The Dynamic Abutment Solution - Invitation to view

by

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As Technicians, we are continually searching for options, whether they be material or technology related, that will help us in the pursuit of providing our clinical partners and their patients with the most functional esthetic and long-lasting restorations.

The focus of this article is to showcase how one company's objective to meet the demand for innovation and quality is helping a growing number of dental technicians and clinicians provide favourable solutions in unfavourable situations.

Our laboratory was first introduced to the Dynamic Abutment a few years ago by their exclusive Canadian distributor; ISO certified Swiss NF Metals, Inc. The introduction was during the onset of what can be described as the "zirconia age," and with a plethora of components flooding the market, the Dynamic Abutment system stood head and shoulders above the rest due to its unique features and benefits. For starters, the reusable design of the PEEK scan body sleeve and titanium base/screw assembly meant that at a minimum, only 5 different scan body sleeves are necessary for every future restoration. This came as a relief as our current inventory of various scan bodies at the time was approaching 200 individual scanflags/scanbodies.

The biggest attraction of the system is the ability to correct the screw access (up to 30°) of less than favourably placed implants, particularly implants in the "esthetic zone." With compatibilities on over 50 different implant manufacturers this system provides technicians and clinicians with the incredible versatility to predictably restore the most difficult cases across a broad spectrum of implant manufacturers.

From experience, our laboratory's most significant challenges when restoring implants often manifest in the way these implants have been placed in the bone at the time of surgery. Two of the most common issues we face would be:

1: The angulation of the implant.
2. Implants placed very deep.

Angulation issues can limit us from being able to provide patients with the most favourable long-term options, especially in the esthetic zone, where screw-retained options must have the screw access in favourable positions (usually on the lingual side of the tooth).

When implants are placed very deep in the bone, we are often challenged with a considerable prosthetic space that results in restoring on abutments that are too short. Adequate abutment height must be used when restoring teeth/gingiva with a sizeable prosthetic space.

Let's take a look at some of the benefits of this system with two real cases.

