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Master Techniques
in Surgery

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ESOPHAGEAL SURGERY

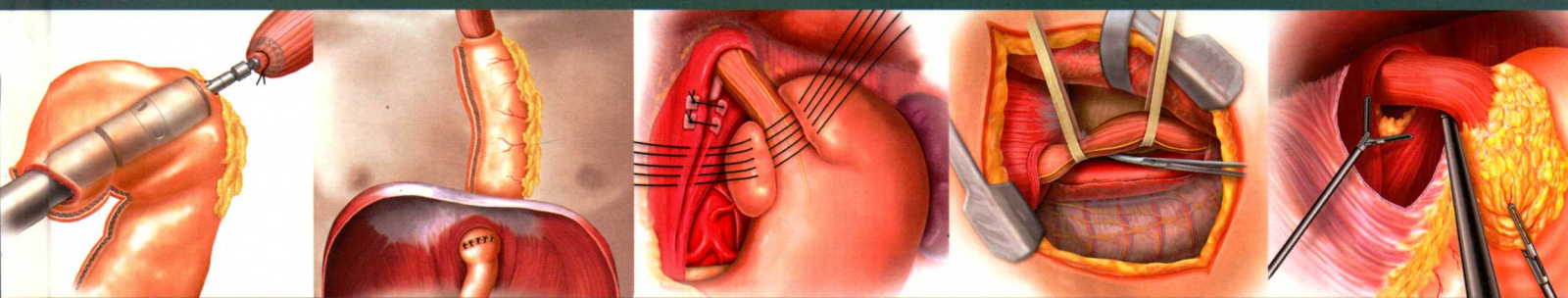
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Master Techniques in Surgery

ESOPHAGEAL SURGERY

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in Surgery

ESOPHAGEAL SURGERY

Master Techniques in Surgery

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This textbook would not have been possible without my mentors in thoracic and esophageal surgery, including Ernest Rosato (The Hospital of the University of Pennsylvania), Robert Ginsberg (Memorial Sloan Kettering Cancer Center), Manjit Bains (Memorial), Mike Burt (Memorial), David Skinner (New York Hospital), Nasser Altorki (New York Hospital), Griffith Pearson (Toronto). Each of you contributed significantly to my surgical skill and understanding of esophageal surgery and I feel blessed to have been mentored by all of you.

This textbook was made possible by my two co-editors. Thanks to Arjun Pennathur for his undying support and loyalty, and to Rod Landreneau for his support and help during this process and for helping me to build a world-class center for thoracic surgery. A special thanks to my assistants at Pitt, including Erin Dupree, Kathy Lovas and Shannon Wyszomierski.

James D. Luketich

“I wish to recognize Jim Luketich for his exceptional clinical skills and his dedication to advancing the care of patients with esophageal disease. I must also recognize my surgical mentors, Walter Becker, Robert McClelland, William Fry, Marvin Kirsh, and Mark Orringer, for their patience with me and their support through trying times.”

Rod Landreneau

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Arjun Pennathur

Dedication

I would like to dedicate my contributions to this textbook of esophageal surgery to my family, including my wife Christine, who gives so much meaning to my life and makes it all worthwhile, and to the kids (now adults) Jim, Jr., Derek, Bobby, and Patty. And of course, I must make special mention of our most recent additions to the family, my wonderful Sam and Alex, who make life so much fun!

James D. Luketich

I dedicate this book to my wife, Sandy, who has been my inspiration and my most important advisor and supporter. I also dedicate this effort to the "Js"; may they be challenged, brave, and succeed along the "Road of Right".

Rodney J. Landreneau

I am grateful to God for the Blessings and Grace.

I would like to dedicate this work to my family, in particular my parents for their support and teaching us the value of hard work, honesty and education. I would like to thank my family for their encouragement and support—my grandparents who lived by setting an example, my brother, and sister, my wife Revathi and our children Krithika and SriGanesh. I am indebted to their unwavering support, patience and their persistence.

