

A Technique to Facilitate the Fabrication of Provisional Restorations for ITI Solid Abutments

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The aim of this technique report was to present a procedure for the fabrication of provisional restorations for ITI solid abutments using impression caps in the laboratory with a number of advantages over intraoral techniques. There may be no need for cementation, and elimination of cementation may assist tissue healing.

Key Words: *ITI implant, impression cap, provisional restorations, solid abutment*

INTRODUCTION

Provisionalization is a critical procedure in implant restorative treatment.¹ Provisional restorations should be used to evaluate esthetic, phonetic, and occlusal function prior to delivery of the final implant restorations, while preserving and/or enhancing the condition of the peri-implant and gingival tissues.^{1,2} Provisional implant restorations provide soft tissue support and can be used to determine diagnostically the position and contours of definitive restorations.²

The ITI implant (Straumann AG, Basel, Switzerland) is a single-stage implant with a shoulder restorative finish line oriented at an angle of 45° relative to the implant body. The ITI solid abutment is used for cement-retained restorations with components available that facilitate the impression-making procedure.³

The use of the manufacturer's provisional protective cap is a classical procedure. However, the procedure does not have the capacity to bond to acrylic resin and is unesthetic because of its color. Additionally, the shape of this component may not be able to develop or maintain optimal soft tissue contour. The component may be acceptable in some posterior areas but is of limited value in the

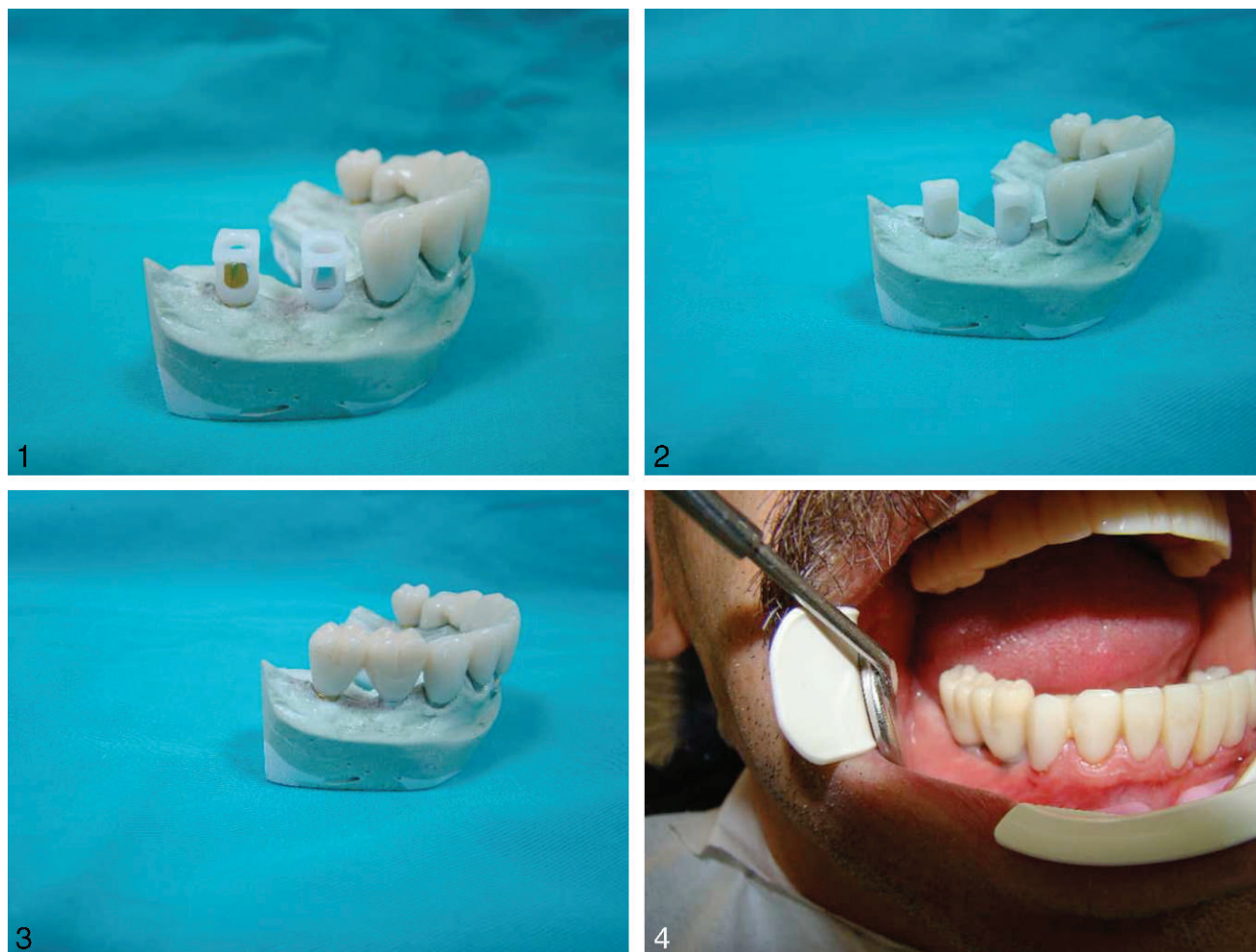
esthetic anterior region.⁴ This technique also requires additional cost for the patients. Because of these disadvantages with manufacturer's protective cap, provisional restorations for ITI solid abutments have been fabricated by alternative techniques, such as modifications of burn out coping, resin coping, impression cap, and protective cap.^{3,4}

