ask them to smile and then perform the alveolectomy 5 mm above the highest smile line (Fig. 55).

• Bone reduction guide. This works well for patients who have only a few teeth remaining. A complete denture set-up is done at the correct centric relation and vertical dimension of occlusion (Figs. 56, 57). The jaw relation records are verified. (This clinical example will illustrate a mandibular bone-reduction guide). The lower denture is duplicated in clear acrylic resin and a radiographic marker placed (Fig. 58).

A CT scan is taken with the radiographic guide in place. The patient is also wearing the opposing maxillary denture.

On the CT film, measurements can be made using the radiographic marker and using the existing teeth as a reference (Fig. 59).

On the day of surgery, the maxillary denture and the duplicate mandibular appliance are placed intraorally. CR and vertical dimension of occlusion are verified (Fig. 60).

The surgeon marks a line on the bone identifying the amount of reduction required (Fig. 61). The guide is removed, the teeth are extracted and the bone planed down to the marked line. Once the bone has been leveled, the implants are placed (Figs. 62-64).

Editor’s note: Please watch for Part 2 of “Graftless solutions in implant dentistry” in the next issue of Implants magazine. That part will include treatment protocol, gaining restorative space, implant surgery and postoperative protocol.

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The reseat implant impression technique

Abstract

Accurate implant impressions are required for the successful delivery of prosthetics. The reseat impression technique offers an alternative employing triple trays without inter cuspatation.

Template material has been utilized to form a custom patient-specific preliminary impression that undergoes a light body reline to accurately capture fine anatomical detail applied through hydrostatic pressure. The technique provides a simple, accurate and clinically acceptable method.

Further developments have employed the Tres Perfect impression carrier and vinylsiloxanether to impress the implant fixture without the use of copings.

Introduction

The efficient execution of dental impressions is necessary for both the clinician and patient. Detailed accuracy of the impression is essential for the successful delivery of implant-supported prosthetics, particularly in the esthetic zone. Conventional impression procedures can prove to be a difficult hurdle (Fig. 1). The reseat impression technique has been developed as a simple alternative.

Conventional implant impression techniques rely on either the closed or open tray technique, with the option of splinting. Both techniques have limitations based on the following:

- Stock trays are inappropriate for PVS impressions.
- Limited tray size availability for tray impressions.
- Difficult posterior access for the open tray technique.
• Unparallel impression copings complicate the insertion and withdrawal.\(^5\)
• Closed tray "snap" impression copings may shift during tray insertion.
• Lack of detail of the impression requires retakes.

The reseat impression technique is based on the premise that triple trays can be employed without intercuspation to accurately impress the copings. Ultra-quick set silicone matrix material can be utilized to form a patient-specific custom tray and preliminary impression.

Rigidity and rapid setting are ideal characteristics of the silicone. Light body material is required to reline the preliminary impression. The relined impression is then seated back onto the patient’s dentition to accurately capture fine detail through hydrostatic pressure. The reseat technique is an adapted form of the rebite impression technique.\(^6\)

Methodology

Clinical case of an implant-supported anterior crown

A 68-year-old male presented with an asymptomatic fractured central incisor. Radiographic and clinical exam indicated a bone level horizontal fracture on tooth \#21 with no apical pathology or buccal plate disruption. The treatment option of root extraction and immediate implant placement followed by a porcelain fused to metal crown was selected over the guarded prognosis of endodontic therapy, post- and core-retained crown restoration.

Following an unremarkable immediate Straumann implant placement, the patient was followed post-surgically and dismissed until the final impression appointment.

Clinical examination revealed normal healing (Fig. 2) and the reseat impression technique was employed. An anterior Quad Tray (Fig. 3) (Clinician’s Choice: London, Ontario, Canada) was selected and loaded with Template (Figs. 4 and 5) (Clinicians’ Choice: London, Ontario, Canada). The Template preliminary impression was taken of the maxillary arch (Fig. 6) with the healing cap in place.

The impression was removed (Fig. 7), and the section of the impression where the healing cap was located was removed using a scalpel (Figs. 8 and 9). A screw-retained open tray impression coping was seated (Fig. 10) and tightened (Fig. 11). A periapical radiograph confirmed the fit. The fit and path of insertion of the preliminary impression was confirmed (Fig. 12). Affinity light body (Fig. 13) (Clinician’s Choice) was employed to reline the preliminary impression (Fig. 14).
The relined impression tray was reinserted (Fig. 15) and additional light body was added immediately if needed. Adequate pressure was applied to reseat the preliminary relined impression hydraulically. The light body was cleared from the impression coping screw to allow for easy driver positioning. The impression coping was unscrewed and removed with the final reseat impression (Fig. 16). The healing cap was replaced, shade taken (Fig. 17) and the patient dismissed.

