



REOPERATIVE ABDOMINAL SURGERY



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Preface

Our decision to produce a comprehensive textbook on reoperative abdominal surgery was driven by the limited availability of literature devoted to the postoperative considerations and clinical decisions required of the surgeon when rescuing deteriorating patients. Moreover, the truncated training times for resident and trainee surgeons today make a book like this one more valuable than ever before.

In assembling a team of authors to prepare chapters we invited experienced surgeons with the ability to communicate clearly and provide the best possible surgical advice. We are delighted by the various qualities - judgment, wisdom and maturity - that all our authors have brought to the content. Anatomic and technical experience is evident in every chapter, as is the emphasis on the

importance of involving patients, their families, and the entire surgical team in the management process.

No textbook can hope to cover every possible clinical eventuality. So we acknowledge that this book cannot provide guidance on every possible reoperative problem associated with the abdomen that will ever be encountered. However, we firmly believe that *Reoperative Abdominal Surgery* achieves our original goals of providing solid, reliable advice to all surgeons involved in this area of care and of ensuring the safety of their patients.

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Dedications

To my late mentors in surgery, Dr Beni Shtamler and Dr Ida Lunski, for their inspiration, surgical education and training. To my students and residents in surgery who always keep me challenged. In blessed memory of my late parents, Cesar and Allegra Mizrahi, who encouraged and supported me throughout my professional lifetime.

SM

To the large number of 'good doctors' I have helped to train, in appreciation of their numerous and diverse contributions to medicine, surgery and the health of the public as a whole. Reoperative surgery is seldom 'pretty' but it is an ongoing and essential component of good patient care.

HCP

To my wife Aviva and my four children, Einav, Tom, Nitzan and Noa, without whose endless understanding and support of my everlasting work, this project, like many others, would not have been possible. Thanks to my teachers and mentors, as well as my residents, to whom I owe my ongoing learning of the art of surgery.

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Chapter 1

Orientation to reoperative surgery with an emphasis on communication and safety

Hiram C. Polk, Jr.

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Reoperative surgery requires an entirely different approach from any other kind of surgical care. The implication that the first or prior effort had failed or that the disease recurred is the essence of the problem and creates another sequence of pain, anxiety, and recovery that must be directly addressed. There are always multiple parties with an interest in the reasons for failure, the prospects of lasting recovery, and other therapeutic options. When the surgeon proposing reoperation differs from the earlier operator, there will always be the wish that younger/older, wiser or more or less aggressive, better facilities, or other aspects of the change of characters on the surgical team will lead to a better outcome. When any surgeon faces reoperation on his own patient, the psychological milieu is different in that there should always be a sense of fault or constructive self-blame, even when no error has been made:

- Could I have used different techniques?
- Better timing?
- More overall support, such as nutrition or anesthetics?
- Different antibiotics and shorter or longer use?
- An endless list of questions about materials, strategies, and devices:
- Minimal versus maximal access?
- Absorbable or nonabsorbable sutures?
- Staged operations as opposed to a single coup?
- Alimentary diversion or not?
- More or less utilization of image-dependent adjunctive therapy?
- Had I done something differently, would the outcome have been better?

Before proceeding, I rightly should recognize some specific efforts of now senior and respected protégés in keeping me focused upon the goals of surgical education; the patient is best served by the curative and innovative surgeon who is also totally honest! Gaar, Mitchell, Fry, Bland, Edwards, Evers, Voyles, and McMasters: these former residents' books and articles on reoperation and surgical infection have hugely influenced this 2013 version of Reoperative Surgery.

Given a reoperation by the same surgeon, a conscious initial assessment, including formal or informal consultation with colleagues, must be made and plans for alternate strategies and techniques set forth with the patient and immediate family. What will lead to a more satisfactory outcome this time? In all cases, the approach to the operation should be undertaken with specific but often different goals, assured that preoperative total patient preparation and optimum imaging will have been done. The most certain predictor of failure is 'let's see what we find and go from there.'

Again assuming the same surgeon or team is going to do the reoperative procedure, expectations must be finite and carefully laid out for the patient and family. Although preoperative consultation is given, intraoperative consultation may be even more important; a peer in the field should always be available – even if by telephone – to discuss unanticipated discoveries or diseases.

It is a psychologically easier scenario when reoperation is undertaken by a different surgeon; it is never too early to remind the reader-surgeon that many professional liability lawsuits are spawned by overt or even subtle inferences that the first operation was less than ideally done. A personal conversation between the two surgeons is not always done but is most desirable.

