Asthma Management; A Bronchoscopists Perspective

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Asthma is a chronic lung disease whose prevalence is increasing in the developed world and affects as many as one in four urban children. The National Heart, Lung and Blood Institute define asthma as a chronic disorder of the airways that is characterized by variable and recurring symptoms, airflow obstruction, bronchial hyperresponsiveness, and underlying inflammation. An increase in airway smooth muscle mass is a feature of asthma and correlates with asthma severity. Airway smooth muscle contraction can occur in response to allergens, irritants, psychological stress or other neural activation.

The role of airway smooth muscle in the pathogenesis of asthma is unknown. Smooth muscle contraction causes acute narrowing of the airway and causes airflow obstruction. Whether this is a primary or secondary response is unknown, although most investigations and treatment strategies have focused on the interruption of the migration of inflammatory cells and cytokines as the primary initiator of asthma and treating airway constriction secondarily. Some have hypothesized that recurrent episodes of airway smooth muscle constriction could cause a secondary inflammatory reaction. In this case airway constriction would be a primary cause of asthma and play a pathological role.

Bronchial Thermoplasty (BT) is a novel therapy aimed at reducing the contractility of proximal airway smooth muscle. BT involves the delivery of radiofrequency energy to the airway wall using a flexible bronchoscope. By heating the airway wall BT aims to reduce smooth muscle mass thus decreasing the potential for bronchoconstriction and possibly decreasing the frequency and severity of asthma symptoms.

I will discuss the current state of Bronchial Thermoplasty in managing patients with moderate and severe asthma.