

postponement of a needed orthodontic intervention for 12 years is ethically unacceptable," is misunderstood in this case.

The last question is how studies like this can be performed in an institute where there is teaching and learning every day. The institute in Jönköping is well known for its research and qualitative postgraduate education. To reach this level, traditional research must be supplemented by research that does not always follow the old footprints; new views must be rewarded. The large amount of data that is available in the Orthodontics Department in Jönköping with at least 10 years' follow-up of orthodontically treated patients is very valuable. A "clean" control cohort can be difficult to find; therefore, we have to use the second-best material as control, for example, long-term follow-up data that have been used in previous studies and such as what we used in the present study.

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## Difficulties obtaining matched groups

It was a pleasure to read this recent interesting study about maxillary canine impaction because it has such clinical relevance (Arboleda-Ariza N, Schilling J, Arriola-Guillén LE, Ruíz-Mora GA, Rodríguez-Cárdenas YA, Aliaga-del Castillo A. Maxillary transverse dimensions in subjects with and without impacted canines: a comparative cone-beam computed tomography study. *Am J Orthod Dentofacial Orthop* 2018;154:495-503). Although this condition has low prevalence,<sup>1,2</sup> it constitutes an important challenge for the clinical practice in orthodontics, and understanding its consequences in the interdental width would help the orthodontist to make a better treatment plan, as explained by the authors.

Over the years, many researchers have concentrated their investigations on identifying etiologic factors responsible for the displacement of the canines, and several theories have been presented to explain this anomaly.<sup>3,4</sup> In addition, there are investigations that concluded that the dental arch deficit is a local cause,<sup>5</sup> concluding that patients with impaction of canines present an anterior transversal deficiency of the dental arch.

Other authors reported that the shape of the maxillary arch was narrower in the palatally canine impaction group than the buccally impacted canine group.<sup>5,6</sup>

In this way, the authors of this recent study concluded that the impacted canine condition affected the intermaxillary width, for which objective they compared "matched groups." However, the pairing of the groups to make them comparable is not achieved by controlling only variables such as the skeletal relationship or vertical growth. The muscular pattern and the facial biotype are very difficult variables to control in a study, but the absence of their control could modify the results of this study. Therefore, a true pairing is difficult to achieve. Although this was a first effort, the authors could have measured the facial biotype, because 2 paired individuals could have Class I malocclusion, be of the same age and sex, and only apparently vary in the canine impaction condition. However, the control subject could be brachyfacial and the person with impacted canine could be dolichofacial and consequently the width of premolars would be greater in the control subject. Therefore, the difference could be affected by the facial biotype and not only by the unilateral or bilateral canine impaction condition, so this point should be recognized by the readers and taken into account for future studies.

It would be very helpful if the authors can give their opinion about these topics. Thank you.

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