

CASE REPORT

Distalizer Treatment of an Adult Class II, Division 2 Malocclusion

BERTA PARDO LOPEZ, DDS
FELIX DE CARLOS VILAFRANCA, DDS, MD
JUAN COBO PLANA, DDS, MD, PHD

An adult patient with a severe Class II, division 2 malocclusion requires careful diagnosis and treatment planning. Camouflage treatment may be possible if the first premolars can be extracted without a detrimental effect on facial esthetics. The satisfaction of a patient who receives such camouflage treatment has been found to be similar to that of a patient who undergoes mandibular advancement surgery.¹

A new range of nonextraction options for treatment of adult Class II, division 2 patients has now been opened by the nickel-free Carrière Distalizer,* which

*Trademark of ClassOne Orthodontics, 5064 50th St., Lubbock, TX 79414; www.classoneorthodontics.com.

is based on the mechanics of Carrière's Modular Arch.^{2,3} The objective of the Distalizer is to achieve a "Class I Platform"—a canine occlusion in which centric relation coincides with centric occlusion and the posterior occlusal relationships are a perfect Class I. The upper first molar is the key to achieving this platform, because the mesial molar rotations usually found in Class II cases can cause substantial loss of arch length.

The Carrière Distalizer is a bar with a concave surface on the anterior end and a flattened sphere that fits into a socket on the posterior end. The anterior end is bonded to the labial surface of the upper canine, and the socket is

bonded to the upper first molar. The articulation between the two parts can be adjusted to control the positions of the molar and the canine, and the surfaces of the flattened sphere act as a stop within the socket, preventing excessive distal inclination and rotation of the molars.

The biomechanical requirements needed to achieve the required movements—distalization, rotation, and uprighting of the canines and molars—have all been incorporated into the system, which also controls undesirable side effects. The apparatus itself is entirely passive; it is activated with Class II elastics from canine hooks to the lower premolar bands.^{3,4}

Drs. Pardo and de Carlos are Assistant Professors and Dr. Cobo is Chief Professor, Department of Orthodontics, University of Oviedo, Catedrático José Serrano s/n, 33006 Oviedo, Spain. E-mail Dr. Pardo at iao@odontologico.com.



Dr. Pardo



Dr. de Carlos



Dr. Cobo

Diagnosis and Treatment Plan

A 23-year-old male presented with the pronounced brachyfacial pattern and bimaxillary retrusive profile that are the hallmarks of a Class II, division 2

malocclusion (Fig. 1). This effect was compounded by a marked mentolabial furrow, a prominent chin, and thin lips. A broad, symmetrical smile exposed 2mm of gingiva, but despite anterior crowding, the lower lip and upper incisal edges were balanced. There

was no periodontal pathology, although the upper canines had 1.5mm pockets.

The patient's molar relationship was Class II on both sides, with a deep curve of Spee. Cephalometric analysis showed a severe brachyfacial pattern, a

