REPORT OF A PATIENT WITH A CLASS II OCCLUSION USING THE BEGG TECHNIQUE TO MOVE THE FIRST MOLARS DISTALLY

A 14-year-old female with a Class II occlusion and an increased overbite was treated using a Begg appliance and a modified Henrikson’s arch. The treatment resulted in a Class I occlusion and ideal overjet, overbite, and incisor angulation. Class I occlusion was achieved after 6 months, and total treatment time was 1 year 6 months. The Begg technique with intermaxillary traction to move posterior teeth distally is an effective method to correct a Class II occlusion with minimum mandibular crowding. World J Orthod 2009;10:252–256.

Key words: Begg technique, Class II malocclusion, molar distalization

PATIENT REPORT

A 14-year-old girl was referred to the university dental clinic for orthodontic treatment with the chief complaint of unsatisfactory esthetics. She had no facial asymmetry, craniofacial deformity, or temporomandibular joint disorder (Figs 1a to 1c).
Diagnosis

Intraoral examination revealed a Class II molar occlusion with a 2.5-mm overjet, a 6.0-mm overbite, 7.5-mm crowding in the maxillary, and 4.0-mm crowding in the mandibular arch (Figs 1d to 1f). Her skeletal stage was MP3u, and she had completed 97.4% of her growth. The patient’s pretreatment, progress, and posttreatment cephalometric analysis is presented in Table 1.
Treatment objectives

Orthodontic treatment objectives included distal movement of the maxillary molars to obtain a Class I relationship, protrusion of the maxillary incisors, reduction of the overbite, and alignment of all teeth.

Treatment progress

Following extraction of the primary maxillary right second molar, a Begg appliance was inserted. In the mandibular arch, the first molars were banded. After leveling, a 0.18-inch Australian archwire with anchorage bends was used to increase anchorage, and uprighting springs were applied to all premolars.

In the maxilla, a modified Henrikson’s arch was inserted, which bypassed the canines and premolars (Fig 2). Class II elastics (75 cN) were applied to decrease the protrusive effect of the Henrikson’s arch.

A Class I molar relationship was achieved after 6 months of treatment, and the total treatment lasted 1 year 6 months. Hawley retainers were used for retention.

RESULTS

The treatment resulted in a Class I molar occlusion, an ideal overjet and overbite, and an ideal incisor angulation (Fig 3). According to Björk’s structural superimposition, a distal tipping of the maxillary molars and a concomitant increase in the mandibular plane angle could be observed (Fig 4). As a side effect of the Class II elastics, the mandibular incisors were protruded, which reduced the overjet and overbite; the mandibular molar position was protected. The soft tissue profile was improved.

DISCUSSION

Intraoral magnets have been reported to cause mesial movement of the maxillary premolars and a protrusion of the incisors in the maxilla when used for molar distal movement.14–16 The Pendulum appliance can tip molars distally, move premolars mesially, and increase the overjet.17–19 Similar effects have also been reported for the Jones jig appliance.6,20–22 In contrast, the distal jet appliance shows less anchorage loss and molar tipping than both the Jones jig and Pendulum appliances.23

Molar distal movement up to 1.8 mm can be achieved with a 3D bimetric arch; however, this is accompanied by slight tipping.24–28 A 10-degree protrusion of the mandibular incisors and mesial movement of the mandibular molars have been reported for the Henrikson’s arch. Altug-Atac et al29 compared the 3D bimetric arch with a modified Begg intraoral distal movement technique. They reported that the distal movement took 3.4 months and 6.5 months, respectively, with a greater mandibular incisor protrusion with the Begg technique.
Fig 3  Patient’s posttreatment extra- and intraoral photographs.

Fig 4  Total and local superimpositions according to Björk’s structural superimposition technique revealing mainly a limited late mandibular growth, protrusion of the incisors in both arches, and distal movement of the maxillary molars.
Even if this female had completed 97.4% of her growth, some late growth of the mandible helped with the correction of her Class II occlusion. The typical side effects of intraoral intermaxillary distal movement were diminished using a modified Begg anchorage technique.

**CONCLUSION**

The Begg intermaxillary distal movement technique is an effective method to achieve a Class I occlusion within a relatively short treatment time in patients with a dental Class II occlusion and minimal crowding in the mandibular arch.

**REFERENCES**