The patient returned for delivery of the custom milled titanium abutment and porcelain fused to metal crown. The abutment and crown were seated and assessed on the cast (Figs. 18 and 19). The patient had the healing cap removed and the abutment seated (Fig. 20). A periapical radiograph confirmed the seating (Fig. 21) and the screw was torqued to specifications. The crown was seated and assessed for fit, contacts, occlusion and esthetics (Figs. 22 and 23). The screw hole was sealed and the crown cemented (Fig. 24) with Fujicem (GC America: Chicago). The patient returned for 48 hours post-cementation assessment (Figs. 25 and 26).

Clinical investigation of CAD/CAM abutment and crown

Because of the limited application of the Quad tray, a new tray has been employed. Tres Perfect impression carriers (Reserch Driven: Kilworth, Ontario, Canada) provide a full-size, adjustable triple tray (Fig. 27). The tray size offers coverage of the posterior

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**Fig. 12** Preliminary impression reseated for confirmation.

**Fig. 13** Affinity light body (Clinician’s Choice).

**Fig. 14** Relining of preliminary impression with light body.

**Fig. 15** Impression reseated intraorally.

**Fig. 16** Final impression with coping.

**Fig. 17** Shade selection.
molars bilaterally. That the tray can be manipulated by hand allows the clinician ideal fit and adaption to any arch arrangement. The supporting material is thick enough for material support yet thin enough to provide minimal distortion during maximal intercusptation.

Identium is a vinylsiloxanether impression material (VSXE) (Kettenbach: Huntington Beach, Calif.) that combines a polyether and A-silicone into one (Fig. 28). VSXE exhibits extreme hydrophilicity, is highly flowable and provides excellent resilience. The material handles very well clinically and produces highly detailed impressions.

A modified reseat impression technique has been employed without sectioning the area at the healing cap with a scalpel (Fig. 29). The result was an extremely efficient and accurate impression containing the impression coping (Fig. 30). The resultant model was fabricated (Fig. 31). A further simplified step was executed in which the Tres Perfect and Identium were employed to achieve an impression of the implant fixture without the utilization of an impression coping (Figs. 32 and 33). Digitization and morphogenesis are required to assess the validity of the technique.

Discussion

The reseat impression technique provides a simple and accurate method to replicate implant location and the soft-tissue framework. The ability to add Template incrementally allows for an easy chairside fabrication of a patient-specific custom tray and preliminary impression. The removal of the template with a scalpel at the impression coping site allows for an unobstructed path of insertion. By relining the preliminary impression, the clinician can capture the finest details of the fixture and soft tissues via hydrostatic pressure.

The reseat impression technique does have limiting factors. That the anterior quad tray is only available in one size and is only a segmental tray may limit case and patient selection. The template surface must
be dry and free of contaminants prior to adding the Affinity reline. The template cannot be reseated if severe undercuts are present. Equal seating force is required so that the hydrostatic pressure can force the light body for an accurate and void-free impression. Laboratory studies, to quantify the impression properties, would strengthen the validity of the technique.

Tres Perfect impression carriers combined with Identium offer further simplification with profound accuracy. Further studies are required to validate the procedure.

_Conclusions_

The reseat impression technique provides a simple, efficient and accurate method to replicate implant position and soft-tissue architecture. Template can be utilized to modify an anterior quad tray to be a patient-specific custom tray. Template can also be utilized as a preliminary rapid set impression material. Affinity light body can act as a reline to capture fine anatomical detail through hydrostatic pressure of the reseating. Because of the limited tray size, case selection may be limited.

A modified reseat impression technique employs the Tres Perfect impression carriers and Identium. This development allows for a more efficient technique that can be applied to all patient cases.

An alternative impression technique has been presented that provides an effortless procedure, simplifying the task for the clinician and patient. The result is the easy yet accurate replication of oral structures, providing for the successful delivery of implant support prosthesis.

_Disclosure:_ Les Kalman is the co-owner of Research Driven and the developer of Tres Perfect Impression Carriers.

_References_


5) Pavlatos J. Mandibular implant-supported overdentures.
Les Kalman, DDS, graduated from the University of Western Ontario with a doctor of dental surgery degree in 1999. He then completed a GPR at the London Health Sciences Centre. He has been involved in general dentistry within private practice since 2000. He has served as the chief of dentistry at the Strathroy-Middlesex General hospital. In 2011, he transitioned to full-time academics as an assistant professor at the Schulich School of Medicine and Dentistry. Kalman is also the coordinator of the Dental Outreach Community Services (DOCS) program, which provides free dentistry within the community.

