

About the Author

Rich has been a dental technician almost all of his life! He literally grew up in his father's laboratory. In 1977 he established Porcelain-Plus Dental Systems, Inc. His educational background is extensive having trained with some of the most famous clinicians, as well as having taught dental technology since 1981.



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A Temporary Path to Permanent Results

Provisionalization is one of the most important steps in the restorative process. Proper function and custom esthetics are generally overlooked by laboratories that specialize in producing provisionals. Although the responsibility for proper function clearly belongs to the dentist, technicians can minimize chair-time by being more in tune with the patient's situation and the restorative plan.

The new resins not only allow us to efficiently produce a strong provisional restoration, but also allow us to create custom characteristics quite easily.

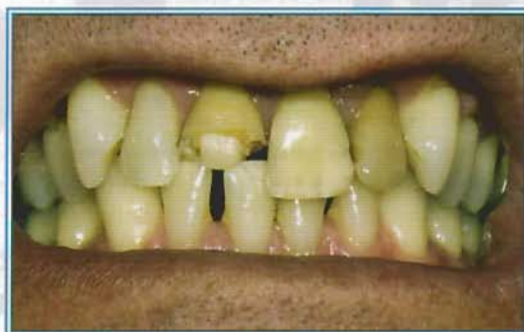
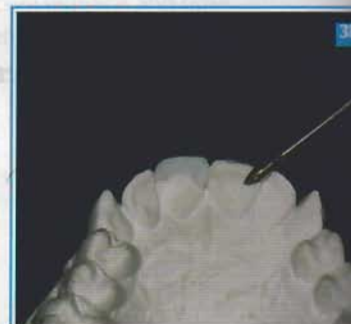


Fig. 1: Patient's Pre-operative situation



Fig. 2: When Lips are in rest position there is no display of the maxillary incisors.

Fig. 3A-3D: Additive (wax) and Reductive (grind) changes are made on the mounted pre-operative casts



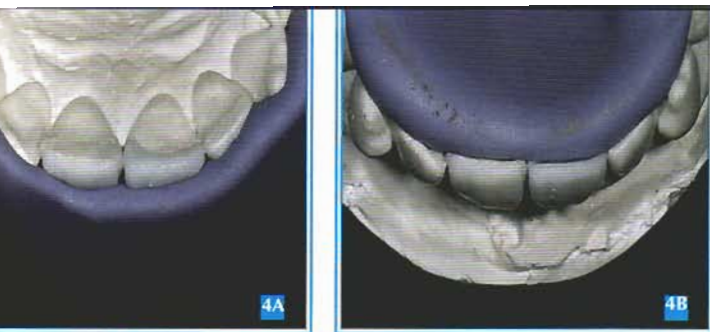


Fig 4A-4B: Matrixes and impressions are taken as guides for preparing the cast for the provisional restorations

Case Study

Our patient presents with a broken maxillary central incisor, and some discolorations in the anterior teeth. The patient decides it is time to restore his smile. An emergency temporary crown is made and preliminary history and impressions are taken, as well as a facebow recording.

Our analysis reveals that the cause of the fracture is trauma, due to the steep proclination of the centrals and laterals (Fig. 1).

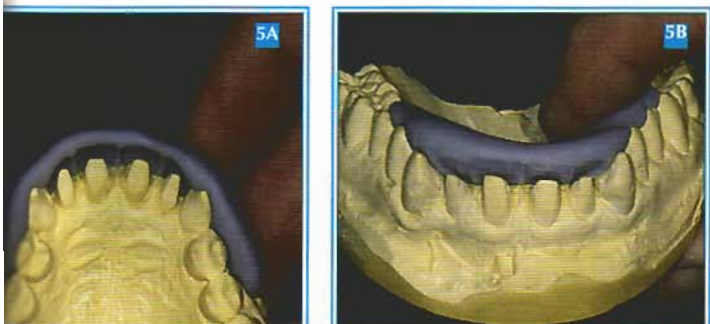
Our solution is to change the anterior guidance to unlock the anterior teeth. This will have to be tested in the provisional restoration. Esthetically, besides giving the patient a more pleasing tooth color, he displays no anterior teeth in the rest position (Fig. 2).

Casts are mounted, duplicated, and additive and reductive changes are made according to the treatment plan (Fig. 3A-3D). Labial and lingual matrixes are fabricated and a full impression is taken for accuracy (Fig. 4A-4B). The duplicated casts are now conservatively prepared utilizing the labial and lingual matrixes as guides (Fig. 5A-5B). The prepared casts are lubricated using Rubber-sep1 on the preparations and 2 coats of Zap-Sep Acrylic Separator (Dental Ventures of America, Corona, California) on the rest of the cast (Fig. 6).

