

source of help for elderly patients with asthma, whereas respiratory therapists are not. Perhaps this is an oversight regarding the value of home care respiratory therapists in educating patients on their disease process, and in discussing action plans for asthma and COPD.

Chapter 12 brings home the reality of lung cancer as the most common fatal malignancy in both men and women. The author is quick to address the lack of any current recommended screening for early detection of lung cancer in the United States. As a result, most patients diagnosed with lung cancer present in advanced stages of the disease. In contrast, it is noted that in Japan the standard of care for all smokers over the age of 45 is screening for early lung carcinoma, which results in a much higher survival rate at 5 to 10 years after treatment. The section that covers diagnosis includes a helpful algorithm for the workup of a solitary pulmonary nodule. Staging and TNM (tumor, node, metastasis cancer staging system) descriptors are covered, and there are brief paragraphs on mesothelioma, sarcomas, and secondary lung cancer. A comprehensive discussion on cancer treatment is not part of this chapter. Rather, it is recommended that an interdisciplinary team composed of a pulmonologist, oncologist, thoracic surgeon, and radiation therapist make decisions on potential therapeutic interventions.

Home treatment of chronic disease, covered in Chapter 13, is a comprehensive overview of long-term oxygen therapy. Specifics on how to prescribe oxygen, the requirements for Medicare reimbursement, and the benefits of oxygen therapy during exercise are presented. Different oxygen systems and delivery devices are explained, along with indications for and limitations of each. The chapter ends with a challenge to continue improving respiratory care for older patients while reducing cost and adding to the legacy of the long-term oxygen therapy pioneers.

The final 2 chapters, on progressive respiratory impairment and end-of-life concerns, round out the book. Both chapters are a testament to the wisdom and compassion of the authors, who are practicing pulmonologists who have worked in critical care medicine for over 40 years. Chronic respiratory insufficiency (most commonly a result of COPD, congestive heart failure, and various comorbidities) cannot be cured. Thus, patients and their families must be

educated and encouraged to focus on an improved quality of life. These chapters provide "how to" advice on approaching a variety of difficult topics and conversations with patients. The overarching theme of this chapter is to provide patients with comfort, control, freedom, and peace. As a final message, the authors suggest the term "decisions at the time of transition," instead of the somewhat depressing term "end-of-life decisions."

Overall this book was easy to read and contains a wealth of information on common disease processes in the elderly. Though designed for physicians, it would be one of those "frequently thumbed through" books on the shelf of any respiratory therapy department. I found it interesting that the authorship of the individual chapters was not revealed to the reader, but this did nothing to detract from the information presented. My only concern with this publication is its failure to mention the profession of respiratory care or pulmonary rehabilitation, which was most notably absent in the chapters on COPD and home care. We are indebted to the many outstanding pulmonologists who over the years have nurtured and trained us to care for their patients with pulmonary disease, and we need to expand our role in caring for the elderly. Education about and understanding of the subtle and not so subtle changes in our older pulmonary patients will serve us well, now and in the future.

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**Obstructive Sleep Apnea: Pathophysiology, Comorbidities, and Consequences.**

Clete A Kushida, editor. *Sleep Disorders* series, volume 3. New York: Informa Healthcare. 2007. Hard cover, illustrated, 486 pages, \$249.95.

**Obstructive Sleep Apnea: Diagnosis and Treatment.** Clete A Kushida, editor. *Sleep Disorders* series, volume 4. New York: Informa Healthcare. 2007. Hard cover, illustrated, 442 pages, \$249.95.

Lest anyone doubt that obstructive sleep apnea (OSA) has "arrived" and is now taking its place at the table of 21st century medicine, the arrival of volumes 3 and 4 of the Informa series on sleep disorders should dispel those doubts. Previous volumes in this series have covered pediatric and neurological problems in sleep. The latest 2 volumes have OSA as their sole topic. Volume 3 is concerned with pathophysiology, comorbidities, and consequences, and volume 4 is about diagnosis and treatment. These 2 volumes join a growing list of textbooks about sleep medicine more generally, yet it is noteworthy that 2 volumes are needed to contain the rapidly growing basic and clinical science that is rapidly accruing on OSA. This is a remarkable achievement for a disorder that really came into clinical consciousness only 30 years ago. In fact, some might argue that sleep apnea still has not come into the full consciousness of physicians, as it is still commonly overlooked by clinicians. These 2 volumes are virtually alone as texts specifically about sleep apnea. I suspect they will not be alone for long.

The 2 volumes are edited by Kushida, from Stanford University's world-renowned sleep medicine program, who was an excellent choice for this task and has assembled many noted authorities in the field as his chapter authors.

The first chapter of Volume 3 is an overview of the history of sleep apnea. It is a thorough and detailed tour through sleep apnea in literature and the subsequent history of OSA from the 1870s and Broadbent's perhaps first description of OSA to the present day. Sleep apnea is also perhaps the only disease whose prototypical patients come from the world of Shakespeare and Dickens. I am referring to the characters of Falstaff, from several of the Bard's histories, and Joe the fat boy from Dickens's *The Posthumous Papers of the Pickwick Club*. Despite early descriptions of the disease from the 1870s, it was not until the mid-20th century that Gastaut, in France, and others, put together the clinical observations known for some 70 years with the abnormal upper-airway closures and reopenings that we now understand as the basic pathophys-

iology of the disease. The first large case series of OSA patients was published by Dement and Guilleminault in 1977.<sup>1</sup> In 1981, Sullivan published his initial description of continuous positive airway pressure (CPAP) therapy, in *The Lancet*.<sup>2</sup> Thus the mainstay of sleep apnea therapy is only 27 years old.

