Asymptomatic cardiopulmonary changes caused by adenoid hypertrophy.

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Abstract

Adenoid hypertrophy is the most common cause of pediatric upper airway obstruction, and it can lead to cardiopulmonary complications such as pulmonary hypertension, cor pulmonale, and even heart failure. The aim of this study was to detect the asymptomatic cardiopulmonary changes that could happen in children with adenoid hypertrophy.Eighty children with adenoid hypertrophy were included in this study. Chest x-ray was used to assess the cardiothoracic ratio, whereas echocardiography was used for measuring the pulmonary arterial pressures, right ventricular diastolic filling parameters, and right ventricular end-diastolic diameters. All patients underwent adenoidectomy with or without tonsillectomy, and they were subjected again to echocardiographic assessment 6 months after the operation. No patient showed an increase in the cardiothoracic ratio on x-ray. Preoperative echocardiography showed an increase in pulmonary artery pressure (22.7 [SD, 3.8] mm Hg), a decrease in right ventricular diastolic filling parameters (E/A = 1.03 [SD, 0.17]), and an increase in right ventricular end-diastolic diameters (1.89 [SD, 0.19] cm). Postoperatively, pulmonary artery pressure decreased to 17.2 [SD, 2.1] mm Hg, right ventricular diastolic filling (E/A) increased to 1.25 [SD, 0.11], and right ventricular end-diastolic diameters decreased to 1.68 [SD, 0.12] cm. The comparison between preoperative and postoperative results for each individual parameter was statistically significant. Clinically asymptomatic cardiopulmonary changes due to adenoid hypertrophy are not rare. Early diagnosis and treatment of upper airway obstruction can prevent these serious complications. Echocardiographic examination should be recommended for these patients as a part of preoperative preparation to avoid anesthetic complications.

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