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Severe Bronchial asthma induced by Gastro esophageal reflux disease – a case report

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Abstract

Gastroesophageal events remain an important factor in the pathogenesis of patients with asthma with the reported prevalance ranging from 32-82%. The esophageal bronchial reflux plays a greater role in the pathophysiology of reflex associated cough. Gastroesophageal reflux either singly or in association with postnasal drip and or asthma is a thought to be a cause of chronic cough. People with asthma are twice as likely to have GERD as those people who don't have asthma. GERD may worsen asthma symptoms, however asthma and some asthma medications may worsen GERD symptoms. Although these two disorders often occur together, the relationship between GERD and asthma remains unclear.

Keywords: Bronchial asthma; Gastroesophageal reflux disease(GERD); Proton pump inhibitors (PPIs).

Introduction

Gastroesophageal reflux disease (GERD) has been considered to be associated with cough in one third of patients.(1) Various studies have supported this documentation and shown a relationship between these two disorders.(2,3) Chronic cough significantly affects the quality of life of these patients.(4)

Case Report

A 65 years old male presented with chronic cough, sputum and respiratory difficulty with repeated attacks of respiratory distress since 18 months having strong relationship with sleep and heavy meals. He was non-smoker, non-alcoholic with no H/O allergy. He had no family H/O bronchial asthma or allergy. He used to experience severe attacks of nocturnal wheezing, respiratory difficulty, orthopnea & tachypnea. These attacks used to subside with change of sleep posture and worsened with spicy food. The laboratory investigations in the form of CT scan, MRI, X-ray chest, cardiac evaluation & tracheoscopy did not reveal any abnormality. He was got examined by ENT specialist with diagnosis of allergic rhinitis without relief. With the passage of time, his symptoms started worsening & was admitted two times in the emergency department where he was managed with oxygen, bronchodilators & steroids. He was diagnosed to be a case of bronchial asthma but he started complaining of dyspepsia & fullness in the epigastium. He was subjected to be upper intestinal endoscopy which was normal. But esophageal manometry revealed lower LES relaxation of 6.5 mmHg (N 10-45 mmHg), low relaxation pressure of -20 mmHg (N <8 mmHg) with relax rate of 32% (N >80%). The patient was put on omeprazole and domperidone along with asthma medication. The intensity of symptoms subsided with no episodes of nocturnal awakening, cough & asthamatic attacks. He was able to sleep with marked improvement in the quality of life.

Discussion

Extra esophageal presentations of GERD such as asthma, chronic cough, postnasal discharge & laryngeal disorders have been widely reported.(5) In USA, 7-15% of western population has GERD, which is the 3rd most common GI disorder.(6) There is limited data from Asia including India. 24 hour ambulatory esophageal pH monitoring and esophageal manometry are diagnostic of GERD without evidence of esophagitis. Takenaka R in their study(7) using FSSG scale questionnaire revealed +ve prevalence of GERD in bronchial asthma as 37.4%. Both the esophagus and airways/lungs are vagally innervated & vice versa. This esophageal bronchial reflex is mainly responsible for gastroesophageal reflux leading to cough.(8) The shared autonomic innervations is a consequence of the common origin of the esophagus and bronchial tree from the foregut.(9) GERD is a potential trigger of asthma, although not all asthma patients with GERD experience reflex symptoms. Asoom AL, et al(10) found that 36.4% of asthmatic patients diagnosed by esophageal pH monitoring as having GERD while Boma G et al(11) reported that about 40% of bronchial asthma patients had GERD. Legget J, et al in their study(12) revealed that GERD is the main culprit for making asthma difficult to control. The association between GERD and pulmonary disease is further documented by the reduction or even disappearance of asthmatic symptoms after medical or surgical treatment of acid reflux(13) as documented in our case. The treatment of GERD in asthma includes lifestyle modification & use of proton pump inhibitors (PPI) & surgical treatment.(14,15)

Conclusion

Physicians should note that all severe asthma patients should be thoroughly investigated to exclude atypical presentation of GERD as in our case. GERD is a potential trigger of asthma although not all asthma patients with GERD experience reflux symptoms. The patients with asthma need to be put on PPIs and referred to gastroenterologist if need be.

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