

Handbook of Reoperative General Surgery



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Foreword by Josef E. Fischer, MD, FACS



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Brief Contents

Contributors	xiv
Foreword	
Josef E. Fischer, MD, FACS	xix
Preface	
Mark P. Callery, MD, FACS	xxv
Acknowledgements	xxvii
1. Reoperative Hepatobiliary Surgery	
Christopher D. Anderson, MD; Charles R. Scoggins, MD; Ravi S. Chari, MD ..	1
2. Reoperative Surgery in Trauma	
Ram Nirula, MD	17
3. Reoperative Gastric Surgery	
Scott F. Gallagher, MD; Sharona B. Ross, MD; Michel M. Murr, MD, FACS ..	31
4. Reoperative Surgery for Inflammatory Bowel Disease	
Tonia M. Young-Fadok, MD, MS, FACS, FASCRS	49
5. Reoperative Bariatric Surgery	
Vivian M. Sanchez, MD; Eric J. DeMaria, MD, FACS;	
David A. Provost, MD, FACS; George Blackburn, MD, PhD, FACS;	
Daniel B. Jones, MD, FACS	67
6. Reoperative Inguinal Hernia Surgery	
Kathrin L. Mayer, MD	83
7. Reoperative Surgery for Melanoma	
Nicholas E. Tawa, Jr., MD, PhD	103
8. Reoperative Pancreaticoduodenal Surgery	
Shimul A. Shah, MD; Charles M. Vollmer, Jr., MD; Mark P. Callery, MD, FACS ..	115
9. Reoperative Endocrine Surgery	
Rebecca S. Sippel, MD; Herbert Chen, MD	135
10. Reoperative Gastroesophageal Surgery	
Mercedeh Baghai, MD; Kent R. VanSickle, MD; C. Daniel Smith, MD ..	151
11. Reoperative Colorectal Surgery	
Mark Lane Welton, MD	167
12. Reoperative Vascular Surgery	
Michel A. Bartoli, MD; Robert W. Thompson, MD, FACS	181
13. Reoperative Breast Surgery	
Darren R. Carpizo, MD, PhD; Mai Brooks, MD; Helena Chang, MD, PhD ..	193
14. Reoperative Surgery for Intestinal Fistula	
David R. Fischer, MD; Michael S. Nussbaum, MD, FACS	213
Index	223

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*With love and gratitude to Angela and our daughters,
Leah, Jacqueline and Brooke.*

Table of Contents

Contributors	xiv
Foreword	
Josef E. Fischer, MD, FACS	xix
Preface	
Mark P. Callery, MD, FACS	xxv
Acknowledgements	xxvii
1. REOPERATIVE HEPATOBILIARY SURGERY	1
• Précis	1
• Reoperative Hepatic Surgery	1
Recurrent Metastatic Colorectal Cancer	1
Recurrent Hepatocellular Carcinoma	2
Alternatives to Repeat Resection	3
Intraoperative Considerations in Repeat Hepatic Surgery	3
• Reoperative Biliary Surgery	4
Diagnosis	5
Intraoperative Considerations in Repeat Biliary Surgery	6
Interventional Radiologic and Endoscopic Techniques	7
Choledocholithiasis Following Biliary Surgery	8
Biliary Reoperations Following Liver Transplantation	9
2. REOPERATIVE SURGERY IN TRAUMA	17
• Précis	17
• Introduction	17
• Pathophysiology of Severe Injury	18
Hypothermia	18
• Acidosis	18
Coagulopathy	19
• Indications for Damage Control Celiotomy	19
• Technique of Damage Control Laparotomy	21
• Timing of Reoperation	23
• Extension of Reoperative Strategies in Polytrauma	25
Vascular Trauma	25
Orthopedic Surgery	25
Thoracic Surgery	26
• Summary	27
3. REOPERATIVE GASTRIC SURGERY	31
• Précis	31
• Introduction	31