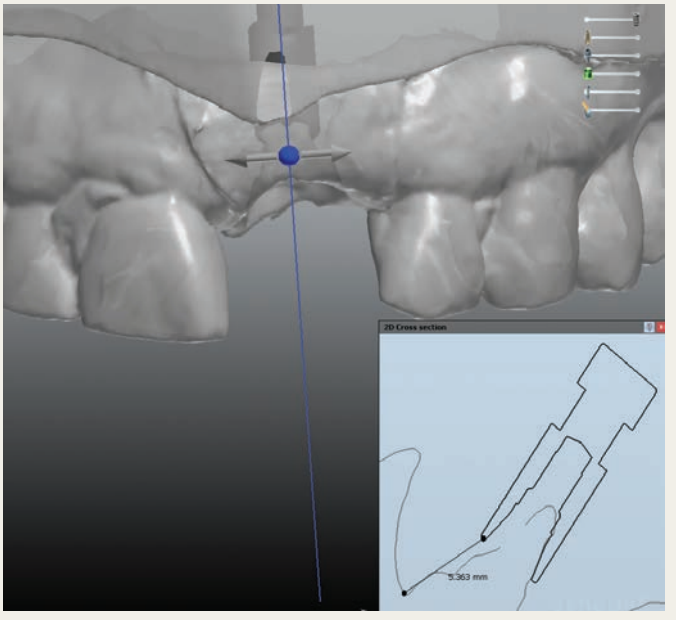


Fig. 1 — Implant placed >5mm below the buccal gingival crest

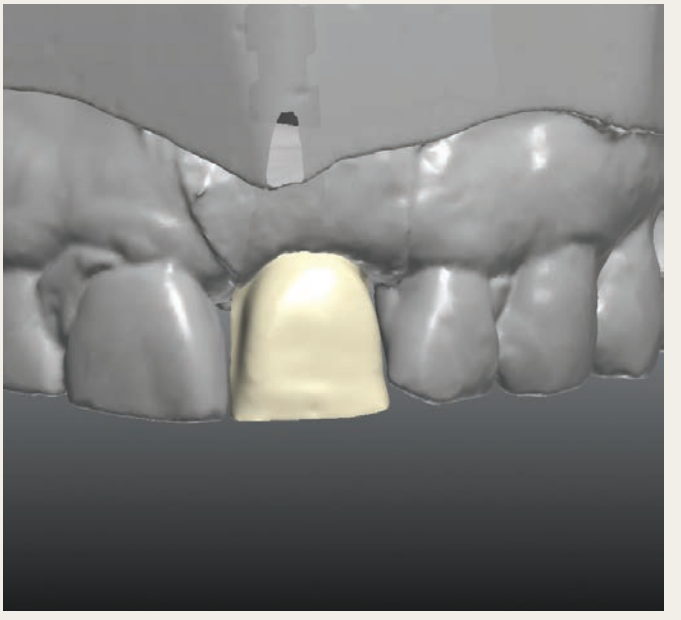


Fig. 2 — Virtual prosthesis fabrication

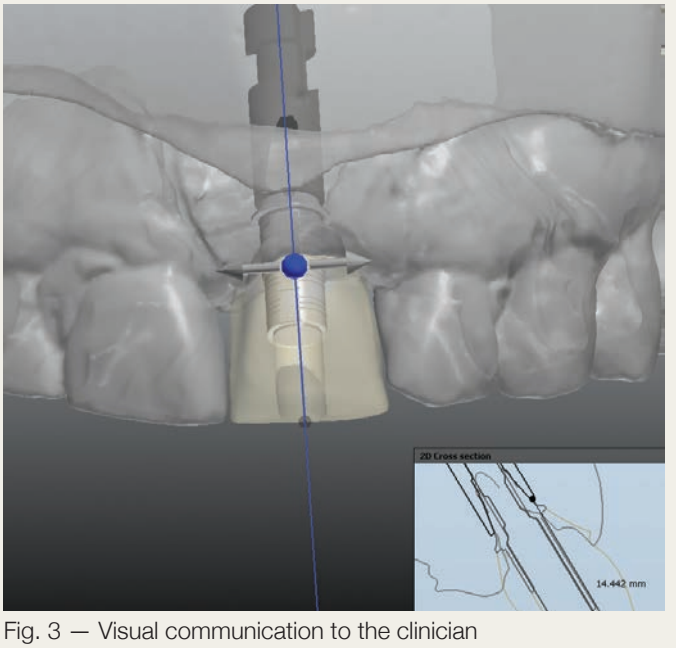


Fig. 3 — Visual communication to the clinician

Case #1 - Single Central

The challenge for us when restoring this case was two-fold, not only was the implant placed
> 5mm below the buccal gingival crest (Figure 1), the implant was also placed at an unfavourable angle. The height from the implant to the ideal incisal edge position was close to 15mm. Implants placed in the anterior region of maxilla often are optimally placed following the anatomy of the bone that is present, which often means tilting the implant to avoid anatomical structures (nasal cavity and maxillary sinus). Also, the anterior region of the maxilla usually has thin cortical bone on both the buccal and palatal surfaces.

The treatment plan was to restore the missing tooth with a zirconia screw-retained crown that would have a facial cutback for ceramic layering. Once a suitable design was fabricated (Figure 2) the extent of the two complicating factors could be visually communicated to the Clinician (Figure 3). The significant amount restorative space and the unfavourable screw-access meant choosing a treatment option that ideally could address both factors at the same time.

