

## **Nationwide Surgical Management in Congenital Cystic Lung Malformations: Equality for All?**

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**Purpose:** Surgical management of congenital cystic lung malformations (CCLM) varies and there is a lack of national data regarding timing of surgery, surgical approach, and outcomes. This study sought to uncover determinants of surgical management in infants with CCLM. We hypothesized that socioeconomic status, gender, and age would be significant factors in the surgical management.

**Methods:** Nationwide Readmissions Database 2010-2014 was queried for all newborns with congenital cystic lung malformations. Details of surgical resection were determined, and patients were stratified by surgical approach. Statistical analysis was performed via  $\chi^2$  analysis, T-test, and  $p < 0.05$  was considered significant.

**Results:** 363 neonates with CCLM were identified, 67% were male and 83% were born in metropolitan teaching hospitals. Lung resection was performed in the neonatal period in 8%. An additional 55% of infants ( $n=198$ ) underwent lung resection within one year, with a mean age at resection of 5 months  $\pm$  2 months. Resection was performed via thoracoscopy in 75%, while 25% were via open thoracotomy, Table 1. Open lung resections, when compared to thoracoscopic resections, were more commonly performed in those with public insurance (51% vs. 19%), female gender (38% vs 22%), those born low birthweight (22% vs 9%) and in younger patients ( $126 \pm 77$  days vs.  $151 \pm 59$ ), all  $p < 0.05$ . Infants who underwent open resections were more likely to experience serious post-operative complications (40% vs. 10%,  $p < 0.001$ ) such as post-operative hemorrhage, pulmonary failure, or cardiopulmonary collapse. There were no in-hospital deaths during the study period.

**Conclusion:** Surgical resection of CCLM within the first year of life is associated with excellent survival. However, there are disparities in surgical management as patients in lower socioeconomic strata are more likely to undergo open procedures, which are associated with higher post-operative complications and cost.