Reoperative Hand Surgery
Preface

The purpose of this book is to present some reoperative options for challenging problems that face the reconstructive hand surgeon after failed primary surgery. We have tried to do this as a one-volume book that is very concise and discusses some of the more common issues that hand surgeons may face in performing revision surgery. Even though there are several books dealing with hand surgery and other problems of the upper extremity, this book is unique in that it looks specifically at the problem of what to do when the original index procedure did not go as planned. We have included topics that involve the hand, wrist, forearm, and elbow. We have also included some sections in the book to look at some of the psychological and social factors that also go into the decision process whether to reoperate or not. My hope with this book is that it will give the busy hand and upper extremity surgeon easily accessible information relating to the evaluation, diagnosis, and possible surgical interventions for the diagnoses discussed.

Hand and upper extremity surgery has a diversity of different procedures to accomplish common goals. There are usually pros and cons to each type of procedure. Complications are a known risk of surgery and do occur despite the best efforts of the surgeon. The purpose of this book is to help hand surgeons manage some of these issues when they do arise in the patients that we all care for.

The chapters are tightly focused so that the important aspects to consider for reoperation can be quickly reviewed. There is also a component of the chapters that discusses how to avoid other pitfalls and to minimize as well as manage any complications that may occur with the reoperative procedures.

The authors that have graciously contributed their expertise to this book are all well known in the hand surgery world. The book has a straightforward table of contents and index which should allow the reader to easily locate the topic which they wish to review. We have purposely minimized the historical aspects and reviews of the literature in this book as these can be found in other hand surgery text books, but again have focused our core competency for this text to be reoperative considerations in those patients who have had previous surgery.

The book is filled with original art work to help describe and demonstrate how to perform some of these reoperative procedures. Our goal is that the artwork should be simple and straightforward but yet detailed enough to convey the important steps and aspects for the surgical intervention that it is outlining. It is my personal hope that in future editions of this book the number of topics will continue to expand and that the current topics will continue to be refined. This first edition represents the hard work of authors, editors, and publishers alike and will hopefully come to serve for the betterment of the patients under our care.

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Abstract

The reoperative hand surgeon is a unique individual. The surgeon who is willing to take on these types of cases, whether they be their own complications or patients who have been referred in from colleagues, faces some unique challenges when compared to dealing with the patient who has not previously been operated on for that particular disease or diagnosis. These patients have unique psychological and social considerations that are compounded by the need for further surgical intervention. Some of these patients may be overtly hostile, and others may have very unrealistic expectations. However, many patients will be very grateful for the surgeon who is willing to rise to the occasion and who has the caring temperament to help guide these patients through their diagnostic and decision-making process. Some patients who think they need surgery in actuality do not; moreover, some patients that would not benefit from further surgery will still want to have surgery performed in the hopes of having some improvement or change in their outcome. This chapter is for those surgeons who understand the unique role of the reoperative surgeon and wish to explore some of the insights needed to try and be more effective.

Keywords

Reoperative • Surgeon • Psychological • Challenges

Introduction

There are many different reasons for reoperating on a patient. The usual reasons for reoperation come from complications. Other times, things such as recurrent disease come about necessitating further surgery. In other situations, there may be continuation or worsening of a biologic process such as Dupuytren’s disease. Finally, there are those cases where the outcome by various measures has been less than optimal, and the surgeon and patient wish to see if these results can be optimized with further surgery. In some circumstances, the procedures do not really represent a reoperation, but rather are the planned sequences in a series of staged procedures needed to reconstruct or correct hand and upper extremity dysfunction. Any hand and upper extremity surgeon who has had to perform reoperative surgery in anatomic areas that have undergone previous surgery can vouch for the difficulty in dealing with tissues that have already undergone scarring.

Most hand surgeons learn how to perform reoperative surgery (to a degree) through their fellowship training, but much of reoperative surgery is learned while engaging in the practice of hand surgery. Some of this learning curve comes about from trial and error in finding out what has worked for them or colleagues, as well as what has not yielded positive results. As the surgeon ages, he or she may find themselves not only mentoring a younger group of hand surgeons, but also being referred patients who potentially could benefit from reoperative surgery. However, no surgeon is free from the possibility of unanticipated surgical outcomes and the
need for reoperative surgery in their own patients. Much of what is known about treating hand surgery complications is passed down through verbal communication, but not necessarily written down in the same way that primary surgical procedures are written down and described in textbooks. Most hand and upper extremity surgery procedures are meant to be single procedures that the patient recovers from with time, therapy, and normal biological healing. However, some upper extremity surgery procedures are meant to be staged and these staged procedures are frequently done in order to facilitate the healing of one aspect of the anatomy so that another aspect of the anatomy is not detrimentally affected by the other procedure.

