

SYMPTOMS IN DIAGNOSIS

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ILLUSTRATED

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TO
J. M. *and* T. L.

PREFACE TO THE SECOND EDITION

The first edition of this text was written through the encouragement, in fact the insistence, of one of the greatest scientific internists of America. He was not born of us but he took America and Canada into his heart and was adopted as one of our own. Soma Weiss was a superb clinician and I would desire now before it may be too late to pay my tribute to his greatness, his sympathy and understanding of colleagues whether old or young. Years, however, meant nothing to him. He was one of the immortals!

The original text was designed to be a monograph dealing with the practical aspects of symptomology. It was in no way to be considered as encyclopedic. There would appear to the writer to be two concepts in the language of symptoms. These conform to two parallel concepts of medical education. One is that related to the method of memory of facts as such—the other is based on the appreciation of processes and the application of their diversities to an understanding of the physical and emotional disturbances which plague mankind.

To follow this concept to a farther extension the author has been humble enough to solicit the help of a number of his younger colleagues. For this he makes no apology! The progress of medicine is such that there must be an appreciation of how some of the clinical specialities have become intimately integrated with internal medicine. This has no barriers in respect to the soma or the psyche and their inter-relations with the skeletal, visceral, nervous, (spinal or autonomic) or endocrine systems etc. Therefore there is no excuse being offered that over one-third of the chapters have been written by my colleagues. It is with much thanks that I would pay my appreciation to Dr. Nicholls for Chapter VII, to Drs. Stuart and McNally for Chapter VIII, to Dr. McNaughton for Chapter IX and to Dr. Stern for Chapter X.

The tasks of writing Chapter IX and X were particularly difficult undertakings within the scope of this text, a full book could have been written upon either subject, particularly that dealing with the emotions and behaviour. But it is impossible to appreciate the language of symptoms unless the emotional reactions and their variations are also considered.

It became obvious in the early stages of rewriting this edition that there would be some overlapping and particularly in regard to pain and its allied sensations. This one symptom in itself covers such a vast field in ill health and has so many implications that it did not seem inappropriate to consider it from several angles.

Serious consideration was given as to the sequence of the Chapters. From some points of view Chapter X could have been with benefit Chapter I. On the other hand, the skin is an organ to which the patient pays particular attention and from which many of his symptoms arise. The arrangement, however, is not intended to stress one group or system over another

JONATHAN MEAKINS

PREFACE TO THE FIRST EDITION

This is not a text which, alone, will lead any student or practitioner to an immediate diagnosis. It is hoped, rather, that it will act as a stimulus to analyze what symptoms the patient presents whether in an acute or a chronic disease. Through nigh on forty years of intensive study of disease at the bedside, I have gone through the whole gamut of diagnostic criteria. I early found that a patient's symptoms were really of more importance in beginning the investigation of a case than physical signs or laboratory findings. Approximately fifty percent of patients have no signs but are all complaints or symptoms. Symptoms are the patient's way of telling his story. They, as individuals, are most of the time rather inaccurate as far as the terms they use are concerned; but, who are we to be too "choosey" about terms when we are so slovenly about them ourselves. It should be our endeavour sympathetically to encourage the patient to express his feelings in simple language, unadorned by preconceived diagnostic impressions gleaned over the back fence, around the tea table, at a church social, or a cocktail party, where all the ills of mankind from vulvar irritation of the menopause, the fatigue of hypertension, or the epigastric irritation of duodenal ulcer, to gall stones, or coronary sclerosis, are diagnosed without the least dubiety. The symptomatology of disease is the most subtle of all diagnostic criteria, but only when it is so appreciated can it be revealing upon close analysis. This may, however, be completely defeated by erroneous and preconceived conclusions. Therefore, it is essential to sift the evidence as presented by symptoms to an ultimate conclusion.

There are, however, certain time relations which must be kept in mind, also, the factors of quality and quantity of symptoms which differ from person to person, and all these variations must be assessed by the observer in their true perspective. It is here that the guinea-pig and *homo sapiens* differ as an experimental animal. The guinea-pig has no inhibitions—he is of the earth earthy and lives life in its entirety, while the *homo sapiens* covers most of his actions with repressions or disguises them with preconceived opinions, or his own diagnosis gleaned here and there from friends and acquaintances. It is through this labyrinth that the physician must wend his way to truth.