Senior surgeons always savor judgment and wisdom, and younger ones are fascinated by new technologies and devices. In the last decade's obsession with quality and outcomes (has it not always been so?), a study of major abdominal operations done by fully trained surgeons in a Midwestern state showed that among sequenced age groups of surgeons, only recent (<5 years of experience) graduate surgeons had a higher than expected operative mortality rate (Billeter et al. 2012, Galandiuk et al. 2004, Prystowsky et al. 2002). Regardless of the situation, two heads are often better than one! In that same vein, the surgeon's evening preceding a reoperation should dwell on details of the case ahead: think and rethink! Reoperative surgery is seldom pretty and virtually never easy.

A good example for many of these principles is the re-repair of ventral or incisional hernia; increasingly, it is agreed that nearly half such operations fail and fail again. This scenario is familiar to all general surgeons. Often in North America the predisposing cause is overt abdominal obesity. Pleas for weight reduction are seldom heeded, but the optimistic second surgeon is easily seduced. When the hernia is very large or 'massive,' pneumoperitoneum preoperatively in the doctor's office is an advantageous maneuver, virtually always overlooked and historically ignored. If the patient is obese, excision of the omentum as a battering ram to a new repair as well as the previous one is useful and regularly forgotten. Tension is the producer of failure and one of the advantages of component release as a technique is its de facto requirement for wide dissection (Kanaan et al. 2011). Although the sundry, innumerable meshes, or combinations thereof are regularly placed by their seriously conflicted surgeon advocates, combinations of the technically demanding component release bridged with permanent mesh are increasingly the fashion among the most experienced abdominal surgeons. Again communication failure sets the stage for disappointment; 'do not lift anything over 4 kg (10 lbs) until the 100th days after operation' is the most important pre- and postoperative admonition, to be repeated at every follow-up visit!

If there is any nontechnical common thread to the requirement for reoperation, it is the failure to understand and, to the extent possible, eliminate predisposing causes. Here, an alimentary fistula is a highly representative case. While the litany is known to all, distal obstruction and foreign bodies, such as mesh, and cancer lead the list. All the prescribed medications in the world will not close a fistula due to any of the unholy trinity – all of which must be systematically corrected or eliminated at reoperation.

Safety issues apply to all operations, but reoperation is the ideal scenario in which to practice the surgical time-out (Altpeter et al. 2007). Preoperative description of the plan and goals should be followed by the postoperative 'huddle' – what did we achieve and what are the necessary adjuncts to postoperative care? Drains and other devices must be appreciated for what they are: early for blood, late for intestinal discharge, and removal accordingly but always with the consent of the senior surgeon.

The postoperative report to the family and the next day to the patient must emphasize essential aspects of the reoperation:

1. We found no cancer

Or

We found some recurrent cancer, removed it, and believe we can slow the progress of the disease to some degree with further therapy

2. We found a blockage and were able to remove it

Or

Bypass it, which often works as well

3. We found a tack or suture of the mesh underneath and corrected it

We removed all of the mesh and used your own tissue for repair

Surgeon, patient, team, family need to enter the reoperative arena with understanding, trust, and tempered optimism. Finally, if at all possible, reoperation should be undertaken as the first case of an uncrowded day. So be it.

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Chapter 2

The ethical legal implications of reoperative surgery

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■ INTRODUCTION

Reoperative abdominal surgery is not an unexpected phenomenon, occurring in both the immediate post operative period and remote from the primary surgery. Acute reoperative surgery generally results from infection, bleeding, or failed procedures, whereas remote occurrence tends to result from late procedure failure, scar tissue development, or other complications. Regardless of when the reoperation occurs, the surgeon is faced with making a clinical judgment as to the best course of action for the patient, as few definitive studies may exist to provide a roadmap for the surgeon and the anticipated anatomy and potential complications may be different than those experienced in an initial operation. Where complications, morbidity, and mortality occur in the medical setting, the stage is set for malpractice claims. Not only must a physician concern himself with a simple negligence claim, he must also consider whether the patient will pursue an informed consent claim.

To illustrate the importance of the necessary clinical judgment, consider Fry and Osler (1991), who noted that care and caution must be exercised when selecting the site for incision in a second abdominal wall surgery due to the potential that adhesions may have developed and attached to the underlying bowel where a previous incision exists, increasing the potential for complications. The authors surmise that a separate incision might be the best course of action to prevent or reduce the risk of complications in a patient undergoing reoperative abdominal wall surgery. They further suggest that the surgeon must have a comprehensive understanding of abdominal wall blood supply so as to avoid serious morbidity associated with a poorly planned site. In a medical malpractice claim, the surgeon is held to the standard of whether his actions were those of a reasonable physician acting under the same or similar circumstances. Assuming Fry and Osler's conclusions are, in fact, the medical standard of care, a surgeon who operates outside of these parameters risks not only being sued under a medical malpractice theory, but potentially found liable for his actions, even where his incision site for a primary procedure may have been appropriate.