Kalman has authored articles ranging from pediatric impression to immediate implant surgery in both Canadian and American journals. He has been a product evaluator for several companies, including GC America and Clinician’s Choice. Kalman is the co-owner of Research Driven Incorporated, a company that deals with intellectual property development. His most recent dental product invention has been featured on the W Network’s “Backyard Inventors” television series.

Kalman is a member of the American Society for Forensic Odontology, International Team for Implantology, Academy of Osseointegration, American Academy of Implant Dentistry and the International Congress of Oral Implantology, where he has been recognized with master distinction. He can be contacted at (519) 661-2111, ext. 86097, lkalman@uwo.ca or through www.researchdriven.ca.
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The American Academy of Implant Prosthodontics (AAIP) joined with its affiliates, Atlantic Dental Implant Seminars (ADIS) and the Linkow Implant Institute, to present a five-day comprehensive implant training course in Ocho Rios, Jamaica, in early July.

The course included lectures, hands-on participation, surgical and prosthodontic demonstrations, diagnosis and treatment planning of implant cases, the construction of surgical templates, diagnostic wax-ups, the insertion of two to six implants by each participant and sinus lifts under supervision of the course faculty.

The nine participating dentists inserted 56 implants, performed three sinus lifts and restored seven implants placed in a previous course. Patients were provided by the Ministry of Health and the University of Technology, School of Dental Sciences, of Jamaica. Course participants were from Arizona, Illinois, New Jersey, New York, Jamaica and St. Kitts.

Upon completion of the one-week comprehensive implant-training program, participating clinicians are able to accomplish the following tasks: identify cases suitable for dental implants; diagnose and treatment plan for preservation and restoration of edentulous and partially edentulous arches; demonstrate competency in the placement of single-tooth implants, soft-tissue management and bone augmentation; obtain an ideal implant occlusion; work as part of an implant team with other professionals; and incorporate implant treatment into private practice with quality results, cost effectiveness and profitability.

A dental degree was required for all participants. The course was tax deductible and 35 hours of dental continuing education credits were awarded upon course completion. Patient treatment was provided in a Jamaican dental school with personalized training in small-group settings. The course is a cooperative effort of the Jamaican Ministry of Health, the University of Technology, School of Dental Sciences, Jamaica, and the American Academy of Implant Prosthodontics.

Dr. Mike Shulman is course coordinator, Dr. Leonard I. Linkow is course director and Dr. Sheldon Winkler is course advisor. Course faculty, in addition to Shulman, Linkow and Winkler, include Drs. Robert Braun, Ira L. Eisenstein, E. Richard Hughes, Charles S. Mandell, Harold F. Morris, Peter A. Neff, Robert Russo and Robert E. Weiner. Shulman and Winkler taught the July seminar.

Implants and components for AAIP/ADIS implant seminars were provided by Hiossen Dental Implants. Dental laboratory support was provided by DCA Laboratory, Citrus Heights, Calif., Dani Dental Studio, Tempe, Ariz., and Dutton Dental Concepts, Bolivar, Ohio.

Complete information on the AAIP/ADIS Jamaica implant continuing education programs, including tuition, faculty lectures, transportation and hotel accommodations, can be obtained from the course website, www.adiseminars.com or by calling (551) 655-1909.
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AAIP to host 30th annual meeting in Arizona

The American Academy of Implant Prosthodontics (AAIP) will hold its 30th annual meeting on Saturday, Nov. 3, at the Carefree Resort & Conference Center, in association with the Dental Implant Clinical Research Group and Midwestern University College of Dental Medicine.

The theme of the meeting will be “Implant Update — 2012” and will feature outstanding dental clinicians. Podium speakers at the meeting are Drs. Robert J. Braun, Edward M. Feinberg, Jack Hahn, Leonard I. Linkow, Paul M. Mullasseril, William D. Nordquist, Robert Weiner and Christopher Torregrossa.

Dr. M. Joe Mehranfar will be general chairperson of the meeting and Dr. Mahmoud F. Nasr will serve as moderator. Alternate speakers are Drs. Charles S. Mandell, Mike Shulman and Sheldon Winkler.

Major dental implant manufacturers and several outstanding dental laboratories will exhibit at the meeting, the event’s organizers said.

Linkow, considered by many of his colleagues as the “Father of Oral Implantology,” will speak on “Five Decades of Dental Implants.” In 1992, New York University College of Dentistry created the first and only endowed chair in implantology in perpetuity with Linkow as the recipient.

Braun, the professor of oral and maxillofacial pathology, medicine and surgery at Temple University School of Dentistry, Philadelphia, will speak on “Systemic Implications of Oral Disease and its Relation to Oral Implantology.” Feinberg, director of the Westchester Academy of Restorative Dentistry, will speak on “The Precision Attachment Case for Implants.”

