ATLAS *of* TECHNICS *in* SURGERY

John L. Madden

TECHNICS SURGERY

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PREFACE

When the idea for the *Atlas of Technics in Surgery* was proposed, there were frequent discussions relative to the aims, the ideals, and the scope of such an Atlas and the best method of presentation. From these discussions it was concluded that the Atlas should be prepared primarily for the practicing surgeon and the surgeon-in-training, namely, the surgical interne, the assistant resident, the resident, and the fellow in surgery.

The author is wholly cognizant of the fact that one cannot learn either surgical technic or surgical judgment by simply referring to the illustrations in an Atlas. In illustrations, the incisions never bleed and the clamps and ligatures on the cystic and superior thyroid arteries never unlock or slip off. Furthermore, postoperative complications do not occur and there are no fatalities. Admittedly, there is only one proper way to learn a sound surgical technic, and that is in the operation room under the guidance of a qualified and experienced practical surgeon. Similarly, good surgical judgment is acquired only through extensive experience, sometimes bitter, in the preoperative, the operative, and the postoperative care of the individual patient. Personal experience has been and always will be the most impressive teacher. These basic facts cannot be overemphasized to either the surgical trainee or the inexperienced surgeon in practice. However, it is believed that an Atlas of Surgery, sufficiently detailed, may prove an ancillary aid to the reader in either assisting at or performing a particular operation. Furthermore, it is useful as a review of a technic for an operation that may be infrequently performed.

In the preparation of the Atlas the importance of having the medical artist present at each operation was stressed. It is only in this way that one may obtain in the illustrations anatomic realism and the creative interpretation of the artist. Only those operations that were witnessed by the medical artist are depicted. In some instances a particular operation was observed three or four times before satisfactory illustrations were obtained. The artist was instructed to depict carefully the anatomy of the region and the step-by-step technic as it was used in the operation. It is believed that only in this way may a true portrayal of the technic of the operation be obtained. Furthermore, each operation is profusely illustrated in detail to give a logical and progressive steplike pattern and to avoid the long "jumps" that so often prove confusing to the reader.

The operative technics illustrated in the Atlas represent those that have proved the most satisfactory to the author. There is no claim for originality in any of the operations demonstrated. In general, the technic of any one surgeon is an expression of the sum total of his experience obtained through teachers, preceptors, articles in current surgical journals, visitations to surgical clinics, and his own creative modifications. The variations in technic employed by experienced surgeons are not unduly significant, provided there is no transgression of the tried and proved basic principles of sound surgical technic. To emphasize this fact each operation is discussed, not by the author, but by a surgeon experienced in the performance of the particular operation under discussion. Each discusser was advised to stress, in particular, points of disagreement and also to illustrate, if he so desired, the particular steps in operative technic that have proved to him the most satisfactory. This was done to balance the opinion expressed by the author in the legends and illustrations and to serve as an aid to the reader in evaluating the proposed merits of a particular operative technic.

The Preface would be most incomplete if I did not acknowledge my indebtedness to George A. McDermott of Appleton-Century-Crofts, Inc., for his kind cooperation and incalculable aid in the preparation of the Atlas; to Mr. Alfred Feinberg, a consummate medical artist, for his sincere devotion, dependability, and untiring efforts in his excellent portrayals of operative technics; to Mr. Robert Wabnitz for his contributions to the illustrations, particularly the anatomy of the diaphragm; to Mother M. Alice, O.S.F., Administrator of St. Clare's Hospital, for her many favors, kindnesses, and utmost cooperation, and to her successor, Sister M. Columcille, O.S.F.; to Sister M. Pauline, O.S.F., Operation Room Supervisor, for her generosity,

consideration, understanding, and unfailing aid; to Sister M. Francis Aloysius, O.S.F., for her hours of faithful duty in the performance of the secretarial work which made the preparation of this Atlas possible; to Mrs. Mary B. McDermott, Medical Librarian, St. Clare's Hospital; to Miss Catherine O'Regan, my "scrub" nurse; to Miss Winifred Lawless, circulating nurse; to Miss Dorothy Manganaris and Mr. Thomas Arthur for their secretarial help; and to Miss Patricia A. McAteer of Appleton-Century-Crofts, Inc., for her painstaking attention to detail.

