

Surgical Correction of Mesially Impacted Mandibular Second Molars

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Partial or total impaction of mandibular second molars can prolong orthodontic treatment, especially in deep-bite cases, where leveling these teeth is the key to correcting the curve of Spee. Such impaction is relatively rare, however, estimated at three out of every 1,000 teeth.¹⁻³ Impaction can be caused by arch-length deficiency, extraction of the adjacent first molar,⁴ premature mandibular third molar eruption, or unusual angulation of the erupting second molar.⁵

Orthodontic treatment of impactions has the advantage of reducing the risk of ankylosis or pulpal damage. The stage of root development is not critical, although uprighting is faster if the root is not fully formed. In addition, there is no danger of root fracture. On the other hand, orthodontic uprighting techniques are time-consuming, and side effects from an extended period of mechanotherapy, such as periodontal inflammation, can lead to a loss of patient compliance and compromised results. Also, the clinician has to wait for eruption of the full permanent dentition before beginning orthodontic treatment.

This article proposes a more radical surgical procedure that can be faster and more effective in uprighting impacted mandibular second molars.

Surgical Technique

Surgery is carried out under local anesthesia, supplemented by conscious sedation where necessary. A gingival margin incision is started at the buccal interdental papilla between the first and second molar and extended distally along the buccal of the second molar, with a buccal relief incision over the third molar in the region of the external oblique ridge of the mandibular ramus. A mucoperiosteal flap is then raised.

The adjacent third molar is sectioned and removed, along with just enough bone to allow uprighting of the second molar while maintaining adequate stability of the tooth. A curved Warwick-James elevator is placed buccally on the mesial aspect of the second molar, wedging it against the alveolar bone and thus surgically elevating it into the correct position (Fig. 1). The left-curved Warwick-James elevator (model EWJL) is used to upright the lower right second molar, and the right-curved Warwick-James elevator (model EWJR) to upright the lower left second molar.

In older patients, where further eruption may be minimal, the crown must be in a self-cleansing position to promote periodontal healing. In young patients, the tooth position is less important, but ankylosis is still a possibility. Recurrent periodontal inflammation will lessen the chances of successful repositioning.⁷

The occlusion must be adjusted at the time of surgery to prevent trauma to the healing periodontal membrane.⁷ It is important to remember that when delayed eruption occurs, the opposing molar will tend to overerupt. Any premature contact on the second molar should be eliminated by occlusal equilibration.