Root carving in tooth morphology – Is it really necessary?

Sir,

There is no doubt that the knowledge of dental anatomy/tooth morphology is of paramount importance in the practice of dentistry in general and restorative dentistry in particular. Dental anatomy/tooth morphology is a basic subject in dentistry, and can be taught by any dental specialty. However, this paper in the 1st year of BDS is coupled with oral histology and embryology, and is thus taken care by the Department of Oral Pathology. However, the issue here is the modality of teaching of tooth morphology and how much importance is to be given to root carving.

The teaching of tooth morphology starts from two-dimensional (2D) reproduction (drawing) and progresses to 3D reproduction of tooth model with wax. It has been suggested that tooth carving builds the psychomotor skills in dental students.[1] However, it is rather questionable if tooth carving using wax block alone is responsible for the development of psychomotor skills among students. The psychomotor skills that a dental student is expected to learn after completion of dental anatomy is actually the visual skill to minutely appreciate the normal 3D tooth morphology; the ability to differentiate normal teeth from its deviations; visual efficiency to identify the flaw in the morphology of a tooth and envision the correction required to replicate the closest possible morphology and the motor skill to execute it.[2] Carving of wax teeth, which is bound to vary from the actual tooth measurement and morphology, is a debatable teaching practice as the visual skill development is significantly impaired, given that it does not provide the student with an idea of the deviations that exist in real-time clinical scenarios. Newer technologies such as videos, computerized 3D models and mobile applications like 3D tooth anatomy have been suggested by authors and must be implemented.[1] The rigorous carving exercise may be useful in crown carving to a certain extent since the morphology of a restoration is dictated by the morphology and position of the neighboring and opposing teeth. However, the logic behind root carving still remains unclear. Although the knowledge of shape, number of roots and number of canals inside the root is important in the practice of endodontia and exodontia, the need for reproduction of the same does not arise in clinical scenarios, making root carving exercises an unnecessary part in the dental anatomy curriculum.

It is thus quite unfortunate that the concern that was raised 12 years back regarding the necessity of root carving still remains unaddressed after all these years even in the current letter.[3]

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