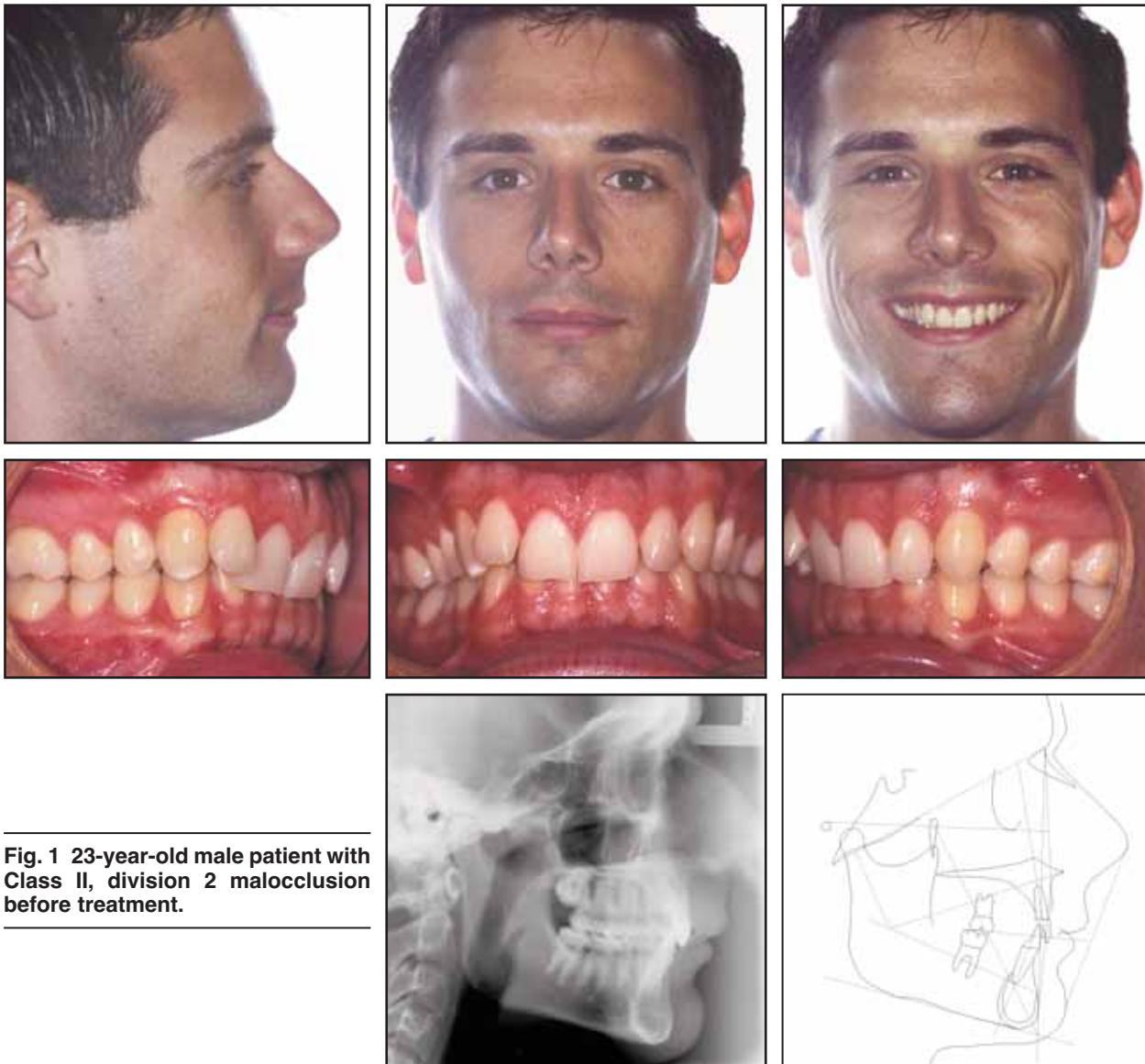


Fig. 1 23-year-old male patient with Class II, division 2 malocclusion before treatment.

skeletal Class II relationship, Class II molar and canine relationships, bimaxillary retrusion, and a deep overbite, as well as markedly upright upper incisors and protrusive lower incisors. The patient reported a history of contact nickel allergies in the buccal cavity.

Considering the skeletal pattern and profile, one treatment option was a combination of

orthodontics and orthognathic surgery. The patient refused surgery, however, and also rejected extraction treatment. Therefore, we decided to use a Carrière Distalizer. The primary treatment objectives were to correct the overbite and crowding, flatten the curve of Spee, and achieve Class I molar and canine relationships with coincident midlines.

Treatment Progress

Because of the patient's nickel allergy, the surface composition of the Distalizer was checked before treatment with a JEOL-6100 scanning electron mi-

croscopie,** a secondary electron detector, an INCA Energy-200 dispersive x-ray microanalysis system,*** and a PentaFET ultra-thin window detector.*** No nickel was found on the surface of the device (Fig. 2).

In this case, we used 5oz, 3/16" Class II Skateboard elastics† to activate the Distalizer (Fig. 3), with a lower lingual arch placed for anchorage. The inventor of the appliance recommends 6 1/2oz, 1/4" elastics.‡

Class I molar and canine relationships were achieved in five months (Fig. 4). The Distalizer was then removed, and an .022" fixed appliance with an MBT‡

**Jeol Ltd., Tokyo, Japan.

***Oxford Instruments, Witney, Oxon, England.

†Energy Pak, trademark of RMO, 650 W. Colfax Ave., Denver, CO 80204; www.rmortho.com.