In some cases, the outcome is not as satisfactory as the patient and surgeon would like. An example of this would be a flexor tendon repair that has developed tendon adhesions. While the flexor tendon or tendons may have healed, unfortunately the patient’s functional use of the hand and finger is restricted because of these adhesions. In these cases, because of less than satisfactory outcome, it is reasonable to consider performing a flexor tenolysis in order to try and better optimize the patient’s usage of the extremity. It is a commonly known fact among surgeons that operative rates go up after national meetings. The thought behind this is that surgeons may elect to try newly seen surgical techniques before they have expertise in judgment that only comes with practice and experience with the technique. These potential complications from the new procedures create a “bump” in the incidence of reoperative upper extremity surgery. Other times, the issue may be subtler. Sometimes they keloid or scar that is deemed cosmetically unacceptable by the patient may require a “touch-up” surgery.

As mentioned previously, a common reason for reoperation is recurrence of disease. Hand surgery examples of this are Dupuytren’s disease as well as giant cell tumor of the tendon sheath. Other examples can be recurrent scarring in flexor and extensor tendons after injury and/or surgery. Unfortunately, the worse case scenario is recurrence of malignancy in the extremity after the attempt at limb-sparing or limb-salvaging techniques. In the hand, if there is a recurrent malignancy, usually a more aggressive surgical approach is required, and this may necessitate loss of limb.

All surgery carries the possibility for potential risk of complications, and many of these complications may require further operative treatment. In hand surgery cases, a failed microsurgical anastomosis and a replant may necessitate an emergent trip back to the operating room. In other cases, a hematoma, seroma, or infection may require an urgent, but not necessarily an emergent trip to the operative suite for decompression. Complications can occur both in the immediate phase or the late phase following surgery. At no point during the postoperative period is the patient completely immune from potential complications. Technical difficulties or errors can result in complications; however, in many cases it is actually host factors. The host compromising issues are diabetes, tobacco use, immunodeficiency, and osteoporosis, among others. Any repeat procedure needs to be weighed against the potential risk of making the problem worse with further intervention.

In planning the reoperative surgery, the surgeon needs to perform a thorough analysis of the pros and cons of proceeding, as well as be able to technically perform the reoperative procedure. Considerations such as circulation to the devitalized previously operated tissue, potential further or worsening of scar tissue, possible internal fixation, and postoperative therapy all need to be made in the planning stages. And then if things were not difficult enough, the surgeon needs to consider potential complications in treating the complications. The obvious goals of the secondary procedure are to fix the underlying problem(s) and to try to avoid any recurrence of those same issues, as well as to try and mitigate the formation of any new complications. All three of these variables need to be incorporated into the treatment plan, as they may all potentially have an effect on the ultimate outcome. In forming the reoperative plan: (1) The surgeon must think creatively and try to avoid the temptation of merely repeating the original plan that proved to not work in the first place; (2) It is especially tempting for the surgeon who is treating a patient who had surgery done elsewhere to fall into the trap that their surgical skills are superior to the other surgeons; (3) The reoperative surgeon always needs to take a step back and think about different ways to attack the problem.

**Patient Expectations**

One of the challenges for the reoperative surgeon is trying to explain to the patient why further surgery or surgeries are needed. One of the key aspects is setting a realistic level of expectation from the patient. This is especially true for a patient who is disappointed and frustrated by the previous surgical management and the patient’s perceived failure of that surgery. The specific goals of reoperative hand surgery are usually more specific and focused and commonly deal with a very narrow problem. However, multiple problems may require multiple staged procedures and some quality time should be spent trying to counsel the patient in this regard.

**Scar Tissue**

Scarring while part of the normal healing of soft tissues can also be part of the problem for the reoperative hand surgeon. Scars and scarring can also be important to consider in that they can make it difficult to place new skin incisions in many cases. When a scar is operated on, it has a tendency to further retract, which can make wound closure problematic.