Hahn, a well-known pioneer in implant dentistry who has developed numerous implant devices and techniques used worldwide, will speak on “The ‘Emergency’ Implant — Immediate Extraction Replacement.” Mullasseril, associate professor and chairperson of the division of restorative dentistry at the University of Oklahoma Health Sciences Center, will speak on “Mini Dental Implants — Where Are We Today?”

Nordquist, who lectures worldwide and performs live-surgery seminars in the United States and Asia, will speak on “Saving Ailing and Failing Implants.” Torregrossa, director of the Dental Practice Group at Price Kong CPAs and Consultants, will speak on “Protecting Your Practice From Theft and Embezzlement.”

Weiner, who has lectured extensively throughout North and South America and Europe and taught at the University of Pennsylvania and Temple University, will speak on “Ridge Preservation and Site Preparation for Optimum Implant Esthetics.”

Founded by Dr. Maurice J. Fagan, Jr., in 1982 at the School of Dentistry, Medical College of Georgia, the objective of the AAIP is to support and foster the practice of implant prosthodontics as an integral component of dentistry. The academy supports component and affiliate implant associations around the world, including organizations in Egypt, France, Jordan, Kazakhstan, Israel, Italy, Jamaica, Paraguay and Thailand.


The academy holds an annual convention, international meetings in cooperation with its affiliate and component societies, offers continuing education courses and sponsors a network of study clubs in the United States. The AAIP website is www.aaiipsusa.com. A meeting program can be downloaded from the website.
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AAID annual meeting to debate implant treatment options and broadcast live surgeries

At the 2012 annual scientific meeting of the American Academy of Implant Dentistry (AAID), Oct. 3–6 in the nation’s capital, the main podium sessions will have a new format — 10 formal debates covering timely and perhaps controversial topics in implant dentistry. Speakers will be allotted 30 minutes to convey their arguments, and a moderated interchange of responses will follow. Session attendees can vote preferences electronically after each session.

“It should be one of the liveliest and provocative AAID meetings ever, as our speakers will debate alternative treatment options in their presentations,” said AAID President James L. Bush, DDS.

The debate topics include:
• Implant dimensions: long vs. short
• Esthetics: ceramics vs. gingiva
• Treatment planning: bioengineering vs. design engineering
• Treatment options: comprehensive vs. comprehensive
• Grafting: plain and simple vs. bells and whistles
• Placement: guided surgery vs. free-hand skilled surgeries
• Implant soft-tissue esthetics: biometrics vs. biomimetics
• Block grafts: autogenous vs. allogenic
• Vertical augmentation: vascularized osteotomies vs. GBR
• Prosthetics: glass ceramics vs. metal ceramics

In addition to the debates, the AAID meeting will feature live surgery broadcasts and 15 hands-on workshops covering topics such as laser implant dentistry and use of Botox and dermal fillers for optimal esthetic outcomes.

Former AAID president Joel Rosenlicht, DMD, will be the surgeon in a live broadcast showing interpositional bone grafting procedures. The procedure places bone-graft material between viable segments of existing bone. The session will help AAID attendees understand when bone grafting is appropriate and show the surgical technique and how to harvest autologous bone and use allographic bone material. Also, Alan Herford, DDS, MD, will perform live surgery in a session titled “Reconstruction of an Atrophic..."
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James L. Bush, DDS, left, is current AAID president. Former AAID president Joel Rosenlicht, DMD, right, will be the surgeon in a live broadcast showing inter-positional bone grafting procedures at the AAID annual meeting.

Ridge after rhBMP2.” The presentation will show how rhBMP2, a growth factor, enhances bone regeneration for augmentation of deficient ridges and improves bone quality and sufficiency for successful implant placement.

In addition, a live surgery will be broadcast from Russia with Maxin Kopylov, DDS, and Sergey Zorin, DDS, performing a vertical and horizontal 3-D bone reconstruction.

This session will help attendees diagnose and classify various types of bone loss and formulate treatment options.

Hands-on workshops are very popular with AAID meeting attendees and 15 will be offered at this year’s AAID meeting. Two sessions will cover laser implant dentistry and use of Botox and dermal fillers in dental practice.

Edward Kusek, DDS, will moderate the laser surgery workshop and show how to use erbium, diode lasers to treat peri-mucositis and peri-implantitis. Applications for Botox and dermal fillers are the fastest growing area in dentistry, and Louis J. Malcmacher, DDS, will conduct a fast-paced session that will enable attendees to integrate these facial injectable agents into their practices to optimize esthetic outcomes for implant procedures.

