

I can add to this, that the physician calling in the surgeon, should always be associated in the treatment, but my own experience has compelled me to imperatively decline to perform an operation under circumstances that forbids my supervision, at least, of the after treatment. It is only lately that an operation was successfully performed, and the patient left in a fair way to recovery, but the inexperience of the attending physician, and his criminal vanity which prevented his reporting the progress of the case to me, led to a disastrous termination. The loss of reputation, in this case, did not attach to the incompetent physician, but to the surgeon, which was partly merited, indeed, by his inexcusable folly.

PART FIRST.

SURGICAL DIAGNOSIS AND SEMIOLOGY.

Cases of accident or disease, coming under the notice of the surgeon, must be subjected to a critical and comparative examination, based upon the history, or anamnesis as it is otherwise called—the nature of the accident, the sex, age, and social condition of the sufferer, and the symptoms. In other words, it is essential that some theory of the case be formed before methods of treatment can be selected, or a prognosis given. This is technically known as *diagnosis*, derived from two Greek words signifying “I know.” It can be at once seen that the diagnostic ability of the practitioner is in direct proportion to his scientific knowledge and practical experience, which fact would lead many to place this chapter at the close of a treatise on surgery, rather than the beginning. It is true that a complete treatise on diagnosis would include the whole natural history of disease, and that the limits of a single chapter would be far too restricted to adequately present the subject. Nevertheless, there are certain general principles that underlie what might almost be called a science, that it seems to need attention at the beginning of our studies, and cannot, it is believed be neglected; nor can they find a more appropriate position than in the first chapter of a work on surgery. It is important that the student and young practitioner should know the best and

most rational method of examining his patient, and how to reach a scientific conclusion systematically. Some there are who instinctively grasp the whole situation on simply looking at a patient, or at most by what would seem, to those less gifted, a very superficial examination. Others, even with large experience, can only reach the same result by a process more or less laborious. The last needs a systematic method, at once to shorten his labors and to increase his accuracy; and the former should practice similar methods to confirm his first impressions, and to guard himself against mortification that may arise from too hasty conclusions.

There can be no question that in surgical matters, whatever may be said of general practice—accurate diagnosis is of the very first importance. No matter what the operator's skill may be, or the profound knowledge of therapeutics possessed by the surgeon, a mistake in diagnosis may result in the death of his patient, or expose him to annoyance, and loss of professional reputation and prestige by a suit at law. What can atone for the puncture of an aneurism for abscess or hernia; or destruction of the hip by mistaking fracture for dislocation? There are occasions when little opportunity is given for careful examination, the emergency demanding an instantaneous application of some means of cure or relief; the conclusion is reached instinctively, it is true, but it is an instinct due to experience and knowledge. Thus when a patient is bleeding to death from a severed artery, a ligature must be at once applied, and neither is there time or necessity for prolonged examination. So also in practice in large hospitals; the attendant cannot give the requisite time for analytical and systematic examination, and yet such examination as the accomplished surgeon would make, would almost unconsciously be conducted in the order to be laid down

shortly. He is not conscious of noting age, sex, position, expression of countenance, etc., but nevertheless, all these matters do receive appropriate attention. Here we have an illustration of the value of systematic training, enabling the man of experience to do intuitively, what might be a laborious mental process to another. At all events habits of orderly and systematic examination must be cultivated, and in all cases in which opportunity of time and circumstances permits, neglect nothing to arrive at a positive conclusion.

A complete knowledge of a given case is to be obtained by the consideration of three elements, each of which will be noticed separately:

1. Diagnosis, including { (a.) History. } Subjective symptoms.
 { (b.) Semiology. } Objective symptoms.
2. Etiology, including { (a.) Predisposing causes.
 { (b.) Exciting causes.
3. Prognosis, as to { (a.) Continuance of life.
 { (b.) Continuance of function.
 { (c.) Preservation of symmetry.
 { (d.) Duration of attack or case.

1. DIAGNOSIS. — Errors in diagnosis are of very frequent occurrence; inexperience undoubtedly will be the cause in the great majority of instances, and yet there are very few who cannot recall more than one mortifying occurrence, even when enjoying large experience. Haste in examination, as said earlier, wilful or unintentional misrepresentation by the patient, friends, or bystanders, insufficient light, and a host of equally embarrassing circumstances may arise, but in very many instances the fault will rest entirely with the surgeon. In all cases where time can be spared, the notes of the case should be committed to writing, thus insuring an avoidance of losing sight of important features and considerations, preserving what may be valuable data for future use, and cultivating habits of order and method.

