

The association between palatal rugae pattern and dental malocclusion

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Introduction: Palatal rugae complete its development during early intrauterine life, whereas dental malocclusions in permanent dentition establishes several years into the post-natal life.

Objective: The objective of present study was to determine if there is an association between the palatal rugae pattern and Angle's classes of malocclusion.

Methods: A cross-sectional study was conducted on pretreatment dental casts of 184 patients. The sample was divided into the following groups: Class I, Class II div 1, Class II div 2, and Class III. The number of palatal rugae was recorded, bilaterally. The length, pattern and orientation of three anterior-most primary rugae on both sides were recorded.

Results: The mean age of the study sample was 17.8 ± 5.4 years. The mean number of the palatal rugae was 11.18 ± 2.5 , with significant differences among different malocclusion groups. The length of the first rugae on left side and third rugae on both sides varied significantly among the groups ($p < 0.05$). Similarly, the pattern of palatal rugae was also found to be significantly different among the malocclusion groups. The right sided rugae did not have any significant difference in the orientation in different malocclusion groups; however, the left sided rugae showed significant differences among the four malocclusion groups ($p < 0.001$).

Conclusions: The current study showed subtle differences in the palatal rugae pattern among the Angle's classes of malocclusion. Similarly, the length and orientation of some rugae were also found to be significantly different between malocclusion groups.

Keywords: Palate. Malocclusion. Dental models.

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