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Books, Software, & Other Media

Lung Transplantation. Nicholas R Banner, Julia M Polak, and Magdi H Yacoub, editors. Cambridge, United Kingdom: Cambridge University Press. 2007 paperback reissue of 2003 edition. Soft cover, illustrated, 412 pages, $70.

Despite increasing demand from patients and physicians, and the widespread acceptance of lung transplantation as the "final" treatment for end-stage lung diseases, very few books have been devoted solely to the subject. For this book the editors assembled an impressive group of experts from around the world to cover a wide arrays of lung transplantation topics, and the book gives a good overview of both the basic science and the practical aspects.

The book's layout is clear and easy to read, the content and titles allow the reader to locate information easily. With the exception of discussing bronchial complications under the chapter on imaging, the book is very well organized.

Part I of this book provides detailed discussion of various lung diseases, including their genetics, epidemiology, pathogenesis, pathophysiology, histology, and medical and non-transplant surgical therapies. Nine chapters cover most of the major lung diseases, including pulmonary hypertension, emphysema, alpha-1 antitrypsin deficiency, bronchiectasis, cystic fibrosis, and diffuse lung disease. There is one chapter on lung pathology. It may appear unusual that almost a third of a book on lung transplantation is devoted to other lung diseases, but this information is crucial to physicians involved in the first part of a successful transplant, which is patient selection. Through its description of underlying lung diseases, how to assess disease severity, prognosis, and alternative treatments, the book provides the necessary framework of when to refer a patient and at what stage of disease to consider lung transplantation.

The overall information is comprehensive and generally up to date, with the exception of the information on medical therapies for pulmonary arterial hypertension, for which there has been a new therapy almost every year, and it is almost impossible to stay current without a monthly literature search. The impact of newer therapies (eg, endothelin receptor antagonist, inhaled prostanoid, and combination therapies) on the timing of transplantation is being evaluated, so readers will need to consult the most recent journal literature for the best and latest answers.

Part II discusses lung transplantation. There is a good discussion on patient-selection guidelines, including glimpses of different transplant practices in different countries. The discussion on types of transplantation is very informative yet concise, and the chapter on anesthesia and immediate postoperative care is very well written, with plenty of practical information for those who take care of post-transplant patients. The book also provides a comprehensive review of long-term transplant management, and the chapters on immunological graft injury, immunosuppression, and post-transplant complications will be especially useful for those interested in the basic science behind post-transplant drug therapies or who manage transplant patients. In particular there is considerable coverage of common complications such as cytomegalovirus and other infections, although some readers may want a more detailed discussion of the less common treatments for chronic rejection, such as inhaled cyclosporine and photophoresis.

There is an excellent review of transplant pathology and a detailed discussion of various psychological issues in pre-transplant and post-transplant patients. I wanted to see more information on the relatively new lung allocation system for organ distribution, adopted in the United States in May 2005, indications for and evaluation of living donor (lobar) transplant, and the role of induction therapy at the time of transplant. Some readers may find it confusing that the discussion on airway complications such as bronchial stenosis and dehiscence is in the chapter on imaging. Bronchial stenosis and dehiscence are common after transplantation, and readers would benefit from more detail on the detection and management of this problem.

Part III introduces several areas of possible future advances, including tissue engineering, xenotransplantation, and artificial lung. These chapters offer great insights into the exciting world of cutting-edge research and provide enough details for a good understanding of the techniques and difficulties of these potential applications. This is the first book I am aware of that has put together these very diverse subjects in one place, written in a way that most readers will understand. Those interested in transplants will find this part enjoyable and thought-provoking.

Overall the book is comprehensive enough to benefit a wide range of readers. Pulmonologists and intensivists who care for transplant patients will find information useful in their day-to-day practice, and nurses can look up concise discussions on complications their transplant patients may have, although the basic-science part may be a little excessive for most. Respiratory therapists will find the chapter on anesthesia and intensive care quite useful, especially the section on management during the post-implant phase of surgery. The rest of the book provides a good reference for lung-transplantation topics for almost anyone interested in the subject.

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Emergencies in Respiratory Medicine. Robert Parker, Catherine Thomas, and Lesley Bennett, editors. *Emergencies In* series. New York: Oxford University Press. 2007. Soft cover, illustrated, 371 pages, $39.95.