JONATHAN MEAKINS

FOREWORD

In recent years, in contrast to the past, few books have been written on symptoms. Beginning with the end of the nineteenth century, the interest in the pathogenesis of disease and the use of laboratory methods led to an underestimation of the value of the interpretation of symptoms. Indeed many still consider a good history and a proper evaluation of complaints to be less important today than in the past. This is, however, a serious misconception.

It is the symptoms which bring the patient to his physician. The proper interpretation of these symptoms either leads rapidly to correct diagnosis, or outlines the shortest road to it with the aid of specific techniques. In the latter instance, correct interpretation of symptoms saves the patient mental and bodily discomfort as well as financial burden. A good physician is one who uses the least number of laboratory procedures to arrive at the correct conclusion. Nowadays "putting the patient through the mill" is not infrequently confused with thoroughness.

Before the advent of modern clinical investigation, symptoms were for the most part correlated with the findings of the physical examination and eventually with the morphologic changes observed at postmortem. The fundamental nature of symptoms could not be studied because of the lack of objective methods sufficiently sensitive for such study. Hence the symptoms of each disease were often analyzed empirically. With the discovery in recent years of new chemical, physical and physiological methods, has come the first study of the fundamental mechanism of many symptoms such as dyspnea, orthopnea, cyanosis, nausea, vomiting, unconsciousness and pain. If we understand the physiology of cyanosis, we can at once evaluate its possible significance. And so we find the interpretation of symptoms on a firmer foundation today than ever before.

The fact that complicated instruments are essential to the fundamental study of a symptom does not mean that the physician in his daily practice must necessarily use these instruments. Once investigation has established the significance of a clinical phenomenon, the intelligent use of the conclusions reached suffices in the practice of medicine. The contribution of clinical and experimental studies to the knowledge of the symptomatology of disease may be compared to the influence of geophysics on classical geology. Just as the modern science of geophysics made possible a more exact interpretation of the surface findings of geology in relation to the depth of the earth; so physical and chemical methods in medicine have resulted in a more precise and useful interpretation of the symptoms of disease. On the basis of information about the mechanism of symptoms, we are able to

probe with greater precision the morbid processes within the depths of the body. Hence the practical value to the physician in the proper recognition of symptoms is even greater today than it was some twenty-five years ago, when Sir James Mackenzie emphasized the significance of the problem.

Dr. Jonathan Meakins has achieved such practical and concise interpretation of the common symptoms, in the light of recent scientific and clinical knowledge. His contribution will be useful both to young students and experienced physicians. The relative brevity of this book has the distinct advantage of making the information easily usable.

Dr. Meakins is particularly well-fitted to discuss symptoms. A pioneer in clinical physiological investigation, he has remained a faithful cultivator of bedside medicine in the classical manner. From him, therefore, we younger students have much to learn.

SOMA WEISS

Boston

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CHAPTER I

SKIN

INTRODUCTION

It is not within the scope of this text to discuss in detail the anatomy of the skin but rather to consider the changes of sensation, color, texture, temperature, appendages, etc., which are of importance in leading to an understanding of systemic, as well as local, disturbances. The role of the dermatologist is a hard one. He has to deal with the most obvious tissue of the body, and perhaps, for this reason alone, it has been less associated and directly connected with systemic disease than any other. The distinctly descriptive appellations given to the dermal changes have conspired to develop a nosography which really means nothing, although it may imply much to the initiated, but it does not rest upon the same basis of anatomy and function as is the case with other systems. In spite of this, or perhaps on account of it, dermatological changes have not received the attention that they should have as indices of systemic diseases. Even the abnormal physiology of the skin is little understood and less energy has been devoted to unravel its mysteries. Therefore, there will be little attempt, in the present text, to delve into them as this must await a future and more inquisitive generation.

FUNCTION

The functions of the skin are many. Perhaps the most obvious and important is to act as a protective membrane to changes in the external environment. Other mammals, birds, and fishes have a protective covering, according to their kind, which serves other purposes as well and it is so constituted as to do this with a maximum of efficiency. Man has, through successive myriads of generations, also acquired certain peculiarities which conspire to a similar end. It is true he is not normally pachydermatous nor does he have scales like the fish, feathers like the bird, or hair of a density to be of a really protective quality: but, as will be seen below, the character and distribution of the hair have significant implications.

