

OP13 IMPACT OF ADENO-TONSILLECTOMY IN DENTOFACIAL MORPHOLOGY CLASS II MALOCCLUSION CHILDREN WITH OBSTRUCTIVE SLEEP APNOEA: A PILOT STUDY

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**AIMS:** To establish the impact of the surgical procedure for breathing pattern correction in dentofacial development for Class II malocclusion children.

**SUBJECTS AND METHOD:** This is a prospective study with Class II malocclusion children (n = 17) diagnosed with a sleep-related breathing disorder detected by polysomnography and treated with adeno-tonsillectomy (T0). A control group was selected and matched for age and malocclusion (n = 11). The age range for both group was between 3 and 7 years. One year after surgery, the dental and skeletal changes of the treated group were compared with the control group (T1). After adeno-tonsillectomy every subject underwent another polysomnography to confirm that a normal breathing pattern was established. Lateral cephalograms and dental casts were taken at two different treatment times.

**RESULTS:** The primary results showed no significant differences between the groups before treatment for variables ANB, mandibular plane and facial axis angle. Statistical analysis showed significant differences between groups for the transverse palatal width (83% of the treated group show a narrow palate proportions, against 57% in the control;  $P = 0.024$ ) and presence of crossbite (45% treated group, 10% control group;  $P = 0.020$ ). Skeletal and dental changes from T0 to T1 were not statistically different between the groups. The results followed the same pattern for changes in Class II malocclusion children with or without surgery. Intermolar distance showed on average  $-0.9$  mm reduction for control group and  $-1.0$  mm for the treated group, systematically for upper and lower arches. The intercanine distance showed no changes between the two different treatment times, with a transversal width reduction on average of  $-0.2$  to  $-0.9$  mm for both groups. Only one subject had the unilateral crossbite spontaneously corrected after surgery.

**CONCLUSION:** Class II malocclusion children with sleep-related breathing disorders have abnormalities in facial and dental development caused by upper respiratory obstruction. The surgical procedure was efficient to normalize the breathing pattern. Obstructive sleep apnoea must be diagnosed and treated at an early age for breathing and dentofacial morphology normalization. The primary short term follow-up results after adeno-tonsillectomy did not show an improvement for Class II malocclusion correction in children.