

SIXTH EDITION

ESSENTIALS OF

General Surgery and Surgical Specialties

Peter F. Lawrence

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Essentials of General Surgery and Surgical Specialties



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Essentials of General Surgery and Surgical Specialties

SIXTH EDITION

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Preface

This textbook was written to address the question: “What do *all* medical students need to know about surgery to be effective clinicians in their chosen fields?” The third year of medical school, which focuses on basic clinical training, is the foundation for most physicians’ clinical training. In surgery, because of the length of time needed to completely train surgeons, surgical residents remain “students” for 3 to 9 years beyond medical school. As a result of this extensive training period, at most medical schools, resident training, rather than student education, makes up the bulk of their educational efforts. To address this issue, *Essentials of General Surgery* is devoted exclusively to medical students.

NOT JUST FOR SURGEONS

This textbook was produced for medical students who are *not* planning a surgical career. We believe that all physicians need to have a fundamental understanding of the options provided by surgery to be competent clinicians. Rather than using traditional textbook-writing techniques, the editors and authors of this textbook, many of whom are members of the Association for Surgical Education, have conducted extensive research to define the content and skills needed for an optimal medical education program in surgery. Somewhat surprisingly, there has been consensus among practicing surgeons and internists (and even psychiatrists!) about the knowledge and skills in surgery needed by all physicians, and the information from this research has become the basis for this textbook.

SIXTH EDITION ENHANCEMENTS

The sixth edition of this textbook has continued the approach that has resulted in its use by many medical students in the United States, Canada, and throughout the world:

1. This edition has been extensively revised to provide the most current and up-to-date information on all fields of surgery, including general surgery and surgical specialties.
2. Our authors are surgeons or surgical educators devoted to teaching medical students, and so they understand the appropriate depth of knowledge for a third-year student to master.
3. We do not attempt to provide an encyclopedia of surgery. We include only information that students need to know—and explain it well.
4. We intentionally limit the length of each section so that it can be read during the surgery clerkship.
5. Through sample written exam questions, with explanations as to why the correct answer is the best one, and with links to the text, we provide numerous opportunities to practice test taking. We believe that this approach best prepares students to score highly on the National Board of Medical Examiners surgery exam. We have also provided your instructors with different oral and written exam questions, linked to this textbook, so that an exam can be prepared specifically for you, on the basis of your medical school curriculum. And if you use this textbook to prepare, you should do well on either an oral or a written exam.

SUCCESS!

You are entering the most exciting and dynamic phase of your professional life. This textbook is designed to help you achieve your goal of becoming an adept clinician and developing lifelong learning skills. It will also help you get into the residency of your choice. Best wishes for success in your endeavor.



Acknowledgments

Many members of the Association for Surgical Education (ASE) provided advice and expertise in starting the first edition of this project nearly 30 years ago. Since that time, ASE members have volunteered to assist in writing chapters

and editing the textbook. We would also like to extend our thanks to Gabriela Flores, our staff editor, who coordinated the writing and revision of all chapters in this textbook, as well as all of the editors at Wolters Kluwer, our publisher.

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Contents

Preface v
Acknowledgments vi
Contributors vii

Chapter 1

Perioperative Evaluation and Management of Surgical Patients 1

Timothy R. Shope
Adam Kabaker

Chapter 2

Fluids, Electrolytes, and Acid–Base Balance 14

Rahul J. Anand
James Gregory
Joseph Iocono

Chapter 3

Surgical Nutrition 23

Gail A. M. Cresci
Jay M. MacGregor
Sean Patrick Harbison

Chapter 4

Surgical Bleeding: Bleeding Disorders, Hypercoagulable States, and Replacement Therapy in the Surgical Patient 39

Hollis W. Merrick III
Jared M. Huston
Timothy A. Pritts
Carlos Ramirez Sanchez
Mary R. Smith

Chapter 5

Surgical Shock 47

Charity Evans
Zachary M. Bauman
Clairice Cooper
Jeannette M. Capella

Chapter 6

Surgical Critical Care 56

Melissa E. Brunsvold
Brian J. Daley
Nicole A. Stassen

Chapter 7

Wounds and Wound Healing 69

Annesley W. Copeland
Shannon Fraser
Juliet Georgia Holder-Haynes
Brian Lewis

Chapter 8

Surgical Infection 75

Ho H. Phan
Tiffany Lasky

Chapter 9

Trauma 87

H. Scott Bjerke
Felix Lui
Areti Tillou
Frederick A. Luchette

Chapter 10

Burns 108

Anthony Baldea
Jong Lee
Tina Palmieri

Chapter 11

Abdominal Wall, Including Hernia 125

Tananchai A. Lucktong
Thomas L. Gillespie
Gaétan Brochu
Rachel L. Slotcavage

Chapter 12

Esophagus 140

Emily Speer
James N. Lau
James A. McCoy

Chapter 13

Stomach and Duodenum 167

Forrest D. Griffen
John T. Paige
Sajani Shah
Michael J. Sweeney

Chapter 14**Small Intestine and Appendix 193**

John D. Mellinger
 Demetri J. Merianos
 Megan M. Rapp
 Tyr O. Wilbanks

Chapter 15**Colon, Rectum, and Anus 216**

Gregory J. Gallina
 Imran Hassan
 Jesse Moore
 Jacquelyn Seymour Turner

Chapter 16**Biliary Tract 242**

O. Joe Hines
 Meredith J. Sorensen
 Uretz J. Oliphant
 Saad Shebrain

Chapter 17**Pancreas 257**

Anthony G. Charles
 Steven J. Eskind
 Christopher Steffes

Chapter 18**Breast 277**

Ted A. James
 Laura Vick

Chapter 19**Surgical Endocrinology 292**

Arundhati Ghosh
 Hadley E. Ritter
 Benjamin C. James
 Abbey L. Fingeret

Chapter 20**Liver and Spleen 317**

Jesse Clanton
 Christine E. Van Cott
 Rajalakshmi N. Warrior
 Gina L. Adrales
 Adnan Alseidi

