

Respiratory manifestations and esophageal diseases

Manifestações respiratórias e doenças esofágicas

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Among the esophageal diseases associated with respiratory symptoms, gastroesophageal reflux disease (GERD) is undoubtedly the one that most frequently presents itself in our daily lives.

Pulmonary fibroses and asthma can both be associated with GERD. In addition, the symptomatology of chronic cough is one of its most common clinical symptoms, and, consequently, this is one of the principal symptoms which prompt patients to seek medical attention.⁽¹⁾

In patients with asthma, some authors have reported a high incidence of digestive symptoms, such as heartburn, dysphagia, choking and regurgitation. These symptoms are seen in 24% to 89% of cases, depending on the study.⁽²⁻⁸⁾ The contrary is also valid, since there are patients with esophageal disease in which the only clinical manifestation is respiratory, which becomes a problem in the diagnostic investigation, especially for the pulmonologist.

According to some authors, up to 30% of patients with chronic cough triggered by GERD can present cough as the only clinical symptom of esophageal disease.

The association between asthma and GERD has been thoroughly studied, and some mechanisms have been suggested in order to explain this relationship.⁽²⁻⁸⁾ Microaspiration of gastric acid and esophageal-bronchial reflex, probably with vagal mediation, are the most common respiratory symptoms mentioned in the literature.⁽³⁻⁶⁾ The instillation of hydrochloric acid (0.1 N) in the distal esophagus has been shown to trigger a greater than 20% reduction in forced expiratory volume in one second (FEV₁) in some patients with asthma.⁽³⁾ In other studies, the instillation of saline solution and the insertion of an esophageal tube triggered a reduction in FEV₁, although always a lesser reduction than that caused by the instillation of hydrochloric acid.⁽⁶⁾ The presence of the proximal gastroesophageal reflux (GER) has been shown to be strongly associated with chest pain, whereas the presence of distal GER has been associated with chronic cough.⁽³⁾

Asthma itself can trigger a vagal disorder, in addition to altering the pressures of the thoracic-abdominal gradient, favoring the development of hiatal hernia and GER. In addition, the prolonged use of bronchodilators results in a reduction in the pressure of the lower esophageal sphincter, and corticosteroid therapy can increase the time of acid

exposure in the esophagus. The final result of this relationship is increased bronchial hyperreactivity in individuals with GERD, probably due to the delivery of inflammatory peptides or to the vagal reflex. In a previous study, we showed that bronchial hyperreactivity occurs in patients with GERD and without accompanying pulmonary disease.⁽⁴⁾

Despite all studies previously published, many controversies remain regarding the mechanisms that make esophageal diseases give rise to respiratory symptoms and vice-versa, whether treatment of the esophageal diseases controls the respiratory diseases and, if so, how.

In studies in which GERD was treated clinically or surgically, an improvement of approximately 70% in the asthma symptoms was obtained, with a reduction in the need for medication; there was also an improvement in pulmonary function, although on a smaller scale (25%). In contrast, another group of authors found no consistent benefits from including GERD medication in the treatment regimen for patients with asthma.⁽⁶⁾

Obviously, many studies are still necessary, perhaps with larger samples or longer follow-up of patients receiving the treatments applied. In order to further broaden the field of research into the association between GER and respiratory diseases, we should remember sleep apnea syndrome, whose relationship has been studied by many authors, and chronic obstructive pulmonary disease, which concerns us even more due to its high incidence/prevalence and which occurs in a large number of patients with GERD.⁽⁷⁾

In view of these facts, what would be the relationship among these diseases? Is it simply cause and effect, or are they coexisting diseases? Probably both answers are correct, depending on the individual variability.

In my opinion, the pulmonologist must, at some moment, investigate esophageal diseases in patients with respiratory symptoms, regardless of the presence or absence of digestive symptoms.

In practice, the complementary test most frequently requested for the investigation of esophageal diseases is undoubtedly digestive endoscopy, probably due to the ease of access, although it should be borne in mind that this is a method with limitations for the diagnosis of GERD.⁽⁵⁾ Esophageal 24-h pH-metry and, more recently, impedancimetry continue to constitute the gold standard for the

diagnosis of GERD. However, they have also been criticized regarding their interpretation, such as the modification of eating habits during the test, as well as the failure of pH-metry to recognize basic reflux, and, principally, the lack of access to these tests at all facilities.

In the current issue of the Brazilian Journal of Pulmonology, there is a study by Machado et al. in which the authors demonstrate the exact association between the two systems.⁽⁹⁾ The authors evaluated 1,170 with respiratory symptoms using 24-h pH-metry and esophageal manometry. The study clearly showed the need to evaluate the symptoms independently, since, for instance, 35.2% of the patients with asthma and pathological GER had no digestive manifestations.

Depending on the respiratory disease, GERD was present in between 39% and 44% of the patients, especially in those with asthma accompanied by hypotonia of the lower esophageal sphincter. The authors suggest, as a conclusion, that GERD be considered an extrapulmonary cause of chronic respiratory symptoms.

Many are the points to be elucidated in relation to respiratory and esophageal diseases: pathophysiological mechanisms; diagnostic methods and their parameters of normality; identification of the patients who would benefit from the dual treatment and what differentiates them; as well as the best treatment options and when they are indicated. I used principally references from our Brazilian Journal of Pulmonology, since we are gradually building a great store of knowledge, of indisputable technical quality, on this subject. All of this in order to achieve better results for our patients.

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