

# Essix™ Appliances

PROVISIONAL ANTERIOR PROSTHESIS FOR  
PRE AND POST IMPLANT PATIENTS

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**R**eplacement of missing anterior teeth by implant-supported restorations is an accepted treatment option in modern dentistry. Holding space for the temporary replacement of missing anterior teeth prior to or following implant fixture placement can be challenging because the temporary prosthesis must satisfy established esthetic and functional standards. Also, following initial placement, the implant fixture should be protected from loading forces, induced directly or transmucosally, when osseous integration is taking place. When orthodontic treatment is included as part of the overall implant treatment effort, the demands of temporization are increased as the retention and stabilization of newly established tooth positions must also be considered.

This article describes the fabrication, use and advantages of a

■ A B S T R A C T ■

*Missing anterior teeth are being replaced by implant-supported restorations quite frequently in modern dentistry. Providing the patient with a temporary prosthesis prior to or following implant fixture placement must satisfy established esthetic and functional criteria. When orthodontic treatment is included as part of the overall treatment effort, additional considerations include the retention and stabilization of newly established tooth positions. This article describes the fabrication, use and advantages of a provisional anterior prosthesis that replaces missing teeth prior to or following implant placement.*

provisional anterior prosthesis that replaces missing teeth, maintains space for an impending implant, and can protect the implant, when in place, from physiologically traumatic forces and effects.

The use of a clear plastic, thermoformed, canine-to-canine Essix™ (Essix Raintree Corp., P.O. Box 9540, Metairie, LA 70055) type of removable retainer has been developed and described by Sheridan et al.<sup>1-3</sup> These thin but

durable retainers are extremely esthetic (Figures 1,2) and can be modified to serve as a provisional anterior prosthesis for both pre and post implant patients. The following cases illustrate the differences between a conventional anterior prosthesis (Hawley type) and the modified Essix appliance.

## Case One

A 16-year-old female who recently completed orthodontic treatment had congenitally miss-

You should place the receipt in the patient's file once it is returned. If the patient is a minor, it is the parent or legal guardian who must be given notice of your decision to terminate treatment.

Sometimes, a patient will not sign for a letter. This is especially true for patients who owe you money. Often, you are not the only creditor, and patients know that a certified letter rarely tells them they won the Publisher's Sweepstakes. The Post Office will make three attempts to deliver the letter, then return it to you. Place it in the patient's file *unopened*. The legal presumption is that the patient received the letter. Legally, you have complied with all of the necessary elements of dismissal even if the patient did not get actual notice. A trick:

If the patient refuses delivery, send a copy of the letter in a plain, unmarked envelope. No one can resist opening such a letter; this will almost certainly give notice of your intention to dismiss.

#### Conclusion

At some point in our careers every one of us will encounter a patient whom we would rather not continue to treat. While I have attempted to outline a protocol for dismissal and have provided you with a sample dismissal letter, no single protocol can accommodate every situation. Improperly dismissing a patient who is in active treatment can result in a claim of abandonment. When in doubt, consult your personal attorney. □

#### Sample Letter

The following might be sent to the parent of a patient you are dismissing for non-payment of a fee.

Dear Parent Name:

You have not kept up with your financial obligations to our office. As a consequence, we must inform you that we are withdrawing from further professional attendance to (patient name)'s dental needs. Since (patient name)'s dental condition requires further treatment, we urge you to place (him/her) under the care and treatment of a dentist without delay.

If you desire, we shall be available to attend to (patient name)'s emergency dental needs for 30 days. This should give you ample time to select another dentist. (Patient name)'s dental records can be transferred if we have a written request from you. There is a charge to duplicate and transfer records.

We regret having to take this action but the situation has left us no other option.

Sincerely,

Your Name, D.M.D./D.D.S.

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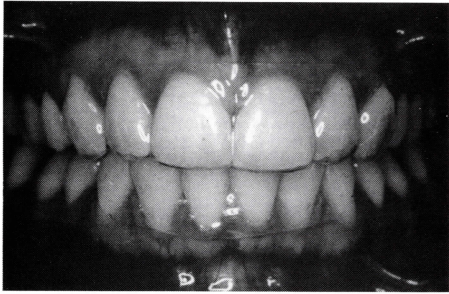


Figure 1. Frontal view of Essix appliance.

