COMMENTARY

ANTERIOR CROSSBITE CORRECTION WITH A SERIES OF CLEAR REMOVABLE APPLIANCES: A CASE REPORT

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As you greet your adult orthodontic patients in the office, what do you say to those not wanting to show metal or partially clear, fixed appliances with arch wires when they smile? Do you offer an option? If so, do you have a reference for your option? This case report described treatment outcomes of an anterior crossbite case of a 28-year-old Korean female using the orthodontic clear aligner. Clearly, there is the potential for an aggressive cosmetic treatment for the adult, especially if invisible appliances become popular.

In this case, the authors followed a systemic diagnosis based on the facial profile, space, and cephalometric analysis. The patient revealed anterior crossbite (–1 mm overjet), with straight facial profile and moderate crowding. Cephalometric analysis indicated a moderate skeletal Class III ([ANB] = –2) with a hypodivergent growth pattern (SN-G_oG_n: 27). The maxillary incisors were retroclined (U1 to SN: 95), and the mandibular incisors showed proclination ([IMPA]: 109). The treatment objectives were to (1) correct the anterior crossbite, (2) establish normal overbite and overjet, (3) align the anterior teeth for ideal inclination, (4) obtain a stable occlusal relationship, and (5) improve the patient's facial and dental esthetics by resolving an anterior gummy smile. The authors provided an aligning sequence—lateral expansion, anterior expansion, and final alignment with space closure for the upper dentition. They also provided two aligners, with 3-mm interproximal reduction (IPR), to upright lower incisors. In each stage, the clear aligners were fabricated from the wax-up models in which teeth were reset to meet the projected sequel. The final result showed the anterior dentition that was positioned esthetically, functionally, and biologically. At the completion of the treatment, cephalometric analysis revealed a skeletal Class I (ANB = 0). The maxillary incisors (U1 to SN: 110) showed decent inclination, and the mandibular incisors (IMPA: 100) showed reduced inclination. The total treatment time took approximately 6 months.

The authors stated the advantages of clear aligner, including esthetics, quickness, comfort, low cost, and availability to change plans during treatment. Unlike Invisalign (Align Technology, Inc., Santa Clara, CA, USA), which uses a computer model to determine the intermittent setups for fabrication of serial trays, the present method did not require prefabrication of serial aligners. Each aligner was customized based on its concurrent model. The authors indicated a better finishing stage in this case. It was noticeable that most movements were tipping of incisor crowns. In an appropriate case like this patient's, the clear aligner appears to be an effective and esthetic alternative for those who are reluctant to wear conventional fixed appliances.

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