I owe much to Robert F. Barber, M.D., Emeritus Professor of Clinical Surgery, Long Island College of Medicine, and the Emeritus Director of Surgery, Long Island Division of Surgery, Kings County Hospital, Brooklyn, N.Y., for the opportunities and counsel given to me during the course of my residency surgical training under his supervision, and I am grateful to him. I am also deeply indebted to John H. Mulholland, M.D., for his introduction, to Henry T. Randall, M.D., for his material on fluid balance, preoperative and postoperative care; to George A. Keating, M.D., for the section on anesthesia; and to all of the surgeons, whose names are listed elsewhere, who so kindly consented to discuss the various operations.

Finally, I should like to express my sincere gratitude to the Residents and Assistant Residents in the Department of Surgery of St. Clare's Hospital for their assistance and kind cooperation in the preparation of this Atlas.

JOHN L. MADDEN

FOREWORD

The purpose of this volume is to present clearly and concisely a correlation of the anatomy, physiology, and understanding of pathology necessary to the technical "art of surgery." Such a book should be based on the cumulative experience of surgeon-investigators and should include the more recent technical advances.

The author is eminently qualified to meet this challenge and has overcome the obvious difficulties. He has produced a record of certain proved procedures valuable for quick reference for any experienced surgeon and especially stimulating to the thoughtful, inquiring mind in the formative phase of surgical training.

The illustrations are precise, beautifully executed, and presented in an orderly, balanced fashion. The carefully edited legends accompanying the illustrations enhance the visual perfection of this work.

There can be no doubt that this Atlas is outstanding among the volumes portraying a workable anatomic–surgical approach to the practical problems of clinical surgery.

JAMES M. WINFIELD

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INTRODUCTION

JOHN H. MULHOLLAND

THERE ARE MANY methods to help a student learn *about* technical operative surgery; the only way he can learn to *perform* operations is by doing them. The creation of a complete surgeon is much more a matter of the development of thought processes than it is training in manual dexterity. Any help in the whole process must provide for the thinking element in a primary way. Offhand, it is difficult to picture how this requirement is met in a book illustrating operative technic, yet Dr. Madden has done so in this book.

The ideal author of such a work would be either an artist who is a surgeon, or a surgeon who is an artist. No such fortunate combination in one individual has come forth. The closest analogous person was the anatomist and artist combined in Leonardo. When an artist attempts to portray an operation without the thought processes of the surgeon, the result may be fine art but runs the risk of being untrue. Conversely, with the surgeon who sketches or draws his operations, the result is apt to be intelligible only to him.

The training of a medical artist, like the training of a surgeon, is long and arduous. Alfred Feinberg is a recognized master in this field, as Dr. Madden is in his. Their joint venture in this book is a happy one. Each must have striven by long conferences and exchange of ideas to acquire some of the viewpoint and skill of the other. Brödel has written "A medical artist's eye should not work merely like a camera, it should digest the object and bring out the features which justify the task of picturing the case, without, of course, neglecting the realistic and truthful characteristics."

Severe limitations are imposed on the surgon by this method. He must transmit to the reader highly focused technical methods which he knows full well are individualistic. Steps he takes are directed toward an objective which may be achieved by different instruments, by different exposure, and perhaps even by different attitudes. His depictions are then subject to minor and superficial criticisms which do not consider the objectives. Many of the illustrations of Dr. Madden's methods will almost certainly provoke the reaction "I do that differently." This is the price paid for completeness and definitiveness in the drawings. Such a reaction is on deeper thought a good lesson learned, particularly if both Dr. Madden and the reading student are referring to an operative maneuver as important as exposing the right hepatic artery in the early stages of a cholecystectomy. The point is that the artery is exposed.

The profit to a student reading this book is gained from what passes through his mind as he looks at the picture. The more profound the student, the greater the profit. Previous operative training, study of disease, experience, and intelligence contribute to the value of his thoughts. A number of factors combine to produce an idea which is only aroused by the picture.

The real test of the excellence of an illustration of operative technic is how such an illustration would stand without explanatory text. It would seem that the perfect drawing would require no text. Certainly an experienced surgeon, studying a good illustration, could compose an explanatory text of his own. Such a book as this, however, is for students at all levels of learning. For beginners to study the illustrated steps of an operation which they will subsequently be observing for the first time, an explanatory text is essential.

