Handbook of

Neurological Examination

and

Case Recording

By

D. DENNY-BROWN, M.D.

Putnam Professor of Neurology
Harvard Medical School

REVISED EDITION

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Note on the Revised Edition

In preparing a new edition of this handbook, opportunity has been taken to revise some sections such as those on apraxia and agnosia where our viewpoint has changed in the last ten years. In addition many minor changes and corrections have been made. The temptation to introduce other new material has been resisted, for we feel strongly that the need of both junior and senior students is for a manual small enough to fit the pocket of the ward jacket, and dealing with only the basic facts of clinical examination.

D. D-B.

June 1957

Foreword

to the first published edition

This handbook is written for senior students and house officers to introduce them to standard neurological methods. There are many ways of eliciting the facts of clinical neurology, and of recording them, and each clinician in time works out a method based on those ways and means which he has found to serve him well. But at first it is essential to select a methodical procedure, for the multiplicity of signs is as confusing as their different values in interpretation. It is hoped that the following pages will serve both to present reliable methods and their usage in clinical neurology and to stimulate a greater uniformity in presentation of the facts on case records.

The booklet was first issued in March 1942 in a private printing for the Neurological Unit. It has been completely revised, and in part, particularly the sections dealing with lumbar and cistern puncture, rewritten. I am greatly indebted to Drs. Raymond D. Adams and Harry L. Kozol for their advice and assistance.

D. Denny-Brown

April 1946

Neurological Unit, Boston City Hospital
Department of Neurology, Harvard Medical School

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Introduction

I. The Case History

In medicine, as in any other branch of science, next to ability to make observations of matters of fact, ability to make and keep adequate record of such observations is of the greatest importance. Of each observation the student requires to learn what is of significance, and then the art of communicating his observation in clear yet simple terms to others. Thus of the pulse, besides its frequency, its regularity of rhythm, its volume and its compressibility each has separate value. Description should be in positive terms, to say of the pulse that it is "somewhat irregular" is obviously inadequate. A patient is not necessarily either emaciated or obese, excited or depressed. Learn to describe intermediate variations. On the other hand an adequate description does not need to cover every possible variable. Only constant practice brings facility in description, conciseness with relevant detail. Phrases such as "tends to" or "is suggestive of" should be avoided. An ounce of fact is worth ten of noncommittal statement.

In neurology a great deal depends on an accurate history and observation. In the history the timing and speed of events is of great value in diagnosis. Of pain, as in other branches of medicine, it is well to inquire systematically

and to record its nature (dull, aching, sharp, shooting, burning, tingling, etc.), its distribution, its duration (continuous, paroxysmal, repetitive shoots, etc.), its frequency, its relation to time of day, to posture, and to other factors, such as movement, coughing, and to other symptoms. The same data on nature, distribution, and relativity can be systematically elicited of an abnormal movement, a vertigo, or a clouding of consciousness. The patient's statement of attacks of loss of consciousness, fits, etc., of defect in memory, or of mental abnormality are recorded for what they are worth. Only with experience can the physician assess the value of the patient's description of such states. He will cross-question the patient as to the circumstances, attempting to decide whether the patient's behavior and the mode of onset and recovery from the episode were consistent with his supposed condition. He then asks the patient what other people had told him (the patient) of his behavior, and seeks to get a history from some witness of the event. With experience some differences between the amnesias of hysteria and coma will soon be learned.

A regular order in recording both the history and the results of examination is of value both in ensuring completeness, and in facilitating subsequent reference. It is suggested that the following order be followed:

1. *The Patient's Complaint* — a brief statement of the problem, preferably in the patient's own words.
2. *Family History* — any known history of mental or nervous breakdown, or suicide, or of fits or faints, or paralysis, should be especially solicited.
3. *Marital History.*
4. *Social History.*
5. *Occupational History.*

6. *Past History* – including standard of education.
7. *Present Illness* – in chronological order.

The ideal history of the present illness would be in the patient's own words. Few patients, however, keep sufficiently to the point, and many questions are necessary. A compromise is therefore followed – the history is written objectively in the third person and answers to questions of the examiner are woven into the description. If, however, leading questions are asked about some important point (questions which the examiner feels would suggest ideas to a suggestible person) the description should break into quotation of the patient's own words. The examiner then proceeds to check this statement by asking, for example, if a "dizziness" is mentioned, whether the patient or things around him seemed to be spinning, and in which direction, and will then endeavor to reach a conclusion as to whether the patient was suffering from true vertigo or simply from a sensation of uncertainty, or from faintness.

Special inquiry should always be made about the following symptoms which are of importance in neurological case study.