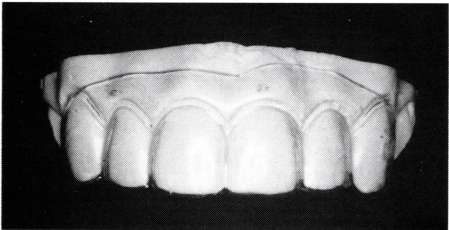


Figure 2. Essix on lab bench.

ing left and right maxillary lateral incisors (Figures 3,4). A conventional removable Hawley-type of retainer was inserted to hold the teeth adjacent to the impending maxillary lateral incisor implant sites in place and, with the addition of lateral pontics, to provide some degree of esthetic improvement (Figures 5,6). The problems of this type of removable appliance include: occlusal interferences from clasps; esthetic limitations, due to the blatantly obvious labial bow; speech problems, resulting from the bulkiness of the appliance, and the initial indications of an inflammatory response triggered by the acrylic framework (Figure 7). Clearly, an alternative appliance would serve the patient better while she is waiting for the ultimate prosthesis (crowns on implants) to be placed. An Essix temporary prosthesis was fabricated for this patient to replace the problematic, removable



Figure 3. Frontal portrait with missing maxillary lateral incisors.



Figure 4. Frontal intraoral with missing maxillary lateral incisors.

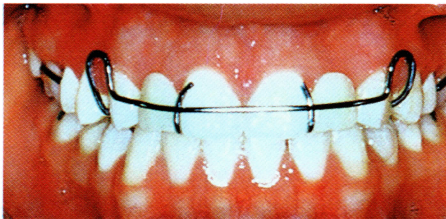


Figure 5. Frontal view of Hawley.

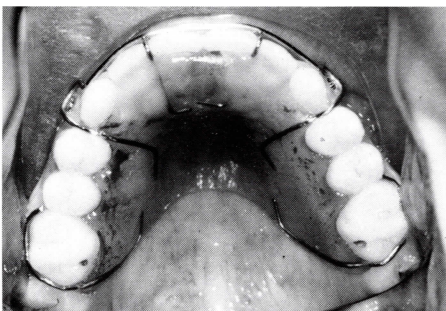


Figure 6. Palatal view of Hawley.

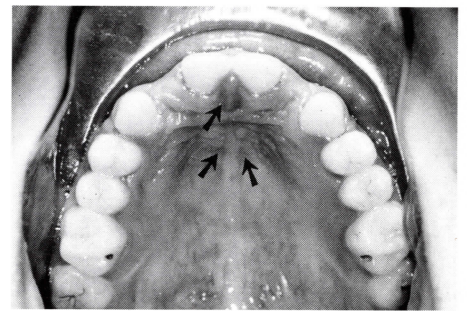


Figure 7. Palatal view of initial inflammatory response.



Figure 8. Frontal intraoral view of Essix in place.



Figure 9. Frontal portrait with Essix in place.



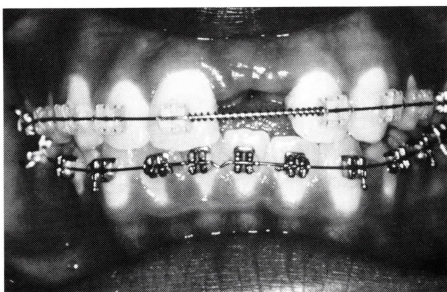


Figure 10. Orthodontic appliances in place; maxillary central incisor missing.



Figure 11. Orthodontic appliances removed; edentulous space obvious.



Figure 12. Essix temporary bridge in place.

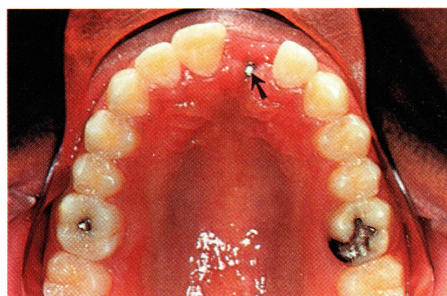


Figure 13. Implant in place.