Fry and Osler further state that a reoperation of the abdominal wall is associated with an increased risk of complications including dehiscence, infection, or ventral herniation. Infection, potentially the most serious of these problems, can range from a simple wound infection to necrotizing fasciitis. Armed with this knowledge, a surgeon who fails to disclose this known cluster of risks to a patient undergoing abdominal wall reoperative surgery places himself at risk of liability in an informed consent suit, in addition to those pursued for alleged negligence related to either the first operation or performance of the second operation.

As the above example illustrates, complication rates from reoperative surgery vary significantly and are dependent on a host of factors such as the type of surgical procedure to be performed, the previous procedure performed, patient-related risk factors, and

surgical skill and experience. Consider for example, the following: Generally, 10–25% of patients who have bariatric surgery undergo such a surgery for either complications arising from initial surgery or for further weight control. It is also known that patients with morbid obesity have a mortality risk of up to 12 times that of the general population. And, in approximately 11% of these bariatric reoperations, serious morbidity will occur (Behrns et al 1993). In ileal pouch reoperative surgery, one study examined the complication rates, finding that two thirds of patients undergoing such a reoperative surgery experienced excellent clinical outcomes but one third did not, and up to one in five patients experienced a loss of their reservoir altogether (Galandiuk et al 1990). This is information most patients would consider critical to their decision making as to whether to undergo additional surgery, and it is incumbent upon the surgeon to stress the risks and potential benefits in obtaining informed consent.

In addition to procedure-specific complication rates, the surgeon must determine whether laparoscopy is available and advisable as a technique. When utilized, consideration must be given as to whether there has been a previous laparotomy, the surgeon's level of experience, the peritoneal access technique to be used, and patient-related factors such as the type and number of previous abdominal operations, the location of previous incision(s), and the likelihood of existing adhesions (Arnell 2006). Indeed, pneumoperitoneum access during laparoscopy can account for significant morbidity. In one report, 40% of bowel injuries occurring during laparoscopy were attributed to the establishment of the pneumoperitoneum – 60% of which occurred in patients who had undergone previous abdominal surgery (Arnell 2006). Finally, as a special consideration, where there has been a complication or other reason for reoperative surgery, the surgeon must disclose to the patient whether there are options for remediation/repair outside the scope of his expertise and should consider consultation with a subspecialist, where appropriate. The surgeon must be honest with himself and the patient regarding what options are available, what procedure best addresses the reoperative need, and whether the surgeon is in the best position to offer that option to the patient. A common theme in lawsuits filed after surgical complication (whether from primary or reoperative care) is that the surgeon was not trained, or was minimally trained in the particular procedure performed or that the surgeon simply did not perform the procedure correctly. The eye on the complication becomes more critical when the surgeon has operative failure a second time.

Thus, certain particularized elements of risk exist and are known at the outset when a decision is made to proceed with reoperative abdominal surgery. The decision to proceed with such a procedure is under the sound discretion of the competent surgeon in conjunction with the patient following a thorough discussion of the risks, benefits, and alternatives to the proposed procedure. This of course, is wholly aligned with the long-standing principles of medical ethics.

■ MEDICAL ETHICS

I WILL FOLLOW that method of treatment which according to my ability and judgment, I consider for the benefit of my patient and abstain from whatever is harmful or mischievous. . . . WITH PURITY, HOLINESS AND BENEFICENCE I will pass my life and practice my art. Except for the prudent correction of an imminent danger, I will neither treat any patient nor carry out any research on any human being without the valid informed consent of the subject or the appropriate legal protector thereof . . .

—*The Hippocratic Oath*
Harvard Classics Volume 38

The Hippocratic Oath has long provided physicians with an ethical framework to guide medical practice; however, the advancement of both technology and medical knowledge has resulted in ever increasing moral and ethical dilemmas for today's physicians. Beauchamp's model of ethical and moral principles incorporates the four generally accepted principles of medical ethics: autonomy, justice, beneficence, and nonmaleficence, providing a meaningful ethical framework in today's climate (Beauchamp & Childress 2008).