Another good feature of the book is that all the operations were performed by one surgeon in the presence of the artist making his sketches. Sketches drawn under such circumstances are the result not only of what the artist sees, but also of what he knows about the surgeon's plan and method for carrying out that plan. The final drawing is completed after a joint review of the sketches by both artist and surgeon. The book's unity of purpose precludes an encyclopedic presentation

of all surgical operations. The areas of specialization are not covered; only those procedures which one active general surgeon performs, and which therefore are the content of general surgery are shown.

In many drawings of operative technic the exposed structures are beautifully depicted as they appear at the completion of exposure. A student may see in such drawings how the field should look. What he ought to see is how to make the field look that way. For example, the mark of a skillful abdominal surgeon is his ability to reveal structures by accurate peritoneal incisions. The most important step in exposure of the biliary ducts and vessels is delineation of peritoneum overlying them and a precise incision which unfolds the peritoneal layer. The drawings in this book carefully indicate these vital steps.

To paraphrase Abraham Flexner's statement about medicine—We should admit once and for all that surgery is difficult to learn and impossible to teach. There are no short cuts in time or method which will relieve a student of effort. He must develop himself. The stimulation of ideas through all his senses is as far as any aid can go. This book should serve well to promote thought by showing good drawings of good operations.

PRE- AND POSTOPERATIVE CARE WITH CONSIDERATION OF FLUID AND ELECTROLYTE BALANCE IN THE SURGICAL PATIENT

HENRY T. RANDALL

THE TASK of the surgeon is, by the training of his mind and the skill of his hands, to restore health to his fellow men who fall prey to a variety of diseases, accidents, and infections amenable to operative correction. Yet he who would be a surgeon, if he wishes to be more than merely a highly skilled mechanic of human tissue, must, in addition to developing skill and judgment in the operating room, learn the science and the art of patient care. In making the decision as to whether and when to operate, in the preparation of the patient for surgery, in the operation itself, and in the postoperative convalescence, the surgeon must take full responsibility for his acts and his judgment. Though the operation is the peak of the experience for both patient and surgeon, preparation and postoperative care often spell the difference between success and failure. Today's surgery involves increasing consideration of human physiology. The effect of the disease on normal function, the effect of trauma—including surgery—in producing a pattern of response, and the effect of the surgery in producing permanent alterations in normal function are all of great importance. The surgeon's responsibility is never finished, for if he is to evaluate critically what he has done and thus learn to do it better he must follow his patients carefully, keep accurate records, and compare his work with those of others, so that all may benefit.

The purpose of this chapter is to outline the high points of some major aspects of pre- and postoperative care, and to stimulate further interest in the how and the why of the patient's response to surgery.

PREOPERATIVE CARE AND EVALUATION

Surgical preoperative care begins the moment that a decision is reached that surgery should, or even might possibly, be used in the treatment of a patient. Its duration may vary from a few minutes of rapidly (though carefully) carried out preparation of the obvious surgical emergency while the operating room is being readied to many days of carefully thought out and systematic evaluation preceding an elective or semielective operation. The objective is to bring the patient into the operating room in the best possible physical and psychological state to withstand the procedure. Often great exercise of judgment in the patient's interest is involved to determine when he is ready for surgery.

Modified only by the degree of genuine emergency which exists, the beginning of preoperative care should consist of a careful and detailed history and physical examination of the surgical patient. The history should begin with the presenting complaint and with the diagnosis if established and should include in sufficient detail the patient's description of the onset and development of his illness together with the answers to certain guiding questions which occur to the examiner as he listens to the patient's story. All patients should be questioned with regard to their height, present weight, and whether or not they have lost weight. If he has lost weight, the patient should be asked how rapidly and over what period of time the loss has occurred. Those who have a positive history of weight loss should be interrogated concerning their dietary intake, particularly during the weeks immediately prior to admission. This will give a valuable clue with regard to nutritional status. All surgical patients should be questioned as to whether they have had previous surgery and if so of what type and when. They should be asked whether they had any particular untoward reactions to surgery or anesthesia, and these facts should be recorded. A history of severe injuries is also important, as is a history of drugs and medications which a patient is taking or has taken in the past. Clues to important other illnesses may be obtained in this fashion. A history of the use of alcohol and of tobacco is of considerable value in evaluating the surgical patient. So too is a sensitivity or