Adolescent Class II Treatment with 3M™ Incognito™ Appliance System and 3M™ Forsus™ Class II Correctors

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Professor Omur Polat-Ozsoy received her Dental Degree from Hacettepe University and Specialty Degree in Orthodontics from Selcuk University. She has been teaching and practicing at Baskent University since 2004. She is an active member of a number of professional organizations including American Association of Orthodontists, World Federation of Orthodontics and Societa Italiana di Ortotonzia. Dr. Ozsoy serves as a reviewer to many national and international journals like American Journal of Orthodontics and Dentofacial Orthopedics, Angle Orthodontist, European Journal Orthodontics and Korean Journal of Orthodontics. Her academic interests include pain in orthodontics, skeletal anchorage, lingual orthodontics and indirect bonding.

Introduction

Conventional orthodontic treatment during adolescence is challenging, especially when aesthetics is one of the main factors in development of self-confidence during this developmental stage. The adolescent is usually both non-compliant and esthetically demanding. Most patients are willing to have a short treatment period, and if they have a sagittal discrepancy the treatment may be exhausting for both the patient and the doctor.

In this report, the treatment of an adolescent Class II patient with lingual braces and the 3M™ Forsus™ Class II Correctors appliance will be presented.

Case

A female patient, 14 years and nine months of age, presented to our clinic for the correction of her mandibular retrusion (Figure 1A-H). Radiographic evaluation revealed complete permanent dentition with developing wisdom teeth (Figure 1I-J). The patient was a low angle, dental Class II patient with retrusion of upper and lower incisors. She only had a minimal amount of crowding in upper arch and sagittal mandibular correction was the main goal of the treatment. The patient had a high rate of aesthetic expectancy from the appliances. Therefore, lingual treatment using the 3M™ Incognito™ Appliance System was offered (Figure 2A-E).
When the treatment initiated, a special buccal attachment for the Forsus Appliance was not available. Therefore, after leveling, a 17×25-inch steel wire was bonded to the buccal surfaces of the lower canines and first premolars for the attachment of the Forsus Appliance (Figure 3A-C). During Forsus Appliance application, no breakage was seen on the lower buccal attachments. The main advantage observed with combined application of lingual appliances and the Forsus Appliance was the minimal anterior movement of lower incisors. Since the center of resistance of lower teeth was buccal to the brackets, lingual appliances do not cause proclination of teeth unlike buccal appliances.

During treatment progress, five unplanned visits were made due to bracket debonding. The treatment lasted 17 months. Upper and lower fixed retainers were placed at the time of debonding (Figure 4A-H). During a 12-month follow-up, no relapse was observed (Figure 6A-H). In conclusion, Class II treatment of an adolescent was successfully completed using Incognito brackets and the Forsus Appliance.
Figure 4A-J: Post-treatment photos and radiographs.

Table 1: Cephalometric analysis.

<table>
<thead>
<tr>
<th>Cephalometric Analysis</th>
<th>Pretreatment</th>
<th>Post-Treatment</th>
<th>12-Month Retention</th>
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<tr>
<td>SNA</td>
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<td>81.3</td>
<td>82</td>
</tr>
<tr>
<td>SNB</td>
<td>78.4</td>
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<td>20.8</td>
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<tr>
<td>L1-NB (°)</td>
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<td>24.7</td>
<td>22</td>
</tr>
<tr>
<td>L1-NB (mm)</td>
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<td>2.1</td>
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<tr>
<td>UL-Eplane (mm)</td>
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<tr>
<td>LL-Eplane (mm)</td>
<td>-2.6</td>
<td>-2.6</td>
<td>-2.5</td>
</tr>
</tbody>
</table>

Cephalometric Analysis

Figure 5: Pre- and post-treatment cephalometric superimposition and pre- and post-cephalometric measurements.
Dental Analysis
- Bilateral Class II malocclusion
- Deep Bite
- Light crowding in upper arch
- Narrow lower jaw

Treatment Plan
Upper/lower Incognito Appliance with Forsus Class II Corrector

Wire Sequence
0.014 Superelastic NiTi; 0.016x0.022 Superelastic NiTi; 0.018x0.025 Superelastic NiTi, 0.016x0.024 SS; 0.0182x0.0182 TMA

Treatment Duration
17 months

Retention
Upper/lower fixed retainers (3-3) 0.215 multistranded wire

Case photos provided by Dr. Omur Polat-Ozsoy.

Figure 6A-H: 12-month follow-up photos.