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THE PSYCHOLOGICAL APPROACH TO PAIN*

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I have been asked as a psychiatrist to confine my remarks in this symposium* to the psychological approach to pain. It will be appreciated, however, that psychiatry is rooted in genetics and physiology and demands not only a knowledge of psychology but some acquaintance with sociology, anthropology, history and philosophy.

It is true that the clinical approach of the psychiatrist is similar to that of the physician. For both the essentials of diagnosis are the same—the site of the disease, its causes, and the nature of the functional disturbance. But the psychiatrist begins his investigation of causes and his search for their quantitative relationship on almost virgin soil. For our clinical purposes, it is agreed that people may become ill for psychological or physical reasons, or both; where we might differ is in the emphasis we place upon one or the other, psychological or physical.

Those concerned merely with measurement and the classification of sense data might offer a purely physiological hypothesis of mental symptoms. Others might continue to regard mind as a 'thing in itself', separate and distinct from any physiological emphasis. Men like McInnes[2] have posed an important question, whether the psychic life is a reality which would always require its own symbol 'mental', or whether one day this concept, too, will be explained and understood in terms of physiology. I think, however, that today we all accept the idea that a person is an integrated whole, of which mind and body are distinguishable but inseparable aspects. It is always difficult to avoid language which suggests dualism, and it is obviously convenient to think in terms of this dualism, provided we appreciate that it is 'the person as a whole' who is an entity, and that body and mind are two aspects of this whole person.

Russell Brain[3] has said that in normal persons, the unconscious motivation of conscious acts were not necessarily to be explained in terms of physiology, or by the presence of an affective disorder. A neurosis is a disorder of values, and it is not always possible to call in a cerebral disorder to explain it. Trends in modern research suggest that emotional states are psycho-physical conditions arising in the organism as a result of some failure in adaptation. They express themselves both in objective physical signs and subjective mental symptoms. These physical signs and subjective mental symptoms, as Miller[4] has reminded us, constitute a unitary experience which may be the result of a cortical disturbance, an alarm reaction from a particular organ, or an upset of normal body chemistry.

To understand the psychology of pain, it is essential, I think, to appreciate what I have referred to as this 'unitary experience', and that it is 'the person as a whole' who is the entity.

PSYCHO-PHYSICAL CONSIDERATIONS

We have been taught that the sensation of pain arises as a result of the stimulation of certain nerve endings and that the impulses set up are transmitted through the afferent paths of the nervous system to the thalamus, where they are appreciated in consciousness. But by dividing the thalamo-frontal tract a personal pain may be reduced to an experience not unlike the sympathetic appreciation of pain in others, or as a patient once described the change following a leucotomy, 'Oh, yes, doctor, I still have pain, but it is no longer my pain'.

One would imagine from a purely physiological basis that so long as the nervous pathways were intact, the sensation of pain would always be established and persist. We know, however, that this is not always so, for under hypnosis or in hysteria the sensation of pain may be completely absent. This at once suggests the appearance and existence of other factors governing pain sensation, factors concerned with that other part of the person as a whole which we call 'mind'.

Pain may be produced by damage or excessive heat or cold to the skin, but in the internal organs these stimuli do not produce pain. In these tissues the effective stimulus is tension, either from distention, contraction or anoxia. Pain may also arise from inflammation or irritation of the afferent nerves themselves. Now it is common knowledge that memory is reinforced by repetition and emotion, which

* A paper read in a symposium on the Treatment of Pain (opened by Sir Russell Brain, Bt.[1]) at the South African Medical Congress, Durban, September 1957.

may explain why a pain may continue after the original stimulus has ceased. Pavlov, for instance, suggested that the excitability of the cerebral cortex may be affected by emotion. Pain may also be conditioned like conditioned reflexes. And closely related to this is the emotion of fear, which is again associated with any kind of threat to security.

The treatment of a painful tendon by the injection of a local anaesthetic, which only lasts for a short time, may often cure the pain permanently, the cure probably depending on the elimination of some conditioned reflex and the realization by the patient that he can now move the part painlessly while he does not know how long the anaesthetic will last.

