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Impacted molars

I read with great interest the recent article by la Monaca et al regarding first and second molars with failed or delayed eruption (la Monaca G, Cristalli MP, Pranno N, Galluccio G, Annibali A, Pippi R. First and second permanent molars with failed or delayed eruption: clinical and statistical analyses. *Am J Orthod Dentofacial Orthop* 2019;156:355-64). A significant number of patients (161 molars), treated with 8 different methods, were examined.

Although the 7 teeth treated with orthodontic uprighting alone were successful, only 34 of the 48 (70.8%) teeth treated with surgical exposure and orthodontic uprighting were successful—the worst prognosis of all the methods examined. The success rate was even lower for impacted mandibular second molars (67.9%). These results might cause orthodontists to be reticent to recommend this approach and are in contrast to other articles reporting excellent outcomes for surgical orthodontic treatment.^{1,2}

The authors state, “the overall success rate of surgical orthodontic uprighting (70.8%) differed from that of 100% reported by Wellfelt and Varpio, but they did not account for patients lost to follow up and those still receiving treatment.” What does this mean? Did the authors (la Monaca et al) place patients who were lost to follow up or still in treatment into the unsuccessful 29.2% category? If so, is that appropriate? If you do not know the outcome, should not the cases be dropped from the study?

What can we advise our patients when recommending surgical orthodontic treatment for impacted molars? What were the reasons that 29.2% of cases failed? Were the molars ankylosed? More information would be helpful to those of us wanting to use this data to treat our patients best.

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Authors' response

As reported in the Results section of our paper, treatment outcomes were known in 161 molars because 20 patients (36 molars) out of 125 patients were lost to follow-up, and they as well as those still in treatment were not considered in the statistical analysis.

As for the comparison with the studies of Wellfelt and Varpio¹ and Fu et al,² the results were not really comparable. Wellfelt and Varpio¹ applied surgical-orthodontic uprighting in only 8 mesioinclined impacted mandibular second molars, and no further information was specifically provided on their treatment outcomes. Fu et al² referred only to the treatment of impacted mandibular second molars using an orthodontic uprighting and not a surgical-orthodontic uprighting. Moreover, they did not report the treatment outcome but the correlation of the impacted depth with the initial uprighting period and excluded 44 patients (almost 29% of their sample) on the basis of “personal considerations and poor prognosis” of the impacted teeth. Most of the treated second molars were superficially impacted with an impaction angle lower than 60° (n = 81; 65%) and an impaction depth lower than 12 mm (n = 12; 90%).

As explained in our Discussion section, the negative results reported in 9 of 10 first molars and only 5 of 38 second molars were related to the deep impaction (total bone coverage) and impaction of root apex with the mandibular canal roof or the maxillary sinus floor. Within the limitations of the small number of molars, these results should lead orthodontists in considering the aforementioned anatomical features as a limit to the surgical-orthodontic uprighting and not in being reticent to recommend this approach in all other situations.

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