THE YEAR BOOK *of* GENERAL SURGERY

(*1957—1958* YEAR BOOK *Series*)

EDITED BY

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With a Section on

ANESTHESIA

EDITED BY

STUART C. CULLEN, M.D.

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PUBLISHER'S FOREWORD

DR. GRAHAM'S DEATH OCCURRED as he was beginning the selections for the present edition. This unfortunate circumstance required the immediate selection of someone to complete the work and carry on the editorship. Fortunately, we were able to obtain the services of Dr. Michael E. De Bakey who was willing to fill the breach with no preparation and complete the volume under the most trying circumstances. We are grateful to him for his immediate understanding of the problems involved and for his enthusiastic and intelligent co-operation with our staff. We welcome him to our family of YEAR BOOK editors. Our thanks also to Dr. Warren Cole for preparing the memorial to Dr. Graham which appears on the preceding pages.

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YEAR BOOK QUIZ

THE NEW YEAR BOOK OF GENERAL SURGERY

(Published November, 1957)

The scores of significant world-wide advances detailed in this latest YEAR BOOK shed important light on the new diagnostic and therapeutic procedures applicable to the type of cases seen most frequently in this field of practice. Test your familiarity with the current literature by trying the questionnaire that thousands of physicians look forward to each year.

1. What is considered the only valuable use of the Trendelenburg position?
   For the answer, see page 14.
2. What are 2 advantages of abdominal approach in hiatal hernia repair?
   See page 352.
3. How may blood aspirated during cardiotomy be utilized?
   See page 186.
4. In what regions are extra ribs found most often?
   See page 120.
5. What law applies in ether but not in nitrous oxide anesthesia?
   See page 498.
6. What surgical treatment appears satisfactory in atomic radiation injuries?
   See pages 42-43.
7. What is the problem with mechanical devices for suturing blood vessels?
   See page 253.
8. In which sex does acute gastric or duodenal ulcer perforate more often?
   See page 372.
9. What chief factor affects results of finger tendon grafts?
   See pages 457-458.
10. What is the challenge in present surgical treatment of cancer?
    See page 69.

(CONTINUED OVER)

11 What is an early and persistent sign of **appendicitis in** children under 3?
See page 413.

12 What is considered the most serious drawback of **porta-caval** anastomosis?
See page 311.

13 What special advantage is provided by **left heart catheter-ization** through atrial puncture?
See page 168.

14 What are 2 disadvantages of **intraperitoneal blood trans-fusion**?
See page 30.

15 What is a good rule to follow for recurrent laryngeal protection in thyroidectomy?
See page 98.

16 What is considered the best treatment for all popliteal aneurysms?
See page 272.

17 What appears to explain the rapid recovery from small doses of thiopental?
See page 515.

18 What is considered the most likely factor in etiology of actinomycosis?
See page 57.

19 Under what conditions are lung resection results most satisfactory?
See page 136.

20 What appears to be the best method for aortic valvulotomy?
See page 209.

21 In what 2 situations is pancreatic calcification considered significant?
See page 330.

22 What may ECG changes be suggestive of in the dumping syndrome?
See page 391.

23 What appears to be the treatment of choice for breast cancer?
See page 112.

EVARTS A. GRAHAM

(1883-1957)

IDENTIFICATION OF EVARTS GRAHAM as one of the most distinguished members of his profession would come easily to most of his colleagues. Certainly his death on March 4, 1957 stunned the surgical profession throughout the world more than the death of any other American surgeon. His warm humanity, his personal qualities as a teacher and his technical brilliance in his specialty inspired all who were fortunate enough to be numbered among his students, associates and friends.

Dr. Graham was born March 19, 1883 in Chicago. He received his A.B. degree from Princeton University in 1904 and his M.D. degree from Rush Medical College in 1907. Following his internship at Presbyterian Hospital in Chicago he devoted several years to the preclinical fields, particularly chemistry. Clinical surgery reclaimed him during the period of World War I, during which time he applied his knowledge of the physiology of the lungs and pleural cavity to the treatment of empyema. His advice to postpone thoracotomy during the acute stage of the disease saved thousands of lives during the war.

In 1919 Dr. Graham accepted an appointment as Professor and Head of the Department of Surgery at Washington University School of Medicine in St. Louis, positions he held until the time of his retirement as Emeritus Professor in 1951. During the intervening years, the stature and reputation of Barnes Hospital grew and Dr. Graham became recognized as one of the leaders of his profession. Among his notable achievements during this period were the development of the idea which resulted in the discovery of cholecystography, and on April 5, 1933 his performance of the first total pneumonectomy for cancer. He was among the first to present evidence to indicate a strong relation between cancer of the lung and cigaret smoking, a subject to which he devoted his attention until his death.

Dr. Graham was always interested in the training of young surgeons and was responsible, more than any other person,

for the formation of the American Board of Surgery, of which he was Chairman from 1937 to 1941. A versatile man, most generously endowed with research ability, a great capacity for work, fine clinical judgment and unexcelled power for the inspiration of his young associates, he gathered to him students from all over the world. From them he expected much —but he allowed them a great deal of independence. His courage in fighting for what he believed right is as well known as his code of moral and professional ethics, from which he would not deviate.