The "ABCs" mantra for emergency care illustrates the importance of airways and breathing in treating critically ill patients. **Emergencies in Respiratory Medicine** covers both aspects of assessing and managing acute illness as well as acute exacerbations of chronic conditions. As an emergency physician, I was excited to review this book.

The book has 6 sections: "Presentations," "Clinical Scenarios," "Acute Respiratory Conditions," "Chronic Respiratory Condi-

tions," "Practical and Management Issues," and "Investigations." The book starts general and gets more specific. For example, an early chapter on cough, sputum, and fever in the "Presentations" section directs the reader to subsequent chapters on pneumonia, chronic obstructive pulmonary disease, bronchiectasis, cystic fibrosis, and the immunocompromised patient. The "Practical and Management Issues" section contains chapters on airway management, tracheostomy, nebulizers, and chest-drain insertion. The "Investigations" section contains chapters on arterial blood gases, pulse oximetry, spirometry, and radiology.

This is an attractive book, sized to fit into a lab-coat pocket. The book has plastic covers that will not fray, 2 ribbons for bookmarks, and lots of white space for notes. Symbols inside the front cover designate the urgency of the situation. The early pages provide a helpful list of abbreviations. A book icon refers the reader to other parts of the text. The radiograph images are small ($\leq 6\times$ 6 cm) and printed on nonglossy paper, but the abnormalities they show are so blatant that the images are sufficient.

To keep this book concise, readers are referred to a 776-page companion text, the *Oxford Handbook of Respiratory Medicine*, for further explanations. A second edition of the *Oxford Handbook of Respiratory Medicine* is due out in July 2008.

Published in 2007, **Emergencies in Respiratory Medicine** is up to date. The section on severe acute respiratory syndrome recognizes the importance of timeliness and cautions, "Currently (at time of print), we are in an interepidemic period." The chapter on pulmonary hypertension (a topic I reviewed recently) includes recent approaches, although the newer prostacylins treprostinil and iloprost are not mentioned. The chapter on intensive-care referral has an excellent discussion on limits and goals of care.

Emergencies in Respiratory Medicine must be evaluated as a handbook—not a textbook. Only 18 of its 58 chapters have references; 4 others provide a source for an algorithm or table. Nevertheless, the lack of explanation and consistency can be frustrating. For example, malar flush and telangiectasia are listed as things to look for in a patient with hemoptysis, but we are not told what diagnoses they imply. The radiation dose to a fetus is given for perfusion scan, ventilation scan, and chest radiograph, but not for computed tomographic pulmonary arteriogram. The book says that a ventilation-perfusion scan is indicated only for patients with normal chest radiograph and no cardiac or pulmonary disease, but not why. The book states repeatedly that it takes at least 200 mL of pleural fluid to be seen on a posterior-anterior chest radiograph, but never how much it takes to be seen on a lateral chest radiograph.

I was excited to see a Web link to a video of the Allen test, but the link actually led to the *New England Journal of Medicine*'s video on placement of an arterial line and required a subscription to view. The chapter on asthma refers to another Web site (http://www.ginaasthma.org.uk), but the correct link is http://www.ginasthma.com.

The book's editors and contributors are all from the United Kingdom and the book is published by Oxford University Press, so its terminology is understandably British. Most British initialisms are easily understood with the help of the abbreviations list: FBC for full blood count, GORD for gastro-oesophageal reflux disease, and CCF for congestive cardiac failure. Some of the terms (eg, "arrest trolley" and "attend a call-out") I found amusing, and a few were enigmatic: does "renal replacement therapy" mean dialysis?

My main difficulty was interpreting the units used for blood gas values. Phrases such as "severe $P_{O_2} < 8$ kPa" where pressure is expressed in kilopascals (the Système International unit) are meaningless to those of us accustomed to mm Hg, the conventional unit in North America.

The book was edited casually. Though the symbols are defined inside the front cover, other symbols are sometimes substituted. A skull icon is defined as indicating a life-threatening emergency, but starting at page 120 a new symbol (▶▶) is used to indicate the same thing. Some abbreviations are missing from the list, and others are used inconsistently. I had to deduce that GTN is probably nitroglycerin and that GINA is Global Initiative for Asthma. A hospital department for special care is sometimes called an ITU (intensive therapy unit) and other times an ICU (intensive care unit).