The examination may be conducted in one of two ways, synthetical or analytical, or, as it is called, "exclusion." In the first method, we start without theory, and construct one as the symptoms elicited suggest. In the second, we at once recognize a group of phenomena as indicating a number of somewhat analogous conditions, and as the examination progresses, strike out one after another, as the symptoms reached contra-indicate. For example, under the *first method*, suppose a patient is presented with a tumor on the head. Without attempting a classification, one theory or another will prevail as the symptoms are elicited, a final determination being reached only with the conclusion of the examination, during which there must be much confusion of mind as conflicting indications are brought out. Under the *second method*, we will at once say, here we have either atheroma, fungus of the cranium, fungus of the dura mater, or hernia cerebri. It is found on tactile examination that the growth cannot be pressed back into the skull, and no opening can be found in the vault; at once we exclude hernia cerebri and fungus of the dura mater. Two conditions now remain. We find the tumor is unattached at the base and can be freely moved. Fungus of the cranium is then excluded, leaving atheroma alone. There can be no question that this is the better method, as we save time, have definite objects to attain, and have a naturally systematic course suggested. We will, therefore, conclude that the practice should be on the method of exclusion or analysis.

We have seen that diagnosis rests upon two elements, viz.: *anamnesis* and *semiology*, the latter being divided into two groups of symptoms, the *objective* and *subjective*. Let us take them up in order, and suggest the ground to be covered, with examples:

(a.) *Anamnesis* is a word derived from the Greek, signifying "again, to put in mind," or to recall to memory, and is used to indicate previous history. The points to receive attention may be, previous diseases; hereditary condition; habits; occupation; age; sex; social condition; duration of present attack; how injured, if a case of accident; and the course of the disease up to the present time.

Previous diseases must always be questioned, when the conditions are chronic. Thus it is well known that without a history of syphilis, mercurialization, or abuse of iodide of potassium, many intractable eruptions, subcutaneous swellings, or ulceration, could never be understood. The removal of a tumor, six months or more previously, might at once account for the malignancy of an ulcer. Slowly increasing swellings in glandular regions, if a history of similar troubles with chronic suppuration is elicited, will be at once set down as struma, and all ideas of tumor formation be dispelled. The sudden disappearance of chronic eruptions may account for functional disturbances, and the like. In fact nearly all chronic conditions may well suggest some previous morbid action, of an apparently different character, and a diagnosis cannot be made if the existence of such action is not brought out.

Hereditary diseases, such as syphilis, struma, phthisis, and carcinoma, will often be so much modified by circumstances, that an accurate diagnosis cannot be made without the knowledge that the patient's ancestors have suffered in a similar manner. Even the failure to recuperate from injuries may frequently be referred to conditions transmitted from father to son. Many observers are of the opinion that the physical peculiarities are inherited from the father,

and the mental and emotional from the mother. We would expect, therefore, to find cancer, etc., transmitted from the father alone, but such is not the case. If my theory of carcinoma, (*vide Surgical Therapeutics*,) is correct, the rule would still hold good, as in the mental sphere, the first step towards cancer is made, and the characteristics of this sphere, we are told, are eminently maternal. A tumor of doubtful character, a cutaneous eruption, or a defect in ossification, can be readily understood when we learn that the immediate progenitors of the patient had cancer, syphilis, or struma.

The *habits* of the patient should never be neglected. Prostitution would lead one to refer genito-urinary lesions to syphilis or gonorrhœa; masturbation would account for some abnormality in the genital apparatus, or some mental defect; drunkenness would account for, or suggest unusual prophylaxis, in erysipelas, etc. Sedentary pursuits would clear up confusion as to the nature of obscure rectal or anal tumors. In many different ways the habits of a patient, in a state of health, or prior to the *status præsens*, would clear up a doubtful diagnosis.

Occupation is naturally connected with the preceding. Tumors of doubtful character about the knees, are at once recognized as bursal enlargements, when we learn that the patient is a housemaid, or tailor, or shoemaker, as these parts are, in such occupations, subjected to unusual irritation. Similar conditions about the hip, or elbows, will be recognized as bursal when the patient is a minor. Necrosis of the bones of the face, will not be referred to mercury or syphilis, when we learn that the patient works in a match factory, or has anything to do with phosphorus. At one time a peculiar ulcer on the joints of the fingers annoyed me in some cases where no adequate cause could be learned; but

the cause was ultimately found to be oxalic acid used in trunk-making.

Age is of the first importance in very many surgical conditions. We know that the bones exhibit a preponderance of inorganic elements in the aged, and that they are consequently more brittle; we also know that the angle of the jaw is changed in age, and also the direction of the femoral neck to the shaft. Hence in doubtful cases, fracture of the neck of these bones will be diagnosed in place of dislocation, when the signs are obscure—or in cases of impaction. So also in ulcerated conditions about the mouth. In the young we would suspect cancrum oris, in the old lupus or epithelioma. Tumors in general are known to be more malignant in the old, increasing in malignancy with the age of the sufferer.