Many honors were conferred on Dr. Graham during his lifetime—both American and international. He was given honorary degrees by no less than twelve universities and colleges, including Leeds, McGill, Glasgow and Johns Hopkins. He was president of almost all the important surgical organizations with which he was associated and was the recipient of innumerable medals, including the Lister Medal from the Royal College of Surgeons, the Distinguished Service Award of the American Medical Association and the Annual Meritorious Award given by the American Cancer Society.

Because of his interests and his tremendous capacity for work, it is not surprising that he also contributed much of great value to the literature. He was the author of numerous books and edited a classic three-volume work, *Surgical Diagnosis*. He organized the *Journal of Thoracic Surgery* and was its first and only editor. In 1926 he began his editorship of the YEAR BOOK OF GENERAL SURGERY and continued it until his death. This span of 31 consecutive years is the longest of any editor in the YEAR BOOK series.

It is ironic that Evarts Graham died from carcinoma of the lung, the disease which for so long had claimed his attention. His friends will miss him because of his warmth, understanding and courage, and surgery will miss him because of his innumerable contributions and his tremendous influence on the profession.

WARREN H. COLE

PUBLISHER'S FOREWORD

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ANESTHESIA

INTRODUCTION

THE DEATH OF DR. EVARTS A. GRAHAM on March 4, 1957, brought to a close a truly eminent career in surgery, aptly described by Dr. Edward D. Churchill as an "illustrious performance as a surgeon, scientist and teacher." Indeed, few men have combined these roles with such talent, capability and energy. His remarkable versatility is reflected by notable achievements in all these fields of endeavor, and his fundamental contributions not only broadened but also brightened the horizons of surgery. In the words of Dr. Alfred Blalock, "The death of Dr. Graham has removed the most widely known and the most influential surgeon in the world, but the influence of such a life and work will endure."

The teachings of surgery and the elevation of its standards of practice were among Dr. Graham's earliest objectives in life, and he devoted much of his time and energy to these purposes. The fullness of his accomplishments in the field of surgical education is difficult to measure, for it includes a tremendous breadth of activity. It is mirrored in the distinguished school of surgery that he established and in the vigorous leadership he provided in national organizations dedicated toward development of higher standards of surgery. It is also reflected in his roles as editor of the *Journal of Thoracic Surgery* and the YEAR BOOK OF GENERAL SURGERY. The eminent place in surgical literature which has been attained by both of these publications through Dr. Graham's efforts could stand alone as a tribute to his greatness.

When Dr. Graham assumed the editorship of the YEAR BOOK in 1926, he became its third editor, his predecessors having been two other distinguished surgeons, John B. Murphy and Albert J. Ochsner. In his Introduction to this volume he stated with characteristic humility that when asked by the publishers to succeed Dr. Ochsner, "It was not without misgivings that I consented to do so, feeling that his ripened clinical judgment and editorial comments could not be approached by one so much younger." No better words would express my own sentiments following the invitation by the publishers to succeed Dr. Graham in this role. I would,

however, add that these sentiments are even more intensely experienced in light of the luster that Dr. Graham's editorship has brought to the YEAR BOOK. In accepting the editorship it is my sincere hope that the inspiration he has provided may enhance my efforts.

Death came to Dr. Graham in the midst of work on this latest volume of the YEAR BOOK, and its completion became the task of his successor. It was characteristic of Dr. Graham to continue working with courageous disregard of the nature and inevitably fatal course of his illness, and only its profoundly disabling effects within a few days of his death forced him to stop. By this time, he had selected approximately one third of the articles in the current volume. He had also developed an outline of its table of contents which has been only slightly modified in the final organization. All of the editorial comments, however, represent expressions of the present editor.

The 30-year period during which Dr. Graham served in the capacity of editor saw truly immense strides in surgery, and their advancing imprints may be followed readily in the annual volumes of the YEAR BOOK. To appreciate fully the great advances that have been made in surgery during this span of approximately 3 decades, one need only contrast the contents of the current volume with those of the 1926 volume. Particularly striking is the change in emphasis and in point of view in some areas of surgery, the virtual disappearance of some topics that occupied much attention in the earlier volume and the phenomenal growth and development of new fields of surgery, such as those concerned with cardiovascular diseases. In the earlier volume, for example, considerable attention was devoted to asepsis and antisepsis, postoperative complications, infections and gangrene. In the present volume, these topics have been displaced by a change in emphasis from these "pathologic interventions" to investigations dealing with surgical metabolism, fluids and electrolytes and the underlying physiologic and biochemical disturbances produced by the stress of surgical procedures. This shift in emphasis is further exemplified by the contrast in the number of articles devoted to the appendix in these respective volumes—approximately 30 in the earlier volume and only 1 in the current volume.

