

# Lower Molar Intrusion Using Skeletal Anchorage

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Until the development of skeletal anchorage,<sup>1</sup> it was nearly impossible to intrude lower molars without reciprocal extrusion of the teeth used for anchorage.<sup>2-5</sup> Recent articles have reported on the use of skeletal anchorage for lower molar intrusion<sup>6</sup> and, more commonly, upper molar intrusion.<sup>7-14</sup>

This article describes a technique for effective mandibular molar intrusion with anchorage from mini-implants placed in an edentulous space.

## Case Report

A 64-year-old female presented with a Class III malocclusion, missing and decayed upper and lower molars, and mandibular crowding (Fig. 1). The maxillary right first molar was missing; due to the resulting extrusion of the opposing second molar, the vertical space was insufficient for prosthodontic replacement. The mandibular right first molar had been destroyed by decay, with only the roots remaining.

After extraction of the residual mandibular right first molar roots, we inserted two mini-implants, 1.3mm in diameter and 9mm long,\* into

the lingual cortical bone of the first molar space (Fig. 2A). The lingual location was chosen to allow the crestal bone to heal after the root extractions. The mini-implant heads were bonded together with composite, and a molar bracket was bonded to this base. A molar tube was then bonded to the mandibular right second molar, and intrusive forces were applied to the second molar using an .018" × .025" TMA\*\* wire segment (Fig. 2B). We applied 40° of lingual crown torque to the second molar to prevent any buccal crown torque that might be caused by the buccal force application.

Seven months of intrusion created sufficient space for a prosthodontic implant in the maxillary right first molar space (Fig. 3). After five additional months of treatment, a segment of .019" × .025" stainless steel wire was bonded between the lower right second premolar and second molar to maintain their mesiodistal spacing, while the vertical dimension was maintained by a crown placed

\*OASI, Lancer Orthodontics, 2330 Cousteau Court, Vista, CA 92081; www.lancerortho.com.

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**Fig. 1** 64-year-old female patient with Class III malocclusion, mandibular crowding, missing maxillary right first molar, and decayed mandibular right first molar. Extruded mandibular right second molar prevents prosthodontic replacement of missing upper molar.

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**Fig. 2** A. Two mini-implants inserted into lingual cortical bone in mandibular right first molar space. B. Molar bracket bonded to composite over mini-implant heads; intrusive force on mandibular right second molar applied with .018" x .025" TMA\*\* sectional wire.

over a maxillary first molar implant (Fig. 4).

Six months later, a prosthodontic implant\*\*\* (4.25mm x 11.5mm) was inserted in the lower right first molar space (Fig. 5A). After a three-month osseointegration period, a porcelain-fused-to-metal crown was placed over the implant (Fig. 5B). Two years after crown placement, the occlusion remained stable, and the soft tissue was healthy (Fig. 6).

### Discussion

Lower molar intrusion is generally predictable when skeletal anchorage is used. If a buccal force is applied, lingual torque should be added to the crown of the tooth to control its buccolingual position. Other authors have described skeletal anchorage techniques using two implants, one lingual and one buccal, thus avoiding the need for torque control.<sup>6</sup>

Because it is important to stabilize the vertical dimension in any molar-intrusion case to prevent relapse, we suggest initiating prosthetic

rehabilitation of the missing tooth so that a provisional crown can be placed on the antagonist molar before the end of intrusion treatment.

As the present case demonstrates, lower molar intrusion with skeletal anchorage presents new opportunities for orthodontists and prosthodontists in the ideal rehabilitation of adult occlusions.



**Fig. 3** Sufficient space for upper first molar prosthodontic rehabilitation created after seven months of lower second molar intrusion.

\*\*\*Kohno, Sweden & Martina, Via Veneto 10, 35020 Due Carrare, Padua, Italy; www.sweden-martina.com.



**Fig. 4** Upper first molar prosthesis in place after 12 months of treatment, with .019" x .025" stainless steel wire segment bonded in lower arch to maintain mesiodistal distance between mandibular right second premolar and second molar.



**Fig. 5** A. Dental implant inserted in lower right first molar space. B. Porcelain-fused-to-metal crown placed three months later.

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**Fig. 6** Stable occlusion and healthy soft tissue two years after crown placement.