Sudden disturbances in consciousness
Convulsions
Headache
Loss of vision
Diplopia
Deafness and tinnitus
Vertigo
Nausea and vomiting
Dysphagia
Speech disorder, either in the understanding and use of words, or articulation.

Weakness, stiffness, or paralysis of the limbs

Pains and paresthesias

Disturbances in control of rectal and vesical sphincters.

The nature and degree of the *patient's anxieties* should be ascertained, and the relationship, if any, between dramatic events in his medical history and emotional stress in his daily life.

Patients often describe in great detail the numerous doctors they have seen, the hospitals they have attended, and what was said or done to them, without mentioning what was happening to their pain or other complaint in this period, and only repeated questions (which need not be mentioned in the record) will elicit this more essential information.

Any information from earlier examination or medical records is to be abstracted and added at the end of the history of present illness.

II. The Record of Neurological Examination

The aim of the record should be to give a concise description of the patient's condition as it appears to the observer.

An attempt should be made to convey an impression of the patient himself, whether he is, for instance, a quiet, reserved person or talkative and agitated, whether introspective and overanxious because of his illness or euphoric and unconcerned, intelligent or the reverse, cooperative in examination or resentful. This could well come at the beginning of the description. The order of description is of importance in that uniformity greatly facilitates subsequent analysis of case histories. It is therefore suggested that the order to be followed should be:

1. General impression of the patient's *awareness* of his surroundings, and his ability to cooperate in examination, together with a general statement of his ability to converse. Mention here his personality, and mannerisms, any obvious abnormal movements or attitude, or abnormality in gait.

2. Enumeration of abnormalities in the *cranial nerves* in order from olfaction to hypoglossal nerve.

3. *Motor function* — upper limbs, neck and trunk, and lower limbs, in that order, describing abnormalities of posture, power of movement, development and bulk of the muscles, coordination and resistance to passive movement (postural tone) in each part.

4. The essential *reflexes*, tabulated with responses on right and left sides indicated, and any other unusual reflex movement that is observed. This is concluded by a statement as to the state of the sphincters.

5. *Sensation.* Refer to a chart but also give a brief description. Tabulate the findings under headings of touch, pain, temperature, position sense, vibration, two-point discrimination, tactile localization and stereognosis.

6. The results of palpation and other search for *tenderness* of neuromuscular and ligamentous structures, and of special tests for meningitis, sciatic tenderness, etc.

7. Any *structural deformity* or limitation of movement in relation to skull vertebral column or other bones or joints.

8. Special tests for *aphasia* if necessary.

9. Special tests for *perceptive disorder* and agnosia if necessary.

10. Special tests for *apraxia.*

11. Special tests for memory and intelligence, and if necessary a complete psychiatric examination (*mental*

status). The use of simple tests for memory (digit retention, events in the day's newspaper, 100 – 7) and intelligence (events in the day's newspaper, names of Presidents, names of cities, and test story) is recommended in all cerebral affections for they give a good general guide to the day to day, or month to month, assessment of the condition. If there is any intellectual defect a full mental status should be attempted and recorded here.

12. Record of *special investigations*, lumbar puncture, pneumencephalogram, X-rays, electroencephalography, auscultation of bruits, observation of fits, record of muscular excitability, biopsy, etc.

13. Description of general examination, including cardiovascular, respiratory, alimentary, renal, and endocrine systems.

14. A brief general impression as a result of your first examination, stating the nature of the disability, your deduction as to the probable situation of the lesion, and lastly, its nature.

15. Description of further facts elicited during the patient's admission and changes in his clinical state, in the form of progress notes.

In the following sections information on clinical investigation is given under the first twelve of the above headings.

Notes on Methods of Examination and Recording

I. Awareness, Cooperation, Personality, and General Defect, including Gait.

Too often the clinical record omits to state the important fact that the patient is "semicomatose," or in "coma." His general awareness should be stated at the very beginning. Some difficulty attaches to definition of "unconsciousness" and it is best, as with many other clinical terms, to describe what happens and not use a term that is in part observation, in part deduction, and has no absolute definition.

States of impairment of consciousness are judged by the reaction of the patient to his environment. Insensibility is deep indeed when the patient no longer makes any reaction to painful stimulus. If painful stimulus elicits only a primitive defense movement (corneal reflex, withdrawal of a limb or part of a limb), and no other stimulus elicits any response, the condition is described as *coma.* A full definition is "the absence of any psychologically understandable response to external stimuli or inner need." [1]

If some psychologically understandable response (e.g. change of expression, attempt to brush away an offending object, or restlessness due to distended bladder) is present, but elicited only by painful or other disagreeable stimuli

[1] From *A Glossary of Psychological Terms Commonly Used in Cases of Head Injury,* by the Medical Research Council Brain Injuries Committee (London: H. M. Stationery Office, 1941).