READER'S FORUM

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Relationship between mesiodistal width and enamel thickness in mandibular incisors.

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Q. Thank you very much for the interesting as well as informative article, 'Relationship between mesiodistal width and enamel thickness in mandibular incisors.' I find that the results of this study can be very useful during interproximal reduction even with the mentioned limitations of the lack of considerations for the differences in the enamel thickness between genders and between central and lateral incisors. Now I have some questions.

1. I found a correlation between mesio-distal width and the thickness of enamel, but not between MD/FL index and the thickness of enamel. If so, given the same mesio-distal width, can it be assumed there is no correlation between facio-lingual width and enamel thickness?

2. I need your valuable opinion whether this relationship between mesio-distal width of lower incisor and the thickness of enamel can be applied to upper incisors or other teeth.

Questioned by

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A. 1. There is a correlation between facio-lingual width and enamel thickness, and its Pearson coefficient of correlation (PCC) is 0.48. But, it is lower than PCC between mesio-distal width and the thickness of enamel (0.68). And there is a correlation between mesio-distal width and facio-lingual width with PCC of 0.62. So, facio-lingual width is proportional to mesio-distal width to some extent, which come to that it has an effect on enamel thickness. Even though facio-lingual width increases and MD/FL index decreases among the teeth which have same mesio-distal width, enamel thickness is not increased significantly. Thus, we concluded that facio-lingual width did not have a correlation with enamel thickness.

2. If it is assumed that enamel layer covers the dentin core and its thickness decrease from cusp tip to cervical area, I think similar pattern can be found in other teeth. But, when Korean's maxillary incisors are compared to mandibular incisors, shoveling shaped incisors are estimated in 91 - 96% of maxillary incisors. However, shoveling shaped incisors are not found in mandibular incisors and even when it happens, the shaped is not clear.¹ The difference of shape like this can change the relation between mesio-distal width of lower incisor and the thickness of enamel. Maxillary incisor has wider contact area facio-lingually, which is also more gingivally positioned. So, Interproximal reduction can be more difficult.

Reference

1. Hu KS, Oh HJ, Moon HS, Kang MK, Choi JH, Kim KD, et al. Metric and non-metric traits of the teeth in past and present Koreans. *Korean J Phys Anthropol* 1999;12:223-34.

Replied by

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