

# Letters to the Editor

Dear Sir,

## Re: The use of pressure formed retainers in cases of hypodontia.

The orthodontic treatment of patients with hypodontia can be extremely demanding for the clinician. This is particularly true where spaces are to be left in the anterior segments for bridgework. Too often a good result achieved at the end of active orthodontic treatment is compromised during the retention phase due to retainer breakages or poor patient compliance. The Hawley type retainer with an acrylic pontic is particularly prone to fracture across the narrow isthmus of acrylic connecting the pontic to the baseplate. We describe a method of incorporating a pontic into a pressure formed retainer. Clinical experience has shown good patient compliance with this retainer and less problems with breakages which lead to space loss. A case is illustrated where this modified retainer was used to hold space prior to bridgework to replace a missing lateral incisor.

### Applicance construction

An acrylic tooth is chosen to replace the missing tooth on the stone model. The acrylic tooth is trimmed to neatly fit the gum margin anteriorly. A small hole with undercut walls (diameter 3 mm, depth 3 mm) is then drilled into the cingulum area using a tungsten carbide 1.4 mm diameter rosehead bur (Fig 1). This acts as a retentive lock which firmly connects the pontic to the pressure formed retainer. The tooth is located and held on the stone model with modelling wax applied buccally. The model is then coated with sodium alginate solution for easy removal of the formed retainer. An Essix (ARS Materials Inc., New Orleans) type C 0.40 mm thickness arch blank is then blown over the model and tooth using the Dreve Drumformat Machine A (Drumformat, Panadent Ltd, London). The blank is removed from the model by cutting with a

wheelsaw and trimmed across the palate distal to the molars. The retainer is trimmed neatly to follow the cervical margin of the acrylic pontic.

Elsewhere the retainer is trimmed such that it extends for 3 mm onto the buccal surfaces of all the natural teeth (Fig 2). The retainer is then smoothed along the periphery using an Aztech Abradisc Bur (Orthocare UK Ltd., Bradford).

The Essix orthodontic retainer was first described by Sheridan *et al.*, (1993). The technique involves thermoforming the Essix plastic sheet over a stone cast and trimming the retainer so that it extends over the gingival margins. The same authors later described the use of this material to fabricate temporary anterior bridges (Sheridan *et al.*, 1994). The present retainer design differs from these previous Essix retainers and temporary bridges in three ways. First, the buccal margins of the retainer only extend 2-3 mm onto the labial surfaces of the teeth. Clinical experience has shown that this provides adequate retention and avoids the gingival and mucosal irritation which can result when the retainer is extended to cover the gingival margin. It is also felt that gingival recovery following orthodontic treatment will be facilitated by leaving the gingival margins uncovered. Second, the temporary bridges described by Sheridan *et al.*, (1994) only extend over the anterior teeth adjacent to the missing tooth (3-3). The present retainer is larger, extending over the premolars and first molars providing greater retention and reducing the likelihood of accidental ingestion. Finally, the artificial tooth is securely locked to the Essix retainer via the retentive recess drilled in the palatal surface of the pontic.

The pressure formed Essix retainer with pontic attached has also a number of advantages over the Hawley retainer to which a prosthetic tooth has been added. As no wire work is required, the Essix type retainer can be fabricated quickly in the laboratory while the patient waits. The thin palatal coverage of the Essix type retainer has also been found to interfere less with speech, especially in adults. In

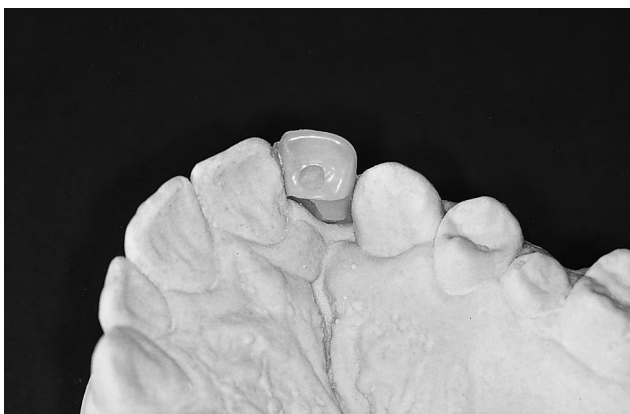


FIG. 1 shows the acrylic pontic on the stone model and the undercut on the palatal surface of the pontic to aid in retention.



FIG. 2 shows the finished pressure formed retainer. Note that it extends over the palatal vault and it covers only the incisal 1/3 of all the teeth except the pontic where it extends to the cervical margin.

cases where rotational relapse of anterior teeth is a concern an unaesthetic stainless steel labial bow is required with the Hawley type retainer. The Essix type retainer provides a more aesthetic solution to this problem. This technique provides an elegant and reliable method of holding spaces prior to definitive bridgework.

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## References

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