BICKHAM-CALLANDER

Surgery of The Alimentary Tract

VOLUME ONE

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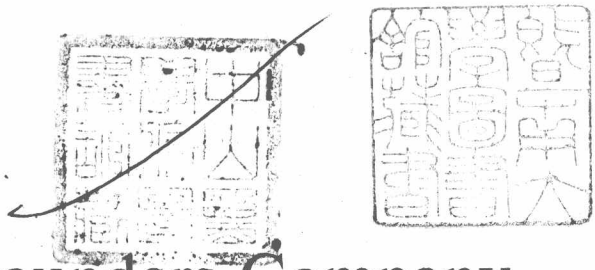

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Preface

The formidable task of revising the great Bickham text on Operative Surgery was approached by this author with a considerable amount of trepidation. The uneasiness arose, of course, from my natural reservations about my own—or perhaps any one man's—ability to present in authoritative fashion the entire sweep of surgery of the alimentary tract.

With the project completed, uneasiness remains. Perhaps I can relieve a portion of it by stating that deficiencies must surely exist in these three volumes. I have not been unaware of the great responsibilities involved in preparing such a work for the profession. Such errors as could be prevented by diligence and effort have been obviated.

Now for the work itself. To use these three volumes well, one should know something of their historic background. Dr. Warren Stone Bickham of New York completed in 1924 a monumental six-volume presentation of the technics of general and special surgery. Described and illustrated in that work was practically every operative precedure that was then being performed in the hospitals of the world. Dr. Bickham concerned himself little with evaluating these procedures; he simply described them.

He described them most clearly, and the six-volume work was remarkably successful. All surgeons who practiced in that era remember it well. It still rests on the library shelves of many, and is now and again consulted as an encyclopedic compendium of surgical practice.

After Dr. Bickham's death the publishers enlisted the assistance of Dr. C. Latimer Callander of California to revise the work for a second edition. Dr. Callander engaged in the project from 1938 until his death in 1947. By that time he had done a tremendous amount of writing and revising, but still none of his material was in sufficiently finished form for publication.

In 1949 I agreed to take over the task, with the understanding that I would review Dr. Callander's material on the digestive system, tie up the loose ends, and submit to the publisher the finished manuscript for a two-volume work on Surgery of the Alimentary Tract. I anticipated that I could complete the job in a year.

It is now, quite obviously, six years later. When I got down to serious work on the revision I came to realize, as I should have anticipated, that it is almost impossible to sign one's name to the work of another. And so I rewrote everything that Dr. Callander had done.

If one stops for a moment to consider, one can appreciate how much the scope of gastrointestinal surgery has been extended during the past six years. As new knowledge made new procedures feasible, I included descriptions of these. And so when I came to the end, I found that I had written three volumes instead of two.

Such is the natural history of the Shackelford: Bickham-Callander Surgery of the Alimentary Tract. In its present form the work retains the great scheme of the first edition; it presents nearly every operative procedure currently in use for repair of disease or injury to organs of the digestive tract.

It differs from Dr. Bickham's original volumes, however, in that I have offered an evaluation of every procedure described. Basing my comments on my own experience and on reports in the literature, I have indicated whether a given procedure seems to be the one of choice. For those procedures which do not seem to be the best, I have pointed out in what respects they are lacking. In addition I have described the diseases or lesions for which the operation is used and the stage at which it should be undertaken, and have elucidated the indications and contraindications to alternate procedures. Preoperative and postoperative care are described in detail.

The great concept of this work and its basic outline are Bickham's; many improvements and additions are Callander's; the writing, the evaluations and the deficiencies therein are mine.

In the course of preparing the material for publication I have received significant assistance from a great number of people. I would like to acknowledge particularly my indebtedness to Drs. Richard Sweet and Robert Gross of Boston whose names appear so frequently in the bibliography and who permitted me, without restriction, to borrow illustrations from their respective books "Thoracic Surgery" (the section on the esophagus) and "The Surgery of Infancy and Childhood," subjects in which they are far greater authorities than I. Appreciation and indebtedness are also owed to Dr. Harry E. Bacon and the J. B. Lippincott Company for their generosity in loans from "The Anus, Rectum and Sigmoid Colon." Dr. C. Rollins Hanlon, while at Johns Hopkins, now professor of Surgery at St. Louis, was kind enough to edit the section on "Portal Hypertension," a condition in which my experience is limited. The staffs of the Lahey and of the Mayo Clinic have been most generous in permitting me to borrow material from their publications. Dr. Howard Gray has helped greatly with his personal correspondence on some controversial matters. Drs. Clarence Gardner and Kenneth Pickrell at Duke University, Dr. John W. Duckett of Dallas and Drs. Harry C. Hull and Otto Brantigan at the University of Maryland have supplied me with material before it was published. Dr. Edgar Berman of the Sinai Hospital in Baltimore was of great assistance in writing the sections on "Achalasia of the Esophagus" and the "Plastic Esophagus," as was Dr. Mark M. Ravitch in the discussion of "Anal Ileostomy." Dr. Richard TeLinde advised wisely and allowed unrestricted use of material from his book "Operative Gynecology."

Unbeknownst to him, Dr. John Eager Howard, Associate Professor of Medicine at Johns Hopkins, cleared many problems in fluid and electrolyte balance that had previously been obscure to me. Dr. Amos R. Koontz was a most helpful adviser in writing the chapter on "Hernia." My grateful thanks go to Dr. Howard and Dr. Koontz.

