

Clinical Examinations in

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THIRD EDITION

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Dedicated to

HENRY W. WOLTMAN, M.D.

and

FREDERICK P. MOERSCH, M.D.

*Pioneers in Neurology—Mayo Clinic
Inspiring Teachers—Mayo Foundation
Generous Associates of the Authors*

This book represents an attempt to convey to two men the gratitude of those who have been apprenticed to them. The connotation of "teacher and student" is not quite applicable to the relationship which has existed between us. Henry Woltman and Frederick Moersch have been more than schoolmasters in neurology, and we who have been reared by them have learned from them values and nuances of our art which cannot be defined by any formal statement. We imbibed these intangibles by some manner of person-to-person osmosis. Our "trade" was learned in the spirit of the "guild" and not by the didactic methods of the classroom. These men created for us a departmental environment free of jealousy, greed and false pride. In it we learned the technics and judgments necessary to our craft, stimulated constantly by unaffected trust and encouraged to perform instead of merely assimilating by rote.

Paradoxically, we now venture a work that was never a formal part of our training—a factual outline of the practical components of the neurologic examination. This effort of ours will succeed or fail, as we succeed or fail to impart to others something of the essence of our indoctrination. We intend this book as a series of working blueprints and not as a course of lectures delivered from a remote podium. And so, we who are now journeymen write about the prosaic aspects of our branch of medicine, about the tools to be used and the manner of their using. We hope that these two masters of the "guild" may read into this primer our common gratitude for the uncommon things that happened to us through our association with them.

ALEXANDER R. MACLEAN

PREFACE TO THE THIRD EDITION

Graduate training in neurology at the Mayo Clinic started half a century ago. During this period the elements of the neurologic examination have remained relatively unchanged. An exception is in the field of pediatric neurology, which has expanded greatly in the past 20 years. In recognition of this, the chapter on the examination of infants and children has been rewritten and amplified. Similarly, the chapter on language and motor speech has been expanded to reflect the increased interest in and practical applications of knowledge in these fields. In keeping with advances in development of ancillary tests we have incorporated brief discussions of echoencephalography, the use of radioisotopes in localization of brain lesions and the uses of muscle biopsy. In each case it is our intent to indicate the general nature of the procedure and its sphere of usefulness and not to present a guide to performance and interpretation of the results of the tests. As in the past, we are grateful to our colleagues in the Section of Publications who, with patience and care, have again brought this manuscript into finished form.

JOSEPH G. RUSHTON, M.D.

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1

The Neurologic History

GENERAL ASPECTS

History-taking is an art in the subtle directing of a conversation with a patient. As the interview develops, insight into the problem comes to the physician and enables him to direct the interview along the most useful lines. The physician should learn the art or, if you will, the science of eliciting history from a poor observer, an uneducated person, a person who may delight in twisting the meaning of things, and sometimes from a person who has mental deterioration. The task is a long one; if time has to be limited, subsequent interviews are imperative. In difficult problems a second interview is of inestimable value, since the patient's recollection may have been stimulated during the interval and important events may then be told with ease and accuracy. Physicians frequently complain that the patient misled them, that the history was changed and that, therefore, the patient is an unreliable witness. Sometimes this is true but not always. Frequently the physician has misunderstood the patient and written down his own interpretation of the patient's statements. There are times when the patient has had trouble recalling all details during the stress of his initial interview. The amount of time required to take a history will vary both with the personality of the physician and with the patient's particular problem. The amount the physician may guide and interrupt the patient as he gives the story varies with many factors, including the experience and ability of the physician. Too frequently a physician believes he can save time by direct questioning and begins such interrogation early in the interview. The technic may work reasonably well for the experienced physician, and for the inexperienced in evaluating simple problems. In difficult diagnostic problems such a method will not be efficient or satisfactory for anyone. The method must be modified according to the education and cultural background of the patient.

The recording of the history is important; if it can be remembered that one is documenting evidence, the record will likely be clear and complete. Within reasonable limits one should make use of the patient's own words, since these give a picture of the patient in his cultural background. Attempts to abbreviate remarks of the patient by using technical terms, or the physician's interpretation of the patient's remarks, usually will result in an inaccurate history. The physician may, of course, ask for clarification of the meaning of words used during the interview, and in fact he should do so. If the patient possesses reasonable mental competence, it is often worthwhile to record almost verbatim the patient's chief complaint and part or all of the symptoms in the present illness. The importance of an accurate and detailed record of events in the case of patients with compensation and insurance problems cannot be overemphasized. In such instances a verbatim report may be essential in making a correct diagnosis and giving evidence in court. The patient should be encouraged to give his story in chronologic order; during or at the end of the interview the physician will need to ask pertinent questions to obtain accurate dates and to clarify the meaning of certain words or phrases. A record of the interview should be made at the time or immediately afterward.

The order in which information is obtained about the family, past illnesses, and the social situation may vary from one physician to another, and may depend on the problem. The emphasis will not always be the same, but the important thing is to pursue the inquiry in a systematic manner; otherwise the history is likely to be incomplete. The history of the illness is a part of a life story and not something unrelated to home, work and community. The correct perspective and emphasis on these aspects are essential in making a correct diagnosis and in managing the patient and his family.

Evaluation of the clinical problem begins by an interview with the patient. This approach is advisable, and the exceptions to it are few even with patients who are mentally ill. However, relatives and friends should not be ignored. In fact, they should be given every opportunity to report information and ask questions, even though it may be inappropriate to answer all the questions they may ask. The reason for the question being asked may be as important as the question itself. Sometimes information about changes in behavior, memory, hearing, vision, speech, coordination and gait can be obtained only by interviewing the relatives. For example, in convulsive disorders the observations of the relatives may be of the utmost importance in establishing the origin of the discharging focus that initiates the spell. Furthermore, it is important to understand the attitudes of the patient and his relatives in the general management of the medical or surgical problem presented.