● Recurrent Ulcer Disease and Its Complications	31
Early Complications	32
Late Complications	34
Recurrent Peptic Ulcer Disease	34
Postvagotomy and Postgastrectomy Gastroparesis	37
Alkaline Reflux Gastritis	38
Dumping Syndrome	38
Postvagotomy Diarrhea	38
Afferent and Efferent Loop Syndromes	38
Postgastrectomy Cancer	38
Diagnostic Studies	39
Technical Considerations in Reoperative Gastric Surgery for Peptic Ulcer Disease	39
● Revisional Antireflux Procedures	39
Anatomic Classification of Failed Antireflux Operations	40
Diagnostic Studies	42
Candidates for Revisional Operations	43
Technical Considerations in Reoperative Antireflux Operations	43
Complications	44
● Summary and Future Directions	45
4. REOPERATIVE SURGERY FOR INFLAMMATORY	
BOWEL DISEASE	49
● Précis	49
● Introduction	49
● Crohn's Disease	50
Prior Operation	50
General Principles	50
Multiple Prior Operations	50
Defunct Procedures	50
Recurrent Small Bowel Disease	51
Small Bowel Resection	51
Strictureplasty	51
Recurrent Colonic Disease	52
Complications of Prior Operation—Nonhealing Perineal Wound	52
● Ulcerative Colitis	53
Prior Elective Operation (Proctocolectomy and IPAA)	53
Ileostomy Closure	53
Prior Emergent Operation (Subtotal Colectomy and Rectal Stump)	54
Completion Proctectomy and IPAA	54

Early Complications of IPAA	54
Pouch Bleeding	54
Pouch Ischemia	54
Pouch Sepsis	55
Late Complications of IPAA	55
Small Bowel Obstruction	55
Delayed Pouch Sepsis	56
Poor Pouch Function	58
Small Volume Reservoir	59
Pouchitis	59
Retained Rectum/Cuffitis	60
Cancer	60
Cesarean Section After IPAA	61
Liver Transplantation and IPAA	61
5. REOPERATIVE BARIATRIC SURGERY	67
• Précis	67
• Introduction	67
• Reoperation for Complications	69
Revisions for Complications of Vertical Banded Gastroplasty	70
Revisions for Complications of Roux-en-Y Gastric Bypass	73
Revisions for Complications of Laparoscopic Adjustable Gastric Band	75
Revisions for Complications of Malabsorptive Procedures	77
• Reoperation for Failure of Weight Loss	77
Revisions for Insufficient Weight Loss Following Vertical Banded Gastroplasty	77
Revisions for Insufficient Weight Loss Following Roux-en-Y Gastric Bypass	78
Revisions for Insufficient Weight Loss Following Laparoscopic Adjustable Gastric Bypass	78
• Conclusion	78
6. REOPERATIVE INGUINAL HERNIA SURGERY	83
• Précis	83
• Hernia Repair Today	83
• Epidemiology of Inguinal Hernias	83
• Epidemiology of Recurrent Inguinal Hernias	84
• Etiology and Risk Factors	84
• Types of Recurrence	86
Recurrent Hernia Is a Direct Inguinal Hernia	86
After Repair of a Direct Inguinal Hernia	86
After Repair of an Indirect Inguinal Hernia	86

Recurrent Hernia Is an Indirect Inguinal Hernia	87
After Repair of an Indirect Inguinal Hernia	87
After Repair of a Direct Inguinal Hernia	87
Recurrent Hernia Is a Femoral Hernia	87
After Repair of Femoral Hernia	87
After Repair of an Inguinal Hernia	87
Anatomy	87
• Surgical Management of Recurrent Inguinal Hernias	89
Timing of Surgery	89
Repair Techniques for Recurrent Groin Hernia	90
Anterior Repair with Mesh	91
Preperitoneal Repairs with Mesh	92
• Complications of Recurrent Herniorrhaphy	98
• Conclusion	98
7. REOPERATIVE SURGERY FOR MELANOMA	103
• Précis	103
• Overview	103
Radiologic Evaluation	103
Patient Selection	104
Rationale for Resection of Metastatic Lesions	104
• Lymphadenectomy	105
Completion Lymphadenectomy Following a Positive Sentinel	
Node Biopsy	105
Technique of Resection	106
Approach to Deep Pelvic Node Dissection	108
Management of Bulky Lymphatic Metastasis	109
Application of Sentinel Node Biopsy for In-transit Disease	109
Delayed Sentinel Node Mapping Following Definitive	
Wide Local Excision	109
Management of Wound Complications	110
• Management of Metastatic or Locally Recurrent Melanoma	110
Recurrence in Scar or in Soft Tissue	110
Excision of In-transit Metastases	111
Gastrointestinal Tract	111
Retroperitoneum	112
Is “Induction” Therapy with Surgical Salvage a Viable Concept?	112
8. REOPERATIVE PANCREATICODUODENAL SURGERY	115
• Introduction	115
• Management of Complications from Pancreatic Surgery	115
Complications of Pancreatic Resection	115
Pancreatic Fistula	116