The change in attitude toward a more aggressive approach in surgery in recent years, which has been made possible by use of more effective supportive measures, improvements in anesthesia and better control of infection, is especially noteworthy. This is well illustrated by the emphasis placed in the earlier volume on graded or multiple-stage operations, then considered "one of the great surgical advances of recent years." A particularly striking example of this concept, as presented in the earlier volume, is evident in a discussion of the "role of surgery in pulmonary suppuration," in which cautery pneumonectomy was described and strongly recommended as an effective method of treatment for various forms of localized pulmonary infections, including tuberculosis. In light of current surgical concepts and technics, this method of surgical treatment seems almost archaic, yet only 30 years ago it was apparently regarded as a surgical advance.

Perhaps the most striking example of the rapid progress that has taken place in surgery during this period lies in the truly brilliant achievements in cardiovascular surgery. Indeed, the advancements made during the past decade alone far surpass all previous efforts in this field of surgery. To gain a more vivid impression of this extraordinary progress, both conceptually and in technical application, one need only contrast the 8 articles on surgery of the heart abstracted in the 1926 volume with the host of articles in the current volume. Moreover, 6 of the 8 articles in the former volume were concerned with wounds of the heart, whereas in the present volume consideration is given to a wide variety of congenital and acquired diseases of the heart. Of historical interest, however, and of some significance in illustrating the selective character of the YEAR BOOK in recording new developments in surgery, is the fact that the 2 remaining articles on heart surgery in the 1926 volume are concerned with the surgical treatment of mitral stenosis, the first by Souttar and the second by Cutler. Another and equally striking illustration of this progressive movement in surgery is provided by the subject of aortic disease. The 1926 volume, for example, contains only 1 article on this subject, and this deals with "needling for aortic aneurysm," an almost century-old method of treatment long found to be ineffective.

The current volume, on the other hand, includes 23 articles on this subject which are concerned both with aneurysmal and occlusive lesions of the aorta and with their efficacious surgical treatment by excision and restoration of aortic continuity.

Still another impressive example of the progress that has taken place along these lines of endeavor is illustrated by the contrasting approaches and objectives of surgery in peripheral vascular disease as seen in the earlier and current volumes of the YEAR BOOK. In the earlier volume, this phase of the subject was limited essentially to a few articles concerned with amputations for "gangrene in the aged" and with the differential diagnosis of thromboangiitis obliterans. The status of therapy for this problem is well described in the following sentence from one of these articles: "The present treatment is unsatisfactory." In contrast with this rather limited and somewhat fatalistic point of view, the current volume includes numerous articles presenting aggressive, enthusiastic and highly encouraging therapeutic approaches to this problem. This much more hopeful outlook in therapy has been developed as a result of more recent pathologic and arteriographic studies which have provided a better understanding of the nature of these occlusive arterial lesions. It has been demonstrated, for example, that the obstructing lesion in chronic arteriosclerotic occlusive disease of the lower extremities is frequently well localized and segmental in character, with a relatively normal patent vessel above and below the occlusion. This knowledge has led to development of more rational and effective therapy with a direct attack on the occlusive lesion aimed at restoration of normal circulation through the main arterial channel.

These and other recent developments in surgery clearly reflect the vigor and intense activity characterizing its current status. They portend other advances of even greater importance. The YEAR BOOK, uniquely structured to provide an annual selective review of the surgical literature, has traditionally kept pace with this progress. With the future of surgery appearing brighter than ever, its objective to bring to the profession these progressive developments assumes increasing gratification.

MICHAEL E. DE BAKEY

GENERAL CONSIDERATIONS

Tracheostomy, and Management of the Unconscious Patient is discussed by John Andrew[1] (St. Bartholomew's Hosp., London). In recent years, indications for tracheostomy have been extended to include management of tetanus, respiratory paralysis and the unconscious patient.

It is important to maintain a clear airway in comatose patients. When consciousness is suddenly lost, this may be achieved by placing the patient horizontally and inserting a Magill airway into the mouth. If this is inadequate, the trachea may be intubated through the mouth or nose.

If coma is prolonged, respiration and coughing and swallowing mechanisms are usually also depressed. Secretions may be aspirated and retained in the smaller bronchi. Blood oxygen tension falls and CO_2 tension rises. Secondary circulatory changes occur which may lead to cerebral venous congestion and edema and to pulmonary edema. Tracheostomy is of value in these patients, since it halves the dead space air and facilitates mechanical suction of the trachea and bronchi. A cuffed tube is advantageous in preventing aspiration of secretions from the pharynx. Raising the head and shoulders allows a fuller respiratory excursion by reducing the weight of the abdominal contents on the diaphragm. Venous return to the heart is improved; the danger of cerebral venous congestion is reduced.

When consciousness is suddenly lost from acute intracranial lesions, it is believed the fluid is secreted by the tracheobronchial mucus glands. When coma is prolonged, the fluid is thought due to the same secretions, but a purulent bronchopulmonary infection and, terminally, pulmonary edema also develop.

In coma, tracheostomy should be elective, and its performance should not be delayed until the patient has become cyanotic or peripheral circulatory failure has begun.

Trendelenburg Tilt: Obsolete Position, is discussed by J. M. Inglis and B. N. Brooke[2] (Birmingham, England). From the anesthetic aspect, routine use of the Trendelenburg

(1) Brit. M. J. 2:328-332, Aug. 11, 1956.
(2) Ibid., pp. 343-344.