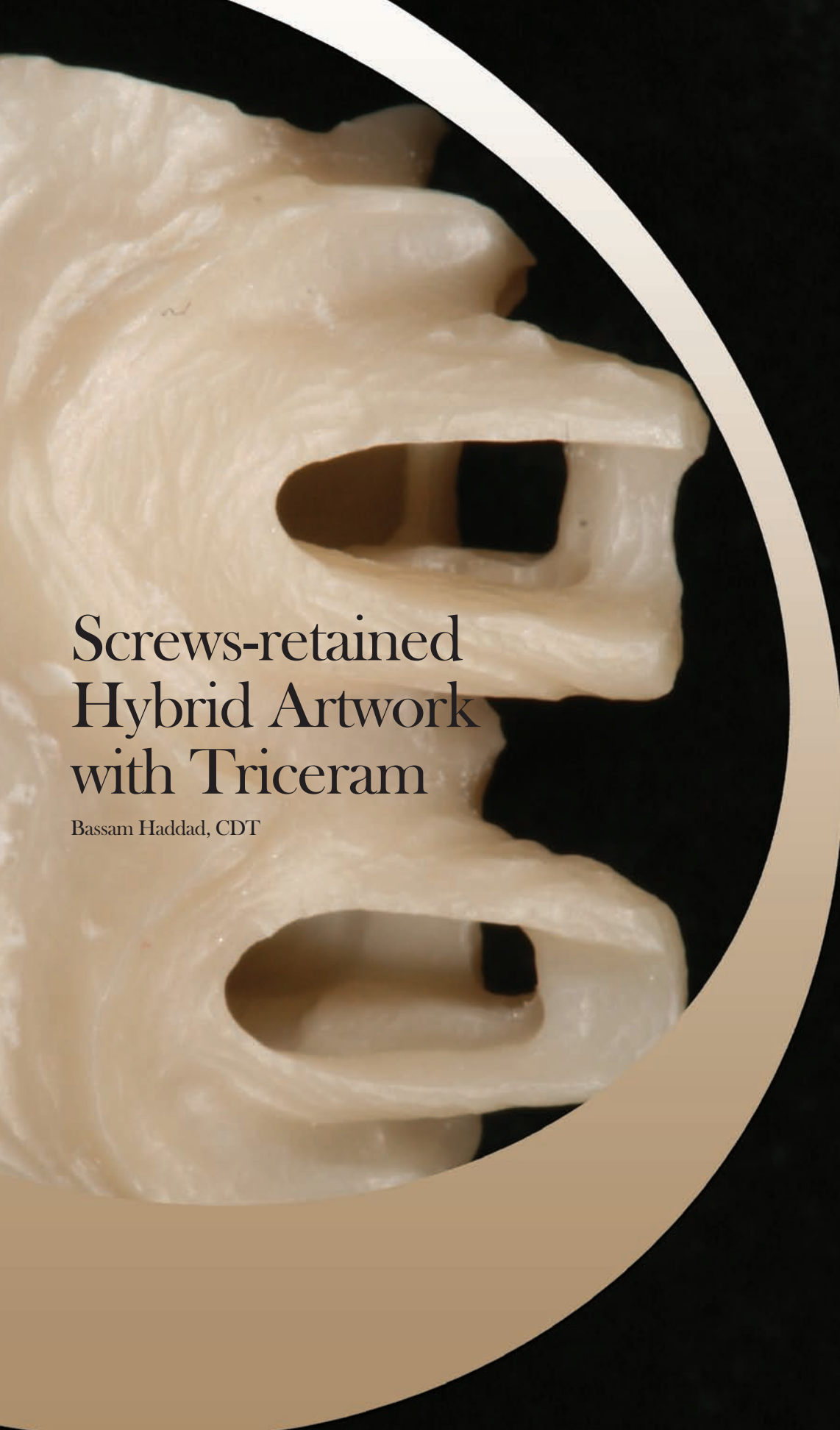




Screws-retained Hybrid Artwork with Triceram

Bassam Haddad, CDT

Most laboratories receive implant cases which have aesthetic difficulties that they have to solve: the parallelism, difficult types of implants, at the same time implant's depth in the gum and implants position. What I have noticed most often is the bone loss in most cases; even after a bone graft, a few months later you would notice that this artificial bone has moved from its original position or has resorbed. This causes defective lip support, incorrect tooth position, disharmony in the smile and muscles of the face which will not act or move in the same manner.

A lab technician must create an esthetic prosthesis which passively fits in the same position as the original dentition without thinking about the implant's position. In my personal opinion I always start from the natural position of the teeth and I then create and fill in the surrounding area. This case shows what can be created in a very logical and functional way by maximizing the esthetics, at the same time keeping in mind patient comfort, all followed by periodic checkups and observations by the dentist.

As you can see here we have a central #11 and a lateral #12 that were both replaced by implants and were placed too high and very close to the nose due to bone loss. If we take a look from the occlusal view we can clearly see the concavity of the bone in relation to the gum above teeth #21 and #22. (Fig. 1)

The first step the lab must take is to design a wax-up. We used temporary abutments on those 2 implants to produce our wax-up, creating the bone and gum loss labially and lingually and placing teeth #11, #12 in their original position, but also verifying parallelism by making an implant guide. At the try-in consultation the patient felt very comfortable and the thickness of the bone made his upper lip look symmetrical. (Figs. 2 & 3)

We then waxed our Gold base custom abutments and lengthen them, except labially. A lingual square was created which slightly protruded out of the lingual side. We then closely verified and compared the positioning to the putty matrix that had been created from the initial 3D try-in wax-up. (Figs. 4 & 5)



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9



Fig. 10

The abutments were cast, milled then polished and defined the lingual squares. We left a 1.5mm space above it for the next steps.

