



# DIAGNOSIS OF SURGICAL DISEASE

Volume I

BY

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W. B. SAUNDERS COMPANY • Philadelphia • London • Toronto • 1968

W. B. Saunders Company: West Washington Square,  
Philadelphia, Pa. 19105

12 Dyott Street  
London, W.C.1

1835 Yonge Street  
Toronto 7, Ontario

## Diagnosis of Surgical Disease

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*This book is dedicated  
with admiration and affection  
to the memory of my close friends, colleagues,  
comrades in arms and companions:*

DR. ELDRIDGE H. CAMPBELL

*Mountain boy, student, athlete, surgeon, scholar,  
soldier and leader of men*

DR. EDMUND B. KELLY

*Humorist, student of science and nature, sailor,  
gynecologist and radiotherapist, soldier, explorer  
and particular friend of his friends' children*

*They are sorely missed.*

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# PREFACE

In 1962 I was invited by the Saunders Company to write a book on Surgical Diagnosis. To the dismay of Kitty (my wife), I accepted. This book is the result. It has been written primarily for general surgeons, residents and medical students.

I am convinced that most failures of surgical treatment are caused by errors in diagnosis, and that most errors in diagnosis are made because the correct diagnosis simply did not come to mind. For this reason many disorders which are non-surgical, or belong in the fields of surgical subspecialties, or require no treatment at all, are mentioned so as to remind attending surgeons of their existence. Some nonsurgical disorders present clinical manifestations simulating surgical disorders and vice versa. They require consideration in the differential diagnosis. Also many patients seen by general surgeons have complaints (either primary or incidental) which, if recognized, suggest the presence of a nonsurgical or surgical subspecialty disorder which should be investigated by appropriate studies to determine their possible relation to the main complaint, or suggest the presence of a concomitant disorder which may require consideration in the therapeutic management of the case.

An attempt has been made to arrange the subject matter according to the usual sequence of events that occur when a patient is first seen by a surgeon. Hence

the first two chapters are on the time-worn, elementary subjects of the history and the physical examination. However, these two chapters are treated somewhat differently from heretofore. That on the history contains both general and specific questions that might be asked plus the clues to various disorders suggested by different replies. Likewise, the chapter on physical examination contains clues to various disorders suggested by findings usually unfamiliar to, and hence overlooked or ignored by, a general surgeon. Some symptoms and/or signs that are recognized by physicians or surgical specialists as being characteristic of certain disorders in their field, but are unfamiliar to general surgeons, are included.

The diagnoses of specific disorders usually treated by general surgeons are discussed in detail in subsequent chapters. Those usually managed by specialty surgeons are described more generally and in less detail (by appropriate contributing specialists) for the purpose of alerting general surgeons to the presenting clinical manifestations and to the type of studies indicated. The constant aim has been to identify the essential findings required for establishing or excluding the diagnosis.

The chapters on the history and physical examination and on disorders usually managed by general surgeons were written by me, as I am a general surgeon. Their basis is my own experience, or the



experiences of my colleagues presented before the weekly surgical staff meetings at The Johns Hopkins Hospital. I want to thank all these participants for their invaluable enlightenment. However, I am convinced that no one individual or group knows all there is to know about surgical disorders, hence there has been liberal use of the writings of others to present additional or differing experiences and opinions, as attested to by the size of the bibliography. Each person cited has contributed to this book, and I thank them all.

I am extremely grateful to all the contributors of the specialty chapters and sections which are an indispensable part of this work. They are all busy and authoritative specialists in their subjects and were most pleasant and cooperative in carrying out their assignments. Thank you so much. One word of sadness: Dr. Frederick M. Reese died before he had completed the chapter on the eye. His colleagues at the Wilmer Eye Institute at Johns Hopkins, Drs. Stewart M. Wolff and Frank B. Walsh, completed that chapter in memorial to him.

I am most grateful also to the Welch Library at Johns Hopkins which provided hard-to-find space wherein to work and to members of its staff who supplied the publications requested, with such graciousness that it was a pleasure, as well as a

privilege, to work there.