Pancreatic Abscess	117
Pancreatic Ascites	118
• Reoperations for Benign Conditions	118
Recurrent Pancreatitis	118
Pancreatic Pseudocyst	121
Cystic Neoplasms of the Pancreas	122
• Special Problems in Reoperation for Malignancy	124
Reoperative Pancreaticoduodenectomy	124
Completion Pancreatectomy	126
Intraductal Papillary Mucinous Tumors	127
• Reoperative Surgery for Neuroendocrine Disease	128
Insulinoma	128
Gastrinoma	129
9. REOPERATIVE ENDOCRINE SURGERY	135
• Précis	135
• Reoperative Thyroid Surgery	135
Indications for Reoperation	135
Emergent Reexploration	135
Reoperation for Malignancy	136
Reoperation for Benign Disease (Thyroid Goiters)	136
Preoperative Assessment	137
Localization Studies	137
Operative Approach	138
Complications	139
• Reoperative Parathyroid Surgery	140
Preoperative Assessment	140
Localization Studies	141
Operative Approach	143
Intraoperative Adjuncts	144
Complications	146
• Conclusion	147
10. REOPERATIVE GASTROESOPHAGEAL SURGERY	151
• Reoperation After Antireflux Surgery	151
Immediate Perioperative Issues	151
Leaks	152
Acute Wrap Herniation	152
Bleeding	152
Early Postoperative Problems	153
Dysphagia and Food Impaction	154
Gas Bloating or Aerophagia	154

Late Postoperative Problems	155
Results of Reoperative Antireflux Surgery	159
• Reoperation After Surgery for Achalasia	160
Reoperation for Esophageal Perforation	160
Reoperation for Treatment Failure	161
• Conclusion	163
11. REOPERATIVE COLORECTAL SURGERY	167
• Précis	167
• Introduction	167
• Reoperation for Stomas	168
• Reoperation for Stoma Complications	169
• Recurrent Rectal Cancer	172
• Recurrent Colon Cancer	175
• Reoperation for Abscess/Fistulous Disease	176
12. REOPERATIVE VASCULAR SURGERY	181
• Précis	181
• Introduction	181
• Aortofemoral Graft Limb Occlusion	182
Incidence	182
Etiology	182
Clinical Presentation	183
Diagnosis	183
Preoperative Preparation	183
Operative Approach	184
• Aortic Graft Infection	186
Incidence	186
Etiology	186
Clinical Presentation	187
Diagnosis	187
Preoperative Preparation	188
Operative Approach	189
13. REOPERATIVE BREAST SURGERY	193
• Précis	193
• Introduction	193
• Reoperation in Breast Cancer: Diagnosis	194
• Reoperation in Primary Breast Cancer: Therapy	195
Re-excision Lumpectomy	195
Intraoperative Techniques for Minimizing Positive Surgical Margins in In Situ and Infiltrating Breast Cancer	197
Reoperation After Sentinel Lymph Node Biopsy	198

• Reoperation in Breast Cancer: Recurrence	199
Local Recurrence in Invasive Carcinoma	199
Local Recurrence in Ductal Carcinoma In Situ	200
Reoperation for Local Recurrence After Breast Conservation Therapy: Re-excision Versus Mastectomy	202
Reoperation for Local Recurrence Following Mastectomy: Chest Wall Recurrence	202
Chest Wall Recurrence Following Immediate Breast Reconstruction	203
Reoperation of the Axilla for Regional Lymph Node Recurrence ...	204
Reoperative Sentinel Lymph Node Biopsy	205
14. REOPERATIVE SURGERY FOR INTESTINAL FISTULAS	213
• Précis	213
• Introduction	213
• Clinical Findings	214
• Staging or Classification	216
• Management	216
• Prognosis and Treatment	218
• Follow-Up	220
• Prognosis	221
• Summary	221
Index	223