Autonomy is the principle of self-governance, viewed by many as an irrefutable value, the crux of which is the ability to be one's own person. In the medical ethical arena, autonomy permits a greater equilibrium in the doctor-patient relationship and power structure. It embodies a respect for the patient's wishes and a facilitation of a patient's input into the medical decision-making process. Autonomy requires the physician to not only consult with the patient regarding their care and treatment, but also to obtain their agreement to any proposed treatment prior to performing the procedure. The principle of justice is equated to 'fairness' and the conscious effort not to permit one's prejudices to directly influence their professional work by prejudicing their assessment of a patient's needs or restricting or delaying their access to care. Beneficence is the concept of doing that which benefits one's patients and nonmaleficence involves the avoidance of harm. Thus, a natural conflict arises between upholding each of these principles, as a procedure that is intended to promote the well-being of a patient may carry significant risks and potential harm to the same patient. These principles must, therefore, be considered together. Each proposed action upon a patient requires a careful cost-benefit balancing, the aim of which is to produce a net benefit over harm to the patient. These principles are likewise intertwined with the principle of autonomy. By informing the patient of what the net benefits and risks are to a procedure, a patient is able to deliberate on the options, and participate fully in the decision to proceed.

■ LEGAL CONSIDERATIONS: INFORMED CONSENT

■ Background

In the context of reoperative surgery, the aforementioned ethical principles align with the legal doctrine of informed consent. The doctrine of informed consent as pertains to physician-patient relationships reaches far back into the English Common Law. As early as 1767, physicians were charged with the tort of battery if they performed a procedure on a patient without having secured their consent. In an early United States case, Justice Cardozo stated, 'every

human being of adult years and sound mind has a right to determine what shall be done with his own body; and a surgeon who performs an operation without his patient's consent commits an assault, for which he is liable in damages (Schloendorff v. Society of New York Hospital, 211 NY 125, 129-30; 1914).' Today, informed consent actions are based in negligence rather than battery and in each of the 50 United States, the requirements are expressed by either case law or statute.

■ INFORMED CONSENT: REQUIREMENTS

The informed consent process is much more than the obtaining of a patient's signature on a consent form. Rather, informed consent is the process of communication between the physician and patient, which results in the patient's authorization to proceed with a proposed procedure or their decision to refuse the proposed procedure. In discussing a proposed procedure with a patient, a physician should discuss the nature of the proposed procedure, the risks and benefits of the proposed procedure, alternatives to the proposed procedure, risks and benefits of the alternative procedures, and the risks and benefits of choosing not to undergo any procedure. Heightened requirements exist for certain populations, including those participating in human subjects research. Physicians participating in clinical research are encouraged to familiarize themselves with these heightened requirements. As the purpose of informed consent is to enable the patient to make an informed decision, this communications process should provide the patient with the opportunity to ask questions to better understand both his illness and the proposed treatment or procedure. This communications process has long been an ethical obligation of the physician, and today, it is also the legal duty of the physician to engage in this process prior to proceeding with any proposed treatment. Obtaining informed consent is not properly delegated to nurses or nonclinical staff. The communication requires knowledge regarding the patient and the procedure possessed by the surgeon.

Unlike a standard malpractice claim where the patient alleges that the doctor negligently performed a given procedure, the crux of an informed consent action is the patient's allegation that the physician never told him that there was the possibility of the occurrence of a resulting injury or harm and had he known, he would not have undergone the procedure. The patient must prove he experienced a complication of the procedure, and had he known about the specific complication he experienced, he would have opted not to undergo the proposed procedure. In other words, the patient has the burden of showing that the physician's failure to disclose a given risk resulted in the patient having a procedure he would have otherwise refused, resulting in the ultimate harm or injury suffered.

■ INFORMED CONSENT DISCLOSURE STANDARD

The question often asked, is how much information is adequate when a physician sets out to disclose the risks involved in a given procedure. States are divided in the standards they set forth in this regard (Table 2.1). The most widely applied approach is the 'Professional Standard' or the standard of the 'reasonable physician.' States utilizing this approach require a physician to disclose the amount of information, or particularized risks, as would a reasonably prudent physician with the same background, training, and experience in the same or similar situation. This approach is the same standard

Table 2.1 State-specific informed consent standards (July 2012)

