



Factors other than root resorption may result in root shortening

Dear Editor,

I have read with great interest the article by Ho and Liao entitled 'Pre-treatment radiographic features predict tooth resorption of treated impacted maxillary central incisors', which appeared in the August 2012 issue of *Orthodontics and Craniofacial Research* (1).

The authors have assumed in their investigative sample that the root shortening was due solely to root resorption. However, there are other factors that are involved in root shortening. Impacted teeth, which develop in close relation to the floor of the nose, grow their roots in very cramped circumstances and, even ignoring a resorption factor, the root length can be adversely affected by this space-limited environment. The more severe the vertical displacement, the more likely this factor will come into play. This was one of the most significant findings of the study.

A comparison of the measurement of root length of two adjacent central incisor teeth directly from periapical radiographs can only be a valid exercise if the roots of these teeth are straight, without dilacerations, and the roots (not the crowns) of the two teeth are at precisely the same angulation in the sagittal plane.

In the article, dilacerated incisors were included within the sample, which (by definition) means that a portion of the root had developed in a direction other than vertically. Secondly, the

authors are at pains to note that '.... special care was taken not to expose the root despite an insufficient torque'. In other words, the measured length of the roots of the teeth on the periapical film did not reflect their full length.

The majority opinion regarding etiology of dilaceration of central incisors is that it is caused as the result of trauma. This is at variance with the statement by the authors '..... none had suffered a traumatic injury', an assumption that was made only from patient records and not from direct, focused questioning of the parent.

So, while agreeing that resorption may be a factor in root shortening in these teeth, it is by no means the only factor and, probably, not even the major factor.

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References

1. Ho KH, Liao YF. Pre-treatment radiographic features predict root resorption of treated impacted maxillary central incisors. *Orthod Craniofac Res* 2012;15:198–205.

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