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# THE EDITOR'S CORNER

## Can Lingual Make a Comeback?

The history of lingual orthodontic treatment in the United States has not been auspicious. Although there was a good deal of interest when lingual brackets and appliance systems were first introduced, the relative difficulty of lingual treatment compared to labial caused a rapid dropoff in popularity. The short spans between brackets required alterations in mechanics that seemed unnecessarily demanding in light of the reduced obtrusiveness of labial appliances, made possible by the development of bonding adhesives, miniaturized brackets, ceramic brackets, and tooth-colored wires. Also, while lingual orthodontics practically requires an indirect bonding technique, direct bonding has long been the prevalent method in the United States.

Still, the reasons for the initial interest in lingual orthodontics remain. Chief among them is a strong objection on the part of many adults to the appearance of labial appliances. Limited availability of lingual therapy has undoubtedly prevented many adults from undertaking orthodontic treatment. The recently developed Invisalign Appliance System appears to offer an alternative to lingual appliances in cases requiring limited tooth movement, but it remains to be seen whether Invisalign will be able to manage the full range of cases.

The adult factor may yet encourage a revival of interest in the United States, if only because of demographic trends. It is reasonable to predict that the demand for orthodontic treatment will increase in the near future as the percentage of minorities in the U.S. population increases and as the economy creates upward mobility among them. Since minorities have so far been underrepresented in the orthodontic treatment population, there will likely be a greater demand for treatment not only of children, but also of minority adults. In other words, there will be a considerable backlog of unmet orthodontic need in the future adult population.

Another impetus for the revival of lingual orthodontics may be new developments in lingual appliances and mechanics, such as those presented in JCO over the past

two years. We have seen articles on improved bracket placement,<sup>1-3</sup> improved brackets,<sup>2,3</sup> and new indirect bonding methods.<sup>3-5</sup> The Orthomate System promises a new level of precision with computerized, CAD/CAM technology used for the positioning of lingual brackets and the formation of preprogrammed lingual archwires.<sup>6</sup> This system is not only highly precise, but it overcomes the difficulties of torque and vertical control due to reduced interbracket distances.

Another interesting development has been the use of lingual lever arms for anchorage and torque control. Dr. Siatkowski utilizes these lever arms to control anchorage in patients with generalized marginal bone loss who might previously have been questionable candidates for lingual treatment or, indeed, for any treatment.<sup>7</sup> Drs. Park, Choy, Lee, and Kim employ lever arms to control both anchorage and the torque of anterior teeth by adjusting the point of force application and the line of force.<sup>8</sup>

There have been two innovative approaches to eliminating the mushroom-shaped arch in lingual treatment. Yoshizawa and Tanaka accomplish this with a segmented arch technique,<sup>9</sup> and, in the current issue, Takemoto and Scuzzo use a new bracket with low gingival entry to accom-

modate straight-wire mechanics.<sup>3</sup>

In sum, there have been a great many advances in recent years that can make lingual orthodontic treatment easier and better. It is time to take another look at and perhaps to revive an attractive, but generally neglected, treatment option. ELG

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