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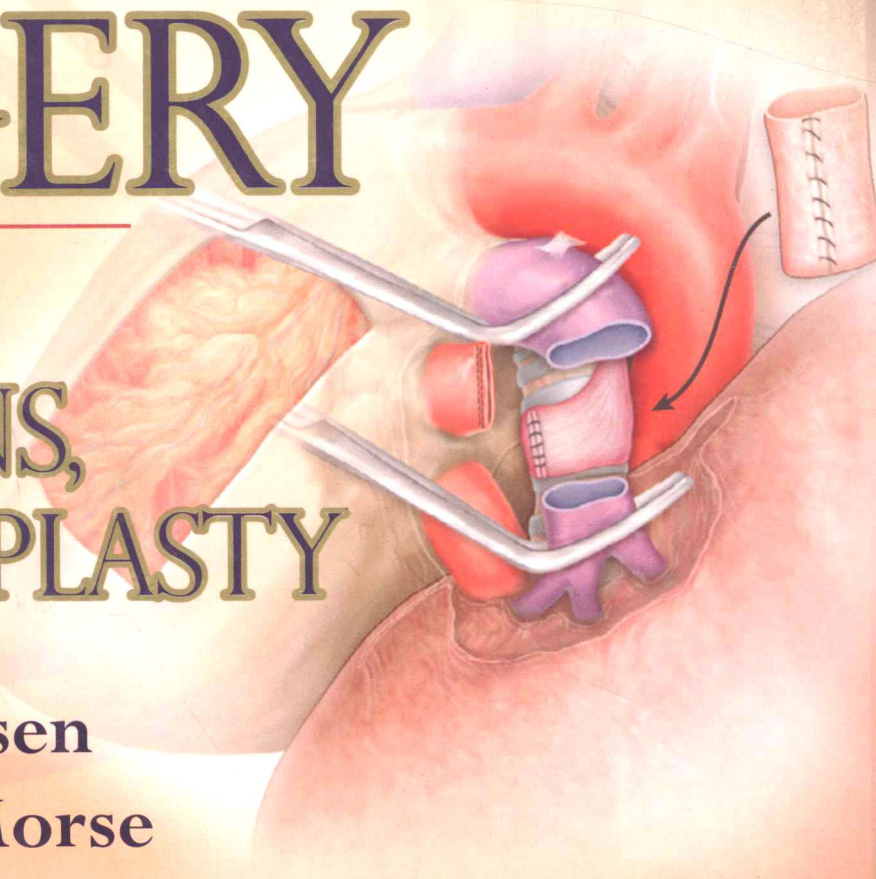
Master Techniques  
in Surgery

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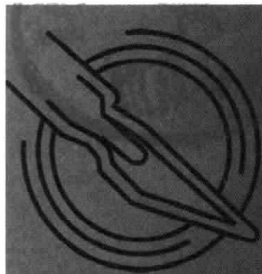
# THORACIC SURGERY