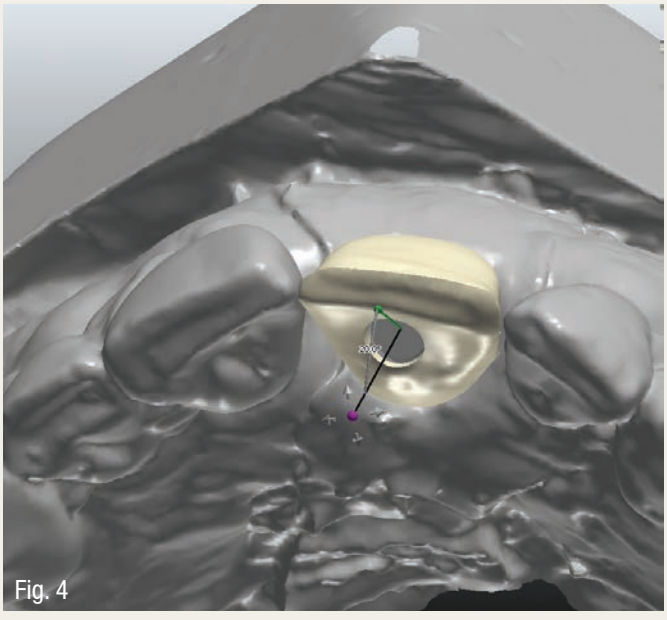
Dynamic Abutment Solutions offers tibases (titanium base) with bonding surfaces ranging from 3.5mm all the up to 9mm, all with accompanying variable gingival heights. For this case, a tibase with a 7mm bonding surface and a 1.1mm gingival height was selected. The last step in the design phase was a 20° correction of the screw access to ensure adequate thickness and strength of the zirconia framework (Figure 4 and Figure 5).

Case #2 - Maxillary Hybrid

Fixed hybrid restorations are an excellent treatment plan for restoring an entire arch. Angle correcting Multi-Unit Abutments (MUA) are often used with great success. The primary challenge we had when restoring this case was that even with 30° MUAs on the anterior implants we still had the screw access holes right on the incisal edges of teeth #11 and #21 (Figure 6).

Dynamic Abutment to the rescue! A simple angle correction with the system meant we were confidently able to deliver an esthetic and practical result to the Patient (Figure 7 and Figure 8).

All cases restored using the Dynamic Abutment system must be appropriately torqued intra-orally utilizing their uniquely engineered screwdriver which is designed with a hexalobular head. Tightening torque is transmitted with



