

Bronchoscopic Strategies for the Treatment of Severe Emphysema

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The National Emphysema Treatment Trial (NETT) showed that surgical lung volume reduction (LVRS) improved lung function, improved exercise capacity and reduced mortality in highly selected patients with severe emphysema. Recent reports suggest that LVRS can decrease COPD exacerbation rate and related hospitalizations. Despite good quality supporting data, this procedure remains highly underutilized. Given the established benefits of surgical lung volume reduction, investigators have sought to achieve these benefits in patients with emphysema and hyperinflation using non-surgical means. Multiple bronchoscopic techniques with good physiologic rationale have been developed. Airway stenting, one-way valves (to achieve atelectasis or to redirect airflow), and a variety of biological and mechanical methods for reducing lung volume have been explored, and one-way valves are in active clinical use in Europe. This lecture will review the physiologic rationale for volume reduction in patients with hyperinflation and review the lessons learned in the NETT. We will then review the various options for bronchoscopic lung volume reduction and explore the future of this exciting and emerging area.