_About AAID

AAID is the professional society dedicated to maintaining the highest standards of implant dentistry through research and education. The academy’s annual meeting is the field’s leading venue for cutting-edge, evidence-based implant research presentations and demonstrations of state-of-the art implantation techniques. AAID is based in Chicago and has more than 4,500 members. It is the first organization dedicated to maintaining the highest standards of implant dentistry by supporting research and education to advance comprehensive implant knowledge. For more information on the AAID, see www.aaid.com.

‘It should be one of the liveliest and provocative AAID meetings ever, as our speakers will debate alternative treatment options in their presentations.’
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DENTSPLY Implants, North America
President Scott Root.
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Author_DENTSPLY Implants staff

_Following the Aug. 31, 2011, acquisition of Astra Tech AB by DENTSPLY International, a leading manufacturer and distributor of dental products, DENTSPLY Implants is the union of two successful and innovative dental implant businesses: DENTSPLY Friadent and Astra Tech Dental.

As the result of bringing together the No. 3 and No. 4 dental implant companies worldwide, (Astra Tech Dental and DENTSPLY Friadent, respectively), DENTSPLY Implants is poised to take a leading position in the dental implant market, the company said.

Aside from the sheer dollars and cents, there are many other aspects that make this the company to watch. As proudly communicated through its name, DENTSPLY Implants is a company owned and supported by DENTSPLY International, which, for more than a century now, has grown to become one of the largest professional dental products company in the world and whose products are used in more than 120 countries around the globe.

“Dental implants have revolutionized care for patients with missing teeth and can help to provide a positive impact on the overall quality of life,” said Scott Root, president, DENTSPLY Implants North America. “Under our new company, DENTSPLY Implants, we are able to truly leverage the many years of expertise and experience, and products and services of both the former Astra Tech Dental and DENTSPLY Friadent organizations to provide our customers with a broad portfolio of dental implant solutions.”

DENTSPLY Implants in North America offers a comprehensive line of implants including ANKYLOS® Implant System, ASTRA TECH Implant System™ and XIVE® Implant System as well as digital technologies such as ATLANTIS™ patient-specific abutments, Symbios™ regenerative bone products and professional development programs designed to support dental professionals in providing predictable and lasting implant treatment outcomes.

Each of the three implant systems offers its own unique benefits. The Tissue Care Concept of the ANKYLOS Implant System allows for subcrestal implant placement and measurable gain in interdental papillae height, while the BioManagement Complex™ of the ASTRA TECH Implant System provides exceptional marginal bone level maintenance results compared to that of the current standard norm. The more traditional internal flat-to-flat configuration of XIVE offers restorative simplicity and versatility to implant treatment. All of the implant systems are designed for use with either a one- or a two-stage approach.

DENTSPLY Implants is also the provider of ATLANTIS patient-specific abutments. Through the use of 3-D scanned images and the proprietary ATLANTIS VAD (Virtual Abutment Design) software,
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Other digital product solutions designed to support implant therapy, such as its Facilitate™ implant treatment-planning software and surgical guides are available to ensure accuracy and predictable outcomes. DENTSPLY Implants has also recently introduced Symbios, which includes a full range of quality allograft, xenograft and alloplast bone graft and membrane products.

In addition to its comprehensive product portfolio, DENTSPLY Implants also provides tools and services to support the practice and business development of its clinical and laboratory customers. It also collaborates with leading associations, reputable educational institutions and industry leaders to develop the congresses, courses and training needed to support its customers in learning the latest advancement and technologies available for implant therapy.

“Our goal is to be the leading provider of implant products and services that deliver the highest level of simplicity, reliability and customer satisfaction,” Root said. “With the strength and support of our parent company (DENTSPLY International) and the partnership and expertise of our customers, it is with enthusiasm and commitment that we work toward achieving this goal.”
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2012
BIOMET 3i marks 25th anniversary

BIOMET 3i, a world leader in oral reconstructive devices, is pleased to announce its 25th anniversary.

Founded as Implant Innovations Inc. (“3i”) on May 27, 1987, by Dr. Richard Lazzara, a periodontist, and Keith Beatty, an engineer, the company has grown to 1,000 employees with its global headquarters located in Palm Beach Gardens, Fla.

BIOMET 3i is recognized, the company says, for its cutting-edge product innovations in the development of biologically driven implants; winning worldwide acclaim for the microtextured surface of the OSSEOTITE® Implant, which has more than 15 years of documented research.

More recently, BIOMET 3i introduced a Bone Bonding® NanoTite™ Surface with a complex architecture at the nano-scale, which produces a mechanical interlocking of the newly formed cement line matrix of bone with the implant surface.

BIOMET 3i has also been recognized, the company says, for its contributions to new dental technologies, such as digital dentistry, with the development of its patented BellaTek™ Encode® Impression System. At the core of this system is the BellaTek™ Encode® Healing Abutment, which incorporates special codes embedded on the occlusal surface that translate the dental implant information needed without the clinician having to make an implant level impression. In addition, the impression of the BellaTek Encode Healing Abutment can now be taken with an intraoral scanner allowing for a quicker, more comfortable impression process for the patient.