Measurement units are not always provided, or are incomplete: "$P_{aO_2} < 10$ on high-flow oxygen" and "PEF $< 50\%$" (should be "PEF $< 50\%$ predicted").

The book is not consistently precise. For asthma, the dose of aminophylline is given simply as intravenous 250 mg, but for chronic obstructive pulmonary disease the loading and maintenance doses are weight-based. For patients with the human immunodeficiency virus (HIV) and tuberculosis, the chapter on tuberculosis says to delay highly active anti-retroviral treatment for 2 months, whereas the chapter "HIV and the Lung" says to delay it for 0 to 6 months, depending on the CD4 count. To calculate the respiratory quotient we are told it is "easier to multiply by 1.2" than to divide by 0.8. Isn't it just as easy—and more accurate—to multiply by 1.25?

The index does not function well. Influenza and permissive hypercapnia are discussed in the text but are not listed in the index. The index listing "immunocompromised patients" refers to "13" without indicating that this means chapter 13, not page 13. The page numbers for "pneumococcal urinary antigen" are wrong.

Most serious, the book contains some definite errors. These might be excused as typographical if this were not a medical text. Examples include:

On page 9: "Glucose (if low give 50 mL 5% glucose IV stat)"

On page 50: "A-a gradient = $P_{aO_2} - (P_{aO_2} + P_{aCO_2}/0.8)$"

On page 277: "Usually LTOT [long-term oxygen therapy] patients have been assessed and should have a $P_{aO_2} < 7.3$ kPa [55 mm Hg] when stable"

On page 314: "Make a 5–7 m [ouch!] skin incision parallel to the ribs"

The book's stated audience is "front-line health care professionals," "junior doctors," or "middle-grade medical staff in A&E [accident and emergency]." The book is not intended for anesthetists, pulmonary function technicians, the resuscitation team, the lung transplant team, or pulmonologists, as these people are for consultation or assistance. I think the chapter on noninvasive ventilation is not detailed enough for respiratory therapists.

I would not recommend this book to emergency physicians. The algorithm for advanced life support is less complex than the algorithms from the American Heart Association. The indications for hyberbaric oxygen in carbon monoxide poisoning are less specific than those taught to emergency physicians. Only the Sellick maneuver is described to help visualize the larynx during intubation, with no mention of the BURP (backward-upward-rightward pressure) or bimanual techniques.

More rigorous editing would decrease distractions in this book, better indexing

would make it more functional, and providing the North-American measurement units along with Système International units would make it useful to more people. However, accepting its limitations as a handbook, it would be a convenient and helpful resource for medical students or residents on a pulmonary rotation or consult service.

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Management of the Difficult and Failed Airway. Orlando R Hung MD and Michael F Murphy MD. New York: McGraw Hill. 2008. Hard cover, illustrated, 510 pages, includes DVD of airway techniques videos, $129.

Why yet another book on airway management? The authors of this book partly address that question in the preface. The book provides exceptional coverage of the issues with non-standard, difficult, and failed airways. Supporting the patent's airway is the greatest concern for all airway practitioners, especially in an emergency setting. To succeed in a difficult airway situation one has to have clear strategies and tactics in the approach to airway management. This book presents a thorough overview of the essentials of airway management, and the authors took up the challenge of creating an organized, logical systematization of all possible difficult-airway situations.

The book is an imposing 28 × 22 × 2.5 cm volume, bound in a shiny hard cover and printed on glossy, acid-free paper. The contents are organized into 4 large sections, which describe, in a logical sequence, airway evaluation and airway management planning, airway devices, airway manipulation techniques, and examples of difficult airways, with case-specific management.

Section 1 provides an excellent in-depth description of the airway evaluation, which is essential for prediction of a difficult airway. The difficult and failed airways are defined and described. This section also presents an overview of various airway-management algorithms. The authors, who are eminent international experts, discuss the strengths and weaknesses of the American Society of Anesthesiologists difficult-airway algorithm and emphasize the importance of the timely shift to the surgical airway when the necessity arises. The recommendation to create a surgical airway in a critical situation, and allow no unnecessary delay, is a red thread that runs throughout the book.