Miss Ruth Ann Rochlitz, until she left Baltimore, and Miss Jo Ann Mezzadra, who shortly became Mrs. Eugene Lacey, Jr., typed all the manuscript except the final chapter, which Kitty typed. Proof was read by Drs. Joseph H. Hooper and Nagui El Bayadi. I am deeply grateful to all of them.

Having published a book previously, I am well aware of the importance of the publisher. Again, the entire staff of the W. B. Saunders Company has been helpful beyond the call of duty. Their courtesy, patience and extraordinary sense of humor have made communications and visits to or from them a keenly anticipated pleasure. For these and many other reasons I thank them profusely.

Finally, I want to express my deepest appreciation to Kitty—not only for remaining my wife, but for her unselfishness in tolerating cheerfully and without complaint the restrictions on social and recreational activities that writing a book, while carrying on an active surgical practice, requires, and for doing everything possible to ease this burden, even to typing part of the manuscript—a talent which I was previously unaware of her having. I am a fortunate husband.

RICHARD T. SHACKELFORD

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## Chapter One

# THE HISTORY: SIGNIFICANT SYMPTOMS

RICHARD T. SHACKELFORD

### THE MAKING OF A SURGICAL DIAGNOSIS

The diagnosis of a pathologic condition should be made by inductive and deductive reasoning based on a careful analysis and evaluation of the information obtained from the patient's history, a careful physical examination, and whatever laboratory, roentgenologic, endoscopic, microscopic and other special examinations are pertinent. In the writer's experience these studies have been the most informative when made in the following chronologic order:

First, the *history* is obtained from the patient (when possible), or from his family. The history usually will suggest a number of possible diagnoses and these should be either recorded in writing or noted mentally by the examiner. An attempt should be made to obtain evidence either for or against each of these possibilities during the subsequent physical examination and by whatever later appropriate laboratory and special examinations are necessary.

Second, a careful *physical examination* is performed during which, in addition to evidence obtained for and against the

possible diagnoses suggested by the history, a search is made for findings to suggest additional possible diagnoses. This examination, when combined with the history, will usually reduce the number of possible diagnoses to a smaller group, which should then be listed in the order of likelihood and confirmed or excluded by appropriate laboratory or special studies.

Third, those *laboratory and special examinations* indicated to confirm or exclude the specific conditions retained in the list of diagnostic possibilities are performed. An examination of the urine and determination of the hematocrit or hemoglobin level of the blood should be done in nearly all patients upon whom an operation is contemplated. Tests may be required to determine the presence or absence of suspected concomitant lesions which often are not recognizable clinically, such as diseases of the kidneys, heart and lungs. Laboratory and special examinations should be limited to those selected for a specific diagnostic purpose. The routine ordering of a whole battery of laboratory and other diagnostic tests without specific diagnoses in mind wastes the patient's money, overloads the already



taxed laboratory facilities, and reflects unfavorably on the diagnostician's clinical ability. When summarizing the information obtained by these laboratory and special examinations one must remember that they are not infallible and that some are more reliable than others. It is desirable to repeat those with a notorious margin of error or those that are influenced by other factors or are at variance with the evidence obtained from other sources.

Fourth, the *course of the illness* during the period under observation is studied. Even though the period of observation may be a brief one the course of the illness during that time so often furnishes valuable information that it should not be ignored. For this reason it is a good general rule to interview or examine all patients more than once before operating upon them. Even though the repeat visit may be only an hour or so after the initial examination and much briefer and less thorough, it often provides information not discovered previously.

Fifth, the information obtained from the history, physical examination, laboratory tests, special examinations and course under observation is analyzed and may be sufficient upon which to establish a satisfactory diagnosis. If doubt is cast by conflicting evidence, it may be advisable to repeat the examinations that were in conflict. If the diagnosis remains obscure after exhausting all these studies, an exploratory operation may be indicated to provide the additional information to be obtained by direct vision, palpation and possibly biopsy.