Superior customer service and supporting continuous learning for dental health care providers have been at the core of the BIOMET 3i Business, the company says. This includes the recent launch of the new Institute for Implant and Reconstructive Dentistry (IIRD®), a state-of-the-art learning facility that combines leading-edge technology with evidence-based dentistry. It is located in Palm Beach Gardens, Fla., with affiliated locations in Mexico and Italy.

BIOMET 3i has been a leader in the dental industry for 25 years through continuous innovation, education, new market expansion and long standing relationships with global dental schools and societies. BIOMET 3i will continue to focus on treatment solutions that help to optimize dental care for patients, continuing to make implant dentistry a more widely accepted form of treatment.

“My dream to better the lives of patients through scientific, evidence-based research has now been fully realized. At BIOMET 3i, our primary goal is to provide clinicians and their patients the simplest, most esthetic outcomes. I couldn’t be more proud of what we’ve accomplished throughout the past 25 years,” Lazzara said.

BIOMET 3i will be celebrating this milestone at key events throughout 2012.

“It’s a pleasure to continue Dr. Lazzara’s vision,” President Maggie Anderson said. “The strategies and mission of the founders continue to resonate in everything that we do. We look forward to another 25 years of successful innovations.”

For more information on BIOMET 3i, visit www.biomet3i.com or contact (800) 342-5454; outside the United States, dial (561) 776-6700.
SAVE THE DATE

Yankee Dental Congress 2013 will bring together thousands of brilliant minds to learn about the most innovative approaches, practices, and resources in dentistry.

Here is a sneak peak at a few education highlights:

Gordon Christensen, DDS
RESTORATIVE

Loretta LaRoche
PERSONAL DEVELOPMENT

Kenneth Hargreaves, DDS
ENDODONTICS

Roger Levin, DDS
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Laney Kay, JD
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Cherilyn Sheets, DDS and
Jacinthe Paquette, DDS
RESTORATIVE/ESTHETICS

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The InterActive evolution of conical connection implants

Fig. 1. InterActive’s All-in-1 Packaging (4.3 mm shown). Includes implant, fixture-mount/abutment/transfer, cover screw and healing collar for convenience and up to 70 percent savings. (Photos/Provided by Implant Direct)

Author: Gerald A. Niznick, DMD, MSD


The Core-Vent (1982) internal hex implant (Niznick G. US Pat. No. 4,431,416) with cemented abutments brought versatile prosthetics to implant dentistry, but it was the Screw-Vent® (1986) internal hex-thread connection with a lead-in bevel (Niznick G. US Pat. No. 4,960,381) that brought together stability and detachability.

This connection facilitated the design of narrow-diameter implants, and its stability made cementation in partially edentulous jaws the treatment of choice.

This type of implant-abutment connection became the cornerstone of modern implant design and is today referred to as a conical connection in the most popular implant systems. Before the patent’s expiration in 2007, this connection was licensed to eight different implant companies and since has been incorporated into most implants, including the NobelActive™ and NobelReplace™ Conical Connection implants.

Whether the lead-in bevel is 45 degrees above an internal hex, as in the original Screw-Vent (Zimmer Dental), MIS or BioHorizons implants; 82 degrees above an internal octagon (Straumann®); 79 degrees above an internal double-hex (Astra™); or 78 degrees above an internal hex (NobelActive™), “conical” connections provide lateral stability to reduce the occurrence of screw loosening in comparison to butt join connections (tri-lobe and external hex implants).

One problem with increasing the slope of the lead-in bevel is that it moves the anti-rotational feature (internal hex) farther down the internal shaft, often requiring X-rays to verify full seating of the abutments. It also thins the walls of smaller diameter implants, increasing the risk of fracture under lateral load.
The new InterActive™ system of conical connection implants and abutments from Implant Direct (anticipated launch 4Q12) provides a platform compatible to the NobelActive and NobelReplace Conical Connection. The InterActive abutments incorporate design modifications to help ensure full seating of the abutments without the necessity of confirming radiographs.

This is accomplished by lengthening the hex and shortening the bevel so that a lack of full seating is readily apparent, as the hex will be visible above the implant. Two other features also assist full seating. A piloting feature has been added to the bottom of the abutment’s hex to help guide insertion, and an internal thread has been added to the abutment shaft to retain the screw while the abutment is rotated to a full seat in the implant’s deep hex. The contours of the InterActive abutments, transfers and healing collars have been designed for improved soft-tissue management with a concave emergence profile.

