
Rehabilitative Surgery

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Editors

Rehabilitative Surgery

A Comprehensive Text for an
Emerging Field

 Springer

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We dedicate this book to our teachers, who gave us the tools and insight to innovate, and to our spouses, whose support makes everything possible.

Preface

The paralyzed or severely neurologically impaired patient is one of the greatest challenges in long-term chronic care that we face as clinicians, whether we are occupational therapists or orthopedists or physiatrists or surgeons. Because of the complexity of their treatment and the severity of their injury, these patients may be viewed as a hopeless cause for many physicians, especially surgeons. Optimization of their care – and potentially improvement in quality and length of life – requires a complex and delicate interaction between multiple surgical and medical specialties across disciplines and time.

The current state of rehabilitative medicine works to maximize patient function as well as manage the lifelong maintenance required to continue that level of function. Although surgery has always been part of the treatment of the paralyzed patient, it may be seen as an afterthought or the modality of last resort for the rehabilitation community or even surgeons who have little experience taking care of these patients. Once surgery is considered, the procedures needed to care for these patients and improve their lives often exist at the margins of existing surgical specialties or at the junction of multiple disciplines, performed haphazardly without a unified understanding of a comprehensive treatment approach. These procedures and their context may be difficult to understand, requiring familiarity with different interlocking yet distinct specialties, making approaching this topic particularly daunting for the student of any field.

We introduce the new field of rehabilitative surgery, a unique designation combining state-of-the-art surgeries from multiple surgical specialties in order to reimagine our approach to these patients. In this text, *Rehabilitative Surgery: A Comprehensive Text for an Emerging Field*, we present a completely different framework for understanding, coordinating, and providing treatment for the paralyzed or severely neurologically impaired patient. Contrary to the traditional approach of rehabilitative medicine, surgery is in fact a critical component of the care of the chronically impaired patient and may create opportunities to change their everyday life in a profound way by creating a new baseline of functional status.

We believe that much of the resistance to the surgical treatment of these patients arises from a lack of understanding of how even some straightforward interventions, performed in a coordinated way, can dramatically improve a patient's life. Patients who can now move a joystick on a wheelchair or feed themselves again often have profound appreciation for this

incremental increase in independence, a small but significant liberation from the prison of paralysis.

This compendium represents the first interdisciplinary text for the emerging field of rehabilitative surgery, synthesizing various perspectives into a cornerstone for the rehabilitation field. The text is designed for both surgical and nonsurgical readers. An expert has written each evidence-based chapter with concise and straightforward explanations for clinicians who have no previous experience in that specialty. Specific descriptions of surgical procedures are included as well as surgical videos that can be accessed from the companion website.

Every major aspect of the reconstructive surgical treatment of these patients has been considered from a multidisciplinary vantage point, including orthopedic surgery, plastic surgery, neurosurgery, general surgery, and otolaryngology. We clearly describe and evaluate the most up-to-date and evidence-based surgeries that are currently standard of care including treatment of pressure sores, placement of feeding tubes, and upper extremity interventions to improve function and hygiene. As international leaders in the field of nerve reanimation surgery, we describe our cutting-edge protocols for the surgical treatment of severe nerve injuries, spinal cord injury (SCI) and stroke, or cerebrovascular accidents (CVA). We provide the first description and evidence for phrenic nerve repair to assist weaning paralyzed patients from their ventilators. This includes an exciting subset of patients with amyotrophic lateral sclerosis (ALS), who have shown benefit from phrenic nerve reconstruction in conjunction with nerve stimulation. These patients need our help. It falls on us – their clinicians and caretakers – to do everything we can to maximize their function to help them live as well and as independently as possible.

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Foreword

The explosion of medical/surgical knowledge and the introduction of complex treatment protocols dictated the need for the development of interdisciplinary teams.¹ The day of the physician working alone in a single office became an anachronism.

As superbly illustrated in *Rehabilitative Surgery*, the concept of the truly functional interdisciplinary team is an absolute necessity in modern clinical practice. The surgeon's role is no longer limited to a defined period in the operating room, but, equally as important, it is also defined by the extra-operating periods of the working week – meeting jointly with colleagues and evaluating patients with their clinical problems, developing treatment protocols, providing postoperative care and rehabilitation, and, hopefully, participating in designing well-controlled outcome studies.

The benefits of the clinical team are obvious. First of all, it provides optimal patient care – the primary requisite of clinical medicine. In addition, it promotes patient/family education. For the participating clinician, membership in a clinical team ensures exposure to cutting-edge care and enormous opportunities for learning from members from other disciplines, i.e., “cross-fertilization.” New treatment programs can be undertaken and research protocols developed. The clinical gains from these joint efforts can be exponential and can result in paradigm shifts in clinical care. In the process, lifelong friendships are formed within the team.

To paraphrase Gertrude Stein, “A team is not a team, is not a team....” Not all teams are functional, and as in athletics, one can ask what distinguishes a truly successful, winning team. I believe it comes down to the commitment of the individual member – a dedication to the patient; a desire to learn from each other; a reliability or accountability; an open-mindedness with an ability to abandon old, unproven dogma; and an enthusiasm for advancing the clinical field.

The original version of this book was revised. An erratum to this chapter can be found at (DOI [10.1007/978-3-319-41406-5_28](https://doi.org/10.1007/978-3-319-41406-5_28)).

¹I prefer the term interdisciplinary to multidisciplinary, as the former implies clinicians from different specialties *working together* as compared to clinicians from different specialties existing together (multidisciplinary)

As one reviews the list of authors and their clinical backgrounds, as well as the wide variety of subjects covered, one cannot help but question the legitimacy of age-old “specialty” designations. In many ways, they appear as anachronistic as the medieval guilds. Clinicians today identify themselves as belonging to clinical teams treating specific conditions of common interest. The opportunities and advances in health care have broken down the walls of “specialty” isolation and narrow-mindedness.

The editors and authors of *Rehabilitative Surgery*, in their organization and presentation of content, superbly direct the reader to the new world of health care organized to address and care for individual patient health problems.

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