



CFAO GRADUATE STUDENT POSTERBOARD ABSTRACTS

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Acumen and discernment using 3dMD in orthodontic diagnosis

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Objective:

Compare clinically observed 3 Dimensional diagnostic features with existing cephalometric data (controls) for comparison of accuracy between different observers.

Methods and Materials:

Orthodontic residents and orthodontists (Group A) and 3rd year dental students (Group B) assessed 3D facial images, obtained with the 3dMD system (Atlanta, Georgia, USA), of six patients. Participants were asked to determine the skeletal classification, the severity of the skeletal deformity and to diagnose the antero-posterior relationship of the mandible and maxilla as well as the growth pattern; and to assess four soft tissue features and two dental relations.

The 3D facial images for each patient were projected on a large screen for 3 minutes each. Participants were asked to record their findings. Their responses were compared to existing cephalometric data of the six patients (Controls). Data were analysed by a paired t-test.

Results:

The results show a 90% to 100% agreement for skeletal classification in five patients in Group A and four patients in Group B. In four patients in Group A, there were 80% to 100% agreements with reference to growth pattern, naso-labial angle, mandibular plane angle, and lower lip to E-plane. Lower facial height, the antero-posterior position of the mandible and maxilla and the vertical position of the maxilla showed only 1 to 3 patients with 80% to 100% agreement in Group A. Upper incisor inclination and upper incisor position showed no patients with an 80% to 100% agreement in both groups.

There is a statistically significant difference ($p < 0.05$) between the number of patients with an agreement of 80% to 100% in Group A and Group B.

Conclusions:

Orthodontic residents and orthodontists had a higher accuracy at identifying the orthodontic problems from 3D facial images compared to 3rd year dental students. Detailed evaluation parameters still require cephalometric interpretation for the highest accuracy.