In addition, the first section contains chapters on airway anatomy, comprehensive review of airway preparation for awake intubation, drugs useful in airway manipulation, and aspiration prevention.

Section 2 contains a full survey of various airway equipment and techniques. Each topic in the equipment section starts with a brief historical overview, introduces a specific device, and clearly presents the device's techniques, advantages, and drawbacks. Novice laryngoscopists such as anesthesia residents will find here plentiful information regarding laryngoscope blades, introducers, and extraglottic devices. The introductory discussion of direct laryngoscopy is followed, logically, by an overview of Macintosh and Miller blades and their indications and techniques. These topics are covered in great detail that will be very helpful for the trainee. The blind intubation techniques, including rarely discussed digital intubation, are well laid out, along with the fiberoptic and video-assisted techniques. Intubation techniques, use of extraglottic devices, and the surgical airway are presented in a sound and orderly mode. The chapter on creating a surgical airway is a must for all practitioners who might encounter a difficult airway situation.

Clear, illustrated, step-by-step guidance is provided for open cricothyrotomy, Seldinger cricothyrotomy technique, and retrograde intubation. Percutaneous dilational tracheotomy is discussed, but not recommended for inexperienced operators.

A criticism of this section is that some discussion of oxygen sources and oxygen-delivery devices would have been useful. They are mentioned throughout the text, but there is no separate discussion of them. Jet ventilation is discussed mainly in the surgical airway chapter and is presented as a transtracheal option.

Section 3 presents an outstanding collection of clinical pearls. Each chapter includes a brief clinical scenario, followed by short, problem-based discussion and review of the relevant anatomic and physiologic changes. The appropriate actions and techniques are outlined, and the tips and insights provided will be useful to beginners and experienced practitioners. The selection of pediatric cases is excellent. Trauma cases, obstetric cases, a few scenarios of airway edema of various origins, and much more are found here. The majority of the cases are built in accordance with the algorithms in section one, which is helpful in committing these to memory.

Finally, Section 4 describes the not-very-exciting but nevertheless important issue of building the difficult airway cart. There is a list of equipment supplier contact information, and a section on documenting the difficult airway.

Overall the book is an enjoyable and often an absorbing read. It is cleverly designed; the beginnings of chapters and topics are clearly marked by a blue font. Nice figures, color illustrations, and photographs are plentiful. Many chapters contain useful mnemonics. The algorithms are easy to follow. Each chapter is followed by self-evaluation questions, the answers to which are near the end of the book. The book's accompanying CD-ROM comes in a paper cover and provides excellent learning material for mastering the techniques of direct laryngoscopy, extraglottic devices such as the laryngeal mask airway, and fiberoptic intubation. This is an excellent reference for anesthesia residents, anesthesia practitioners, and all physicians who need airway-management skills in the emergency department or intensive care unit. However, the abundance of learning material and details may be a little overwhelming for medical students.

To summarize, the authors succeeded in composing a well-written and well-organized textbook that undoubtedly accomplishes the goals stated in the preface, to provide a clear and up-to-date text on identification and management of difficult and failed airways.

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Atlas of Airway Management: Techniques and Tools. Steven L Orebaugh MD. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins. 2007. Hard cover, illustrated, 216 pages, $79.95.

Appropriate airway management commands a position of importance in the fields of respiratory care and anesthesia; it is a fundamental skill that we're involved with daily. The reported incidence of the difficult or failed airway in anesthesia is 0.4–4%. Failure to properly manage the airway (ie, inadequate ventilation, esophageal intubation, difficult endotracheal intubation) increases morbidity and the risk of death. Adverse patient outcomes associated with respiratory events account for one third of anesthesia legal settlements. All respiratory care and anesthesia practitioners must have a prelearned and predetermined strategy for dealing with the challenging airway in the context of anesthesia and intensive care.

Several books have been published to assist practitioners in honing airway management skills. Some books are intended for beginners, and some are for the more advanced practitioner. **Atlas of Airway Management: Techniques and Tools** is a good starter book—one that is really a pocket guidebook offered in a full-size book. The strength of this atlas lies in the numerous photographs and the visual component for instruction. There are nearly 300 author-contributed images, many of which are cross-sectional cadaver photographs of the upper airway and illustrate the various airway devices.

