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**Role Of Selective Intubation To Inform Decision Making For Surgical Treatment Of Acquired Lobar Overinflation (ALO) In The Setting Of Pulmonary Hypertension (PH): A Case Report**

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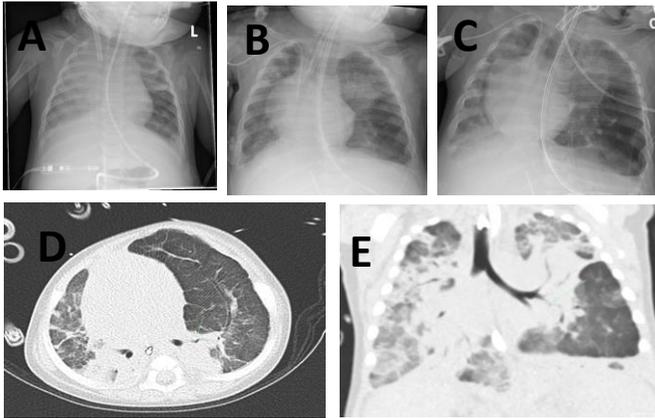
# Role of Selective Intubation in Acquired Lobar Overinflation

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## Introduction

Acquired lobar inflation (ALO) is a rare, but serious complication of bronchopulmonary dysplasia (BPD). Characterized by hyperinflation of the affected lobe, it can cause mediastinal shift and collapse of the contralateral lobes resulting in decreased pulmonary reserve. We describe one case of ALO in a patient with severe BPD and pulmonary hypertension.



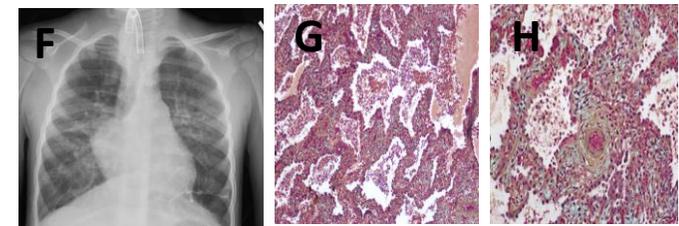
Serial radiographs with increased hyperaeration of the lingula causing right mediastinal shift (A-C). Left lingular hyperaeration is also seen on chest CT (D,E).

## Case Description

The patient is a 4-month-old, ex 26-week male with BPD admitted to the PICU in respiratory distress. He required VA ECMO and developed severe pulmonary hypertension requiring Sildenafil, Bosentan and IV Treprostinil along with tracheostomy. Bronchoscopy demonstrated significant malacia of the left lingula on exhalation. Perfusion scan showed patchy perfusion consistent with pulmonary vascular disease. Right mainstem intubation was trialed due to lack of clinical improvement with aggressive PH management; subsequent imaging demonstrated increased aeration of the right lung with improvement of oxyhemoglobin saturations and pCO<sub>2</sub>. A left lingular lobectomy was then performed; post operatively the residual lung re-expanded with gradual improvement of pulmonary arterial pressures. After 18 months, the patient was discharged on oral Sildenafil, Bosentan and subcutaneous Treprostinil and has been successfully decannulated.

## Conclusion

Selective intubation may help delineate between healthy and diseased lung. In this case, right mainstem intubation was both therapeutic and diagnostic as it improved ventilation and facilitated expansion of the compressed, albeit healthy right lung. More importantly it demonstrated adequate function of the right lung, which is crucial information when considering surgical resection and determining overall prognosis.



Improved aeration was noted after lingula removal (F). Lingular pathology showed alveolar septal thickening and fibrosis (G); arterial intimal thickening suggestive of PH was also seen (H).

Reference: Azizkhan et al. Acquired Lobar Emphysema (Overinflation): Clinical & Pathological Evaluation of Infants requiring Lobectomy. *Journal of Ped Surg*, 27;8 1992

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