The InterActive implant is available in four diameters with the same platform for the 3.2 mm and 3.7 mm implants as the NobelActive 3.5 mm implant, and the same platform for the 4.3 mm and 5.0 mm implants as used with the NobelActive implants of these diameters.

The platforms are color-coded for easy identification with matching anodized cover screws, healing collars and transfers.

The body of the InterActive implant matches that of the successful Legacy™2 implant with double lead body threads over the tapered two-thirds of the implant for faster insertion.

These threads are flat-based and become progressively deeper toward the apex for increased surface area. Three long vertical cutting grooves and tapered body with a round apex ensure the implant will follow the trajectory of the osteotomy and allow self-tapping insertion using dense-bone drills without the need for a bone tap.

An additional design improvement incorporated into these new implants is the combination of coronal quadruple-lead micro-threads (Niznick Pat. No. 7,677,891) with micro-grooves (Niznick Pat. Pending) for enhanced crestal bone preservation and initial stability.

The InterActive’s revolutionary two-piece fixture-mount (Niznick Pat. Pending) serves as a transfer and final preparable abutment. The square top is friction retained in the top of the abutment and, when used as a transfer, releases with the impression. The abutment (attached to an implant analog) then snaps into the impression, mating metal with metal for accuracy.

The square top also offers a torque safety feature, stripping when over-torqued to prevent damage to the implant’s interface.

The All-in-1 Packaging of the InterActive further includes a cover screw that can be used for submerged healing or with a 2 mm extender/healing collar (Niznick US Patent No. 7,396,231) for added value and simplicity.
Anew implants meet the ‘most precise’ standards

First used in 2000 and granted FDA approval in 2004 for long-term use as determined by health-care providers, the 1.8, 2.2 and 2.4 mm diameter ANEW implants from Dentatus have met the most precise implantology standards having undergone rigorous testing, research and clinical use by the profession.

ANEW Implants are widely recognized by clinicians and universities worldwide. These narrow-body implants provide effective remedy for many because they are ideal for patients who have limited interdental spaces, insufficient bone or require provisionalization during augmentation procedures. ANEW Implants should also be considered when financial constraints might delay or prevent treatment.

Nearly 25 percent of patients who come in for implant treatment will not have enough bone to place a conventional diameter implant, Dentatus said. Practitioners placing implants should consider including ANEW in their armamentarium so that all patients might take advantage of the benefits that implants afford.

ANEW Implants are the only one-piece narrow-body implants that have restorative options for screw-retained prosthesis, Dentatus said. ANEW boasts a number of features that set it apart from other implants, including a short-threaded external connector that tolerates substantial abutment angulation without stress.

ANEW’s prosthetic components provide patients with a cosmetic, fixed chairside restoration at the time of placement so they never have to go without teeth. There are a variety of platforms available for restorative ease, presenting flexibility for optimal esthetic solutions.

For instances of single tooth replacement in narrow spaces, the availability of ANEW Implants provides patients who might have to proceed with a fixed or resin-bonded bridge the luxury of dental implants without preparation and/or reduction of the adjacent natural dentition. Another advantage to this modality is the maintenance of alveolar bone, which is documented to undergo resorption with other restorative options.

In 2012, Dr. Francois Fisslier and Dr. Carlos Munoz from the New York University Department of Implant Dentistry presented the following findings about papilla regeneration at the Academy of Osseointegration’s 27th annual meeting:

“In this case series, nine patients received 10 [ANEW Narrow Diameter Implants (NDIs)] which were loaded for periods of six months to 10 years post-insertion. No implants or prosthesis had to be removed or replaced during the follow-up period. Neither a surgical or prosthetic complication was seen on any of the 10 NDIs. The average mesial [Papilla Index Score (PIS)] was 2.4 and the average distal PIS was 2.7, indicating that the NDIs regenerated at least 50 percent of the papilla in all cases (20/20 papilla).”

The non-hygroscopic screwcap allows for retrievability, so that during the healing period the restoration contours can be easily modified to the tissue architecture, thereby eliminating a final “black triangle” result, Dentatus said.

Its effective adaptation and integration in bone has been shown to be on par with conventional implant
fixtures and provide excellent support and retention. In 2007, Dr. Stuart Froum and his colleagues published a study in the International Journal of Perio and Restorative Dentistry stating “40 Anew Implants in patients for one to five years post-loading. No implant failures were reported, yielding a 100 percent survival rating.”

In 2005, the Journal of Oral and Maxillofacial Implants published Dr. Michael Rohrer’s histology study on Dentatus implants. Rohrer determined that the percentage of bone in contact with the body of Dentatus implants was in “the same range and sometimes higher than what is usually seen with conventional implants.”

