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Neonatal Respiratory Disorders, 2nd edition. Anne Greenough MD and Anthony D Milner MD, editors. London: Arnold/Oxford University Press. 2003. Hard cover, illustrated, 550 pages, $149.50.

Every neonatal intensive care unit (NICU) has a collection of treasured reference materials that are constantly consulted for the details of neonatology practice, review of specific respiratory conditions, and for valuable "pictures" from other experiences. **Neonatal Respiratory Disorders** (second edition) is one such treasured text. I strongly recommend its inclusion in all neonatal intensive care unit libraries, and my copy will be kept in my cache in ours. Contributors to this reference are from both sides of the Atlantic and have made major contributions to our understanding of neonatal lung development and diagnosis and treatment of neonatal pulmonary disorders, including lung imaging, bronchoscopy, pulmonary function testing, clinical assessment, and contemporary clinical management of respiratory illness in preterm and term neonates.

Over half of the text is dedicated to 17 chapters on specific neonatal respiratory conditions, documenting the recent advances in treatment of respiratory distress syndrome and other causes of neonatal respiratory distress; management of bronchopulmonary dysplasia, apnea, pulmonary agenesis, and hypoplasia; other anomalies of lung development; disorders of the diaphragm and thorax; and pulmonary insufficiency resulting from neurologic disease. The text also provides normative data for lung function, blood gas values, and a useful pharmacopeia focused on neonatal pulmonary disorders.

The text, edited by Anne Greenough and Anthony D Milner, provides a scholarly, balanced, and only slightly duplicative presentation by various authors of the development and physiology of the immature and term respiratory system, richly illustrated (in black-and-white) and with numerous schematic illustrations.

The chapter on surfactant, by Robertson and Johansson, provides an updated discussion of surfactant-associated proteins and the results of various "knock out" models, demonstrating the various critical roles of 4 major proteins to surfactant function. However, the genetics of surfactant protein allelic variation is not discussed in any detail.

Lung liquid dynamics and the epithelial secretory and absorptive mechanisms in fetal and early neonatal life are cogently explained. Milner et al detail reflexes controlling respiratory drive and the mechanics of neonatal respiratory control, with a clinical emphasis, including the physiologic control of breathing at birth and the complex changes in cardiovascular adaptation to air breathing. Though the authors discuss the importance of balance between endogenous nitric oxide (NO) and endothelin-1 activity, there is a limited discussion of the ontogeny of NO synthases and their developmental role in the regulation and production of endogenous NO.

The text dedicates a large section to clinical assessment of the newborn with respiratory distress, lung microbiology, histopathology, and imaging (fetal and neonatal lung), with some discussion of the indications for neonatal bronchoscopy. Neonatal function measurements are illustrated with ample discussion of the limitations of each method. The interesting Appendix 1 lists normative values for term infants obtained by Milner using pneumotachography and the esophageal balloon for intrathoracic pressure measurements. I thought this appendix would have been better placed within the chapter on neonatal pulmonary function monitoring.

The chapter on resuscitation at birth—though comprehensive and nicely divided between preparation and equipment choices and techniques including pharmacologic interventions for complicated deliveries—does not present the algorithms recommended by the Neonatal Resuscitation Program and so effectively implemented internationally by the American Academy of Pediatrics. Milner discusses the efficacy of the T-piece device and face mask (such as found in the Neo-Puff). This device has gained widespread use because of its ease of use and capacity to control peak pressures, end-expiratory pressure, inspiratory time, and frequency. However, the more familiar bag-mask ventilation and use of laryngeal mask for difficult intubations are described in detail. Whether Milner's advocacy for an inspiratory time of 3–4 seconds controlled by the T-piece device will be accepted by all neonatologists resuscitating babies is doubtful, as this technique has not been tested clinically in randomized controlled trials. Because administration of surfactant to infants < 30 weeks in the delivery room has been shown to reduce air leaks and mortality, use of surfactant within the context of resuscitation or associated with administration of continuous positive airway pressure could be discussed in greater detail. (However, in Halliday's chapter this application is discussed in the section on prophylactic surfactant therapy.) Table 14.3 is somewhat superficial in describing "high risk" deliveries among whom resuscitation might be more likely, and the discussion of medications useful in resuscitation is standard.

Greenough et al describe the specifications of various forms of mechanical ventilation with up-to-date explanations of proportional-assist ventilation, volume guarantee, various forms of patient-triggered ventilation, oscillation, high-frequency jet ventilation, extracorporeal membrane oxygenation, and NO use in the critically ill newborn. The book's emphasis is on evidence-based comparisons of the various forms of ventilation rather than on biases. Overall, this discussion is among the most concise I have seen. Separate discussions of respiratory function monitoring, blood gas interpretation, and other aspects of intensive care add to the completeness of the text. Somewhat out of place is the chapter on feeding, which is superficial and not of the extraordinary quality of the other chapters. Parker and Greenough present a balanced discussion of chest physiotherapy; however, one neglected subject is the management of neonatal pain or suctioning when applying these modalities. Recent randomized trials using closed suctioning devices—devices that permit maintenance of mean airway pressure during suctioning—are not discussed.

