Introducing the Dental Lab Tribune

By Rodney Abdallah
CDT, Lebanon

For the first time dentists and dental technicians will be together in one pool of news, business, industry, politics and science in the world leading dental newspaper.

As a Certified Dental Technician, it is my great pleasure to welcome you to the first Dental Lab Tribune edition within Dental Tribune Middle East & Africa.

I am proud to announce the birth of this highly anticipated section which is part of the Dental Tribune International Publishing Group, composed of the leading dental trade publishers around the world. Its combined portfolio includes more than 100 trade publications that reach over 650,000 dentists in more than 90 countries in 25 languages.

It is highly important to recognize the importance of the Dental Laboratory and its technicians who play a vital part of any Dental Team. It is the place where science meets art, the backbone of any Dental Clinic much needed in providing the perfect smile as end result.

Dental Lab Tribune will be entirely dedicated in providing the latest news, state-of-the-art research & developments, products and education with special focus on developing further Dental Laboratories and the already skilled Dental Technicians. Working together with world leading Dental Professionals, Dental Tribune Middle East & Africa will be delivering the much needed information to its readers. As part of the Editorial Board, together with my colleagues we intend to keep Dental Lab specialists informed of the latest developments, events and advances in both general and specific Dental Lab topics in an easily accessible format including graphs, tables and figures which will appear in their original articles.

By placing an emphasis on publishing novel and high-quality research papers together with the latest industry developments related to the Dental Lab, the Dental Lab Tribune section aims to influence the practice of Dentistry on a Dental Lab, research, industry and policy-maker level on international basis. Readers will have direct contact with industry players in a knowledge exchange environment, creating a forum for discussions, questions and exchange of valuable information through our ‘feedback session’.

For the above targets, I would like to invite all Dental Lab specialists to interact with Dental Lab Tribune. I look forward to exchanging all related Dental Lab experience with you.

Yours faithfully,
Rodny Z. Abdallah
Certified Dental Technician

Crows VS Veneers

All the way to creating esthetic Reconstruction of aesthetic & its functionality in combined (Crowns-Veneers) case.

Dr. Sami Bese & CDT, Aiham Farah
Damascus/Syria

45 year old female presented to the clinic unsatisfied with the appearance of the composite veneers she had on her upper and lower anterior teeth, besides a phonetic problem with the letter S in particular. She desired functional and aesthetic restorations.

Diagnosis:

Intra Oral clinical exam showed discoloration, lack of vitality, and poor appearance of the composite veneers on the upper and lower anterior teeth, the upper premolars, plus a little deep bite in the centric occlusal jaws relation, what prevented from having proper dimensions (width X length).

Radiographic testing revealed good and had endo-treatment for different teeth with a questionable over all prognoses. Also it appeared to have generalized horizontal bone resorption, which played a major role in the loss of the inter-dental papillae.

Fig 1: Preoperative situation showing the poor appearance of the composite veneers on the upper and lower anterior teeth.

Restorative Treatment Plan & Implementation

Prior to setting up a plan, the dental technician examined the patient’s oral cavity and face carefully at the dentist’s office, answered all her questions and developed an idea about her expectations. A collaborated plan by the dentist and technician then was created.

Treatment workflow was initiated by taking preliminary impressions.

New Vertical Dimension.

Taking into consideration that our priorities were the reconstruction of aesthetics and its functionality, the dental technician proceeded with a diagnostic wax-up in the new planned vertical dimension of occlusion on the upper teeth and 36-37 from the lower teeth (the missing vertical dimension was gained by means of waxing up to the new occlusion level).

According to the new vertical dimension, a diagnostic template of silicon (silicon index) was made to the upper and lower teeth to be used as a visual aid, as a preparation guide to the dentist, and as a mold for placement of the temporary restorations in the new vertical dimension of occlusion.

Determining restorative materials and corresponding preparation forms

To be restored by All-ceramic crowns from IPS Emax Press, maxillary and 36,37 teeth were prepared with the aid of the silicone index. The prepared finishing lines of the abutments had rounded shoulder. According to esthetic and biological considerations, they were either equigingival or supergingival.

Fig 3

To be restored by All-ceramic veneers from IPS Emax Press. The Six interior lower teeth were prepared with the aid of a silicone index. The prepared finishing lines of the abutments were chamfer and equigingival.

Fig 2

Final impressions were taken to the upper and lower teeth with addition silicone (Virtual silicone from Ivoclar Vivadent)

The shade of the final restorations was chosen according the patient desire, her skin color and the shade of the natural (not treated) lower posterior.

