Buccal alveolar bone level is more favourable for age estimation than structural changes of teeth.

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Introduction. The age of the person is of critical concern, especially when doing cases of identification of deceased persons.

Objectives. The purpose of this study is to estimate the chronological age from Cone-Beam Computed Tomography (CBCT) images by measuring the buccal alveolar bone level (ABL) to the cementoenamel junction and to investigate the possibility of employing the age-related structural changes of teeth as studied by Gustafson. In addition, this study will determine the forensic reliability of employing CBCT images as a technique for dental age estimation.

Materials and Methods. A total of 284 CBCT images of Malays and Chinese patients (150 females and 134 males), aged from 20 years and above were selected, measured and stages of age-related changes were recorded using the i-CATVision software. Lower first premolars of both left and right side of the jaw were chosen and the characteristics described by Gustafson (attrition, secondary dentine formation and periodontal recession) were evaluated.

Results. Linear regression analysis was performed for the buccal bone level and the R values obtained were 0.85 and 0.82 for left and right side respectively. Gustafson’s characteristics were analysed using multiple regression analysis with chronological age as the dependent variable. The results of the analysis showed R values ranged from 0.44 to 0.62.

Conclusions. The buccal bone level highly correlated with the chronological age and is consequently the most suitable age-related characteristic for forensic age estimation.