

CASE REPORT

Uprighting a Horizontally Impacted Mandibular Second Molar

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The incidence of impacted second molars has been estimated at as many as three in 1,000 cases. Because the second molars tend to erupt at a mesial angle, mesially rotated impactions are fairly common in cases with arch-length deficiencies. Distally rotated impactions are much rarer. Correction of a mesially rotated molar requires a push-type force, whereas a distally rotated molar needs a pull-type force.

The following case involves a 17-year-old female who presented with a fully impacted mandibular left second molar, horizontally rotated 90° in the distal direction (Fig. 1). The crown was interlocked with that of the third molar, which was horizontally rotated 90° in the



Fig. 1 Pretreatment radiographs showing horizontally impacted, “kissing” mandibular second and third molars.

mesial direction.

One treatment option was to extract the second molar, allow the third molar to erupt, and then transplant the third molar into the second molar socket, but this was not feasible because of the horizontal impaction. The patient declined removal of the asymptomatic third molar.

Treatment

The impacted second molar was surgically exposed, and a buccal tube was bonded to its mesial surface in a buccolingual direction. A full-arch fixed appliance was bonded, and a “tear-drop” loop was placed in the main archwire to upright the second molar with a pull-type force

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Fig. 2 Mandibular archwire with “teardrop” loop to upright second molar.

(Fig. 2). The wire was bent 90° to the lingual, just mesial to the buccal tube, so it could be engaged in the tube.

The archwire was reactivated about 1mm at each appointment until the second molar began to erupt into the oral cavity (Fig. 3). The buccal tube was then rebanded to the buccal surface of the molar, and a new archwire was fabricated with a horizontal loop distal to the mandibular left second premolar. The extruded maxillary left second molar was banded and engaged in the maxillary archwire to prevent interference with the mandibular second molar, and a removable bite plate was worn. Class II elastics were also used.

Treatment continued until

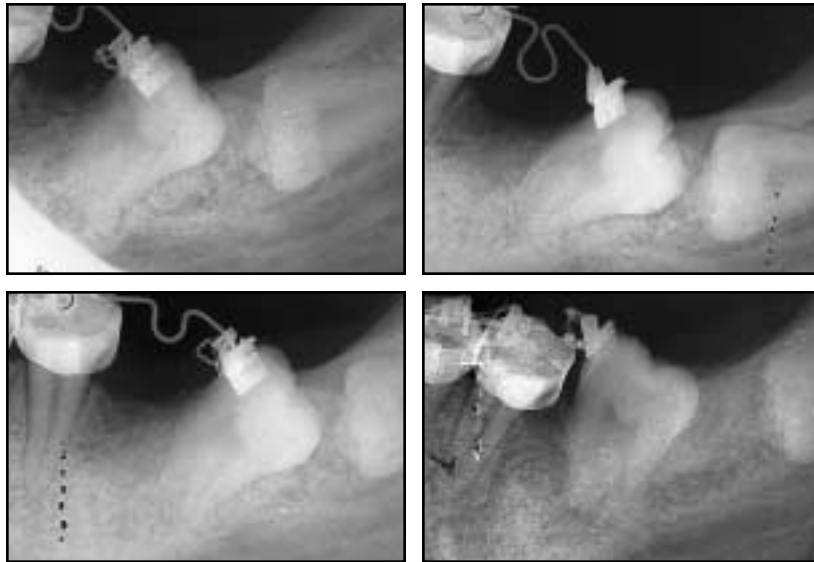


Fig. 3 Treatment progress radiographs.

the mandibular left second molar had fully erupted, after 24 months of uprighting (Fig. 4).

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Fig. 4 Patient after 24 months of treatment.