Sex, while not as valuable an indication, in morbid action of a general character, is often of the first importance in leading to a correct diagnosis. Thus tumors about the neck, which might cause confusion, in the case of males, will frequently be found goitre in women, as they are more liable to such troubles. Abdominal tumors, particularly, cannot be accurately determined without considering the sex. The prevalence of hysteria in women, although not a few of the sterner sex have suffered from it—modifies and changes, or throws doubt over many a diagnosis. Age and sex may both be useful in some forms of coxalgia; occurring in adult life, in women, painful when walking and thinking of it, being kept awake by the pain but never being wakened by it, will serve to exclude hip-disease from consideration.

Social condition, whether married or single; rich or poor; happy or discontented, is a very prominent element in diagnosis. Abdominal enlargements, in married women, will

always suggest a possibility of pregnancy, while without a suspicion of chastity, it would not enter into the case when the patient is unmarried. So with uterine hæmorrhages, whether due to abortion, or metrorrhagia, would in many cases depend upon marriage or not. The rich and luxurious, might be expected to suffer from post perfection of the blood, and gout and synochal inflammations occur; while the poor, ill-fed, housed, and clothed, would suffer from inflammation of an asthenic character, due to impoverishment of the blood. Stimulation *might* be demanded in one case, and depletion in the other; at all events the habits of life would require changing in both instances, either to facilitate recovery, or to place the patient in a favorable condition for an operation.

The *duration* of an attack is often important in determining the true condition. For instance, a swelling appears in the inguinal region. It is likely to be hernia, if produced rapidly, and abscess when the reverse. Swellings in other regions, may be aneurismal when suddenly formed, abscess or tumor when of slower development. Ulcers in the genitals when of long existance may be set down as chancroid, when shorter chancre may be the condition.

The *nature of the accident*, when being examined for injury—is manifestly of prime importance. A severe blow might cause suspicion of fracture, while a twist or wrench, would suggest dislocation. Falls on the head, with unconsciousness, compression or concussion; while the same condition from blows in the precordia, or excessive hæmorrhage, would suggest syncope; immersion in water, exposure to noxious gasses, etc., with similar loss of consciousness, would show asphyxia.

Finally, the *course of the disease*, would be of the utmost

importance to observe. Thus paralysis gradually following hyperæsthesia, or anæsthesia, would direct attention to the spine or encephalon. Coming on at once after trauma, we would look for nerve lesions in their continuity. The regular appearance of iritis, ulceration in the fauces, and roseola on the trunk, would direct attention to syphilis. A sudden swelling in the groin, with nausea and vomiting succeeding violent pain, would show hernia.

As will appear later however, discretion must be exercised in taking the history, and any inducement that might exist to mislead or falsify carefully weighed. Young women will attempt to conceal loss of chastity; married women abortion; men will deny exposure to syphilis or gonorrhœa. Hence any want of harmony in the account given by the patient or friends, or the existence of causes for deception, must demand great care, and the exercise of sound judgment, carefully weighing all the probabilities before concluding a diagnosis.

(*b.*) *Semiology*, is likewise derived from two Greek works, meaning "a sign" and "discourse," and is that department which refers to a knowledge or discussion of the symptoms of disease. We have two classes or sets of symptoms, each of which must receive careful attention, but in surgical practice, and when there is a manifest want of harmony between the relation of the patient and what can be observed by the surgeon, the latter should always take precedence. The former are technically known as *subjective* symptoms; the latter *objective*.

Subjective symptoms, as already said, are those sensations, experienced by the patient, that cannot be observed by the surgeon, who is compelled to rely upon the statements made to him, and exercise his powers of discrimination and know-

ledge of morbid action to determine upon their reliability. In surgical practice it has always been the rule to accept these statements with a good deal of allowance, and credit nothing that is not well borne out by what is visible to the senses. There are so many circumstances which have a tendency to detract from their value, that it is well considered a misfortune that medical practitioners are compelled to rely upon such statements so largely, and the ingenuity of the profession is largely engaged in devising new and improving old diagnostic appliances, which necessitate less reliance on these truly blind guides. An intelligent hypochondriac or hysterical sufferer, can entertain his attendant by the hour with a recital of distressing and formidable symptoms, and in the absence of the stethoscope, and similar aids to diagnosis, false impressions are almost unavoidable. There are so many inducements, at least in the experience of the surgeon, to falsify, magnify, or distort, either for the purpose of extorting sympathy, or even less worthy motives, that nothing should be accepted as a fact, until either it has proved so, or is incapable of positive interrogation. At this time it can only be necessary to suggest a method of examination in general, particulars being almost impossible.