Intimately connected with the function of the skin as a protection to external changes, it also has a primary function in maintaining certain internal equilibria. It will be pointed out, from time to time, how important it is for the body to maintain these, and the beautiful manner in which it does so. It will be seen, however, that this is sometimes beyond its power, and, even in attempting to do so, it may produce a malignant condition or even a vicious circle which may lead to somatic dissolution.

Of these functions, perhaps the most are concerned with the following, heat regulation, water balance, tactile sensation, allergic manifestations, cutaneous-visceral reflexes, sex reflexes, etc. It is not meant that the skin is only employed in relation to such, but rather to imply how diverse is its function. It is our purpose to point out the significance of skin changes with regard to these.

DISTURBANCES OF SENSATION

In the symptomatology of disease a common and significant complaint is some unusual sensation. This may vary from a vague and indefinite discomfort to an agonizing pain. In most instances it can be localized with fair accuracy, but most persons cannot give a trustworthy or detailed description of its character and intensity, even at the time of its occurrence. This would appear to be an inherent quality in regard to most complaints. It would not seem to be altogether a matter of intelligence but rather that some are better witnesses than are others. On the other hand, a vivid imagination, or fear of the unknown, may lead to an unnecessarily lurid or vivid description. The personality and psychic background must always be given due weight in assessing the reactions of the individual. Libman has pointed out that there are two types of individuals: the hyposensitive and the hypersensitive. This division is certainly not as clear-cut as he would imply as there is undoubtedly the largest group who occupy an intermediate zone, or the average or normal people. The others shade off into the two extremes. It must also be appreciated that the memory of a sensation may be dulled or even distorted by time.

The description of any abnormal or unusual sensation should include the following important features: kind or quality, severity or intensity, locality, time relation to other events, periodicity, factors influencing its increase or decrease, influence of external environment, mode of onset and finally duration.

Kind or Quality of Sensation

There is a habit in most to compare the sensations conceived by our special senses to common or homely things. In touch, we use such terms as "satiny", "silky", "bony", "pebbled", etc.; in hearing "thunderous", "birdlike"; in the visual description of color this is particularly the case, as found in "grass green", "sky blue", "blood red", "lemon yellow", "orange", "gold", "platinum", and numerous others. So it is with abnormal sensations, but here the descriptive terms are not as a rule so vivid or clear-cut. Some are quite definite, such as "burning", and "prickling", used to represent a burn or a prick of a pin, which are common agents to inflict definite sensations, and, therefore, are easily recognized. But such terms as "burning", "cutting", "tearing", "stabbing", "crushing", etc., cannot convey to

the judge or jury what the witness means to imply. Few may have experienced such sensations and even those who have do not necessarily or even commonly describe their feelings at the time in these terms. It would seem most likely that these adjectives are more applicable to the duration of the sensation than to its quality. Such terms as "throbbing" or "pulsating" would indicate a rhythmic character but are not informative as to its quality or severity.

It is important if not imperative, therefore, that as many attributes as possible of any abnormal sensation should be critically analyzed. Unfortunately, such critical analyses based upon experimental methods have been few, and our real knowledge of the significance and interpretation of many sensations is, at the best, empirical and many times the questioning of the patient is such as to be classified as leading, and, therefore, is inclined to elicit the desired and preconceived answer. This is the basis of one of the greatest fallacies of medicine and its various specialties. There are, however, a number of painful sensations which by their quality, elicited by careful questioning and examination, may have a distinct significance.

Disturbances of sensation referred to an area or region of the skin may or may not be caused by a local skin lesion. It is important however to examine carefully the area so localized by the patient to ascertain if there has been any evidence of local injury or history of such.

A regional pain in the skin should be possible of accurate localization. Its intensity and duration can be fairly well determined and may vary from time to time. Its quality, however, is constant. This fact is not sufficiently recognized because all stimuli to the skin gives a sensation of a common quality. It is immaterial whether the stimulus is pinching, pricking, burning, electrical, chemical or pulling a hair. If the stimulus is of short duration, the sensation is always described as "pricking." If, however, the stimulus (no matter which it is) is prolonged, the resulting sensation is now described as "burning". It is of the same quality. Other terms are also sometimes used such as "smarting" or "stinging". All three lack accurate distinction, but the fact remains that they indicate the same thing.