It is the more accurate evaluation of information obtained from the history, physical examination and course of the illness under observation plus the judicious selection and assessment of special examinations that distinguishes the superior surgical diagnostician from one who is mediocre.

Most diagnoses can be established with reasonable certainty only upon the insight provided from the above *total* of information. Only rarely should a diagnosis be made on one isolated historical or physical or laboratory or special examination finding unsupported by other evidence.

Exceptions to this general rule are those cases in which the microscopic study of tissue obtained from the patient provides *positive* proof of a lesion not suspected or detected by other examinations, or when endoscopy reveals the presence of an unsuspected lesion that cannot be verified by other methods (in these cases it is a good safeguard to demonstrate the finding to a colleague for his confirmation), or when an acute emergency requiring prompt action exists, such as cardiac arrest or acute asphyxiation or exsanguinating hemorrhage.

When no acute emergency exists it is far safer for the surgeon to obtain a detailed history, perform a careful physical examination, observe the course of the illness at least briefly and carry out those laboratory and special examinations (if any) suggested by the information obtained than to operate with a diagnosis based on incomplete evidence. Such studies will produce more accurate and complete preoperative diagnoses and result in fewer unnecessary or ill chosen operations with a greater percentage of patients cured. They will also frequently detect concomitant but unsuspected pathologic conditions which may require correction prior to the contemplated operation, which may be amenable to surgical correction at the same operation or which may contraindicate an operation. These rewards are a bargain for the additional time spent and have spared careful surgeons many embarrassing and disagreeable experiences and, more important still, have spared some patients unnecessary suffering, expense and even death.

Even in acute emergency cases, unless delay may endanger the patient's life, the work-up should be as complete as is necessary to establish a convincing diagnosis, to exclude other possible causes and to detect concomitant conditions that might contraindicate or modify the contemplated surgery. At present there are not many conditions in which the relatively short time required to complete the pertinent examinations represents the crucial difference between life and death. Cardiac arrest, exsanguinating hemorrhage, asphyxia from respiratory obstruction and

tension pneumothorax are the chief ones that come to mind and they are not very common. More often the time required for completing these diagnostic studies can be used to the patient's advantage by restoring fluid and electrolyte balance, decompressing the abdomen if there is abdominal distention, and replacing blood loss.

When a surgeon sees a patient referred to him by a competent medical colleague, who has already studied the patient diagnostically, most or even all of the necessary examinations may have been completed and a diagnosis established. Even in such cases the surgeon at least should personally obtain from the patient the pertinent facts of his present illness, perform as much of the physical examination as is necessary to confirm his colleague's positive physical findings and evaluate the laboratory and special examinations himself. He should be convinced of the diagnosis by his own personal knowledge of the facts about the case, rather than depend entirely on a diagnosis made for him by others, before proceeding with an operation or other treatment. The same is true when a surgeon is seeing for the first time a patient who has already been studied by his assistant in the office or the resident house staff in a hospital. It is the surgeon's responsibility to check personally the pertinent findings in the history and physical examination and to confirm the diagnosis himself before proceeding with surgery. His own history and physical findings usually will be far more helpful both to the patient and to himself than any supplied by another physician.

As mentioned above, some patients represent acute emergencies and are in no condition to undergo prolonged questioning and examination. In such cases the surgeon will reduce the above routine to the pertinent essentials. Routines should be made to guide by and not to die by.

### TAKING THE HISTORY

The history should be obtained from the patient when possible, but when this

is impossible, as in the case of patients who are unconscious, psychotic, hysterical, infants or children, it must be obtained from the family or friends or attendants. In general, a history given by the patient is more valuable than one obtained from other sources, but there are exceptions. When one is suspicious of the reliability of the patient's history it should be checked against information obtained from his family or acquaintances. This is particularly true when disability awards, pensions or litigations are involved.

In some instances no history can be obtained because the patient is unable to give it and there are no family or friends available. Then the diagnostician is handicapped and appreciates fully the great importance and helpfulness of a good history.

