Introduction

Laryngomalacia is the most common congenital anomaly of the larynx and the most common cause of neonatal and infantile stridor. Although the exact pathophysiology is unknown, the disorder involves collapse of the involved tissues of the larynx, such as the aryepiglottic folds, arytenoid mucosa, and the epiglottis, resulting in supraglottic airway obstruction and inspiratory stridor. Several classification systems of laryngomalacia have been developed depending on the site of laryngeal involvement. The vast majority of cases of laryngomalacia will resolve during the second year of life, but up to 10-20% of patients may have symptoms severe enough to warrant surgical intervention in the form of supraglottoplasty or tracheotomy. The purpose of our study was to examine the characteristics of patients undergoing supraglottoplasty for laryngomalacia at our institution.

Methods

Retrospective case series of a single surgeon of patients who underwent supraglottoplasty for laryngomalacia at our academic tertiary care children’s hospital between 2005 and 2012 and examining their demographic information, medical comorbidities, symptoms, indications for surgery, operative findings and procedure, site of laryngeal obstruction, operative techniques, and surgical success rates.

Results

Fifteen patients with laryngomalacia underwent seventeen surgical procedures. The most common indications for supraglottoplasty were persistent stridor (93.3%), difficulty feeding (53.3%), and failure to thrive (33.3%). The most common comorbidities seen in patients (Figure 2) were gastroesophageal reflux (86.7%) and cardiopulmonary disease (40%). Operative findings (Figure 3) included shortened aryepiglottic folds in fourteen patients (93.3%), retropositioned epiglottis in fourteen (93.3%), and prolapsed arytenoids in four (26.7%). Thirteen patients (86.7%) underwent division of the aryepiglottic folds and four underwent ablation of arytenoid mucosa (26.7%) (Figure 4). Of the fourteen patients who had followed up at the time of study conclusion, thirteen (92.9%) had symptom improvement and nine (64.3%) had complete resolution of their symptoms (Figure 5). One patient with multiple comorbidities ultimately required a tracheotomy and later died of unrelated causes.

Conclusions

Supraglottoplasty is an effective treatment for laryngomalacia. Outcomes in our patients are similar to those reported in prior literature. Prior studies in our laryngomalacia population have found that 75% of patients will have some aryepiglottic fold or epiglottic collapse. The findings of shortened aryepiglottic folds and a retropositioned epiglottis, which were found in 93.3% of patients undergoing supraglottoplasty, appear to be disproportionally over represented in our cohort of patients undergoing supraglottoplasty.

References