‡Trademark of 3M Unitek, 2724 S. Peck Road, Monrovia, CA; www.3mUnitek.com.

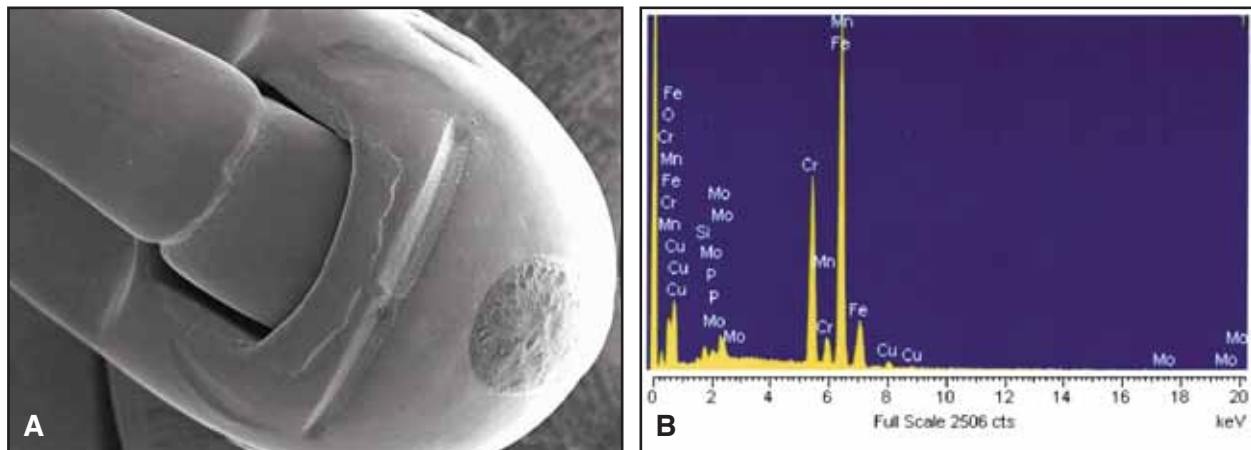


Fig. 2 A. Scanning electron microscopic image of Distalizer socket. B. Distalizer surface composition, showing no presence of nickel.



Fig. 3 Distalizer activated with Class II elastics.



Fig. 4 “Class I Platform” achieved in five months of treatment.



Fig. 5 Fixed appliance used to align midlines.

prescription was placed to align the midlines (Fig. 5).

Treatment Results

After only 13 months of treatment, the patient’s deep overbite and crowding were corrected, and the curve of Spee was flattened (Fig. 6). The arches were well coordinated in Class I molar and canine relationships.

Discussion

Treatment of adult Class II, division 2 cases is always a challenge when the profile must be left unaltered. Brachyfacial patients are even more difficult, because the powerful musculature requires increased force from the intermaxillary elastics. Extraoral traction has been the traditional treatment method,⁵ but a variety of other tools are now available for

intraoral correction of Class II, division 2 malocclusions.⁶⁻¹¹

Although the recent trend has been to develop appliances that do not require patient cooperation,⁶⁻¹¹ we were confident of the patient’s total collaboration in this case. In such circumstances, the Distalizer is an effective alternative that can distalize not only the first molars, but the entire posterior segments, considerably reducing treatment time.

The molar socket of the Distalizer moves freely to compensate for the vertical discrepancy between the canine and molar. In some Class II cases, however, the canine relationship may appear to have been corrected when the canines have only been distally inclined. If a fixed appliance is then placed, the canine relationship will relapse. Therefore, we recommend bonding the posterior base in a slight-

ly inclined position to prevent clockwise, downward, and backward rotation of the rod.

Another advantage of the Distalizer over molar-distalizing springs or superelastic arches is that it is nickel-free. The increasing number of patients with nickel allergies has recently limited the options available to the orthodontist. Furthermore, the Distalizer is small and comfortable, making it easily accepted by patients.

