

READER'S FORUM

Sanghee Lee, Soonshin Hwang, Woowon Jang,
Yoon Jeong Choi, Chooryung J Chung, Kyung-Ho Kim

Assessment of lower incisor alveolar
bone width using cone-beam computed
tomography images in skeletal Class III
adults of different vertical patterns.

- *Korean J Orthod* 2018;48:349-356

I appreciate the authors' work to investigate the alveolar bone thickness (or width) of lower incisors in skeletal Class III adult patients considering their vertical facial patterns. This article would be valuable especially to the orthodontists who are interested in Class III orthodontic treatment combined with orthognathic surgery. For better understanding not only of mine but also of other readers, I would like to ask some questions.

The methods used in this study to evaluate the alveolar bone thickness would be worthy to share among clinicians as well as researchers.

Q1. Regarding the image manipulation, could you please explain more on the sentence, "The images were reformatted to be viewed at a width of 1,726 Hounsfield units (HU) and level of 870 HU on a three dimensional (3D) imaging software"? How did the authors come to have those numbers? Did all the images from every sample look similar in terms of radiopacity and radiolucency?

Q2. How the authors handle the incisors with curved root in setting the long axis of the tooth?

Q3. What type of the files were exported to Image-

Pro Insight (Media Cybernetics, Silver Springs, FL, USA) from OnDemand3D™ (Cybermed, Seoul, Korea)? Were they DICOM or any graphic files such as JPEG, PNG, TIFF or so?

Q4. In clinical point of view, the authors' valuable opinion would be appreciated. For orthodontic camouflage treatment in Class III patient, are the authors willing to take cone-beam computed tomography (CBCT) to evaluate the bone thickness around lower incisors? Or is there any recommendation by the authors to evaluate those areas rather than CBCT?

Questioned by

Il-Hyung Yang

Department of Orthodontics, School of Dentistry, Seoul National University, Seoul, Korea

A1. Although there were some variations in alveolar bone density for each image, after reviewing the CBCT images in different settings, the evaluator unified the image to the settings mentioned in the study for objective analysis and measurements.

A2. There were a few incisors with slight curvature in the apical 1/3 of the root. In such case, the long axis of the tooth was identified by bisecting the pulp chamber and the canal in the sagittal and coronal planes right before the start of the curvature.

A3. For this study, DICOM files were adjusted and exported as JPEG files to the Image-Pro Insight program.

A4. From the results of this study, the authors recommend reviewing 3D images of the alveolar bone width

in the lower incisor area in Class III high angle patients needing orthodontic treatment involving extensive tooth movements. As with any type of dental treatment, the advantages of accurate diagnosis should indeed exceed additional radiation exposure.

Replied by

Kyung-Ho Kim

*Department of Orthodontics, Gangnam Severance Dental Hospital,
Institute of Craniofacial Deformity, Yonsei University College of
Dentistry, Seoul, Korea*

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.