Though the history of the disorder is interesting, the mark of a useful textbook is how it helps you learn new material for the first time or review previously learned concepts. To put this to the test, I read 3 chapters on subjects that I consider interesting and important in sleep apnea, and another 3 chapters on more established areas of this field. I then looked up specific information about several sleep apnea patients I have recently seen in my own practice.

The first of the chapters I focused on concerned familial and genetic factors in OSA. Written by Patel, from Case Western Reserve University in Cleveland, and Tishler, from Harvard, this chapter expertly covers not only the work on the genetics of sleep apnea and its intermediate phenotypes such as obesity, craniofacial structure, and ventilatory control, but also genetics from a methodological standpoint, and explains the different scientific approaches to studying the genetics of a disorder, from familial aggregation to candidate gene selection and linkage analyses. Unexpectedly, there are several excellent subsections on genetic disorders other than sleep apnea that are nonetheless related to it and important in their own right. Thus, excellent discussions of the genetics of sudden infant death syndrome, Prader-Willi syndrome, and congenital central hypoventilation syndrome are found as well in this chapter.

The second chapter I examined closely was on the neural substrates of sleep apnea. The brain is the next great frontier in our understanding of the consequences of sleep apnea. The chapter by Colrain and Trinder reviews the literature about the central and autonomic nervous systems in this still small but rapidly growing part of our overall understanding of OSA. Functional magnetic resonance imaging and positron emission tomography studies are beginning to illustrate the areas of the brain involved in memory and other key functions. In the section on the interactions between sleep apnea and the autonomic nervous system, Colrain and Trinder aptly discuss heart rate and blood pressure variability measures and barorecep-

tor sensitivity in OSA. Catecholamine testing in urine or plasma—a more traditional method of autonomic nervous system measurement—is covered less completely.

The third topic of particular interest is so-called complex sleep apnea. This chapter first discusses bi-level positive-pressure therapy in relation to CPAP, and its role in hypercapnic patients, as well as the role that it may or may not have in improving adherence to positive-pressure therapy. The author then segues into a discussion of complex sleep apnea or the problem of central apnea emerging during the positive airway pressure titration of patients with obstructive sleep apnea. This is a subject of considerable controversy at this time. The author, Gay, correctly states that complex sleep apnea is “increasingly recognized but not a new clinical problem.” His discussion of this subject is brief and focuses on treatment issues, including the relative merits of conventional bi-level pressure therapy for complex sleep apnea versus newer adaptive servo ventilators that augment ventilation during the apneic phase of the respiratory event and decrease support during the hyperpneic phase. Several studies have demonstrated efficacy. However, larger and more comprehensive studies are still needed, as Gay points out. Finally, whether any therapy at all is needed for the central apneas that compose complex sleep apnea remains controversial.

Of the chapters I reviewed on the more established aspects of sleep apnea, I particularly enjoyed the one on control of breathing during sleep. These fascinating concepts have been neglected in the education of pulmonary and sleep medicine fellows. However, understanding how the brain regulates breathing during wakefulness and sleep, including the transition between the 2 states, is crucial to a full understanding of the OSA pathophysiology.

I thought the chapters on health-related quality of life and treatment of OSA with CPAP therapy were also strong.

How useful were the 2 volumes in the clinic, for teaching fellows, and for looking up the answers to questions? Here, I give them a mixed review. The first of 3 questions had to do with the measurements made on a lateral cephalometric radiograph. The chapter on surgery for sleep apnea has a brief section on cephalometry, but not a diagram of the landmarks to guide the reader

in actually making the measurements. The second question I had related to the interaction between OSA and symptoms of depression. In this case I found a nice discussion in the chapter entitled “Other Sleep Disorders.” I am not sure sleep apnea and depression should be placed in that particular chapter, as opposed to elsewhere in the sleep-apnea-oriented chapters, but at least it was present and was well done. The final clinical question I encountered was the use of modafinil for persistent sleepiness in the setting of adequate use of CPAP therapy in OSA. This topic was briefly covered in 2 chapters: one on adjunctive therapy in OSA, and the other on medications used in OSA.

Overall I enjoyed these 2 texts on sleep apnea. With only a few weak spots, they cover the burgeoning field of sleep apnea very well. One final gripe: the images in the book are mostly black-and-white reproductions of figures and graphs. Both volumes, however, have a central section of color plates, where all the color images for that volume are collected. This may be a necessary evil for the publisher, but it is a nuisance to have to flip to the center of the book to see a color image instead of having it *in situ* in the appropriate chapter where it belongs. This aside, I strongly recommend these 2 volumes to sleep medicine clinicians, sleep fellows, and pulmonary fellows or practicing physicians interested in OSA.

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