## LUNG RESECTIONS, BRONCHOPLASTY

**Douglas J. Mathisen**  
**Christopher R. Morse**







Master Techniques  
in Surgery

# THORACIC SURGERY

## LUNG RESECTIONS, BRONCHOPLASTY

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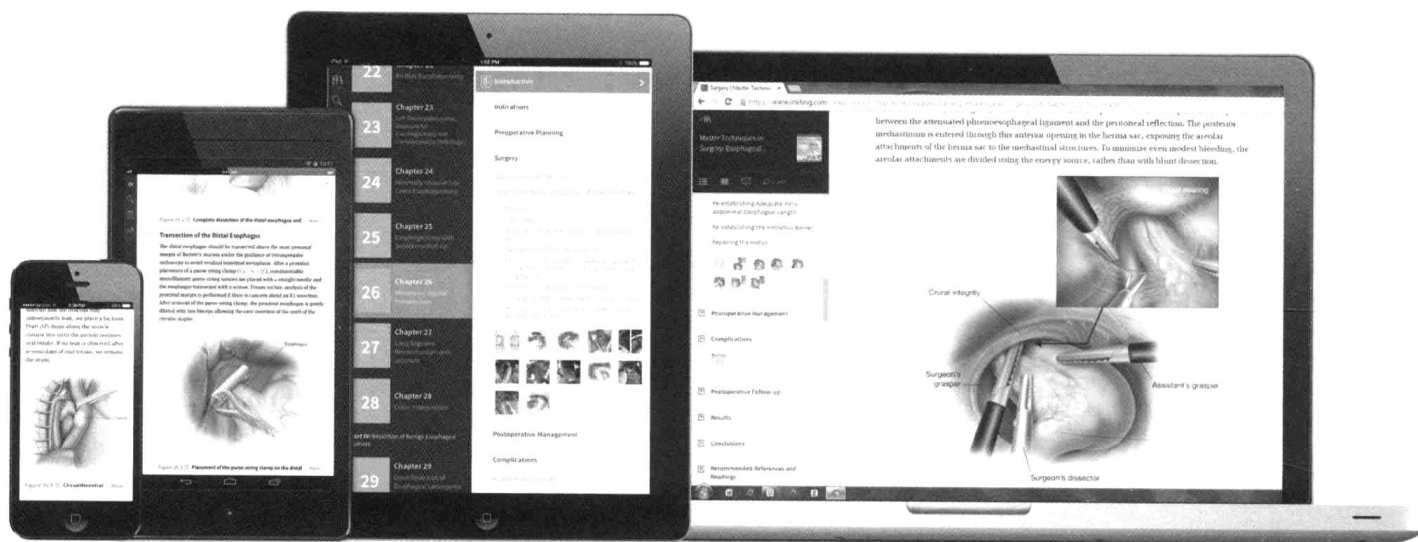
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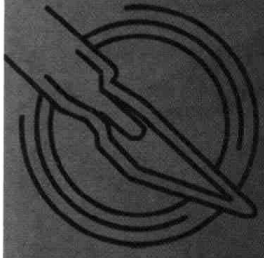
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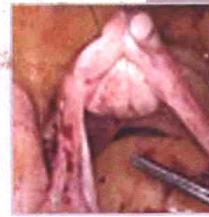
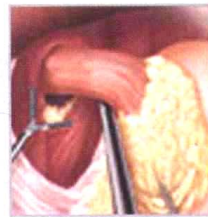
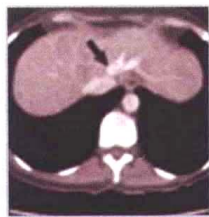
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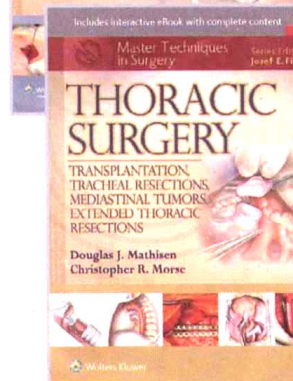
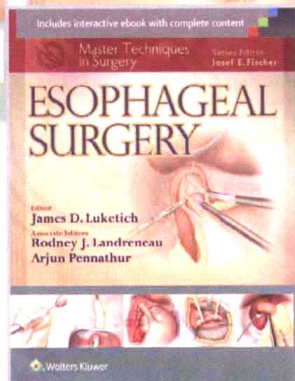
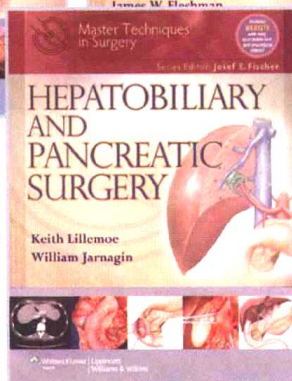
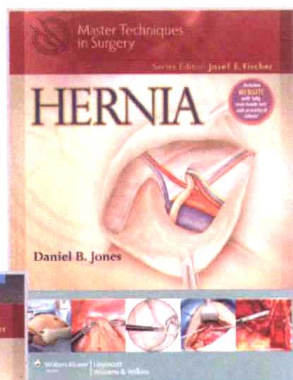
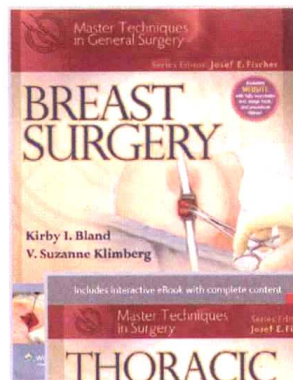
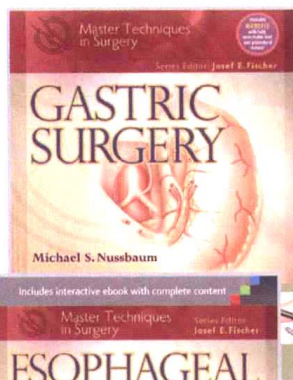
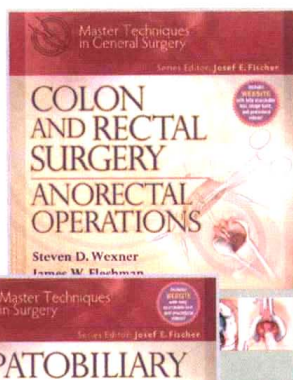
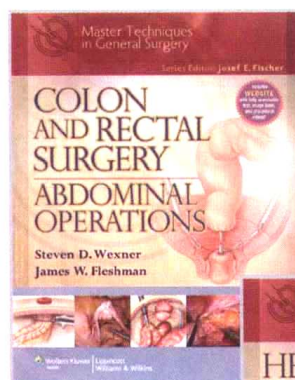
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## Dedication

