

## Letters to the editor\*

### Mandibular molar intrusion with mini-implants and the multiloop edgewise archwire technique

We sincerely compliment the authors on the publication of their case report, "Nonsurgical correction of a severe anterior open bite with mandibular molar intrusion using mini-implants and the multiloop edgewise archwire technique" in the April 2018 issue (Freitas BV, Abas Frazão MC, Dias L, Fernandes Dos Santos PC, Freitas HV, Bosio JA. *Am J Orthod Dentofacial Orthop.* 2018; 153:577-87). It was a pleasure reading the article, which mentioned a novel technique for the closure of open bite when the patient is unwilling to have surgery. We would like to put forward a few queries regarding the article.

The pretreatment study models (Fig 2) show the presence of 32 teeth (including third molars) whereas in the intraoral photographs (Fig 1) and the radiographs (Fig 3), the third molars (Fig 3) are missing. It would be of great help if we could know why this mismatch occurred.

The authors state that the intrusion of mandibular molars enabled closing of the anterior open bite by the anticlockwise rotation of the mandible and that the multiloop edgewise archwire technique helped to finalize and refine the open bite closure and tooth uprighting. But the cephalometric analysis and the superimpositions contradict the above statement. The values show the maxillary molars having extruded, thereby nullifying the effect of anticlockwise rotation of the mandible caused by mandibular intrusion: The 6-PP pretreatment value is given as 31 mm, and the 6-PP posttreatment value is given as 32 mm. These values indicate maxillary molar extrusion. Moreover, the superimposition of cephalograms supports this finding. Also, how much the mandibular molar has been intruded is not clear in the article. How much molar intrusion took place? That could provide the effective amount of mandibular rotation.

The authors mentioned that the patient had a tongue thrust habit. But in the treatment plan there was no appliance to restrict the habit. The 50-month review suggests that relapse occurred and the reason put forward was the presence of the anterior disk displacement without reduction. But according to previous studies, the tongue thrusting might have been a contributing

cause for the relapse. Could this habit have played a synergistic role along with the temporomandibular joint problem in bringing the relapse?

It would be of great help if you could enlighten us with their views on the above-mentioned queries. Thank you.

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### Author's response

Thank you for inquiring about the article, "Nonsurgical correction of a severe anterior open bite with mandibular molar intrusion using mini-implants and the multiloop edgewise archwire technique" (*Am J Orthod Dentofacial Orthop* 2018; 153:577-87).

Indeed, the initial dental casts had 32 teeth (including third molars) although intraoral photographs and radiographic films had those teeth missing. Initial dental casts were obtained on the first visit in the private practice where treatment was conducted. But the appointment for imaging acquisition was scheduled after all third molars had been extracted, because most private practices in the country do not have x-ray machines, and patients are regularly referred to an outside radiology laboratory to acquire panoramic and lateral cephalometric radiographs.

Counterclockwise rotation of the mandible, although small, did indeed occur. The last line of the mandibular teeth measurements, and possibly one of the most important, was accidentally deleted from the cephalometric measurements table. In that line, the measurement 6-GoMe (distance of the mesiovestibular cusp of the first mandibular molar to the gonion-menton line) was indicated 46 mm before treatment and 43.5 mm after treatment and remained stable 5 years after retention. The reduction was 2.5 mm, demonstrating clear molar intrusion. FMA reduced from 42° to 41° and then 40° after retention. SNB also increased from 73° to 75° and then 78° after retention. The explanation missing from the article was that although maxillary molars extruded ~1 mm, the

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mandibular molar intrusion, along with intrusion of premolars, was greater than the amount of the maxillary first molars' extrusion, therefore inducing mandibular counterclockwise rotation. Furthermore, one will notice that maxillary superimposition did not include the maxillozygomatic temporal sulcus, the most stable area for superimposition in the maxilla, because the superimposition used in this article was the palate curvature. The choice for this type of maxillary superimposition might have increased the amount of extrusion seen in the first maxillary molars. The bite closure change, as seen on all superimpositions, occurred mostly by the extrusion of maxillary and mandibular incisors and secondarily by the intrusion of maxillo-mandibular first molars.

Tongue posture/thrust habit was a problem detected before initiation of treatment, which along with condyle resorption, might have been the cause of failure from previous orthodontic treatment, as reported in this case, and, if not controlled, could induce anterior open bite relapse.<sup>1,2</sup> The choice for controlling pernicious habit is a matter of personal treatment preference, which in this clinical case was not chosen. The only attempt to control the habit was the delivery of a Hawley retainer with a hole in the palate and verbal instructions on how to correct deglutition habits. If the patient returned to the habit, then open bite relapse might have been, in part, the cause of the small open bite seen at the 50 months' visit.

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## Orthodontics-periodontics relationship

We write in praise of Dr Zoizner et al for their publication on the effect of orthodontic treatment on the interdental alveolar crest level, published in the September 2018 issue (Zoizner R, Arbel Y, Yavnai N, Becker T, Birnboim-Blau G. Effect of orthodontic treatment and comorbidity risk factors on interdental

alveolar crest level: a radiographic evaluation. *Am J Orthod Dentofacial Orthop* 2018;154:375-81).

We all know that without the periodontal ligament and its unique qualities, our profession could not exist. However, in the literature, the relationship between orthodontics and periodontics is almost abandoned. The number of randomized controlled trials published on that topic is negligible compared with other fields. Therefore, we were thrilled to explore this article, hoping that it will serve as a professional milestone to the knowledge in that field.

As we know, abstracts and conclusions are the most readable and quotable parts of articles. Therefore we question the sentence that appears in the conclusion part of this publication (as well as in the abstract): "Therefore, comprehensive periodontal examination is necessary during orthodontic treatment, especially in adults." Unfortunately, this sentence does not appear to meet the criterion that should stand in front of every reviewer before his decision whether to publish a new study, that is, "Are the conclusions based on the study results?"

As we understand the material and methods and the results parts of this publication, there is no finding in the study that can serve as a positive answer to that important question. On the contrary, no statistically significant findings were reported, in any part that was studied, between the orthodontic patients and the control group. In addition, we do not know whether the patients (all? some?) were under comprehensive (meaning what?) periodontal examination during the treatment, and if so, how often they were examined or the most important parameter, whether there were differences between patients who underwent comprehensive periodontal examination compared with those who did not. In fact, we want to point out that this sentence, which was not even closely related to the study and its findings, positions our profession in danger from a legal point of view and in inferior status in relation to periodontics.

Furthermore, this study, in trying to explain the findings of alveolar crest "build up" (decrease in the distance between the crest and the cemento-enamel junction [CEJ]) ignores at least 3 important parameters: 1) the angular differences while taking the bitewing x-rays, which can affect the picture of crest and CEJ height; 2) the local inflammation during treatment on the mineralization and demineralization processes of the crest, because we know that as long as the bone matrix exists, this mineralization process can temporarily "change" every bone morphology as it appears on the x-ray film; and 3) the exposure time and amperage that modify the x-ray pictures such that slight changes