AN ABSTRACT OF THE THESIS OF

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Title: Component Analysis of Craniofacial Relations in Various Malocclusions

Abstract

Linked principally to skeletal Class III malocclusion, mandibular macrognathism might exist in other malocclusions.

Aims: 1) Characterize the traits of Class III and Class II malocclusions compared to a control group of Class I malocclusion. 2) Explore the existence of mandibular macrognathism in all types of malocclusion and its prevalence in Class III and Class II division 2 types. 3) Demonstrate particular traits to Class II division 2 that set it apart from all other malocclusions.

Methods: 322 subjects were divided into 4 malocclusion Classes: I, II division 1, II division 2 (itself stratified into 4 subtypes), and III. Cephalometric linear and angular measurements gauged sizes and positions of the jaws and their relationships to each other. Statistics included a multivariate analysis of variance for group comparisons, frequency distribution, correlations, linear and logistic regressions.

Results: Components of Class II division 2 were distinct from other malocclusions: maxilla closer to Class II division 1, mandible closer to Class I and Class III. In adults, 13.88% of Class III, 2.77% of Class II.2, 0% of Class II.1, had mandibular length (Co- Gn) beyond 1 standard deviation of the mean Class I mandibular length. In Class II.2 27.53% had mandibular length comparable to that of Class II.1, 56.56% comparable to that of Class I and 15.94% to Class III. ANB in Class II.2 in ~60% of the cases was comparable to Class I ANB (0-4.5°), and ~40% to Class II.1 (4.6-10°). Chin components were characteristic in Class II.2: increased anterior symphyseal angle and distance Go- Pog. Conclusion: The results indicate that Class II division 2 may be a dentoalveolar malocclusion grafted on skeletal patterns ranging across other types of malocclusion. Longitudinal research with a larger sample is warranted. Findings on other malocclusions corroborate previous knowledge.