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This series of mini-atlases 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 because of 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 come 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. Although 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 mini-atlases 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 mini-atlases, 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, 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.

Josef E. Fischer, MD, FACS
Boston, Massachusetts

“Whoever saves a single life, it is considered as if one saved the entire world.”
—from the Talmud

As part of the growing and well-known series, *Master Techniques in Surgery*, edited by Dr. Fischer, this book focuses on esophageal surgery. These specialty volumes complement the well-known *Mastery of Surgery* book, also edited by Dr. Fischer. Although there are many standard textbooks in general surgery, thoracic surgery, and some on esophageal surgery, this book is unique in that it focuses on the technical aspects of esophageal surgery. Esophageal surgery is complex, and this textbook, which is entirely devoted to surgery of the esophagus, should serve as a useful complement to some of the existing comprehensive textbooks in esophageal, general, and thoracic surgery, as well as serve as link between a classical textbook and an atlas.

The contributions to the text are led by world-renowned surgeons with expertise in complex esophageal surgery. This book is intended for anyone interested in esophageal diseases—including medical students, gastroenterologists, general and thoracic surgery residents, and other trainees, faculty, and practicing surgeons. The textbook covers the spectrum of surgical techniques to treat esophageal diseases, and is organized in six sections, each covering a specific area of esophageal surgery.

Gastroesophageal reflux (GERD) is a very common condition in Western countries, and surgeons are referred many patients who have failed medical therapy or have developed complications related to reflux. Section 1 is devoted to the surgical treatment of GERD. Surgical treatment of paraesophageal hernia is also discussed in this section. There are a total of 13 chapters in this section by leading experts in the field, covering a wide gamut of surgical approaches to GERD from commonly used procedures such as the laparoscopic Nissen fundoplication to the Hill Repair to complex transthoracic approaches such as the Belsey fundoplication. In addition, complex esophageal procedures—the management of giant paraesophageal hernia and reoperative antireflux surgery—are described in detail in this section. Further, an endoscopic approach to fundoplication is also described. There is now increasing evidence that obesity correlates with GERD, and therefore, we have included a chapter on gastric bypass in this section as well.

In Section 2, the surgical treatment of esophageal motility disorders, such as achalasia and esophageal diverticula, are addressed. Included in this section are chapters describing both the open and the minimally invasive approaches to achalasia and repair of cricopharyngeal (Zenker’s) and epiphrenic diverticula.

The incidence of esophageal cancer is increasing at an alarming rate, primarily because of an increasing incidence of adenocarcinoma particularly in the Western countries. Surgical resection is an important component of treatment; however, it is a complex operation. In Section 3, the techniques and approaches for esophageal resection are addressed, and this includes a total of nine chapters describing the open approaches as well as the minimally invasive approach to esophageal resection. Open and minimally invasive resection of benign esophageal tumors are covered in Section 4.

In Section 5, endoscopic ablative therapies, such as radiofrequency ablation and mucosal resection, for the treatment of Barrett’s esophagus are addressed. While esophagectomy is the standard treatment for esophageal cancer, less invasive therapies may be applicable in the high-risk patient with Barrett’s esophagus and high-grade

dysplasia, as well as in very highly selected patients with intramucosal adenocarcinoma. Finally, in Section 6, the techniques for the treatment of other conditions, such as esophageal perforation and diaphragmatic hernia, and the techniques of stenting and dilation are addressed.

The readers should find this text very useful in updating their knowledge, and it will serve as a practical guide in esophageal surgery. We would like to thank the publisher, and in particular Brendan Huffman, Keith Donnellan, and Aptara project manager Abhishan Sharma for their hard work and persistence in getting this work completed. We would also like to thank Shannon Wyszomierski for the excellent editorial assistance she provided in completing this work.

We hope readers find this book to be a very interesting and a valuable reference in esophageal surgery.

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Arjun Pennathur, MD

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