The wealth of this text is in Part 4, which provides the most comprehensive discussion available on neonatal pulmonary disorders. Halliday's presentation regarding management of respiratory distress syndrome is an excellent review of clinical ev-

idence of the efficacy of various surfactants used for prophylaxis and treatment of surfactant-deficiency states; however, there is no mention of the equivalency of the leucine/lysine-peptide-containing surfactant (Lucinactant) and poractant alfa reported in recent European trials. The chapters on transient tachypnea of the newborn, pneumonia, and air leaks (this chapter is richly illustrated) are excellent resources that should be read by all neonatologists in training and, in some cases, by their mentors. Meconium aspiration and other aspiration syndromes are cogently presented with careful discussion of the newest therapies. The chapters on pleural effluxion, pulmonary hemorrhage, and pulmonary hypertension provide a comprehensive resource for diagnosis and treatment of those conditions. Sosenko, Bancalari, and Greenough summarize the most current thinking regarding the pathogenesis of bronchopulmonary dysplasia and offer rational guidelines for treatment. The discussion of controversies regarding causes and associations of chronic lung disease is quite balanced, and the proposed monitoring and follow-up of infants with this chronic pulmonary disease provide a standard of care for neonatologists, pediatricians, and respiratory therapists. Albert's discussion of neonatal upper airway obstruction and management of laryngeal airway obstructions is a useful reminder that rare conditions still occur and require quick thinking and expert intervention.

Greenough's chapter on pulmonary agenesis and hypoplasia, and additional discussion of abnormalities of lung development such as cystic adenomatoid malformations, lung cysts, lobar emphysema, lymphangiectasis, and pulmonary alveolar proteinosis—all rare conditions—are scholarly presentations that blend histopathology, imaging studies, and differential diagnosis. These chapters, including the discussion of abnormalities of the diaphragm, will be useful resources even for the experienced neonatologist who encounters these disorders infrequently. These chapters have numerous chest radiographs (of varied reproduction quality). Even pediatric radiologists will find these chapters enlightening because of their completeness and extensive review of the imaging literature. The text is rounded out by a discussion of abnormalities of the thoracic skeleton, including osteochondrodysplasias, and a separate discussion of neurologic disorders affecting the cortical, brainstem, and cranial nerve control of ventilation and the disorders of muscle and the neuromuscular junction that affect respiration.

The second edition of **Neonatal Respiratory Disorders** favorably compares to any recent text focused on neonatal lung disorders. This logical book is a comprehensive review of fetal development, lung diseases in the preterm and term infant, and anomalies of pulmonary development, and it gives a richly illustrated presentation of nearly every condition from Greenough and Milner's vast academic and clinical experience. The book is well worth its relatively high price because of its usefulness in daily practice. The text should become a new standard reference in the library of every neonatal intensive care unit. Though there are a few minor deficiencies, Greenough and Milner have made a tremendous contribution to the field.

Neonatology fellows, respiratory therapists, and even consultant-level neonatologists will find this book a welcome addition. The book offers a comprehensive review of fetal and neonatal pulmonary pathology that is well organized, provides a logical direction for diagnostic evaluation and treatment, and is generally written in a balanced and concise fashion. It is well illustrated, although some of the radiographic images did not reproduce well. Each chapter's reference list is comprehensive and up to date. The inclusion of a drug list was probably redundant, given the many available manuals and Web-based neonatal pharmaceutical references. In the words of Wall Street, this reviewer recommends a "strong buy" for this wonderful text.

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Fundamentals of Airway Management Techniques: A Color Atlas. Vijayalakshmi U Patil MD. Skaneateles, New York: Lotus Publishing (printed by India Printing House, Mumbai, India). 2003. Hard cover, illustrated. 2 Volumes, 575 pages, $190.

This atlas, which comprises 22 chapters, was completed entirely by the author. At least half of the pages consist of line drawings, photographs (external and endoscopic, patients, and prosections [ie, a cadaver dissection performed to illustrate anatomy or, in this case, a technique]), radiographs, and models done by the author. It begins at the beginning, with chapters covering airway anatomy, airway assessment, preparation of the patient and the equipment for various procedures, and oxygenation and ventilation. Not until Chapter 5 does the author begin to address the actual techniques. She begins with direct laryngoscopy and tracheal intubation, then nasal intubation, and then an entire chapter on confirmation of tracheal intubation. Volume 1 finishes with less typical—but by no means unusual—methods of securing the airway (including the laryngeal mask airway and the esophageal-tracheal Combitube), the use of the rigid bronchoscope (not typical respiratory therapist territory), and transtracheal jet ventilation.

Volume 2 addresses strategies for dealing with more difficult airways. Included here are flexible fiberoptic scopes (both bronchoscopes and laryngoscopes), lighted stylette, use of the Bullard laryngoscope, retrograde intubation, digital intubation, magnetic orotracheal intubation (an innovative technique developed by the author), and indirect laryngoscopy with a dental mirror.

Next is a chapter that is probably unique in texts on airway management, "Extubation Strategies and Tube Replacement." Of course, anyone who extubates should be prepared for the possibility that the extubation may be inappropriate and immediate reintubation will be necessary.

Next comes a strictly anesthesia-directed chapter, on placement of double-lumen tubes, bronchial blockers (new to me), and single-lumen tubes for selective lung ventilation. She closes with a synopsis of complications in airway management, which includes techniques to minimize the occurrence of complications and to deal with them if they occur despite appropriate patient assessment and preparation of both the patient and equipment. She concludes with suggestions on gaining experience with airway management techniques, including the use of manikins, laboratory animals, and actual patients. She gives appropriate consideration to treatment of the animals. as well as to clearance of procedures through the institution's committee on humane care and use of animals.

The text is peppered with aphorisms related to airway management. Among them