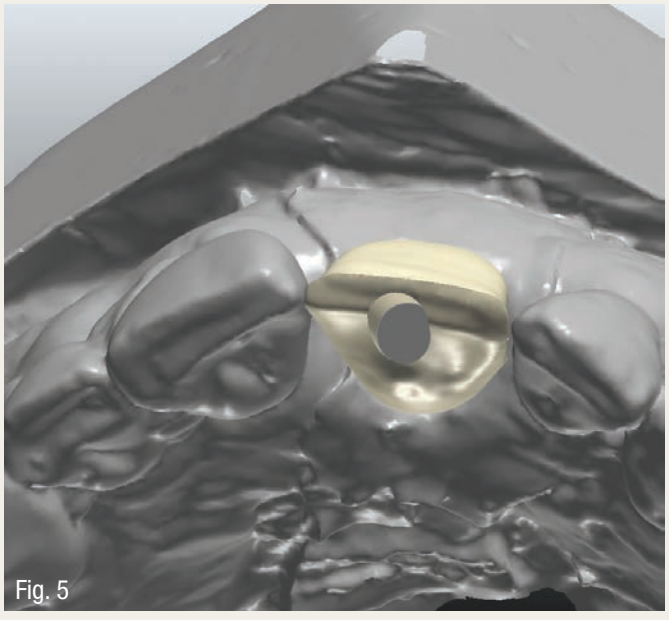


Fig. 4 - 5 — 20° correction of the screw access

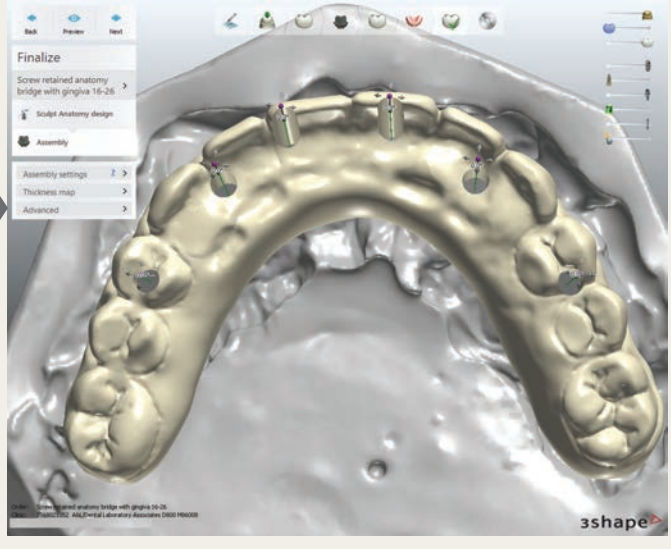
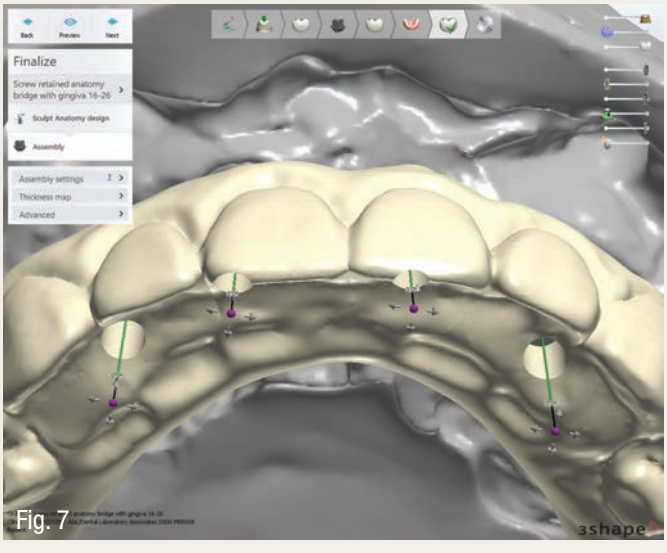


Fig. 6 — The challenge of screw access holes on the incisal edges



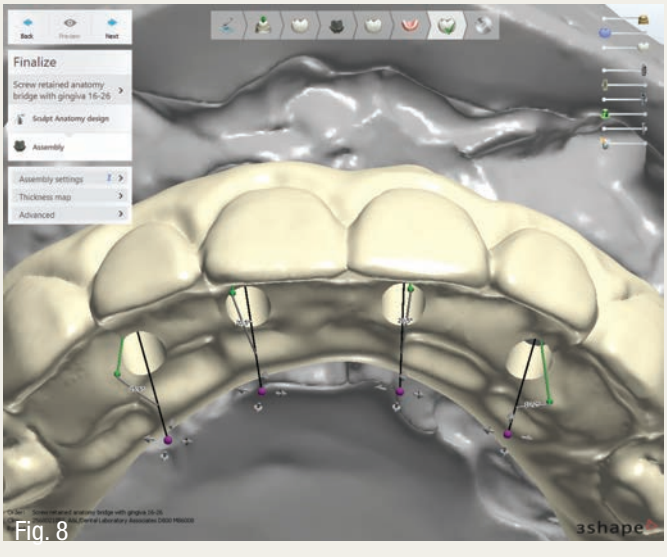


Fig. 7 - 8 — The Dynamic Angled Abutment creating a lingual screw access hole

maximum efficiency through the unique driver head to the matching screw, thus minimizing any future potential of screw loosening.

Over the past decade, the Dynamic Abutment has demonstrated a leading position in the industry when it comes to research and development of new and innovative CAD/CAM products. With over 50,000 cases completed with the Dynamic Tibase system and a lifelong guarantee for its entire range of products, the Dynamic Abutment Solution solves many problems. SD

Biography

Kojo Hayford is a Registered Dental Technician. He graduated from George Brown College with honours in 2006, Kojo Hayford became one of six Registered Dental Technicians at one of Canada's most progressive dental laboratories, Dental Laboratory Associates in Thornhill.