

## Preface



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*Guest Editor*

I would like to thank Dr. Lee Fleisher for the invitation to compile and edit this issue of *Anesthesiology Clinics* on “Thoracic Anesthesia.” The volume and complexity of thoracic surgical procedures continues to increase and, coincidentally, the knowledge base for anesthesiologists providing care for these patients needs to grow. This issue is aimed at helping clinicians keep abreast in some of the areas of progress in thoracic anesthesia.

These articles are grouped into four general areas with much overlap. Articles one through five deal with perioperative management issues. In the first article, Dr. Jens Lohser has produced, what I believe is, the most up-to-date summary that I have read on the management of one-lung ventilation. There has been much progress in understanding the physiology of one-lung anesthesia in the past 20 years, but this has remained scattered in many separate clinical studies and has not been well summarized—until now. The physiology is more complex than previously appreciated, but Dr. Lohser provides useful guidelines for ventilation management while stressing that “one size does not fit all.” In the next article, Dr. Hilary Grocott considers the possibility of oxygen toxicity as a contributor to acute lung injury after pulmonary resection. This is particularly relevant, as the major causes of perioperative morbidity and mortality in thoracic surgery in the last century (pneumonia and broncho-pleural fistula) are decreasing, and acute lung injury is now assuming a leading role in post-thoracotomy complications. In the third article, Drs. Finlayson and Brodsky discuss

the recent advances in airway stenting, both as palliation and definitive therapy for an increasing spectrum of lower airway problems. In the fourth article, Dr. Ju-Mei Ng presents an overview of anesthetic management for esophagectomy. This is probably the common thoracic surgical procedure associated with the highest perioperative complication rate and is also likely the procedure where anesthetic management most affects outcome. This, along with the article by Dr. Gerner comes from the very busy Thoracic Anesthesia group at the Brigham and Women's Hospital in Boston, and I thank the chief of that group, Dr. Phil Hartigan, for his advice and support in assembling this issue. The final article in this section is on anesthesia for patients with anterior mediastinal masses. This subject continues to be a source of anxiety for anesthesiologists, and the topic is well summarized here by Dr. John Gothard, who draws on the large clinical experience of the Royal Brompton Hospital in London, England.

In articles six through eight, the underlying theme is the right side of the heart. In the sixth article, Drs. Heerdt and Park from the Memorial Sloan Kettering Cancer Institute in New York discuss the role that minimally invasive surgery plays in lung resection for elderly patients. Those who began smoking when they were young adults in the 1940s and 1950s (currently in their 80s) are now presenting with lung cancer and form a rapidly increasing portion of our patients. Right ventricular function seems to be the limiting factor in the outcome for many of these patients. Dr. Heerdt is the expert on the response of the right ventricle to lung resection in the elderly. The seventh article by Dr. Amar, from the same institute, examines the problem of perioperative arrhythmias in thoracic surgery and, again, the right heart seems to be the source of much of the problem—fortunately, Dr. Amar is the expert in this area. The eighth article is an overview for anesthesiologists of pulmonary vasodilators by Drs. Granton and Moric from the division of Critical Care here at the Toronto General Hospital. Dr. Granton is a respirologist and intensivist who is responsible for the Pulmonary Hypertension program at this hospital, and as such, this is his area of clinical research.

Articles nine and ten deal with postoperative analgesia in thoracic surgery. The ninth article by Dr. Gerner is an overview of the issues in post-thoractomy pain (including acute, chronic, and shoulder pain) and discusses common therapies. The tenth article by Drs. Conlon, Shaw, and Grichnik from Duke University examines the recent resurgence of interest in paravertebral analgesia for thoracic surgery.

The final article by Drs. Meyer, Strüber, and Fischer from Hannover, Germany, is a look at the possible future of respiratory support. They present a new technology for extra-corporeal ventilation. The “Novalung” is similar to previous extra-corporeal membrane oxygenators but can function without an external pump, driven only by the patient's arterial blood pressure. It has a limited capability to increase oxygenation but is very efficient for removal of carbon dioxide. It allows for use of protective ventilation strategies in patients with severe acute lung injuries. We have had good

initial results with this technology in some lung transplant patients, and the authors describe extending the use of this device to other clinical situations of respiratory failure.

I hope this issue of *Anesthesiology Clinics* offers readers a wide-based update on advances in thoracic anesthesia. I have been fortunate in the enthusiasm that the contributing authors have shown for this project and in their willingness to share their knowledge and time in producing this issue.

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