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Bronchoscopic Lung Volume Reduction During Diagnosis of Thoracic Cavity

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Short Communication

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ABOUT THE STUDY

Bronchoscopic lung volume reduction is a non-surgical treatment that attempts to reduce the volume of hyperinflated lung segments. It is performed by inserting one-way valves into the airways. This allows gases and mucous to exit the targeted area, whilst denying the re-entry of air into the targeted lung segment. The outcome of this technique is partial collapsing of the affected area, which therefore reduces the volume of the lung. This can create significant improvements in lung functions, breathlessness and quality of life. Emphysema is a long term, progressive lung disease that causes breathlessness due to over-inflation of the alveoli. Emphysema is generally caused by smoking but can also be caused by air pollution, hereditary and gender factors. It is also classified as a chronic obstructive pulmonary disease. There is currently no cure for emphysema but it can be managed by using surgical techniques, medications and preventative lifestyle choices. Emphysema is diagnosed using a range of tests with the gold standard test being spirometry. It can also be diagnosed using other lung function tests, x-rays and CT scans.

CF Advanced emphysema (COPD) is an oftentimes difficult condition to treat. Symptom relief with medications and oxygen can often be sub-optimal, especially in the context of significant hyperinflation. Good data exists with regards to the efficacy of surgical lung volume reduction in these settings however, the potential for significant morbidity and mortality from this procedure has led to a great interest in finding more benign means of treating severe hyperinflation in COPD patients. This has resulted in the development of the field of bronchoscopic lung volume reduction, to enable similar outcomes, with substantially fewer risks, in a much less invasive manner. A non-surgical means of attempting reduction in volume of hyperinflated lung segments. Insertion of one-way valves

into the airways, which allow gas and mucous to exit the targeted area of the lungs, but do not allow the re-entry of air into the targeted segment. Results in atelectasis of the affected lobe, and consequent lung volume reduction. Reduction in hyperinflation can lead to significant improvements in lung function, breathlessness and quality of life. An initial bronchoscopy will be performed if the functional tests suggest that bronchoscopic valves are likely to be beneficial, and that the patient is likely to tolerate the procedure. It is also used to assess the air-flow dynamics throughout the lung, to ensure that there is a significant likelihood of successful valve placement leading to lung volume reduction and lung lobar collapse. If the patient is not suitable for BLVR with valves, new technologies, such as endobronchial coils, are on the horizon to assist patients with advanced breathlessness due to emphysema. Placement of multiple one-way valves (3 valves average) in the airways of the pre-determined lung lobe. A short hospital stay is required after the procedure, as some complications are possible. The patient will then be referred back to their physician and further testing with lung function and 6 minute walk distance are likely to be performed as follow up of the procedure. If successful, significant improvement in function and quality of life is potentially achievable with this procedure.

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