*I would like to dedicate this book to my family, whose love, support, and sacrifice have meant so much to me. Art and Virginia Mathisen, parents (deceased); Julie Quinn Mathisen, wife; Amy, Jen, Beth, Kate Mathisen, daughters.*

—Douglas J. Mathisen

*To my parents Frank and Beverley Morse, without whose sacrifice and support this would not have been possible, and to my wife Andrea for her devotion, understanding, and strength.*

—Christopher R. Morse

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This series of miniatlases is an outgrowth of *Mastery of Surgery*. As the series editor, I have been involved with *Mastery of Surgery* since the third edition, when I joined two greats of American surgery, Lloyd Nyhus and Robert Baker, who were the editors at that time. Surgical atlases were common in those days, and *Mastery of Surgery* was one of several quality atlases which existed then; of particular quality were those by Dr. John Madden of New York, Dr. Robert Zollinger of Ohio State, and two others, with which the reader may be less familiar. The first was by Professor Pietro Valdoni, Professor of Surgery at the University of Rome, who ran 10 operating rooms simultaneously, and as the Italians like to point out to me, a physician to three popes. One famous surgeon said to me, what can you say about Professor Valdoni? “Professor Valdoni said to three popes, ‘take a deep breath,’ and they each took a deep breath.” This superb atlas, which is not well known, was translated from the Italian by my partner when I was on the staff at Mass General Hospital, Dr. George Nardi. The second was a superb atlas by Dr. Robert Ritchie Linton, an early vascular surgeon whose atlas was of very high quality.

Atlases, however, fell out of style, and in the fourth and fifth editions of *Mastery of Surgery*, we added more chapters that were “textbooky” types of chapters to increase access to the growing knowledge base of surgery. In discussing with Brian Brown and others at Lippincott Williams & Wilkins, as well as with some of the surgeons who subsequently became editors of books in this present series, it seemed that we could build on our experience with *Mastery of Surgery* by creating smaller, high-quality atlases, each focusing on the key operations of a sharply circumscribed anatomical area. This we have accomplished due to the incredible work of the editors who were chosen for their demonstrated mastery in their fields.

Why the return of the atlas? Is it possible that the knowledge base is somewhat more extensive with more variations on the various types of procedures—that as we learn more about the biochemistry, physiology, genetics, and pathophysiology in these different areas, there have gotten to be variations on the types of procedures that we do on patients in these areas? This increase in the knowledge base has occurred simultaneously at a time when the amount of time available for training physicians—and especially surgeons—has been steadily declining. While I understand the hypothesis that brought the 80-hour work week upon us, which limits the time that we have for instruction (though I do believe that it is well intentioned), I still ask the question: Is the patient better served by a somewhat fatigued resident who has been at the operation, and knows what the surgeon is worried about, or a comparatively fresh resident who has never seen the patient before?

I don’t know, but I tend to come down on the side that familiarity with the patient is perhaps more important. And what about the errors of hand-off, which seem to be more of an intrinsic issue with the hand-off itself (which we are not able to really remedy entirely), rather than poor intentions?

This series of miniatlases is an attempt to help fill the void created by inadequate time for training. We are indebted to the individual editors who have taken on this responsibility and to the authors who have volunteered to share their knowledge and experience in putting together what we hope will be a superb series. We have chosen surgeons who are inspired by their experience of teaching residents and medical students (a high calling indeed), a quality matched only by their devotion and superb care they have given to thousands of patients.

It is an honor to serve as the series editor for this outstanding group of miniatlases, which we hope will convey the experiences of an excellent group of editors and authors to the benefit of students, residents, and their future patients in an era in which time for education seems to be increasingly limited.

Putting a book together—especially a series of books—is not easy, and I wish to acknowledge the staff at Lippincott Williams & Wilkins, including Brian Brown, Keith Donnellan, Brendan Huffman, and many others. I would also like to thank my personal staff in the office, in particular, Edie Burbank-Schmitt, Ingrid Johnson, Abigail Smith, and Jere Cooper. None of this would have been possible without them.

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Dr. Josef Fischer has created a series of atlases designed to complement the textbook *Mastery of Surgery*. These atlases are meant for students of all ages, medical students, residents, practicing surgeons, academic surgeons, general surgeons, thoracic surgeons, and anyone with an interest in surgical techniques. The two volumes in the series deal with thoracic surgery procedures exclusive of esophageal surgery. We have contributions from leading experts in thoracic surgery throughout the world. This international flavor should increase the broad appeal of this surgical atlas. The focus has been on the authors' personal approaches. One of the great attractions of thoracic surgery is the wide array of disorders and the number of procedures required to manage these problems. This is certainly true of these two volumes. The topics covered range from the simple to the complex.