Chapter 21**Transplantation 345**

Amy R. Evenson
 Enjae Jung

Chapter 22**Surgical Oncology: Malignant Diseases of the Skin and Soft Tissue 365**

James M. Nottingham
 Nancy L. Gantt
 Michael Hulme

Chapter 23**Pediatric Surgery: Surgical Diseases of Children 388**

Hayden W. Stagg
 Jonathan Meisel
 Andreana Butter
 Dan C. Little

Chapter 24**Plastic Surgery: Diseases of the Skin and Soft Tissue, Face, and Hand 427**

Seung Ah Lee
 Gregory R. D. Evans
 Gregory A. Greco

Chapter 25**Cardiothoracic Surgery: Diseases of the Heart, Great Vessels, and Thoracic Cavity 479**

Irina Shakhnovich
 Gary Randall Green
 Peyman Benharash
 Kwame S. Amankwah

Chapter 26**Diseases of the Vascular System 512**

James B. Alexander
 Jessica Beth O'Connell
 Roman Nowygrod
 Matthew R. Smeds

Chapter 27**Otolaryngology: Diseases of the Head and Neck 548**

Gerald S. Berke
 Zafar Sayed
 Andrew M. Vahabzadeh-Hagh

Chapter 28**Orthopedic Surgery: Diseases of the Musculoskeletal System 585**

John J. Murnagham
 Justin Siebler

Chapter 29**Urology: Diseases of the Genitourinary System 635**

Isaac Yi Kim
 Chad A. Lagrange

Chapter 30**Neurosurgery: Diseases of the Nervous System 676**

Isaac Yang

Index 719

Perioperative Evaluation and Management of Surgical Patients

Timothy R. Shope and Adam Kabaker

PREOPERATIVE EVALUATION

Surgery and anesthesia profoundly alter the normal physiologic and metabolic states. The task of the preoperative evaluation is to estimate the patient's ability to respond to these stresses in the postoperative period. Perioperative complications are often the result of failure, in the preoperative period, to identify underlying medical conditions, maximize the patient's preoperative health, or accurately assess perioperative risk. Sophisticated laboratory studies and specialized testing are no substitute for a thoughtful and careful history and physical examination. Sophisticated technology has merit primarily in confirming clinical suspicion.

This discussion is a review of the elements in the patient's history or findings on physical examination that may suggest the need to modify care in the perioperative period.

Preoperative Screening Tests and Consultations

It is standard practice in most North American hospitals for doctors to order a battery of routine preoperative screening tests on otherwise asymptomatic patients, under the mistaken belief that this practice improves patient safety and outcome by identifying unsuspected conditions that could contribute to perioperative morbidity and mortality. This indiscriminate practice is expensive and unwarranted. In fact, the potential harm caused by the routine screening of asymptomatic patients is greater than any benefit derived from uncovering occult abnormalities. The time and resources needed to chase unanticipated results, the occasional performance of additional invasive (and risky) secondary procedures, and the fact that 60% of these abnormal results are ignored, are arguments against unselected screening. Obtaining data to establish a "baseline" is not recommended for the asymptomatic patient. Normal laboratory results obtained within 4 months of an elective operative procedure need not be repeated, because abnormalities can be predicted on the basis of the patient's history. Preoperative screening tests are not a substitute for a comprehensive history and physical examination focused on identifying comorbidities that may influence perioperative management. The need for emergency surgery, especially for patients who cannot provide historical data, obviously alters these recommendations.

Routine screening of hemoglobin concentration is performed only in individuals undergoing procedures that are associated with extensive blood loss (typically >500 mL), or who may be harboring anemia unbeknownst to the treating team. Patients with a history of anemia, malignant disease, renal insufficiency, cardiac disease, diabetes mellitus, or pregnancy should have baseline determinations of serum hemoglobin concentration.

Evaluation of baseline serum electrolyte concentrations, including serum creatinine, is appropriate in individuals whose history or physical examination suggests chronic medical disease (e.g., diabetes, hypertension, cardiovascular, renal, or hepatic disease). Patients with the potential for loss of fluids and electrolytes, including those receiving long-term diuretic therapy, and those with intractable vomiting, should also have preoperative determination of serum electrolytes. The elderly are at substantial risk for chronic dehydration, and testing is appropriate in these patients as well.

Preoperative urinalysis is recommended only for patients who have urinary tract symptoms or a history of chronic urinary tract disease, or in those who are undergoing urologic procedures.

Specialty consultation may be required to optimize the patient's chance for a successful operation. Medical consultants should not be asked to "clear" patients for a surgical procedure; their primary value is in helping to define the degree of perioperative risk and making recommendations about how best to prepare the patient to successfully undergo the operation and postoperative course. Once this risk is determined, the surgical team, in conjunction with the patient or the patient's family, may discuss the advisability of a planned surgical approach to the patient's illness. Postoperative consultation should be sought when the patient has unexpected complications or does not respond to initial maneuvers commonly employed to address a specific problem. For example, a nephrology consultation is in order for a patient who remains oliguric despite appropriate intravascular volume repletion, particularly if the creatinine level is rising. Likewise, consultation should be obtained from specialists who have expertise in areas that the treating physician does not have. For example, a general surgeon would be well advised to obtain consultation from a cardiologist for a patient who