Unilateral Craniofacial Microsomia: An Unrecognized Cause of Pediatric Obstructive Sleep Apnea

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Background: Bilateral craniofacial microsomia has been shown to be a major risk factor for obstructive sleep apnea (OSA). However, it is unclear if unilateral craniofacial microsomia (UCFM) also causes OSA. We hypothesize UCFM is also an unrecognized cause of OSA.

Methods: A random sample of patients diagnosed with UCFM at a tertiary level institution from 1990 to 2010 were identified and reviewed (IRB#08-676). Sixty-five patients with UCFM were isolated and only patients with complete data were included in the analysis (n=40). Patients with confirmed diagnoses of OSA (Apnea Hypopnea Index (AHI)>1) were compared to control patients with UCFM without OSA. Univariate Fisher and Chi square tests were created.

Results: 40 patients were identified as having UCFM (clinical and radiographic diagnosis). Nine patients also had OSA (Positive Polysomnography and AHI>1, range : 2.6-20, average : 9.9 ± 6.8). The incidence of OSA in our UCFM patients was 13.8% (prevalence of 2.5% of OSA in an otherwise healthy pediatric population[1,2], p=0.006). Compared to the general pediatric population, UCFM had a 5.5 fold increased risk of OSA. 100% of patients with OSA presented with Pruzanski grades IIB or higher. Patients with OSA presented with snoaring (71.4%), failure to thrive (57.1%), chronic respiratory infections (42.8%), adenotonsillar hypertrophy (28.6%) or loud breathing (28.5 %). Snoring (p=0.005), presence of Goldenhaar features (p=0.001) and failure to thrive (defined as small for age, p=0.005) were identified as single significant predictor for OSA in patients with UCFM. Race, obesity, cleft lip or palate, upper respiratory complications, presence of adenotonsillar hypertrophy and side (laterality) of UCFM were not defined as predictors of OSA in our cohort.

Conclusions: This is the first study to directly investigate the association of UCFM and OSA. Snoring, presence of Goldenhaar features and failure to thrive were shown to be predictive factors for OSA in the presence of UCFM.

References

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