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DENTOFACIAL MORPHOLOGY IN CHILDREN WITH OBSTRUCTIVE SLEEP APNEA

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Objectives: Altered dentofacial morphology has been suggested as an etiology for childhood OSA with limited evidence of greater prevalence of posterior crossbite, Class II skeletal and dental pattern, and openbite in this patient population. Existing reports on the occlusal characteristics of children with OSA vary significantly and are limited by the infrequent use of polysomnography (PSG) for diagnosis. Therefore, the objective of this study is to establish the prevalence of malocclusion in children with OSA diagnosed using PSG.

Methods: The sample comprised 64 children between the ages of 4-16 who were referred to BC Children's Hospital for PSG. Diagnosis of OSA was provided by an overnight, in-laboratory PSG. Malocclusion was assessed clinically by one orthodontist (K.L.), blinded to PSG results.

Results: Children with previous orthodontic treatment were excluded and children with craniofacial syndromes were analyzed separately. The 17 patients with craniofacial syndromes presented significant higher prevalence of altered dentofacial features when compared to the non-syndromic children. The remaining 39 patients were divided into an OSA group (AHI \geq 2; n=17) and a control group (AHI < 2; n=22). The two groups presented with similar demographic characteristics. The OSA group had a higher number of patients who reported snoring more than 3-4 nights per week (61.9 vs. 82.4%). There were no statistically significant differences in frequency of any specific dentofacial features between the two groups; although OSA group had lower prevalence of convex profile, CI II molar relationship, and OJ \geq 5mm.

The OSA group was further divided into lower AHI (AHI between 2-5; n=9) and higher AHI group (AHI \geq 5; n=8). There was no statistically significant difference in frequency of any dentofacial features between the three groups. Nevertheless, the higher AHI group had less prevalence of convex profile and poster crossbite, and less crowding and smaller OJ on average. This dentofacial morphology contradicts what is reported in the literature and warrants further investigation.

Conclusions: In this patient population of 39 children between the ages of 4-16 who were referred to BCCH for an overnight sleep study, no statistically significant differences in dentofacial morphology and occlusal characteristics were found between children diagnosed with and without OSA.

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