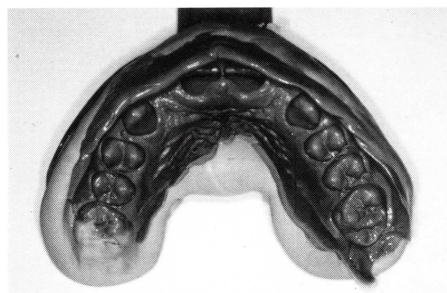


Figure 14. Essix polyvinyl siloxane impression.

Hawley-type of appliance (Figures 8,9). The Essix provisional prosthesis can be fabricated in the office and delivered to the patient the same day. The esthetic advantage is obvious (compare Figure 5 with Figure 8).

**Case Two**

The patient received a single-tooth implant fixture during orthodontic treatment, to replace a maxillary central incisor lost through trauma (Figure 10). Immediately following the removal of orthodontic appliances (Figure 11), a modified Essix appliance was fabricated and inserted (Figure 12) as an anterior provisional prosthesis until a suitable restora-

tion could be constructed using the previously placed implant fixture (Figure 13).

In addition to meeting esthetic and functional criteria of a temporary prosthesis, the Essix appliance can be used as a fluoride tray, prevents food impaction around the implant, serves as an esthetic surrogate mouthguard during this transitional period—insuring safe harbor for the implant—and, because of its minimal thickness (<.020"), does not interfere with incisal coupling.

**Technique**

The fabrication technique for an Essix appliance is presented below.

1. Employing a universal, anterior-perforated plastic tray, obtain an impression using a combination of a heavy and light vinyl polysiloxane impression material. Trim away the impression material distal to the canine—since only the canine-to-



Figure 15. Boxed Essix impression.

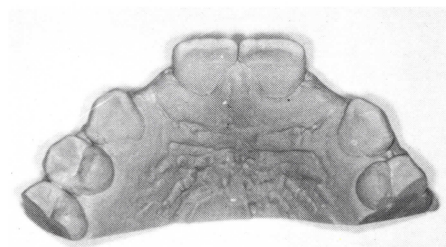


Figure 16. Occlusal view of cast.

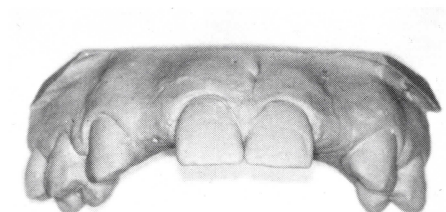


Figure 17. Frontal view of cast.

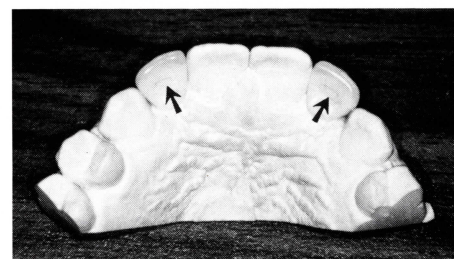


Figure 18. Mesiodistal trench on the lingual surface of pontic.

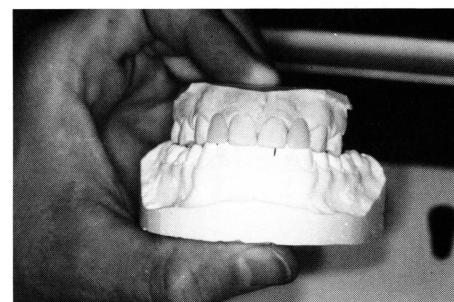


Figure 19. Checking incisal efficiency with opposing cast.



canine teeth will be included in the appliance—and box with baseplate wax (Figures 14, 15).

2. Pour the impression with a high quality die stone. Minimal trimming on the base of the cast is required if the previous instructions have been followed (Figures 16, 17).

3. After placing a separating medium in the edentulous areas, fit an appropriate pontic to the edentulous alveolar ridge. Cut a mesiodistal trench about 4mm. wide and 3mm. deep into the lingual surface of the pontic (Figure 18). This will create a mechanical lock for the pontic during the thermoform process.

