

Evaluation of smile characteristics of skeletal Class III compared to skeletal Class I female adults

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Abstract

Objective

Esthetic enhancement plays an important role in orthodontic treatment. This study was conducted on females as most girls have their growth spurt at a younger age than boys do, so their demand to facial esthetics, especially those who have residual growth of mandible producing class III effect, requires full understanding to smile features helping in diagnosis and treatment planning for maximum patient satisfaction.

Materials and methods

This study was conducted on 30 skeletal Class III and Class I female adults (18-30 years old) who were divided equally into two groups comprising 15 each. Two frontal digital photographs were taken for each subject, one at rest and the other in the posed smile position. Photographs were taken for each subject in the natural head position by a Canon EOS 1200 D camera set on a tripod at a distance of 1.5 m. The incisogingival height of the right maxillary central incisor was clinically measured using a vernier caliper to the nearest 0.1 mm. Photographs were uploaded on Photoshop software for standardization and then uploaded on the Digital Smile Design software (DSD) where the actual incisogingival height of the central incisor was used for automatic calibration. Esthetic components at rest and on smiling were measured for both groups; all linear variables were measured to the nearest 0.1 mm.

Results

Class III females tended to have wider smile widths, less gingival display, longer chin heights, shorter lower vertical dimensions, and a higher percentage of nonconsonant and flat smile arcs than Class I subjects.

Conclusions

The components of the smile should be considered as a guide to help in planning and designing the mechanics during comprehensive orthodontic treatment.