The book has 10 parts. When appropriate, the author adheres to a concise, standardized format to allow for consistency between chapters. Part I introduces the basics of routine airway management. Chapters in this section address upper-airway anatomy, mask ventilation techniques, direct laryngoscopy techniques, uniqueness of the pediatric airway, confirmation of endotracheal tube placement, blade types for direct laryngoscopy, and pharmacologic considerations in airway management. Good fundamental information and solid step-by-step detail is concisely presented in each chapter.

The chapter on direct laryngoscopy outlines preprocedure preparation. Pre-induction airway assessment is not identified as part of the routine. With all patients, preprocedural airway assessment should be conducted, when possible, prior to initiating airway management. Failure to incorporate airway assessment into our routine care can cause morbidity and mortality. I noticed a couple of lapses in the editing in this section. In the pediatric airway chapter, the legend for Figure 4.2 lists a child model as being 6 years of age, whereas 2 pages later, in a figure that must have been from the same photographic session, the child is listed as 7 years of age. Table 7.3, on airway-management pharmacology, lists the time of onset for mivacurium (manufacturing of which has been discontinued) and vecuronium as 2–2.5 seconds and 2.5–3 seconds, respectively. The time unit should have been minutes, not seconds.

The application of references at the ends of the chapters in this section seems to be a work in progress. Each chapter uses a different citation format. My random check of references in the first section chapters found several errors, including author-name misspelling, incorrect authors cited, incorrect volume numbers, incorrect pagination, and incomplete title.

Part II looks at difficult-airway management and includes chapters on the definition, incidence, predictors, decision making, and examples and illustrations of conditions that predispose to difficult airway. Chapter 10 makes the only (and brief) mention of a new type of optical device: the videolaryngoscope. One such apparatus, the GlideScope, has proven to be key in my difficult-airway armamentarium and merits mention. This GlideScope incorporates a video camera in the undersurface of its curved plastic blade, which provides an airway image on an integrated monitor. As with all the various techniques described in the **Atlas of Airway Management: Techniques and Tools,** prior training and appropriate clinical skill that comes from experience with the equipment are key to successful use of the GlideScope.

The remainder of the book explores in more detail specific airway-management techniques: adjuncts to direct laryngoscopy (mirrors and mirror blades, prisms and prism blades, bougies and airway stylets); blind intubation (blind nasotracheal intubation, blind orotracheal intubation); light-wands and optical stylets (lightwands, optical stylets); retrograde techniques (retrograde intubation); fiberoptic techniques (flexible fiberoptic bronchoscopes, rigid fiberoptic scopes); emergency ventilation (esophageal-tracheal Combitube, laryngeal mask airway, intubating laryngeal mask airway, new supraglottic ventilation devices, transtracheal jet ventilation); combination techniques (intubation via laryngeal mask airway or intubation laryngeal mask airway with a bougie, lighted stylet, or optical stylet, retrograde intubation, and flexible fiberoptic bronchoscope intubation, flexible fiberoptic bronchoscope intubation through the laryngeal mask airway, flexible fiberoptic bronchoscope intubation through the intubating laryngeal mask airway, flexible fiberoptic bronchoscope intubation and the esophageal-tracheal Combitube); and emergency surgical airways (cricothyrotomy, wire-guided cricothyrotomy).

I found the chapters on combination techniques (Part IX) a strength of this text, because these are seldom-described difficult-airway approaches. A couple of combination approaches to securing the airway could be added to this section: fiberoptic bronchoscope intubation and the GlideScope, where the Glidescope replaces the jaw thrust or MacIntosh blade to improve visualization; and retrograde intubation and the esophageal-tracheal Combitube.

This atlas is directed toward practitioners involved in hands-on airway management. Though anesthesia providers are frequently exposed to the equipment and techniques in this atlas, I think the book will be very appropriate for respiratory therapists who deal with securing the airway, whether in the intensive care unit or emergency department. For the more advanced airway practitioner, 2 excellent texts that offer more detailed knowledge are *Management of the Difficult and Failed Airway*, edited by Hung and Murphy (McGraw Hill Medical, 2008), and *Airway Management: Principles and Practice*, 2nd edition, edited by Hagberg and Benumof (Philadelphia: Mosby Elsevier, 2007). To enhance your technical skills in airway management, **Atlas of Airway Management: Techniques and Tools** will serve as a good reference.

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