There is, also, the abnormal sensation which continues as an aftermath of the injury. This is, also, of the same quality and only varies in intensity and duration. It is immaterial whether the skin and nerve endings alone are affected or whether the nerve itself supplying an area of skin is injured, the quality of the pain is constant. It is, therefore, apparent that the sensation recorded from skin or cutaneous nerve injury has a distinctive quality and significance.

The local causes of sensory disturbances in the skin may be grouped as follows:

Trauma

(1) Physical: a blow to the skin produces a painful area which is localized and may be devoid of any objective evidence although this is rare as there is usually some thickening of the skin and the underlying tissues due to local edema. Tenderness is present and distinguishes this pain from some which have a distant origin.

(2) Thermal: heat or cold may cause pain without objective signs. It is strictly localized to the area affected and has all the qualities of injury to the sensory nerve endings. Associated changes due to the local circulation should be carefully looked for, namely, pallor, flushing, thickening, desquamation, vesication etc. A careful history is of the utmost importance.

(3) Pressure: prolonged pressure to a part is often the cause of local pain. It is usually complained of over areas where the limbs or trunk are pressed upon the bed such as the heels, malleoli, buttocks, hips, shoulder blades, the deltoid regions and external aspects of the elbows. The skin may be reddened and thickened and the areas are often mistaken for an acute inflammation and even attributed in appropriate areas to an arthritis.

Sensory Nerve Distribution

The most typical type of pain due to this cause is that associated with inflammation of the posterior spinal nerve ganglia so well represented by Herpes Zoster and Herpes facialis in the distribution of the Fifth Cranial or Trigeminal nerve. Pain in the skin from such a cause usually antedates the appearance of the eruption. It may be exquisite and lead to a mistaken diagnosis of a visceral lesion particularly in the thorax or abdomen. Within 24 to 36 hours the true cause of the pain is revealed, although in the meantime drastic therapy may have been instituted. Such instances are the following—appendectomy for herpes from the twelfth thoracic or first lumbar right ganglia; cholecystectomy when the eighth to tenth right thoracic are involved; angina pectoris or coronary thrombosis when the fourth to sixth left thoracic are affected and so on to imitate many visceral lesions.

Local involvement of the spinal cutaneous nerves of central or peripheral origin produce the same type of pain. The differences in distribution are anatomical. The former naturally have a much wider distribution than the latter, but a careful analysis of the exact area as elicited by an exact examination should give the clue to the site of origin.

SPINAL PAIN

Stimulation of a nerve or nerve root gives rise to a sensation over the distribution of its cutaneous fibres. This is strictly localized in the skin of the area supplied by the nerve. Its quality is similar to that produced by skin stimulation and is consequently described as "pricking" or "burning".

(The description of the part being "asleep" is of equal significance.) Its intensity and duration are governed by the severity and persistence of the local insult.

In addition to such, there is the abnormal sensation which arises from injury of the nerve roots. This is of the same quality but has the distribution of the roots rather than of the nerves which arise from plexes, such as the brachial, lumbar, sacral, etc. The quality of the pain is similar, but the distribution differs somewhat.

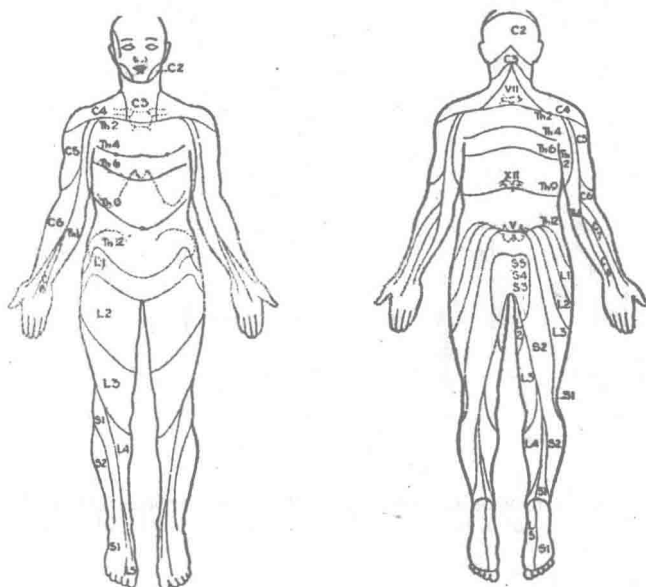


FIG. 1. Diagrammatic representation of the cutaneous distribution of the sensory nerves of the different spinal cord segments.