Many techniques advocate the chair side fabrication of provisional restorations. The aim of this report was to present a procedure for the fabrication of provisional restorations for ITI solid abutments using impression caps in the laboratory with a number of advantages.

CASE REPORT

This method requires the use of an ITI impression cap for solid abutments. An impression with the use of heavy body vinyl polysiloxane (Zhermack, Badia Polesine, Italy) combined with light body vinyl polysiloxane (Zhermack) was made. The corresponding analog was placed into the transfer impression assembly. A master cast model was poured in type IV die stone (Dentsply, York, Pa). The cast model was isolated by lacquer (Ruthinium Group, Badia Polesine, Italy). The impression caps that were used for the impression procedure were placed over the analog (Figure 1). Autopolymerizing acrylic resin (Schutz Weil-Dental GmbH, Rosbach, Germany) was placed into the impression caps (Figure 2) and contours of the provisional restora-

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FIGURES 1–4. **FIGURE 1.** Impression caps used for the impression procedure were snapped over the analog. **FIGURE 2.** Autopolymerizing acrylic resin was placed into the impression caps. **FIGURE 3.** Contours of the provisional restoration were formed using bead brush technique. **FIGURE 4.** The provisional restoration was placed with or without cement.

tion were formed using the bead brush technique (Figure 3). Excess material was removed, and the shape of restoration and margins were contoured after verifying the occlusion. The provisional restoration was placed onto intraoral solid abutments (Straumann AG) as evidenced by occlusal adaptation and marginal fit. After verifying and polishing, the provisional restoration was placed with or without cementing (Figure 4).

DISCUSSION

Dumbrigue et al³ described several methods for the direct intraoral fabrication of provisional restorations for the ITI solid abutment.³ These techniques are modifications of burn out coping, resin coping, impression cap, and protective cap. A modification

of protective cap and burn out coping techniques requires additional cost for patients. Resin coping technique also requires additional cost of a brass ITI practice solid abutment that serves as a die assembly.³ It has been previously reported that impression caps can be used for provisional restorations of ITI solid abutments directly.⁵ Oftentimes it can be difficult to contour the restoration by bead brush technique intraorally, and margin configuration cannot be controlled easily.

The present reported technique described the fabrication of provisional restorations for ITI solid abutments using impression caps in the laboratory. Although this may be a limitation of the present study, there are several implant systems available that have similar copings, and this method could be extended to other implant systems. Extraoral

fabrication of provisional restorations facilitates control of margin configuration. Compared to direct intraoral techniques, it is easier to maintain position of the soft tissue around the implant in a subgingival environment. The other advantages of indirect fabrication of provisional restorations are consuming less time and eliminating the need for vacuum-formed matrix. And, impression caps snap onto ITI solid abutments mechanically, so there is no need for cementation. Agar et al⁵ stated that with the use of cement-retained implant restorations, adequate cement removal with subgingival implant margins may be difficult. Instrumentation may produce scratches and gouges on the restoration and abutment.

CONCLUSION

This report describes the production of a fixed provisional implant restoration using impression cap in the laboratory, which offers a number of advantages over the manufacturer's provisional protective cap and chair-side techniques.

(1) The presented method may be extended to other implant systems that have similar copings.

- (2) The technique is simple and does not require special equipment.
- (3) The technique does not require additional cost for patients.
- (4) Compared to direct intraoral techniques, it is easier to maintain the position of soft tissue around the implant in a subgingival environment.
- (5) Less chair-time is consumed.
- (6) The need for vacuum-formed matrix is eliminated.
- (7) There may be no need for cementation, and elimination of cementation may assist tissue healing.

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