The texts have been organized to deal with thoracic surgical procedures not covered in Dr. James Luketich's excellent volume on esophageal surgery. The chapters are organized with a minimum of background, focusing on indications and contraindications, surgical techniques, avoidance of pitfalls, the management of complications, and surgical results. The emphasis is mainly on surgical technique. The technique sections are liberally supported with detailed drawings. This approach should give the reader all that they need to know in order to manage the surgical problems covered in the text. We have purposely provided only selected references, if the reader wishes to learn more.

We have tried to organize these two volumes according to several broad topics. The first general topic has to do with endoscopy. These rather straightforward procedures may be familiar to most readers, but chapters in this portion emphasize different approaches, specific indications, and problems that may be encountered.

The most common procedures thoracic surgeons perform are related to pulmonary resections. This is the largest topic covered. Thoracic surgery is in a transition from open procedures to minimally invasive procedures and we have tried to present both sides of that argument with chapters devoted to open pulmonary resections and minimally invasive pulmonary resections for each procedure.

Tracheobronchoplasty has become a much more common procedure for practicing thoracic surgeons. Sleeve resections have become more commonplace in practice. The more advanced carinal resections and reconstructions are still (for the most part) limited to units that have a specialized interest in these procedures. These complex operations are covered by acknowledged experts in the field.

Fistulas following pulmonary resections are challenges for all thoracic surgeons. Different approaches are required in specific circumstances. Knowledge of these different approaches should be invaluable to the practicing surgeon. The uses of well-vascularized, pedicled, buttressing muscle or omentum are invaluable in handling these complex problems and are covered in detail in these chapters.

Pulmonary transplantation and related procedures are important in contemporary thoracic surgery. Specific techniques related to surgery for pulmonary transplantation are covered in detail by acknowledged experts.

Disorders of the chest wall and diaphragm are uncommon procedures. Few surgeons have developed extensive experience or expertise in these areas. Yet these conditions do present to the practicing surgeon. Knowledge of these procedures is valuable for those occasions that surgeons are confronted with these problems. These conditions encompass thoracic outlet syndrome, pectus excavatum and carinatum, the paralyzed

diaphragm, and conditions of the mediastinum. We have chosen individuals who have developed specific expertise in these areas.

Disorders of the trachea are uncommon problems. There are centers, however, that have developed specific expertise in these areas. Because of the unusual and infrequent presentation of these problems, detailed knowledge and understanding of the management of these conditions is invaluable. Specific knowledge of techniques, avoidance of complications, and managing complications when they occur should be invaluable to the surgeon unfamiliar with these conditions.

Finally, there are groups of disorders that fit into a broad category of extended thoracic operations. These are operations that have been designed by a handful of experts for specific unusual problems and are quite demanding in their understanding and technical detail. While these types of operations may not be practiced by a general population of thoracic surgeons, knowledge of these procedures and who performs them should awaken the awareness of these problems and the solutions that are available.

We hope these two volumes will be viewed by surgeons as a welcome addition to the thoracic surgical literature. We have selected procedures in such a way that the surgeon should be able to find specific information on any operation involved in thoracic surgery.

Douglas J. Mathisen, MD  
Christopher R. Morse, MD

Contributors	vii
Series Preface	xiii
Preface	xv

## PART I: ENDOSCOPY

1	Rigid/Flexible Bronchoscopy	1
	<i>Douglas J. Mathisen</i>	
2	Airway Stenting	7
	<i>Aaron M. Cheng and Douglas E. Wood</i>	

## PART II: LUNG RESECTION: GENERAL PRINCIPLES

3	Endobronchial and Endoscopic Ultrasound Staging in Lung Cancer	19
	<i>Jordan Kazakov and Moishe Liberman</i>	
4	Mediastinoscopy: Current Role in Thoracic Surgery and Management of Complications	35
	<i>Tibor Krajc and Michael Rolf Mueller</i>	
5	Transcervical Extended Mediastinal Lymphadenectomy (TEMLA) for Staging of Nonsmall Cell Lung Cancer (NSCLC)	51
	<i>Marcin Zieliński, Wojciech Czajkowski, Tomasz Nabiałek, Artur Szlubowski, and Juliusz Pankowski</i>	
6	Mediastinal Node Dissection Right/Left (VATS/Open)	61
	<i>Hiroshi Date</i>	
7	Robotic Lymph Node Dissection	75
	<i>Franca M. A. Melfi, Olivia Fanucchi, and Alfredo Mussi</i>	
8	Techniques/Complications of Thoracotomy	85
	<i>Dan J. Raz</i>	

## PART III: LUNG RESECTION: LOBECTOMY

9	Right Upper Lobe: Open	95
	<i>Walter Weder and Ilhan Inci</i>	