Fig 5: Internal effects layering by Impulse material from IPS e-max Ceram.

Direct temporary restorations were made with the aid of the Index, and no signs or symptoms of discomfort were observed or reported over two weeks.

LAB WORK:

Ingot judgment selection

I chose the new V1 impulse ingot from IPS e.max press, because the final shade chosen A1 was a little extra bright, but before taking the final decision, I had to make sure that the prep color was vital with no discoloration spots on its surface (ND1, ND2) and especially in the lower veneers due to the limited coverage capability, as I learned from my experience that the degree of translucency in Value ingots placed between that of the LT and HT ingots and little more toward the HT.

For interiors, I pressed the V1 as a full anatomical structure and proceeded with a cut back technique simultaneously on the entire upper crowns and lower veneers.

Fig 4: Crown and veneers (full contour) pressed with (Value 1 ingot) and two coping with (HO1).

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Fig 7: The cemented upper crowns showing the mamelon effect and the neat contouring of the interdental triangle and the healthy papilla.
The reflecting materials have to be adequately reflective without being opaque. The light-absorbing materials should not be applied excessively to produce grey and glassy looking results. We don’t want to fabricate teeth that look great on the model but appear grey and glassy in the mouth.

**Foundation bake.**
1st. Shading the cervical third and bring it closer to A1 by using Shades from IPS Emax Ceram.
2nd. Since my goal is to create teeth that demonstrate the entire spectrum of effects shown by natural dental enamel, I used Impulse material on the incisal third to achieve this spectrum. (Fig 5)
3rd. Sprinkling transpa neutral powder on the whole surface, to cover the parts that are not yet covered by powder materials, lowers the value of the V1 frame, and match it accurately to A1 value wise.

**Second bake:**
I used shaded Cervical Transparent powder on the cervical third in the second bake. This material demonstrates slightly higher fluorescence than the convenient transparent material, and gives us a smooth transition to the pink gingiva. (Fig 6, Fig) 7 show clearly the internal effects on the upper crowns and lower veneers after cementation, the actual look in the mouth and the way they treat light.

**Back to the clinic with try-in**
The patient had a clinical try-in of the final restoration; notes and desires of the dentist and the patient were taken into consideration.

Disharmony was noted in the smile line (misalignment with the eye line) (Fig 8, fig 9, fig 10), an important issue that would have been missed if a clinical try-in was not done. And this is where taking pictures of the patient’s lips and face plays a crucial role in the technician work quality, so he would be able to make the appropriate adjustments while observing these photos.

**Third bake:**
Fixing the smile line was the main adjustment needed, so I laddiced incisal edge, created the Halo effect (which is caused, in natural teeth, due to light refraction at the incisal edge), and is usually duplicated by using certain material (IE powder from IPS Ceram Impulse).

**Posters crowns** were built up using the layering technique with IPS Emax Ceram Dentin, Impulse and Incisal. (Fig 11)

**Surface Texture and glaze:**
Ovoid tooth usually is more convex than any other tooth shape, has a rounded ovoid shape, and curvilinear transition angles with a few lobes. This is why a very narrow and shallow vertical depressions were created on the labial surface of the centrals and laterals giving the interiors their soft esthetic composition. (Fig 12, fig 13)

**Closing the gingival embrasures:**
As you noticed from the preparative situation, the unhealthy loss of the grayish interdental papillae is a consequence of wrong countering in the direct composite, where contact areas were elongated toward the tissue, what made the gingival embrasures too close, impinging on the tissue and creating unhealthy periodontal condition. Therefore the tissue receded; and now for the papilla to grow back, the distance between the contact points and the tips of the papilla must be less than 8 mm, which was the main focus of the contouring on a non separated stone model where papillae are still represented there and work can be done relatively (Fig 14).

**Cementation and follow up:**
Upper anterior restorations and premolars were finally cemented with variolink-N (Base and catalyst), lower anterior veneers with variolink-N (only Base), and posterior crowns with Vivaglass (glass ionomer) cement. (fig 15) During the follow up appointment, a final check up and modifications were made to eliminate all occasional interferences.

**Conclusion:**
Being able to Choose the same ingot for fabricating every single restoration in this case (whether they were full crowns OR veneers) was a big advantage, it serves in achieving the accurate matching and harmony among all the restorations in the following dimensions (Value, Hue, Chroma, translucency, depth...) as long as the thicknesses were close.

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