Address all communications to *Journal of Clinical Orthodontics*, 1828 Pearl St., Boulder, CO 80302. Phone: (303) 443-1720; fax: (303) 443-9356; e-mail: info@jco-online.com. See our website at www.jco-online.com.

THE EDITOR'S CORNER

The Resurgence of Lingual Orthodontics

While the number of adult patients seeking orthodontic care has risen considerably over the past 25 years, we still find that relatively few adults with malocclusions are being treated compared to adolescents. One of the greatest deterrents to prospective patients of any age is the esthetic appearance of orthodontic appliances. And even though the social stigma of having obvious braces on the teeth seems to have diminished among younger patients, few adults are willing to have appliances placed where they will be visible during routine daily life. This reluctance has led to the development of a number of alternative approaches, including such removable appliances as the popular "invisible" aligners.

The range of malocclusions that can be treated with aligners continues to widen, but a number of cases still demand treatment with fixed appliances. Although clear and tooth-colored ceramic brackets and archwires all reduce the visibility of orthodontic appliances, no fixed technique completely eliminates the appearance of braces on the labial surfaces of the teeth.

The obvious solution to this problem is to place the appliances on the lingual. In 1982, JCO published a series of articles by the Ormco Lingual Task Force entitled "Lingual Orthodontics: A Status Report", and the technique quickly reached its height of popularity in the United States. But it turned out to pose far more technical difficulties than expected. First of all, working on the lingual aspect of the teeth proved much more demanding for the doctor and the assistant. Visual access was impeded, especially in the lower arch; adequate illumination was problematic; the tongue was always in the way; and moisture control in the immediate neighborhood of the sublingual salivary ducts was challenging, to say the least. Ligating the archwires into place was much more difficult than on the labial. In addition, the shorter interbracket distances decreased the working range of the archwires, thereby reducing mechanical efficiency compared to labial alternatives.

Another major problem associated with lingual appli-

ances during their heyday in the 1980s was patient discomfort. The brackets and wires irritated the tongue—sometimes severely—to the point that patients took to carrying enormous supplies of orthodontic wax around with them. A related issue was speech. Some patients were able to adapt to these difficulties, but others were not. I was a graduate orthodontic student at that time, and our program required each of us to complete at least one lingual case. My case turned out to be my wife, and she turned out to be a very difficult patient to treat lingually. She presented with a relatively high mandibular plane angle and a minor anterior open bite—both of which, at the time, were regarded as contraindications to lingual treatment. But I was young and brash, and I opted to proceed anyway. Treatment progressed slowly, given her particular malocclusion, and the discomfort she reported increased as time dragged on. Her speech never did return to normal in spite of a variety of exercises I gave her to do, and her tongue remained irritated throughout the ordeal. She went through orthodontic wax by the case. One night at about 2 a.m., perhaps one year into her treatment, I was awakened by a sharp elbow to my ribs and the demand, "Get these things out of my mouth *now!"* We did wait until morning for the opening of the clinic, but I removed her lingual appliances post haste and finished her with labial ceramic brackets.

Over the 30 years since that time, the problems associated with lingual appliances, together with the development and success of esthetic alternatives, resulted in a precipitous decline in popularity among American orthodontists. Lingual treatment remained a common option in Europe and Asia, however, and clinical research and development continued. As a result, significant progress has been made in solving the technical and patient-acceptance problems we once had. The last few years have witnessed a resurgence of interest in the United States as well as in the rest of the world.

To address some of the questions our readers might have regarding the current state of lingual orthodontics, JCO assembled a group of leading international experts. A two-part Roundtable chaired by our Contributing Editor, Dr. Björn Ludwig of the University of Homburg in Saar, Germany, begins in this issue. The panelists address many of the issues associated with lingual treatment and describe the wide array of solutions available today. Based on their discussion, I'm ready to give lingual a second chance.

RGK