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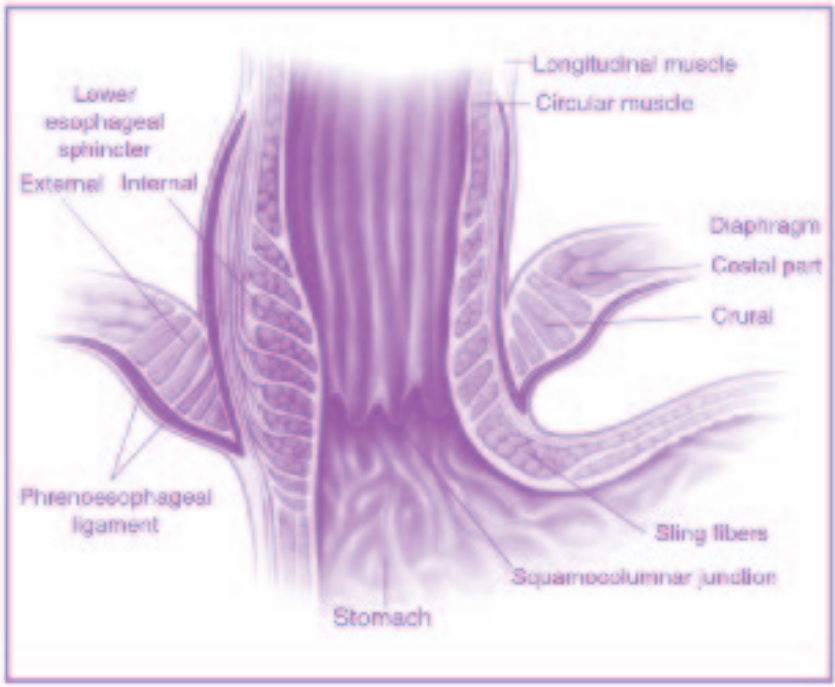
Gastroesophageal Reflux Disease and Airway Disease



edited by

Mark R. Stein

GASTROESOPHAGEAL REFLUX DISEASE AND AIRWAY DISEASE

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Edited by

Mark R. Stein

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I could never have completed this volume without the support and sacrifice of my loving wife, Phyllis. The editing assistance of my friend and colleague, Lewis Mark, M.D., and the never-ending attention to details by my office manager, Lynn Towers, were both deeply appreciated.

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INTRODUCTION

Often in medicine there is the obvious—and the not-so-obvious. Such is the case with asthma, a complex disease that has many causes: the obvious ones (at least we believe we know some of them!) and the not-so-obvious ones! As pointed out by Dr. Stein in his Preface, the association between gastroesophageal reflux and lung disease has been discussed by many for centuries. Yet, it was not so long ago that a publication entitled, ''Silent Gastroesophageal Reflux: An Important but Little Known Cause of Pulmonary Complications,'' appeared (1). Of course, one could say that this 1962 work is a bit dated. Indeed, since then we have become much more aware of the importance and prevalence of gastroesophageal reflux. This is evidenced by the following statement taken from John Murray and Jay Nadel (2):

> ''Over one third of the US population have symptoms of gastroesophageal reflux and it is estimated that 10% of these individuals have respiratory symptoms that may be related to gastroesophageal reflux. This frequency of respiratory symptoms in this group is higher than expected in the general population.''

Furthermore, Drs. Katz and Castell, the authors of Chapter 3 of this volume, point out that ''GERD is arguably the most common disease seen in clinical practice and may present with a multitude of symptoms.''

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Why did it take so long to recognize the importance of the association between gastroesophageal reflux and asthma? There is no simple answer to this question but, in actuality, the question is neither important nor relevant. The fact remains that even today there is much confusion about the association between gastroesophageal reflux and asthma (and other respiratory disorders):

> ''The relationship between gastroesophageal reflux and asthma is further confused by the hypothesis that respiratory disease causes gastroesophageal reflux'' (2).

This volume, edited by Dr. Mark Stein, is a unique contribution to a difficult field and it is a new landmark for the series of monographs, ''Lung Biology in Health and Disease.'' There is no doubt that physicians will find here the answers to their questions about gastroesophageal reflux and that, as a consequence, many patients will be helped.

The contributors are experts in their field, and sharing their extensive experience is a true asset to this volume.

The ultimate goal of this series of monographs is to contribute to improvements in health. The current volume exemplifies how this goal is reached. As Executive Editor, I am grateful to Dr. Stein and his contributors for the opportunity to include it in the series.

Claude Lenfant, M.D.
Bethesda, Maryland

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PREFACE

Clinical insights often appear to be new but may later be found to have been previously recorded and either ignored or lost. This is certainly true regarding the relationship between gastroesophageal reflux and asthma (and other airway diseases). In the Middle Ages, Maimonides noted that asthma occurred after feasting (1). In the late 1800s, Sir William Osler noted a relationship between large evening meals and worsening nocturnal asthma. He stated that ''attacks may be due to direct irritation of the bronchial mucosa or . . . indirectly, too, by reflex influences from the stomach'' (2). This wisdom seemed to be lost until 1934, when Bray proposed that late-evening overindulgence caused gastric distention, which led to reflex-mediated bronchoconstriction through the vagus nerve (3). References to gastroesophageal-reflux-induced airway disease began to appear with increasing frequency in the 1960s and 1970s.

Data suggesting a high incidence of hiatal hernia and gastroesophageal reflux in intrinsic asthma and in patients with idiopathic pulmonary fibrosis appeared in the 1970s (4,5). This was a stimulus for further research at several centers. In 1975, studies were initiated in Denver to explain the relationship between these two commonly occurring conditions, gastroesophageal reflux and asthma. Clinical observations that gastroesophageal reflux was worsened by theophylline led to a study demonstrating that therapeutic theophylline levels were

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associated with a decrease in lower esophageal sphincter pressure (6). Additional studies demonstrated aspiration of gastric contents using an isotope technique (7) and evidence for a vagally mediated reflex that permitted gastroesophageal reflux to trigger bronchospasm in both humans and a dog model (8,9).

These initial studies, together with the subsequent work of numerous investigators, have provided a scientific basis for approaching the evaluation and treatment of gastroesophageal-reflux-associated airway disease. In 1976, when a report by Mays suggested that 50% of intrinsic asthmatics had gastroesophageal reflux, many felt the study was biased and the percentage too high (4). None, at the time, would have expected that future studies could show prevalence rates of as high as 80% (see Chap. 6).

An ever-increasing body of evidence supports the importance of gastroesophageal reflux disease (GERD) as a significant factor in both upper- and lower-airway diseases. Until now, this information had not been presented in a coordinated volume enabling both primary care providers and specialists to grasp these relationships. This book is designed to fill that void, which is also present in most textbooks on asthma and respiratory diseases. It is intended to serve as an extensive review of all aspects of the subjects and to provide the reader with a better understanding of the clinical approaches to diagnosis and treatment in all age groups. It is unfortunate when patients present with severe laryngeal disease or late severe restrictive lung disease, which might have been prevented had these relationships not been missed. Hopefully, this book will provide enough useful clues to help most clinicians identify these patients earlier.

The authors have attempted to weave together broad coverage of these relationships in a format that should permit review of selected clinical topics or the entire subject. Important differences should be noted between the diagnostic approach and treatment recommendations for upper- versus lower-airway diseases.

Mark R. Stein

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