Provisionalization Using the Patient's Extracted Tooth

By Robert Margeas, DDS

A 55-year-old patient presented to the office with severe discomfort of the left lateral incisor (tooth No. 10) (Figure 1) due to a severe periapical lesion and periodontal bone loss. The tooth had been treated periodontally in the past, and it did not respond well. At the time of presentation, the tooth exhibited advanced mobility and exudate was present. The maxillary incisors were free of restorations and did not exhibit mobility or discomfort. This tooth had been bothering the patient for more than a year.

In evaluating the restorative modalities, placement of a single-tooth implant was the treatment of choice for the patient. The patient declined a conventional fixed bridge, primarily because of the relatively invasive nature of the tooth preparation. Because of the severe bone loss, an immediate extraction and implant placement was not possible. This would have been the treatment of choice in the anterior region if all of the key determinants were ideal.

The lateral was removed atraumatically (Figure 2) and would be used as an immediate provisional restoration. The socket was curreted (Figure 3) and synthetic bone was placed in the socket. Before extraction of the tooth, an alginate impression was made and poured in laboratory stone (Figure 4) and would be used as a guide to place the extracted tooth back into its original position.

A clear silicone polyvinyl impression material was injected over the anterior teeth so that the tooth could be positioned into the extraction socket in the correct alignment (Figure 5). The tooth was then sectioned approximately 3 mm from the CEJ (Figure 6) so that the final position would be 3 mm from the free gingival margin. A slot was then prepared on the lingual of the tooth (Figure 7) so that a metal mesh material could be embedded and act as a Maryland-type bridge retainer. The tooth was then etched with a 37% phosphoric acid (Figure 8) and rinsed after 20 seconds. A bonding resin was placed (Figure 9) and light-cured prior to the application of a composite


FIG. 1


FIG. 2


FIG. 3


FIG. 4


FIG. 5


FIG. 6


FIG. 7

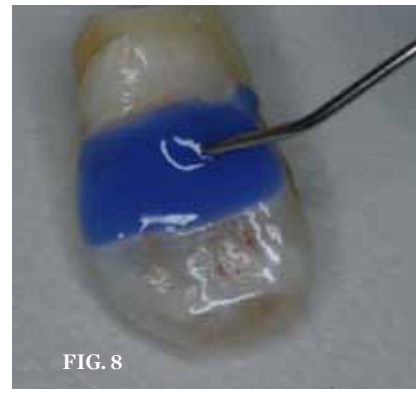
FIG. 8


FIG. 9

(1.) Preoperative presentation. **(2.)** The lateral was removed atraumatically and retained for an immediate provisional restoration. **(3.)** The socket was curreted and synthetic bone was placed in the socket. **(4.)** Alginate impression made prior to extraction and poured in laboratory stone. **(5.)** A clear silicone polyvinyl impression material was injected over the anterior teeth. **(6.)** The tooth was sectioned approximately 3 mm from the CEJ. The final position would be 3 mm from the free gingival margin. **(7.)** Slot prepared on the lingual of the tooth so that a metal mesh material could be embedded and act as a Maryland-type bridge retainer. **(8.)** Etching with a 37% phosphoric acid solution. **(9.)** A bonding resin was placed and light-cured prior to the application of a composite resin.

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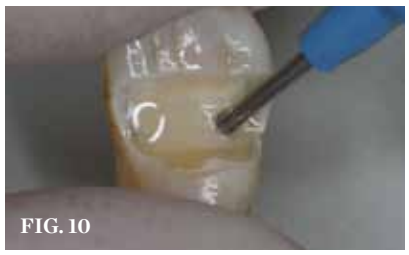
FIG. 10

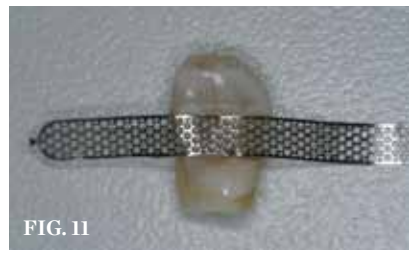
FIG. 11


FIG. 12


FIG. 13


FIG. 14


FIG. 15


FIG. 16


FIG. 17


FIG. 18


FIG. 19


FIG. 20


FIG. 21

(10.) A thin coat of flowable resin was placed in the groove **(11.)** The metal mesh material was placed over the tooth prior to light-curing for 20 seconds. This allowed the holes to be incorporated into the flowable resin. **(12.)** A nano-filled composite resin was placed over the wire mesh and light-cured for 40 seconds. **(13. AND 14.)** TClear C&B-Meta-bond was mixed in its porcelain dish and applied to the wings of the metal mesh. **(15.)** The bridge was placed into the previously fabricated silicone matrix to aid in the positioning of the tooth back into the socket. **(16.)** The adjacent teeth were etched for 15 seconds and rinsed. **(17.)** The clear silicone matrix was positioned back into the patient's mouth and allowed to cure. **(18.)** Lingual view of the cured restoration. **(19.)** Final provisional restoration on the day of placement. **(20. AND 21.)** One-week postoperative images demonstrating healing of the socket with preservation of the papilla and buccal gingival margin.

resin. A thin coat of flowable resin was placed in the groove (Figure 10) and the metal mesh material was placed over it prior to curing (Figure 11). This was then light-cured for 20 seconds so that the holes could be incorporated into the flowable resin. A nano-filled composite resin was then placed over the wire mesh to form a strong and durable structure (Figure 12). This was light-cured for 40 seconds. Clear C&B-Metabond (Parkell, Inc) was then mixed in its porcelain dish (Figure 13) and applied to the wings of the metal mesh (Figure 14). The bridge was then placed into the previously fabricated silicone matrix (Figure 15) to aid in the positioning of the tooth back into the socket. The adjacent teeth were etched for 15 seconds (Figure 16) and rinsed. A resin bonding adhesive was applied to the teeth and light-cured. The clear silicone matrix was positioned back into the patient's mouth (Figure 17) and allowed to cure. A light-cured resin cement could also have been used and light-cured through the clear matrix. The lingual of the cured restoration is shown in Figure 18. Final provisional restoration on the day of placement is shown in Figure 19. The one-week post-operative picture is shown in Figure 20 and Figure 21, demonstrating healing of the socket with preservation of the papilla and buccal gingival margin.