The method of taking and recording a history is the same for the

physician who uses a form as it is for the doctor who prefers to take a blank sheet of paper and write his notes. Our form is used as a guide for assistants and permits the recording of certain negative and positive findings in a graphic fashion and at the same time allows for the free description of observations which cannot be reduced satisfactorily to symbols.

THE CHIEF COMPLAINTS AND HISTORY OF THE PRESENT ILLNESS

The chief complaint or complaints should be documented carefully, with their duration. The latter information may not be admitted by the patient in the first part of the interview, and he should be allowed to tell his story for several minutes without interruption. Otherwise, important details may be pushed aside in his mind. Sometimes it is necessary to bring the patient back to the onset of the illness by asking such a question as "When were you last well?" or "How did these symptoms begin?" Circumstances surrounding the onset of symptoms in such data as time of day or night, location of the patient and the relation of symptoms to other events should be elicited. The actual analysis of different symptoms follows a rather similar plan; the suggested plan of inquiry about each symptom is as follows:

1. Date of onset.
2. Character and severity.
3. Location and extension.
4. Time relationships.
5. Associated complaints.
6. Aggravating and alleviating factors.
7. Previous treatment and effects.
8. Progress, noting remissions and exacerbations.

The history is then developed in a chronologic fashion, and it is easier to follow the record if the dates are clearly indicated in a space on the left side of the sheet. Knowledge about the sequence of events is used in localizing lesions and in determining the nature of the pathologic process producing symptoms. During this part of the interview appropriate questions are asked about other possible symptoms often associated with the main complaints. Later a systematic review or what may be called the "functional inquiry of the nervous system" is carried out. It is often advisable to ask the patient what he means by the particular words he uses. There is a surprising variation as to what people mean by such symptoms as "dizziness," "headaches" and "poor vision." To some patients headache means a drawing sensation; to

others an ache or pain, or even numbness or dizziness. At the end of this part of the interview, if the information has not already been forthcoming, direct inquiry should be made as to whether the patient has stopped working, and the date of this event should be noted in the space allotted in the heading of the neurologic record. This datum is of special importance in compensation and insurance problems, but actually in any illness some idea of the disabling qualities is important.

PAST MEDICAL HISTORY

There are many reasons for taking the history of the present illness before beginning questions about the past history which are unrelated to the present chief complaints. The patient should have an opportunity to talk about what he considers important before these questions are asked. Furthermore, one may better direct the inquiry into the past history, family history and functional data once one is acquainted with the present situation. Careful evaluation and recording of past events are important. A common error is to accept the patient's use of a diagnostic term as a statement of fact when he is reporting a past illness. It is wise to make some inquiry into the symptoms and situations which caused a certain diagnosis to be made. Each past illness should be carefully evaluated from this point of view. For example, patients often cite a diagnosis of poliomyelitis in childhood to explain some old trouble with an extremity. Such a statement may not fit with the present findings, and further inquiry about such an illness may be enlightening.

INVENTORY AND FUNCTIONAL INQUIRY

Special attention should be given to this as it relates to the nervous system. In part, it is carried out as the history is unfolded. For example, in the history of headaches, inquiry is made about nausea, vomiting and visual disturbances. However, a more complete and systematic interrogation is necessary during the interview and examination. There is a certain ease and naturalness about asking some of these questions as the physical examination is being done. For example, what is more natural than to ask the patient questions about his vision and then to test the function of the eyes? This procedure may make it very simple to clarify the meaning that he attaches to the term "blurred vision." This plan of questioning and examining does not overemphasize the question in the patient's mind. More important is the fact that the physician thinks functionally as well as anatomically as he pursues the evaluation of a clinical problem. Thinking and examining go on simultaneously as one looks on these systems.

FAMILY HISTORY

The family history may be of special importance to the neurologist. The health history of the parents and the siblings should be carefully obtained and recorded. The patient's condition may be such as to suggest that a hereditary factor is important. If so, then a more detailed family history needs to be taken. Charts and symbols have been used by the specialist in genetics, and they do portray nicely a family history. However, the eliciting of such information is best done in a simpler way. The name, age, sex, state of health and cause of death are recorded for each parent. Similar information is then obtained for the patient's siblings, the siblings of each parent and other relatives. At a later date this information may be reduced to a chart.

Questions about other relatives are frequently indicated, particularly in the case of headache, epilepsy, hyperkinesia, nystagmus, muscular atrophy and dystrophy, cerebellar disorders, ataxia and neuropathy. Many other examples might be given, but in a broad way one should think to ask such questions as "Have any of your relatives had any illness such as you have?" or, as in the case of convulsive disorder, one may need to frame the questions in a meaningful way for the patient and ask, "Have any of your relatives had fainting spells, spasms or blackouts?" The questions should be asked more than once when there is a reason to expect a positive answer. Sometimes, during a second interview, the patient may come with a family tree carefully prepared as the result of some research at home or of correspondence with relatives in other parts of the country.

SOCIAL HISTORY

It has been mentioned that data about social problems in the family are of importance to the physician. In like manner inquiry should be made about the patient's personality development and his reaction to stress and illness. At least brief inquiry should be made regarding attitudes toward parents and siblings. Some factual data regarding the patient's educational achievements and his adjustment at work should be obtained. A knowledge of marital harmony or disharmony and of the behavior of offspring often throws some light on the neurotic aspects of an illness.

SPECIFIC INQUIRY IN REGARD TO CERTAIN COMMON NEUROLOGIC PROBLEMS.

It is only natural that the experienced neurologist is more adept than the novice in quickly eliciting pertinent data from the patient.