The history provides information which varies in reliability and logical sequence in different individuals. An intelligent, observant and cooperative patient may describe a sequence of symptoms that is characteristic of a certain specific disease or group of diseases and which will guide the physician promptly to the appropriate examinations necessary to establish the correct diagnosis. On the other hand, another person with the same symptoms and condition may give a jumbled history that taxes the examiner's ability to sort out, evaluate and arrange the events in proper sequence so as to obtain a meaningful clinical picture. This is particularly common with patients who are poorly educated or garrulous or senile, and is encountered more frequently in those with chronic or functional complaints than in those who are acutely ill.

Many patients, both educated and uneducated, distort their histories by unintentionally overemphasizing unimportant things and omitting those that are important, or by having made their own diagnosis and fitting their symptoms into the popular conception of that disease. This latter is particularly true of medical students and lay personnel who have acquired a small amount of medical knowledge through an allied occupation or by reading. They often give themselves away by describing their complaints in medical

terms, some of which may be inappropriate. One must be careful in evaluating their histories.

A patient who suspects he has a lesion that will require surgery will often minimize or otherwise distort the account of his symptoms to deceive the surgeon in the hope of escaping an operation which he fears. This is common in patients of school age, particularly those on athletic teams with unfinished seasons.

The narcotic addict seeking his drug will often distort his history to one he has found by experience is most likely to deceive the examiner and produce an injection of morphine. They are clever at it. Clues to their diagnosis are that most often these patients appear during the night with complaints of acute pain, and give an ill defined and jumbled history. On physical examination one may (or may not) find evidence of multiple injections and/or constricted pupils of the eye.

Psychoneurotic patients usually give a vague, ill defined history characterized by multiple complaints involving different systems of the body, often any system about which they are questioned. This multiplicity of complaints that form no clinical picture is a clue to the proper diagnosis. Unfortunately, all the complaints must be investigated for fear of overlooking an organic lesion.

The malingerer will usually describe nonexistent complaints or magnify minor ones, so that one should suspect this diagnosis when the complaints are not supported by objective findings in the physical and pertinent laboratory and special examinations. It is worth while to determine whether the patient will receive compensation or other advantages if a disabling illness is diagnosed. However, the diagnosis of malingering can be established only after the complaints have been thoroughly investigated and all possible other causes excluded. It is a dangerous diagnosis to make, and the present writer prefers to say only that "No organic cause can be found for the patient's complaints."

A history given by a psychotic patient is extremely unreliable and often deceptive. Many will not give any history that

is relevant, and others may refuse to speak. They are particularly reticent about the presence of pain, and possibly some cannot appreciate pain. I recall one schizophrenic with a large intraperitoneal perforation of his sigmoid produced by his own manipulation of a broom handle up his rectum three days previously. He smiled and seemed very pleased with life while I examined his abdomen although there was generalized rigidity, a high fever and marked leukocytosis indicating peritonitis and it must have been painful at some time. He vehemently denied having had pain at any time.

In these cases a history of varying value may be obtained from an attendant, but usually the diagnosis will depend almost entirely on the physical examination and any appropriate additional studies. Often those must be done under adverse circumstances because of lack of cooperation from the patient. The early diagnosis of an organic lesion in a psychotic patient may elude the most skillful surgeon and it may not be detectable until it becomes obvious much later in the disease—another example of the great handicap under which a diagnostician works when an adequate history is not obtainable.

In summary, the history is a very important part of the examination of a patient providing that it is carefully evaluated. Since, for the most part, it provides only *subjective* information which may be distorted or misinterpreted or inaccurately provided by the informant, a diagnosis cannot be established on the history alone. *It should be confirmed by objective findings* obtained from the physical examination and any laboratory or special examinations that seem indicated not only to support the diagnosis, but to exclude other simulating conditions.

Exceptions to this general rule may be made in those uncommon cases in which the physical, laboratory and other examinations have revealed no abnormality, yet a reliable patient's symptoms are characteristic of a pathologic condition, particularly one that recurs in sudden brief episodes too transient to permit a satisfactory examination at those times (or