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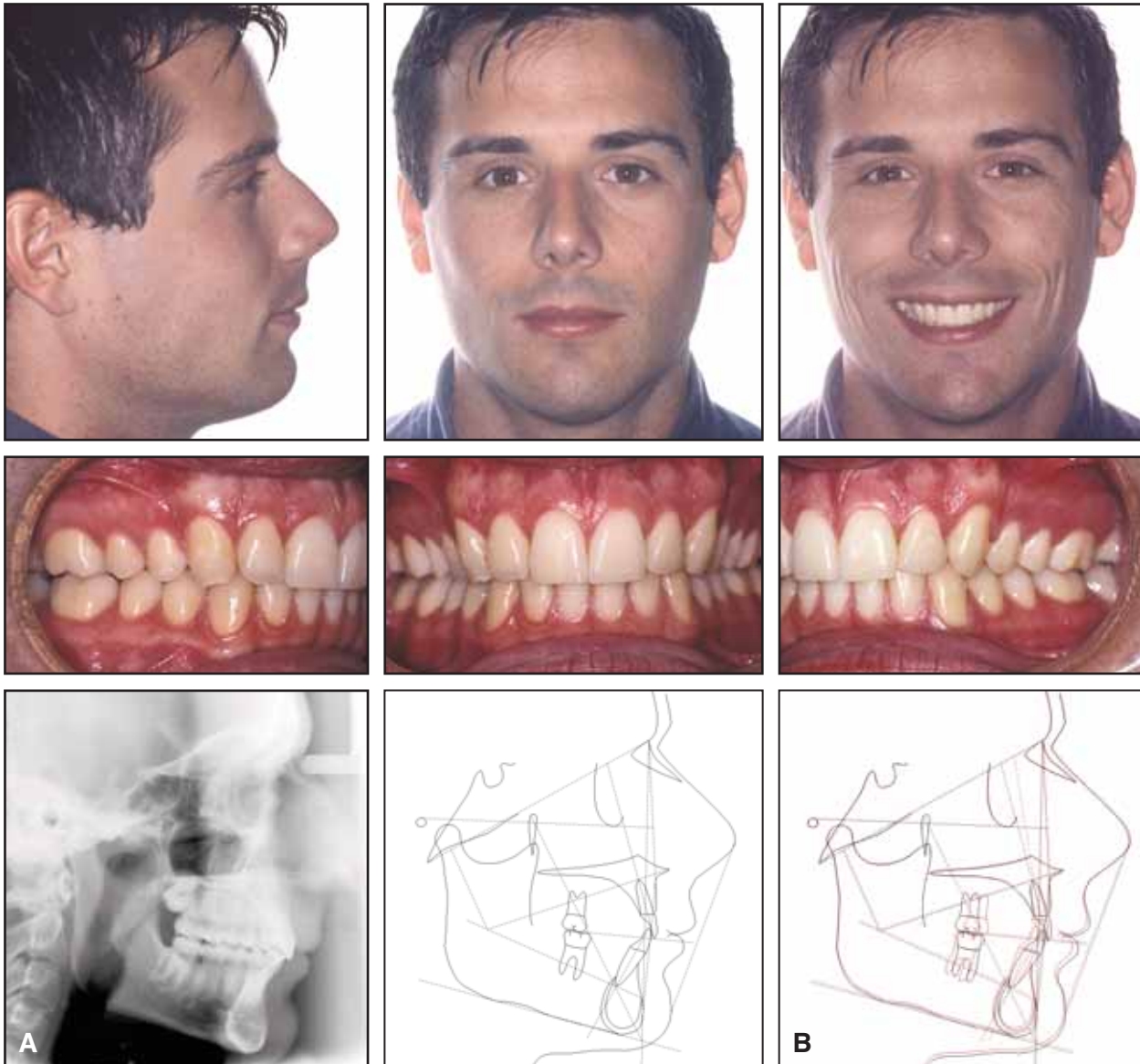


Fig. 6 A. Patient after 28 months of treatment. **B.** Superimposition of cephalometric tracings before and after treatment.

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