The appropriate Resin-Plus (Dental Ventures of America, Corona, California) shade is mixed to a fairly thick consistency and is placed into the impression, which is then secured with a rubber band, and processed for 3 minutes in water at 200° F (Fig. 7) under pressure.

Our analysis reveals that the cause of the fracture is trauma, due to the steep proclination of the centrals and laterals

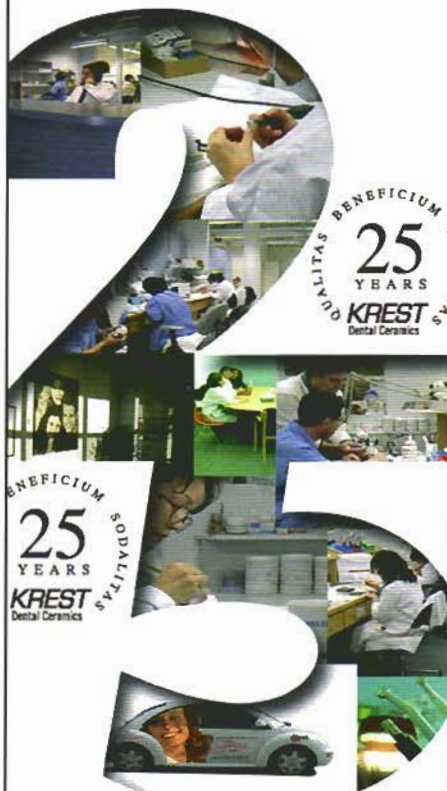
Fig 5A-5B: Prepared cast is checked for clearance using matrixes



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Fig. 6: Model lubrication and separating medium

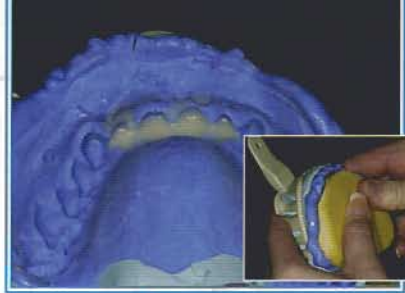


Fig. 7: Creating the dentine pressing



Fig. 8: Dentine resin is checked for accuracy

The processed dentine is verified and corrected according to the lingual matrix (Fig. 8), and a custom cutback is performed for characterization and to accept the enamel layer (Fig. 9). The appropriate light cure stains are used



Fig. 9: Dentino/incisal cutback preparing for effects

(Enamel Plus 2 HFO from DVA, California) to create individuality (Fig. 10).



Fig. 10: Light cured incisal effects

The lingual matrix with a 1.5mm labial overlap is now seated into place and the enamel is placed and cured in the same manner as the dentine (Fig. 11). We finish using carbide or diamond burs, and perform shade corrections by mixing ceramic stains with Palaseal2, then light curing. The case is then covered with a coat of resin glaze and light cured.



Fig. 11: Enamel application with lingual matrix in place

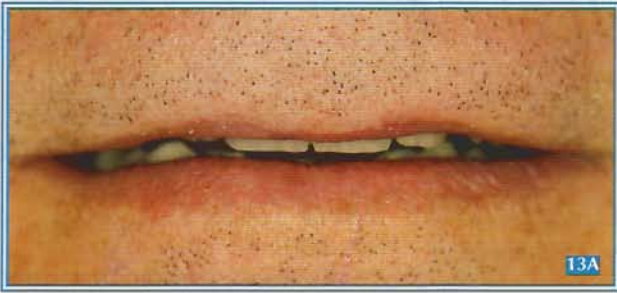
The resulting case can be very natural looking (Fig. 12-12B). As well as satisfying the doctor's and patient's requirements for esthetics and function (Fig. 13-13C).

Fig. 12-12B: Completed provisional restoration on cast





13



13A



13B



13C

Fig. 13-13C: Before and after display at rest and full smile

Conclusion

The provisional restoration is one of the most important steps in creating a predictably successful permanent restoration. It serves as the blueprint or testing ground for the final restoration and should not be treated lightly. This transitional restoration, if done properly, can be psychologically uplifting to the patient. It reassures him/her that the final result will be satisfactory. More importantly, it gives the technician the essential information that is required for a successful case.

References

- 1 George Taub-3
- 2 Heraus-Jelenko

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