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CLINICAL TIPS

Easy Accurate Transfer of the Sculpted Soft Tissue Contours to the Working Cast: A Clinical Tip

Shantanu S. Jambhekar · Mohit G. Kheur · Jay Matani · Sumit Sethi

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Abstract Tooth replacement in the esthetic zone presents a myriad of challenges for the clinician. An ovate pontic accurately duplicates the emergence profile of the natural tooth it replaces in order to provide an esthetic, yet cleansable prosthesis. The accurate transfer of this sculpted tissue beneath the pontic of the provisional restoration is critical to provide the dental laboratory technician with the necessary information to fabricate a definitive restoration with an appropriate emergence profile. This article presents an innovative, simple and convenient impression technique for easy and accurate transfer of the tissue contours to the working cast, avoiding tissue collapse and tissue compression produced due to the impression material.

S. S. Jambhekar
Department of Reconstructive Sciences, Division of Prosthodontics, School of Dental Medicine, University of Connecticut, Farmington, CT, USA

S. S. Jambhekar
Department of Prosthodontics, Terna Dental College, Nerul, Navi Mumbai, India

S. S. Jambhekar (✉)
Opp. Mumbai Veternary College, 1603-Datta Tower, Dr.Walimbe Marg, Parel Village, Mumbai 400012, India
e-mail: shantanujambhekar@gmail.com

M. G. Kheur · J. Matani
Department of Prosthodontics, M A Rangoonwala College of Dental Sciences and Research Centre, Pune, Country

S. Sethi
Department of Prosthodontics, Bhojai Dental College and Hospital, Tehsil Baddi, Himachal Pradesh, India

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Tooth replacement in the esthetic zone presents a myriad of challenges for the clinician. Esthetic success depends upon how the prosthesis emerges from and the extent to which it harmonizes with the surrounding tissues. A pontic should accurately duplicate the emergence profile of the natural tooth it replaces in order to provide an esthetic, yet cleansable prosthesis.

The ovate pontic was first described by Dewey and Zugsmith in 1933 [1].The design was intended to form a concave soft tissue outline in the site of the alveolar ridge mucosa and allows for an excellent esthetic outcome [1–3]. They have been utilized in posterior or anterior quadrants of the oral cavity with equal success [1].

The tissues are sculpted by using provisional restorations with pontic design that provides for tissue guidance and stabilization [3].

The accurate transfer of this sculpted tissue beneath the pontic of the provisional restoration is critical to provide the laboratory technician with the necessary information to fabricate a definitive restoration with an appropriate emergence profile [4–10].

Irrespective of the technique utilized, the viscosity of impression material may record the sculpted soft tissues in an altered state.. [3]. Further, the collapse of the tissue due to removal of provisional restoration may magnify this problem, thereby leading to inaccurate information being communicated to the laboratory.

This article presents an innovative, simple and convenient impression technique for easy and accurate transfer of the tissue contours to the working cast, avoiding tissue collapse and tissue compression produced due to the impression material.

Technique

1. Remove the provisional restoration that is used to develop the desired emergence profile of the pontic area [2] (Fig. 1).
2. Use a conventional impression technique is to obtain a definitive cast that will allow the dental laboratory technician to fabricate the Porcelain Fused to Metal Fixed Dental Prosthesis framework
3. Evaluate the framework intraorally (Fig. 2). Resin (GC Pattern Resin; GC America, Inc, Alsip, Ill) is applied beneath the pontic on the framework with the bead-brush technique, to record the ovate pontic contours (Fig. 3). Using the customized framework, a pick up technique is described in the following steps.
4. Fabricate a custom tray with light-polymerizing material (Triad; Dentsply Intl, York, Pa). Inject low viscosity addition silicone impression material (Aquasil LV, Dentsply Caulk, Milford, DE) over the tissue and over the pontic sites on the framework. Seat the customised framework in situ and make a pick up impression using medium bodied addition silicone elastomeric impression material. (Aquasil Ultra Monophase, Dentsply Caulk, Milford, DE) (Figs. 4, 5, 6, 7).
5. Pour the cast with type IV dental stone (Ultra rock; Kalabhai, India) to create a working model with accurately transferred soft tissue contours (Figs. 8, 9, 10, 11).

Fig. 1 Sculpted ovate pontic sites

Fig. 2 Metal framework trial

Fig. 3 Relining with pattern resin

Fig. 4 Impression technique

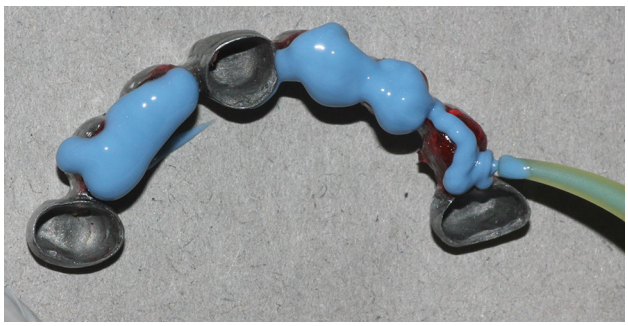

Fig. 5 Impression technique

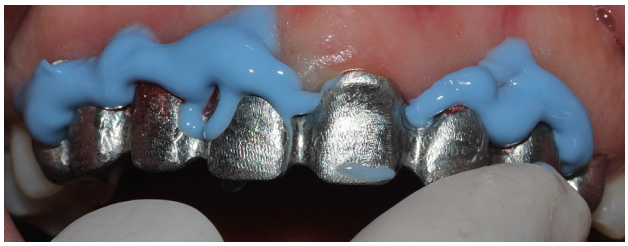

Fig. 6 Impression technique

Fig. 7 Impression technique

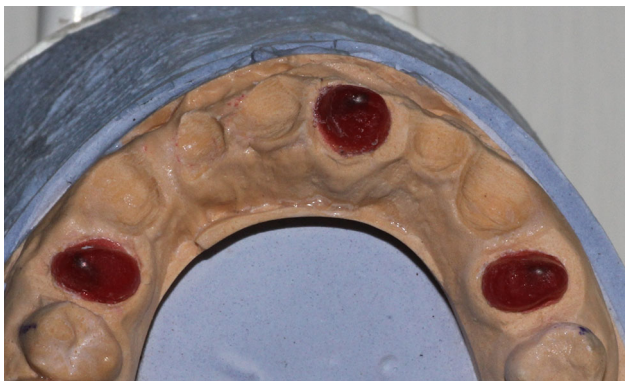

Fig. 8 Master cast

Fig. 9 Definitive restorations with ovate pontics

Fig. 10 Definitive restorations

Fig. 11 Definitive restorations at 1 year recall

Summary

Various techniques have been described to record the developed ovate pontic site contours. These techniques involve modification of master casts to replicate the contours [4, 9, 10].

The technique described in this report utilizes pattern resin (GC Pattern Resin; GC America, Inc, Alsip, Ill) intraorally to record the soft tissue contours, thus a more detailed record of the soft tissue profile is obtained than other laboratory based techniques. This simple technique enables to precisely capture, verify and transfer to the definitive cast the molded ovate pontic site in the same position as it is with the provisional restoration. This facilitates the dental ceramist's ability to design and fabricate an ovate pontic with adequate intaglio contours. This technique could also be utilized for implant supported fixed dental prosthesis in the esthetic zone.

Conflict of interest All authors have no conflicts of interest.

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