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Foreword

I am delighted to write a foreword for Dr. Mark Callery's book on reoperative surgery. Dr. Callery was the first person that I recruited into the building of the Department of Surgery at Beth Israel Deaconess Medical Center. He has done spectacularly well at establishing a superb Division of General Surgery, several members of which are represented in this book, namely Dr. Nick Tawa, Dr. Daniel Jones, and Dr. Charles Vollmer. I'm also glad to see Dr. Michael Nussbaum's name as author of the chapter, "Reoperative Surgery for Intestinal Fistula," as he and I were very closely associated in the University of Cincinnati for many years. Most, if not all, of the individuals in this book are associated with tertiary quaternary centers. They deal, by nature, with problems that community hospitals, even the large ones, often do not relish to undertake largely because of absence of resident staff and other infrastructure.

The first component for caring for patients who need reoperative surgery is the nature of institution and the surgical residency. The surgical residency is the heart of every department of surgery, and its quality determines the quality of patient care that the department of surgery renders. However, there must be other components, including the ready availability of imaging and what I call "heavy radiology" which means CT scans, MRI, and angiography, the last of which now can be carried out by divisions of vascular surgery. In the study of results, it has become increasingly clear that the association of better outcomes with higher volume institutions is not just the result of the resources and abilities to care for complications, including ICUs, critical care, "heavy radiology," and other diagnostic or therapeutic techniques, but with surgeon volume and expertise as well. Dr. John Birkmeyer's recent article in the *New England Journal of Medicine* clearly suggests that in high volume hospitals, there are differences between high volume surgeons whose expertise apparently brings about better outcomes and those surgeons with less experience in difficult areas.¹ There is probably no truer situation where this applies than in reoperative surgery in which the cases are difficult to diagnose and evaluate; the patients must have pre-operative evaluations by skilled clinicians as well as consultants; and the surgeon must have the ability to test certain physiological parameters that determine what kind of reoperative surgery will take place. I found it interesting when Dr. Birkmeyer, in our mutual discussions, told me that he had expected, when undertaking the study, that it would be hospital volume that would be predominant in the outcomes and not surgical volume. This most recent paper in the *New England Journal of Medicine* reaffirms what all of us intrinsically know. At least partially, it is the skill of the individual surgeon, his or her judgment, and the surgeon's ability to prepare for a difficult operation that in large measure determines the outcome.

¹ Birkmeyer. John D., M.D. et al. "Surgeon Volume and Operative Mortality in the United States." *New England Journal of Medicine*. Volume 349:2117-2127, No. 22. November 27, 2003.

In addition to operative skill, the successful reoperative surgeon must have developed a system of dealing with the complex reoperative surgery on the basis of not only experience, but also an underlying knowledge of the anatomy and physiology that enables safe approaches in difficult anatomic situations. There is also a necessity for some reality testing. To those of us who have dealt with reoperative surgery all of our careers, we know that, at least in abdominal surgery and the surgery of gastrointestinal fistulas, that the mortality varies directly with the state of the adhesions. While these may be modified somewhat by Separafilm, which in my own personal experience has proved useful in patients on whom I knew I was going to reoperate, in general, operations are most favorable when performed within 10 days after the prior operation and after 120 days when the adhesions have matured and become more filmy and less fleshy with a tendency to bleed and provoke enterotomies. This practice is something that is intrinsically known by surgeons and has been documented as being associated with the mortality of 20 percent when reoperative surgery has been performed between 10 and 120 days and only 10 percent when surgery is performed before 10 days and after 120 days. When I carry out reoperative surgery or operate on patients with fistulas, I always try to perform the operation more than 120 days after the last operation. This is possible when one is dealing with a large referral practice in which patients are referred often after unsuccessful attempts to close the fistula with failure, and the fistula has been present for some time.

