Operative Timing for Elective Thoracoscopic Lobectomy for CPAM and Sequestration: a NSQIP-Pediatric Analysis 2017-2021

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Abstract

Purpose:

Literature on optimal timing for elective thoracoscopic lobectomy for congenital pulmonary airway malformations (CPAM) and sequestration has been single center or with broader focus of diagnoses. By specifying our analysis, we aim to assess optimal operative timing for elective thoracoscopic lobectomy for CPAM and sequestration.

Methods:

Data from the ACS NSQIP-P registry was used to evaluate elective thoracoscopic lobectomy patients from 2017-2021 diagnosed with congenital cystic lung or sequestration. Open lobectomy, ventilator dependent, oxygen dependent, and <1 month old patients were excluded. Clinical characteristics and outcomes were compared for age cohorts (in months): 1-3, 3-6, 6-9, 9-12, 12-24, and 24+.

Results:

There were 717 patients identified. Operative time significantly increased with age from 1-3 months to 24+ month category (164.9 min to 221.7 min, \(p=0.014\)). Rates of conversion to open also increased; however the trend was not significant (7.4% to 21.8%, \(p=0.181\)). There were greater transfusion events reported at 1-3 months (14.8%) which trended down at 3-6 months continuing to 24+ months (6.4% to 1.3%, \(p=0.067\)). There were no significant differences between age groups for 30-day unplanned readmission, reoperation, non-transfusion complications, all complications, or mortality (Table 1).

Conclusion:

Optimal surgical timing for thoracoscopic lobectomy for CPAM and sequestration is complex. Surgery at younger ages is associated with significantly faster operative times and lower rates of conversion to open (although non-significant); however, a greater powered study is needed to verify that the bleeding/transfusion rate is not significantly higher before recommending surgery prior to 3 months of age.