The retention of completed orthodontic treatment results\textsuperscript{1-5} can be especially challenging in adult patients with significant alveolar bone loss. These patients often experience an unusual degree of relapse because the level of underlying alveolar bone support is insufficient for post-treatment stability. Conventional removable retainers and even lingually bonded canine-to-canine retainers are generally inadequate to prevent such relapse.

This article describes a predictable and reliable method of retaining orthodontic correction of maxillary and/or mandibular incisors in periodontally compromised adult patients.

Planning for Retention

Patients with significant alveolar bone loss require special retention planning. As an example, a 25-year-old female patient had undergone comprehensive orthodontic treatment involving first-premolar extractions as a teenager (Fig. 1). Conventional wraparound removable appliances were used for retention. The patient presented for retreatment because of subsequent tooth migration and unesthetic spacing. The panoramic radiograph and clinical periodontal examination offered an obvious explanation for the relapse: inadequate alveolar bone support, particularly in the maxillary incisor area.

The patient was referred to a periodontist for a comprehensive evaluation, which found generalized posterior pocketing of 4-6mm. Treatment consisted of four quadrants of subgingival root planing under local anesthesia. The patient was given home-care instructions and placed on a three-month-recall maintenance program.

Orthodontic treatment with fixed edgewise appliances and light forces aligned the teeth, closed the spaces, and improved the interdental relationships in 10 months (Fig. 2).

The patient’s history and records clearly

Fig. 1 25-year-old female with post-orthodontic tooth migration resulting in unesthetic spacing. Panoramic radiograph demonstrates significant alveolar bone loss.
indicated that fixed retention would be the most appropriate course to follow, and the patient was so informed before any treatment was initiated. A modified “A” splint\(^*\) as described by Berliner\(^6\) was recommended to hold the maxillary incisors securely in their corrected positions.

**Technique**

Immediately after debonding, the patient was given a local anesthetic in the area of the maxillary incisors. Scaling, root planing, and polishing were performed. A trough 2mm deep and 2mm wide, extending from the mesiolingual surface of one maxillary canine to that of the opposite maxillary canine, was made with a No. 557 bur followed by an inverted cone bur (Fig. 3). An .010" ligature wire was braided and placed in the trough (Fig. 4), with composite added to secure the wire internally (Fig. 5).

This kind of long-term retainer is invisible after placement (Fig. 6). Home care is undemanding, involving conventional floss threaders. The patient shown here has had the modified “A” splint in place for 10 years with minimal professional maintenance.

\(^*\)The original appliance was made of acrylic, hence the term “A” splint.
REFERENCES