I am particularly indebted to those who attend the Tuesday and Thursday surgical staff meetings at the Johns Hopkins Hospital where, under the thoughtful and thought-provoking guidance of Dr. Alfred Blalock, surgical problems have been discussed with rare candor by such able surgeons as Drs. William F. Rienhoff, Jr., Warfield M. Firor, George G. Finney, Grant Ward, Milton Edgerton, Edward S. Stafford, Mark M. Ravitch, William E. Grose, Jacob Handelsman, Alan Woods, Jr., Henry Bahnson, James Cantrell and other members of the visiting and resident staff too numerous to name, as well as by distinguished visitors from this country and abroad. Many of their thoughts have found their way into these volumes without the acknowledgement that I would like to give them. Next to my own personal experience, these discussions have influenced my evaluations of surgical procedures the most.

Actually every person whose name appears in the bibliography is a contributor to this book and I regret that it is not practical to thank each one individually.

Dr. Sanford Larkey and Miss Tyler at the Welch Library at Johns Hopkins, Miss Wheeler at the library of the Medical and Chirurgical Faculty of Maryland, and Mrs. Shaw at the Perry Point Veterans Hospital library provided unusual privileges, for which I am grateful.

Misses Elizabeth Patterson, Jaquelin Wyatt and Anne Seifert typed and retyped manuscript until they found marriage more attractive and Miss Ruth Ann Rochlitz has completed the job. I thank them all.

Until one attempts the preparation of a book one is unaware of the importance of the publisher. I am now cognizant of it. The entire staff of the W. B. Saunders Company has been helpful beyond the call of duty, and I wish to thank its members for unfailing courtesy and helpfulness.

A uniquely kind and valuable artist is Mr. Willard C. Shepard of the Saunders' art department with whom I worked intimately. He has the patience of Job, the anatomical knowledge of a modern Leonardo and an artistic ability second to none. It was amazing how he corrected anatomical inaccuracies and how quickly he sketched a likeness of what I was trying to express in words. To him I owe an especial debt of gratitude.

My colleague and good personal friend Dr. Hammond J. Dugan has done a yeoman's work. Despite the demands of a large surgical practice he had collected and obtained for me much of the bibliography, has made valuable criticisms from time to time and has read all of the proof. I hope that he knows how much his help is appreciated.

Finally, Kitty has put up with strange hours for meals, retiring and rising; with restricted social and recreational activities; and with my erratic temperament and impaired disposition while still remaining my wife. For this as well as for her many other virtues I am deeply thankful.

The late Dr. Howard A. Kelly, after reading an unusually critical review of a book, once said: "Oh! that mine enemy would write a book." I hope that more charity prevails when these volumes are published.

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CHAPTER 1

The Esophagus

ANATOMY

The esophagus is defined by Jones and Shepard[34] as "the portion of the digestive canal between the pharynx and the stomach; it extends from the lower border of the cricoid cartilage, opposite the sixth cervical vertebra, to the cardiac orifice of the stomach opposite the eleventh dorsal vertebra, a distance of about 25 cm. (10 inches)." The average distance from the incisor teeth to the cardia is 40 cm. and varies little with the build of the patient. The esophagus is a long musculomembranous tube which can be divided arbitrarily into three portions: cervical, thoracic and abdominal.

The *cervical esophagus* is the direct continuation of the pharynx. Its beginning is marked topographically by the carotid tubercle, which is the palpably prominent anterior tuberosity of the transverse process of the sixth cervical vertebra, a useful landmark in performing a lateral esophagotomy. The cervical esophagus begins at a point 15 cm. below the upper incisor teeth, and passes downward slightly to the left of the midline.

In the neck the esophagus is not entirely covered by the trachea, as a portion of the left anterior wall of the esophagus extends beyond the left margin of the trachea. Because of this the most advantageous surgical approach to lesions of the cervical esophagus is from the left side of the neck.

The *thoracic esophagus* is a downward continuation of the cervical esophagus, beginning opposite the third thoracic vertebra (Fig. 1). In its descent it curves slightly, medially to the midline in front of the fifth dorsal vertebra, having been pushed there by the aortic arch. It remains in the midline and posterior to the pericardium down to the level of the seventh thoracic vertebra, where it deviates to the left and anteriorly to enter the esophageal hiatus of the diaphragm at the level of the eleventh thoracic vertebra.

The easiest approach for exposure of the lower portion of the thoracic esophagus is through the left side of the chest.

The *abdominal esophagus* is a downward continuation of the thoracic portion, beginning at the esophageal hiatus of the diaphragm. It varies in length in different individuals; in some persons it may be less than 1 cm. long, while in others it may extend for several centimeters. It proceeds to the left and anteriorly to join the stomach at the cardia (Fig. 1).

In its course the esophagus presents three distinct narrowings of its lumen. The first (cervical) constriction is at its beginning at the level of the cricoid cartilage. The second (bronchoaortic) constriction is behind the bifurcation of the trachea where the left bronchus and the arch of the aorta cross, at the level of the fourth thoracic vertebra. The third (diaphragmatic) constriction is at the point where the esophagus passes through the hiatus in the diaphragm.