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Structural cardiac changes as a predictor of respiratory complications after adenotonsillectomy for obstructive breathing during sleep in children.

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BACKGROUND AND PURPOSE: To determine the association between structural cardiac changes and postoperative respiratory complications after adenotonsillectomy for obstructive breathing during sleep. **PATIENTS AND METHODS:** Forty-eight children, ages 2-18 years, undergoing adenotonsillectomy for obstructive breathing during sleep were recruited for this case control study. The case group consisted of 24 children with postoperative respiratory complications after adenotonsillectomy who also had an echocardiogram. An equal number of children without postoperative respiratory complications after adenotonsillectomy were recruited as controls. Left ventricular mass (LVM) was calculated from 2D guided M mode echocardiographic measurements of the left ventricle. Left ventricular mass index (LVMI) was calculated as left ventricular mass/height(2.7). Left ventricular hypertrophy (LVH) was defined as LVMI index greater than the 95th percentile for age. The two groups were compared for demographic variables and cardiac structure. **RESULTS:** The two groups did not significantly differ by age, height, gender or racial distribution. LVH and right ventricular (RV) dimension greater than the 95th percentile for age remained significantly associated with the occurrence of postoperative respiratory complications after controlling for body mass index (BMI) Z score, age, gender, race, systolic and diastolic blood pressure. **CONCLUSIONS:** The increased prevalence of structural cardiac changes in the group with complications (P<0.01) suggests an underlying cardiac origin for postoperative respiratory complications in this group of children.

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