We recreated the bone and lengthened the abutments with our blue composite in which the lingual squares protruded out of. The fabrication fit perfectly on the cast abutments. (Figs. 6 & 7)

The composite portion was then transformed into Zirconia with a manual machine. By doing so, one can create any form of composite, which can then be duplicated into Zirconia. We then tinted the Zirconia at its green stage using the gingiva and the abutment shade and sintered it. We obtained a beautiful and smooth light pink

shade on the bone portion and Dentin A1 shade on the abutment portion. (Figs. 8, 9 & 10)

Triceram gingival dentin ceramic was built on the gingival portion by adjusting the height, positioning, shape contour and embrasure similar

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to the adjacent teeth (21-22), which will then be vertically screwed into the implants. (Fig. 11)

I then tapped the Gold lingual squares, inserted the screws and cemented the Zirconia gingival portion to the abutments using Multilink implant. (Fig. 12)

The advantages are:

- Perfect positioning of the margins as a prepared tooth and same level of margin as the adjusted tooth.
- Great thickness of bone and gingival labially
- Maximizing aesthetics
- Easier clinical procedure as the practitioner will not need to use any cement; everything is screws-retained.
- We heightened the Zirconia preparation screwed vertically with Gold casted abutments.

Two Zirconia crowns with lingual openings at the same level as the lingual tapped squares were created. (Figs. 13 & 14)

After the try-in the dentist prepared teeth #21-22 by preserving the same gingival level. We also manually prepared the Zirconia copings for teeth #21-22, as we wanted to match the shade, surface quality and texture. (Fig. 15)

Now we will have 4 matching natural looking anterior crowns-2 which are natural teeth preparation and the other 2 which we created in the lab on hybrid gold/zirconia abutments. The result we are trying to attain is that all 4 teeth match beautifully. I then finalized the thickness and the positioning of the gingival for teeth #11 and #12 to exactly replicate the natural side (21&22).

We then cut back the margins by 1.5mm to create our butt joint, to make sure that all 4 gingival heights are on the same level. We used Dentaureum's Triceram shoulder material and gingival ceramic to build-up and to level all 4 gingiva heights.

A thin layer of Dentin A2 was used at a higher temperature to create a connection layer with Zirconia.

Dentin A2, IT 57, IO 1, IO 2 and NT were used to obtain the desired effect. We also used gingival dentin to match the shade of the natural gum, even though the patient's high lip line is low.

The patient must take care of their oral hygiene by using a Waterpick and by visiting the dentist





Fig. 15



Fig. 16

twice a year. Just like a patient that has an overdenture.

We continued by building up porcelain and finished the case easily in a beautiful and harmonious manner, keeping also close attention to the facial bone and gum level. Once we were able to obtain nice texture and degradation of colors in harmony with the natural teeth, we then glazed and manually polished the ceramic to obtain natural diffusion of light. (Fig. 16)

The practitioner will receive two screws-retain parts for #11 & #12.

The first part consists of the bone, gum and abutment which is screwed vertically. (cemented together before)

The second part is two separated crowns #11 and #12 screwed lingually.

Cemented Zirconia crowns are on #21 and #22. (Fig. 17 & 18)

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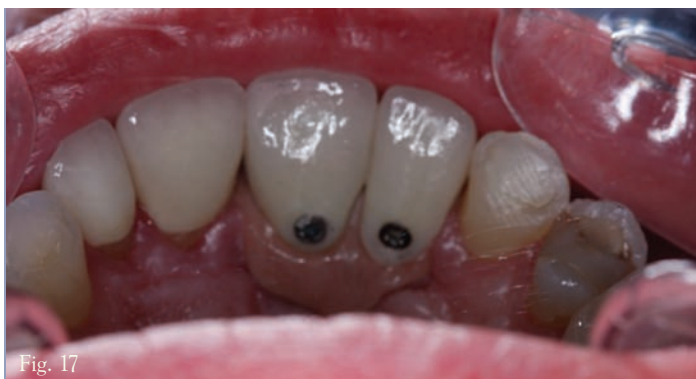


Fig. 17



Fig. 18

A dental technician must always have the knowledge and be up to date with the latest materials and systems available, and have the imagination and foresight of using biocompatible materials. 

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About the author



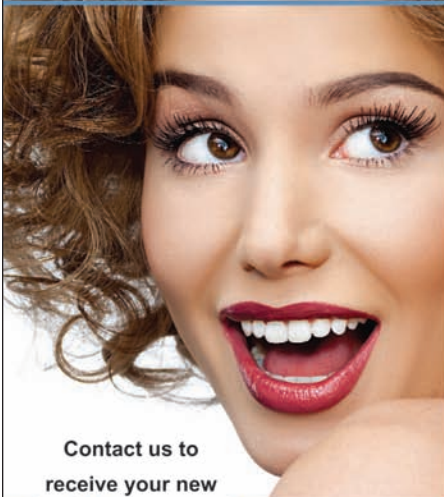
Bassam Haddad has been dental technician for 24 years. He acquired a comprehensive knowledge in various systems of dental technology with some of the greatest masters in the world. He is the author of several local and international articles on aesthetic and restorative dentistry. Bassam is one of the rare technicians who dares to present real cases. He experienced it more than once in international dental meetings in America and Europe. He is known to give passionate hands on courses where he shares his knowledge, own techniques and discoveries to manipulate ceramic and other materials for a natural and aesthetic result.

Bassam is member of the American Academy of Cosmetic Dentistry, the European Academy of Cosmetic Dentistry and an honor member of the Society of Esthetic dentistry in Romania. He is the owner of VIVACLAIR CANADA dental laboratory in Montreal.



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