State	Reasonable physician	Materiality standard	Case name or statute
Alabama	x		Giles v. Brookwood Health Services, Inc., 5 So. 3d 533, 554 (Ala. 2008)
Alaska		x	Alaska Stat. Ann. § 09.55.556 (West)
Arizona	x		Shetter v. Rochelle, 2 Ariz. App. 358, 370, 409 P.2d 74, 86 (1965) modified, 2 Ariz. App. 607, 411 P.2d 45 (1966)
Arkansas	x		Ark. Code Ann. § 16-114-206 (West)
California		x	Cobbs v. Grant, 8 Cal. 3d 229, 245, 502 P.2d 1, 11 (1972)
Colorado	x		Gorab v. Zook, 943 P.2d 423, 427 (Colo. 1997)
Connecticut		x	Duffy v. Flagg, 279 Conn. 682, 691-92, 905 A.2d 15, 20 (2006)
Delaware	x		Del. Code Ann. tit. 18, § 6852 (West)
Florida	x		Fla. Stat. Ann. § 766.103 (West)
Georgia		x	Ga. Code Ann. § 31-9-6.1 (West)
Hawaii		x	Carr v. Strode, 904 P.2d 489, 500 (Haw. 1995)
Idaho	x		2012 Idaho Laws Ch. 302 (S.B. 1294), 2012 Idaho Laws Ch. 302 (S.B. 1294)
Illinois	x		Lisowski v. MacNeal Mem'l Hosp. Ass'n, 381 Ill. App. 3d 275, 290, 885 N.E.2d 1120, 1136 (2008)
Indiana	x		Spar v. Cha, 907 N.E.2d 974, 984 (Ind. 2009)
Iowa		x	Kennis v. Mercy Hosp. Med. Ctr., 491 N.W.2d 161, 166 (Iowa 1992)
Kansas	x		Rojas v. Barker, 40 Kan. App. 2d 758, 763, 195 P.3d 785, 789 (2008)
Kentucky	x	x	Ky. Rev. Stat. Ann. § 304.40-320 (West)
Louisiana		x	Hondroulis v. Schuhmacher, 553 So. 2d 398, 411-12 (La. 1988)
Maine	x		Me. Rev. Stat. tit. 24, § 2905
Maryland		x	McQuitty v. Spangler, 410 Md. 1, 18-19, 976 A.2d 1020, 1030 (2009)
Massachusetts		x	Roukounakis v. Messer, 63 Mass. App. Ct. 482, 485, 826 N.E.2d 777, 780 (2005)
Michigan	x		Roberts v. Young, 369 Mich. 133, 140, 119 N.W.2d 627, 630 (1963)
Minnesota	x		K.A.C. v. Benson, 527 N.W.2d 553, 561 (Minn. 1995)
Mississippi		x	Latham v. Hayes, 495 So. 2d 453 (Miss. 1986)
Missouri	x		Wilkerson v. Mid-Am. Cardiology, 908 S.W.2d 691, 696 (Mo. Ct. App. 1995)
Montana	x		Llera v. Wisner, 171 Mont. 254, 262, 557 P.2d 805, 810 (1976)
Nebraska	x		Neb. Rev. Stat. § 44-2816
Nevada	x		Smith v. Cotter, 107 Nev. 267, 272, 810 P.2d 1204, 1207 (1991)
New Hampshire	x		Folger v. Corbett, 118 N.H. 737, 738, 394 A.2d 63, 63-64 (1978)
New Jersey		x	Largey v. Rothman, 110 N.J. 204, 215, 540 A.2d 504, 510 (1988)
New Mexico		x	Gerety v. Demers, 92 N.M. 396, 410, 589 P.2d 180, 194 (1978)
New York	x		N.Y. Pub. Health Law § 2805-d (McKinney)
North Carolina	x		N.C. Gen. Stat. Ann. § 90-21.13 (West)
North Dakota		x	Long v. Jaszczak, 2004 ND 194, 688 N.W.2d 173, 178
Ohio		x	Nickell v. Gonzalez, 17 Ohio St. 3d 136, 139, 477 N.E.2d 1145, 1148-49 (1985)
Oklahoma		x	Parris v. Limes, 2012 OK 18, 277 P.3d 1259, 1263, reh'g denied (May 14, 2012)
Oregon	x		Or. Rev. Stat. Ann. § 677.097 (West)
Pennsylvania	x		40 Pa. Stat. Ann. § 1303.504 (West)
Rhode Island		x	Lauro v. Knowles, 785 A.2d 1140, 1141-42 (R.I. 2001)
South Carolina	x		Melton v. Medtronic, Inc., 389 S.C. 641, 656, 698 S.E.2d 886, 894 (Ct. App. 2010)
South Dakota		x	Wheeldon v. Madison, 374 N.W.2d 367, 374 (S.D. 1985)
Tennessee	x		Tenn. Code Ann. § 29-26-118 (West)
Texas		x	Vaughan v. Nielson, 274 S.W.3d 732, 737 (Tex. App. 2008)
Utah		x	Utah Code Ann. § 78B-3-406 (West)

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