Injury of nerve roots is seldom localized in these structures alone. The surrounding ligaments and fasciae are also more or less harmed. As a result, the quality and distribution of the pain may be quite confusing on critical analysis. Kellgren has found that muscle pain is always felt diffusely and is referred according to a spinal segmental pattern. He further found that stimulation of the interspinous ligaments gave rise to a similar referred pain. He has made a critical experimental analysis of the various pain areas produced by stimulating each of these ligaments. This ligamentous pain is exactly similar to that produced in muscle and other deep lying somatic structures, being of the actual quality and felt deeply in the limbs or torso. It is different from the pain derived from the skin, serous or mucous membrane. The accompanying figures demonstrate these findings.

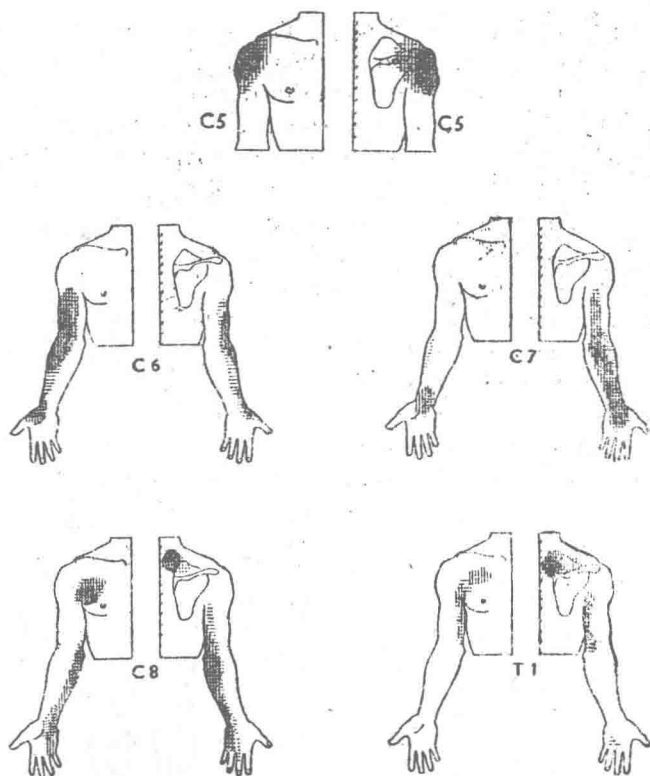


FIG. 2. Distribution of pain arising from the interspinous ligaments, cervical 5 to thoracic 1. (Courtesy of Kellgren, "Clinical Science," 1939-40, 4: 36.)

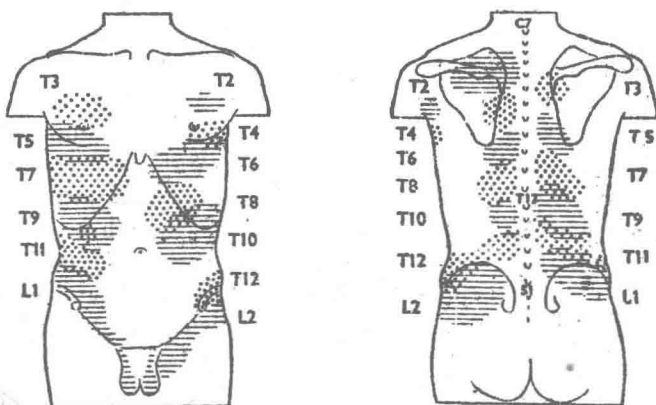


FIG. 3. Distribution of pain arising from the interspinous ligaments. Thoracic 2 to lumbar 2, alternate areas are hatched and stippled. (Courtesy of Kellgren, "Clinical Science," 1939-40, 4: 36.)