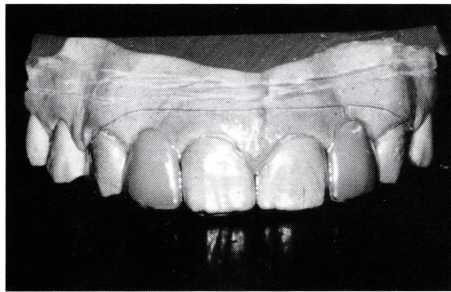


Figure 20. Thermoformed plastic over cast.

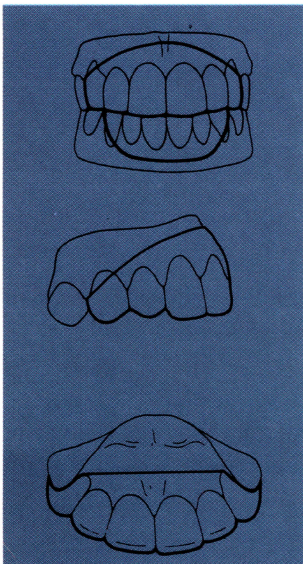


Figure 21A. Outline of appliance.

4. After checking the incisal efficiency of the pontic (Figure 19), secure it in place with a quick-cure or light-cured acrylic. Pink acrylic can be used in the gingival area if desired. Don't use wax. It will melt during the thermoforming process.

5. With the pontic secured on the cast, thermoform the Essix plastic sheet (.030") over the cast (Figure 20). This can be done on vacuum or pressure thermoforming machines.

6. Trim the appliance with curved Mayo scissors to the configuration shown in Figures 21A-21B. Cutting the appliance in the manner shown will allow the patient to easily remove it with a fingernail purchase along the distogingival edge of the appliance (Figure 21B).

**Conclusion**

The advantages of using a modified Essix appliance as an anterior provisional prosthesis for pre- and post-implant situations have been described. Functional and esthetic criteria for temporization prior to and following implant placement have been satisfied. Patient acceptance of this extremely esthetic and durable provisional prosthesis has always been enthusiastic. Additionally, Essix appliances have been used and employed extensively in private practices

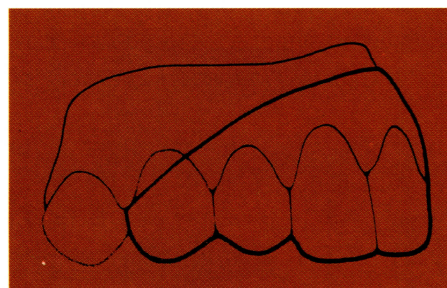


Figure 21B. Outline of appliance.

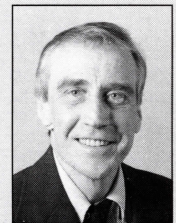
and tested by orthodontic and oral implantology departments of major universities. □

**References**

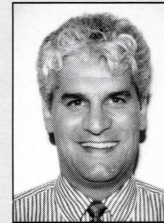
1. Sheridan JJ, LeDoux W, McMinn R. Essix retention: Fabrication and supervision for permanent retention. *J Clin Ortho* 1993;27:37-45.
2. Sheridan JJ, McMinn R, LeDoux W. Essix technology for the fabrication of temporary anterior bridges. *J Clin Ortho* 1994;28:482-486.
3. Sheridan JJ, McMinn R, LeDoux W. Essix thermosealed appliances: Various orthodontic uses. *J Clin Ortho* 1995;29:108-113.
4. Moskowitz E, Lew I, Greene D, Maresca M. An atraumatic single tooth implant replacement procedure for postorthodontic patients. *J Clin Ortho* 1977;11:835-838.



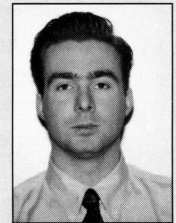
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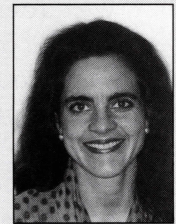
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