Longitudinal cephalometric study of untreated subjects with different facial types

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OBJECTIVES: To examine the craniofacial morphological characteristics of different facial types based on vertical dysplasia in untreated subjects from the ages of 8 to 18.

METHODS: 127 subjects with longitudinal lateral cephalograms at least three time points, 7 to 18 years available from the AAOF Legacy Collection were categorized into three groups: hypo-, normo-, and hyper-divergent facial types based on Mandibular plane to SN angle (MPA) values at the mean age of 12.98 ± 0.65years.

RESULTS: The hyper-divergent facial type showed significantly more retrusive maxillary and mandibular positions relative to the cranial base compared to the normo- and hypo-divergent facial types; however, no differences were found in ANB angle. Gonial angle showed statistically significant differences among the three facial types. The ramus height was statistically greater in the hypo-divergent facial type between the mean ages of 10.5 to 15.5, whereas no differences were found in the mandibular body length (Go-Pog) and Condylion-Pogonion distance among the three groups. The differences in total anterior facial height (N-Me) and lower facial height (ANS-Me) were statistically significant from the age of 8, but the actual changes were not statistically different. Decreases in MPA and gonial angle were significantly greater in the hypo-divergent group than the hyper-divergent group between the ages of 8 and 15.5.

CONCLUSIONS: Significantly different craniofacial morphological characteristics were found for three different facial types based on vertical skeletal dysplasia. These characteristics seem to be established early and continued to develop in the same pattern. Major morphological differences were found in gonial angle and ramus height among the three facial types.