There are certain characteristics that are essential to the successful reoperative surgeon. I've already pointed out the importance of familiarity with anatomy and pathophysiology and excellent judgment. Moreover, the surgeon must also have confidence in his or her ability to do the operation. The surgeon must use adequate exposure and help. Most importantly, he or she must set aside time for the performance of the operation. For example, it does little good to attempt to undertake an operation on a patient with a gastrointestinal fistula, an area with which I am intimately familiar, and think that the surgeon is going to complete it in three to four hours. The technically brilliant surgeon may accomplish this some of the time, but there will be times when the going is just so difficult that an indefinite amount of time should be allowed. One cannot do one's best job in reoperative surgery when one has their mind on an office full of patients waiting to see the surgeon.

Of the characteristics of the surgeon who does successful reoperative surgery, meticulous technique ranks high on the list. When there are two ways to do an operation, one of which in the surgeon's mind yields the best results, then that is the technique that should be followed. There should be adequate drainage of areas that are potentially infected or where the surgeon has to undertake preventative measures, for example, when one has to take bowel off the pancreas in which a pancreatic leak may be possibly expected.

Before the operation, the patient must be adequately prepared nutritionally and immunologically. If the patient's short turnover proteins are inadequate, and one has time to plan the operation, then the serum transferrin should be restored to normal (greater than 220 $\mu\text{g}/\text{dL}$) prior to the procedure. In patients with

gastrointestinal fistulas, particularly those that are associated with mesh, inflammatory bowel disease, and colorectal disease, the ability to allow enough time for what is undoubtedly going to be a very difficult procedure is essential. Judgment as to what is acceptable, the ability to persevere when fatigued, and knowing that when one is fatigued one should not take on an entirely new area are attributes of a surgeon who will get a successful result with a low morbidity and mortality.

During the operation, one should enter the abdomen, if abdominal surgery is what is being discussed, or other areas, in a way that one can gain entrance to the operative area with less chance of doing any damage. In the case of the abdomen, one may choose to make a transverse incision when the original incisions may be vertical. If one has decided on a vertical incision, it may be that the original incisions may be short, in which case one can enter the abdomen cephalad or caudad. One must explore the entire abdomen, free up the entire bowel from the ligament of Treitz to the rectum, and get a clear idea of what the anatomy is.

In dissection, I have always used the technique of “taking what the abdomen will give me.” In other words, if I am not making progress in one area, I have usually placed laparotomy sponges soaked in antibiotic solution on the bowel elsewhere so that when progress is at a standstill, I can go to a different area in a similar fashion where there is slight edema and one can see between the loops. Then, I dissect in that area.

Post-operatively, provisions should be made for post-operative nutrition, and I usually use a feeding jejunostomy of 14-Fr latex whistle-tip catheter, which may be above several of the anastomoses. I’ve always used hypo- or iso-osmolar enteral solutions. Bowel that is compromised in a vascular or an immunological sense cannot tolerate hyper-osmolar solutions. One should try and provide adequate post-operative nutrition either enterally, or, if caloric or protein parity cannot be achieved with enteral solutions alone, TPN should be utilized early. I always start with a hypo-osmolar solution, and in tube feeding, never try to stress a small bowel with significant solutions greater than an osmolality of 310 or 320. One can thus avoid pneumatosis and bowel necrosis in this fashion. Remember that manufacturers’ labels are intended to sell more of the product, not to accurately describe the pathophysiology of tube feeding.

In the various chapters, there are different characteristics which should characterize each approach to reoperative surgery. In the case of gastric surgery and post-gastrectomy syndromes, it is wise to point out to the patient that they will not be 100 percent after the operation. They may get back to 60 or 70 percent of their pre-morbid state, but their eating mechanism will never resemble what was there previously. If they do, one has good fortune rather than surgical skill working in their direction. It is absolutely essential that the surgeon does his or her own endoscopy in patients with a post-gastrectomy syndrome to make certain that stenosis of the anastomosis, a scenario that is particularly applicable to stapled gastric anastomoses, be revised. Remember, few gastroenterologists, no matter how skillful, ever come into the operating room to feel an anastomosis and correlate it with its endoscopic appearance.

