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Authors' response

We thank the reader for her interest in our article and for the comments regarding the standardization of the clinical photographs used in the study. As we stated in the Methods section, all clinicians involved were trained and experienced in the routine use of clinical photography. We think that this was sufficient to produce images that, when viewed by the assessors on a computer screen, allowed them to make judgements about the presence or absence of new demineralized lesions (DLs) and, if present, whether these DLs would be considered unesthetic. The use of multiple assessors allowed disagreements between assessors to be resolved through a majority consensus opinion. We think that these are the most relevant and clinically useful outcomes in the assessment of demineralization during orthodontic treatment.

Other researchers might consider the size or "whiteness" of DLs to be important outcomes. If so, then we agree that more rigorous standardization, including a calibration scale in each image, would be required to ensure that comparable measurements could be achieved across all images. We would suggest that the use of quantitative light-induced fluorescence (QLF) would be a more appropriate method of obtaining images for these outcomes.[1] QLF is capable of producing standardized images, with more accurate positioning over the long periods required when following participants for the full length of orthodontic treatment. However, we consider that, although QLF no doubt increases the precision and reproducibility (as well as the cost) of recording demineralization, the outcomes are not as clinically relevant as a straightforward visual assessment of the presence or absence of new DLs.

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A case for invincible first premolar extraction

The December 2018 Clinician's Corner article by James L. Vaden et al on Class II correction is a treat for any orthodontist.[1] The cases shown in the article align with the notion that correction was achieved by a deliberate conscious effort and laser-sharp focus from the very start and throughout the entire treatment, while adapting and adjusting for multiple variables along the way toward an excellent finish. But I was left with a few questions and judgments.

The authors propounded that the maxillary first premolar and mandibular second premolar extraction protocol is an acceptable method of gaining the required space for patients with moderate to low mandibular plane angle in Class II management. Was this a formula or a clinical judgment? The notion is not new and has existed since the extraction modality came into effect.

I love the ancient Indian story of 6 blind men and an elephant. Any time I find myself struggling with something I know I am capable of handling, this is the story that pops into my mind: each of us doing what we think will move us along, though each of us is only partially right. The story illustrates an extreme case of differing viewpoints that is not very different from what exists in our profession. When it comes to treating a certain patient, some would treat teeth and others would treat the face. Some would postpone a treatment and others would start immediately. Some would retract and others might advance. Some would extract and others would preserve a full set of teeth.

Let me come straight to the point: After 18 years of orthodontic management of patients, it is still perplexing for me to plan on extraction of second premolars for a borderline discrepancy or Class II malocclusion. I often realized that when minimal retraction of lower

incisors was desired, it ended up otherwise. The same goes with execution of Class II correction. At best, the finishing stage showed an end-on molar relationship. In fact, the greatest difficulty I had to face was in post-adolescent patients with moderate to low mandibular plane angles. The management of second premolar extraction space closure further led to increased treatment duration. All these concerns point to the notion that the conventional wisdom noted by Schoppe is not always so wise.[2] One would argue that there could have been negligence in executing controlled mechanics. I could always deny this argument because I have meticulously tried all the means. At the same time, I could be wrong as well. But my experience constitutes my data. Furthermore, I could not find a plausible answer to my concern in the literature.[3,4]

When the effort to manage the lower second premolar extraction space is high stake, I come to a consensus to manage the situation with first premolar extraction. I sensed the advantage in executing the treatment tactics with first premolar extraction regardless of the type of extraction space closure (A,B, or C). I envisaged that closing the lower second premolar extraction space by mesial movement of a wider first molar root into the reduced buccolingual width of bone at the alveolar ridge (corresponding to the extracted second premolar site) is difficult and involves slower tooth movement. Instead, at the first premolar extraction site, the tooth movement often smoothly progresses more quickly and with less tipping. With first premolar extraction, both the second premolar and canine roots are juxtaposed in the alveolar ridge of similar dimension. In that context, our clinical acuity should deal only with the issue of differing anchorage values for a planned and predictable type of extraction space closure. Furthermore, Bennett and McLaughlin[5] asserted that it is important to start space closure without delay, to avoid the risk of bone narrowing in the extraction site, which can occur within 3-6 months. If narrowing occurs, mesial movement of the wide first molars is more difficult. A systematic review calculated the horizontal loss to be 3.8 mm and the alveolar height to be 1.24 mm 6 months after extraction of teeth.[6]

I understand that my delineation is an extreme case of differing viewpoint. However, as an inquisitive orthodontist, I always ask if I am missing or embracing the "big picture."

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Authors' response

Thank you for the letter and comments about our article, "Class II correction: Extraction or nonextraction?" (Vaden JL, Williams RA, Goforth RL. Am J Orthod Dentofacial Orthop 2018;154:860-76). We are appreciative of the fact that the writer found the correction of the malocclusions were done in a "deliberate conscious effort with laser-sharp focus from the very start" and that the patients whose treatment were shown had excellent results, both facially and dentally.

Regarding whether the decision to extract mandibular second premolars was made according to a formula or clinical judgment, out answer is that the extraction decisions were a combination of both. All formulas have loopholes and all clinical judgments need to be examined. Both formula and clinical judgment are used in planning treatments such as the ones described.

The force system used to close the mandibular extraction space was explained in detail in the article. We don't think we need to add anything to the description of the force systems used. It has been our experience that these force systems adequately close a mandibular second premolar extraction space and facilitate a tight contact of the mandibular first molar with the mandibular first premolar.

The diagnostic "formula" that was used was a total dentition space analysis with an added computation in the middle arch area for the Class II correction.[1-3] The occlusal disharmony, or space needed for Class II correction, must be computed along with any tooth arch analysis when premolar extraction is considered. Occlusal disharmony is measured by articulating the