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Lobectomy in a 58-day-old: A Case Report of Cystic Pulmonary Adenomatoid Malformation

Introduction: Cystic pulmonary adenomatoid malformation (CCAM) is a rare developmental cystic space occupying lung anomaly which has the potential for significant morbidity. CCAM is the most common congenital lung lesion and is associated with postnatal respiratory distress. Currently, standard of practice is surgical excision of the malformation within the first year of life.

Case: A male with a CCAM diagnosed on antenatal ultrasound at 21 weeks was born via vaginal delivery and required a three day stay in the neonatal intensive care unit for respiratory distress. Once stable, the patient was discharged and operative planning ensued. At 58-days-old the patient presented for open left lung lobectomy under general anesthesia. Care was taken to ensure the amount of functional lung tissue was adequate for inhaled anesthetics to be efficacious, low peak airway pressures were maintained to protect against barotrauma, and minimal intraoperative resuscitation was performed to maintain hemodynamic stability. The patient emerged from surgery with an uneventful course, was transported to the pediatric intensive care unit for observation, and discharged home after three days. Follow-up visits yielded a well healed surgical site and benign physical findings in an asymptomatic patient.

Discussion: Surgery is indicated for most CCAM within the first year of life, with data suggesting that earlier surgical treatment yields more favorable outcomes as it allows for more lung tissue development during a period of maximal growth. Resection is recommended even in asymptomatic patients due to the high likelihood of symptom evolution and potential for malignant transformation. CCAM raises important anesthetic considerations, given the presence of bronchopulmonary sequestration and ratio of healthy lung tissue to dysmorphic tissue. Though the clinical implications of CCAM are well understood, little is known about its etiology and merits further investigation.