The recommended surgical techniques allow for minimally invasive flapless placement and immediate loading. This eliminates most postoperative challenges and dramatically reduces the total time in treatment. These implants solve the problems of time, money and perceived pain for most patients who otherwise do not proceed with care, Dentatus said.

Other indications for use are noted below.

_Atrophic and thin ridges_

For patients with atrophic and thin ridges who cannot or do not want to undergo lengthy augmentation procedures based on age, systemic disease or inadequate volume of bone, Anew Implants are an economical and viable long-term solution.

_Emergency repairs_

One of the most difficult situations for the practitioner is the emergency intraoral repair of a broken bridge. With ANEW Implants on hand, those difficulties are a thing of the past, Dentatus said. Once the bridge is removed, the implant can be placed in the interceptal bone, stabilizing the bridge, returning the patient to a dentate state while a long-term treatment plan is determined.

_Bone augmentation_

Many implant treatment plans include some type of bone augmentation procedure. It may involve a sinus lift, replacement of the buccal plate and/or widening or heightening a ridge. Selling an implant case involves overcoming a patient’s concerns; one of the major roadblocks is the patient’s perception of a long, drawn out treatment period. Anew implants will give patients teeth during the entire treatment and avoids transmucosal loading of the graft while the patient is able to function with a fixed restoration.

For more information and to see other areas of use, visit www.DentatusUSA.com.
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Zimmer Dental Angled Tapered Abutment expands options

Author_Zimmer Dental staff

Zimmer Dental Inc., a leading provider of dental oral rehabilitation products and a subsidiary of Zimmer Holdings, Inc., is pleased to announce the availability of the Zimmer® Angled Tapered Abutment—a line extension that provides clinicians with the flexibility to place implants off-axis (i.e., tilted) and choose from multiple surgical protocols, including immediate-load, screw-retained restorations, to best meet the specific restorative needs of their patients.

Available in 15- and 30-degree angle configurations, the Zimmer Angled Tapered Abutment promotes angulation correction for off-axis implant placement, repositioning the restorative platform to facilitate insertion of the prosthesis.

The abutment’s 1.2 mm low-profile cone is ideal for use in cases with limited interocclusal space, while the cone’s 15-degree taper allows for additional angulation correction. The ability to place implants off-axis aids in maximizing the use of available bone, avoiding the alveolar nerve and sinus, and minimizing the cantilevers for the prosthesis in multi-unit, partially and fully edentulous screw-retained restorations, the company says.

The user-friendly Zimmer Angled Tapered Abutment’s multiple cuff heights enable the clinician to select the size that best meets the patients’ soft-tissue measurements.

Furthermore, this new abutment has exhibited exceptional strength and durability in testing compared to other popular brands1, and is fully compatible with Zimmer Dental’s existing restorative components and the renowned Tapered Screw-Vent® Implant System, for greater convenience.

“These new Angled Tapered Abutments broaden our restorative portfolio and give clinicians even more flexibility in choosing surgical protocols to best meet the needs of their patients, restore their mouth function, and enhance their quality of life,” said Harold C. Flynn, Jr., Zimmer Dental president. “At the end of the day, our focus, first and foremost, is on giving our customers the tools they need to improve their patients’ lives.”

For decades, Zimmer Dental has gained the trust of thousands of clinicians worldwide who count on its comprehensive line of products to deliver successful patient outcomes.

For more information on integrating the Zimmer Angled Tapered Abutment into your practice, contact a Zimmer Dental sales consultant at (800) 854-7019, (760) 929-4300 (for outside the U.S.), or visit www.zimmerdental.com.

1) Data on file

(Photo/Provided by Zimmer Dental)
submissions

formatting requirements

Please note that all the textual elements of your submission:

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- figure captions
- literature list
- contact info (e-mail addy please)
- author bio

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All images must be submitted separately, and details about how to do this appear below.

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Article lengths can vary greatly — from a mere 1,500 to 5,500 words — depending on the subject matter. Our approach is that if you need more or less words to do the topic justice, then please make the article as long or as short as necessary.

We can run an extra long article in multiple parts, but this is usually discussing a subject matter where each part can stand alone because it contains so much information. In addition, we do run multi-part series on various topics. In short, we do not want to limit you in terms of article length, so please use the word count above as a general guideline and if you have specific questions, please do not hesitate to contact us.

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Please number images consecutively by using a new number for each image. If it is imperative that certain images are grouped together, then use lowercase letters to designate the images in a group (i.e., Fig. 2a, Fig. 2b, Fig. 2c).

Insert figure references in your article wherever they are appropriate, whether that is in the middle or end of a sentence, but before the period rather than after. Our preference is to have figure references noted in the appropriate place within the text as it helps the readers to orient themselves when moving through the article. In addition, please note:

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