The Hahnemannian injunction has stood the test of experience, and nothing has been offered since his day that promises any better. In cases when time can be devoted to it, the patient should be requested to tell his or her story, without unnecessary interruption, or above all, the interposition of leading questions, or that would suggest certain answers; particularly must we avoid categorical questions. When the recital is finished, questions may be asked, still guardedly, in chronic cases, when seeking for a remedy, beginning with the head, and following the well known anatomical order of

the older works on *Materia Medica*. Each region is to be examined, as laid down in the next section, as we proceed, and everything in the subjective group that does not correspond with the results of this examination must be excluded.

In cases in which the sufferings are chiefly confined to one region or organ, there is no necessity for this extended examination, that is for purposes of diagnosis; the remedy, however, can only be scientifically selected by securing the *totality* of the symptoms. Now by "totality of the symptoms" the intelligent practitioner does not mean simply all that the patient has to tell; but, on the contrary, all that can be observed with the aid of the thermometer, test tube microscope, etc., added to the former. Thus we find that there are two purposes in the examination. First, to determine the morbid action, the etiology, and prognosis. Second, to select a remedy or determine upon a line of treatment to be pursued. To a certain extent both objects are attained simultaneously, but after the first is satisfactorily accomplished, the second demands a considerable prolongation of the process.

Objective symptoms, from their very nature, are of the first importance to the surgeon, and are only less so to the physician because he has so few presented to him. They are all such symptoms, changes, and conditions as are visible to the eye, or can be brought into view with the various speculæ and other diagnostic appliances, as well as all those that his senses, touch, etc., can observe without any aid from the patient. In this sense the *bruit* of aneurism, as heard through the stethoscope, is as much an objective sign, as an ulcer on the surface; the crepitus of fracture, equally with deformity when the fragments are displaced. A few examples are given below, as well to illustrate our meaning as to suggest a method of examination.

Posture is a very important diagnostic sign, and should always be observed, particularly in acute attacks, or cases of accident, as well calculated to direct the attention to the seat of the lesion. Thus,

Supine, indicates profound prostration and serious injury. MEIGS astonished his hospital class by confidently asserting that a certain patient, at the farther end of a long ward, would be found better when they reached his bed. His opinion was based upon observing that he had changed his position from a dorsal decubitus, and was lying on his side. The event proved his correctness.

Bent forward, indicates abdominal lesion. It is the usual position instinctively assumed in colic.

Bent backwards, shows spinal lesion, and is the common position assumed in spinal irritations, particularly in tetanus and some of the more serious neuroses.

Paraplegia, or complete paralysis on both sides, indicates spinal trouble, or injury to the large nerve trunks of the extremities.

Hemiplegia, or one-sided paralysis, shows cerebral lesion, and on the opposite side of the brain to the paralyzed side.

Rigidity of limbs, spasmodic conditions; when but one limb or joint, either spasm or dislocation.

Much can also be learned from the physiognomy. Thus: A pointed, pinched expression, usually suggests peritonitis.

Frowning, with the eyes closed, or partially shut, is a common indication of cerebral trouble, particularly cephalalgia.

Compression of the mouth, with a slightly stooping posture, is indicative of pelvic lesion, particularly vesical.

Expanded nostrils, with partially closed mouth and nasal respiration, shows some thoracic trouble.

Such symptoms of disease or accident are usually observed at a glance, and in urgent cases much time may be saved by having some indication of the seat of the trouble. At other times, or after temporary relief has been afforded, the examination may proceed more thoroughly, and would embrace, in most instances, a consideration of one of the following, if not all of them, in cases of chronic and obscure diseases.

Alterations in Form.—The deformity resulting from fracture, with displacement, of the shaft of the long bones, or from complete dislocation, must necessarily be a highly important diagnostic feature; so also the regular pyriform shape of hydrocele, as compared with the spherical form of scrotal hernia. The system is one of comparison, comparing the member or part under consideration with its fellow on the opposite side, or, when there is no corresponding part, with morbid processes or lesions that would induce similar appearances.

Alterations in Color.—In many instances the changed color in a part will furnish alone a reliable theory of the condition. Thus the brown, leathery integument, of scirrhus tumors; the redness of inflammation, or the modification of color produced by the injection of the red blood into a part of some decided tint, as the purple tinge, in the case of a blue iris. The black or livid appearance of gangrened parts may occasionally closely resemble ecchymosis, but other symptoms, as temperature, crepitation, and odor, will assist to differentiate; as a rule, the gradual extension of the color in gangrene, and the recession in ecchymosis will be valuable guides.

Alterations in Temperature.—The clinical thermometer has proved of immense value to the surgeon, and the indications are that when fully developed, and more generally used, the