I mentioned above the reduction of pain occurring in hysteria, when a patient may become quite insensitive to injury. It is also reduced by suppression, by persons of strong will, and it is a common experience to find pain alleviated when the patient's attention is diverted, just as fear is relieved by giving a patient something to do. This suggests that stimuli from outside take priority in consciousness over minor bodily sensations. In passing, it is worth noting how important is the visiting of the sick, in diverting their attention.

Then again, pain may be increased by anxiety. Normal bodily sensations may be mistaken for something more serious; a condition common in athletes, who are particularly body-conscious. It is sometimes difficult to distinguish between an anxiety state and hysteria, since by claiming pain the patient may escape having to perform an unpleasant duty. The fact that pain can be relieved by psychological means does not always prove that it is neurotic, for we know that organic pain can be relieved by hypnosis.

It seems clear, then, that the extent to which certain impulses give rise to pain depends on the personality of the patient. Personality, in fact, often dictates the sensation and its intensity. A given injury may produce pain out of all proportion to that experienced by the average person or, conversely, it might not produce the pain that would normally be expected.

PERSONALITY

The statement that the degree of pain experienced by a patient depends on his personality as well as the nature of trauma or stress, requires a definition of personality. McDowall has described it as 'the resultant of the total forces concerned with the formation of mind, the heredity, together with the personal experience of the individual as shown by his relations to his fellows and their institutions'.

This definition, acceptable to some psychologists, does not seem satisfactory for our purpose. It excludes the pathological conditions, such as anxiety states and hysteria, to which I have referred. As Mayer Gross[5] has pointed out, 'However far the rapprochement goes, between psychiatry and psychology, we still cannot expect that psychiatry will ever be able to base itself on psychology alone. The psychiatrist can never lose his interest in what is happening in the bodily field, and he will seek wherever he can the direct contacts with physiology and medicine. Furthermore, the primary concern of the psychiatrist is with the morbid mental states and, however much is known about the psychology of the normal individual, in the pathological field new laws will be found to operate'.

PSYCHOPATHY AND NEUROTIC REACTIONS

I have said that the approach of the psychiatrist is similar to that of the physician. For both of them the 3 essentials of diagnosis are: the site of the disease, its causes, and the nature of the functional disturbance. It therefore becomes necessary to consider briefly the aetiology of psychopathy and the neurotic reactions.

During the first World War psychiatric attention was mostly concerned with neurotic symptoms (shell shock), and on its psychological causes. In the second World War, however, much more attention was given to the constitutional background. The constitutional background could be measured to some extent by taking a careful history, and constitutional mental instability was indicated by a family history of mental illness, previous nervous break-down and an unsatisfactory work record. It was found that the liability to nervous break-down varied with the amount of stress, but also with the constitutional make-up of the individual. Further, it was observed that some men were vulnerable to particular forms of stress, which varied with their temperamental make-up and their previous experience.

These reactions should not, of course, be regarded as of equal importance. The cold and callous personality, the constitutionally neurasthenic personality, these indicate a serious disorder of structure. On the other hand, hysterical conversion syndromes or acute anxiety states, caused by situations of sudden stress, cannot be so regarded.

DIAGNOSIS

In the absence of clinical signs of organic disease, the diagnosis of the cause of pain is one of the more difficult problems in general practice.

Investigation should consist of a careful biographical history and a meticulous physical examination. The symptoms should then be assessed in their complete setting, their longitudinal section, their various cross sections and the circumstances in which they occur.

This biographical history should include a careful consideration of the heredity (family investigations) and somatic, psychological and pathological factors, in an attempt to distinguish symptoms that are part of a personality problem from those that are impersonal and organic.

For example, the patient with a hysterical personality describes his symptoms in superlatives, and it is often impossible to determine the exact site of the pain, or even what he does feel. In organic pain, the patient may be preoccupied with his symptoms, but the history-taking and the physical examination is an obvious added burden. The pain is seldom continuous, and he freely admits periods of relief. He looks ill, and has often lost weight from prolonged suffering.

The differential diagnosis from a state of depression may sometimes be difficult, but must be attempted because of the possibility of treatment; in primary affective disorder by convulsive therapy, in chronic neurasthenia depending on the estimation of the basic personality, the extent to which the environmental stress has contributed to the condition and

the extent to which these stresses can be avoided in the future.

It must not be forgotten that a patient may develop a cerebral tumour even though he has a hysterical personality. I well remember such a patient being transferred from the general wards of a Royal Naval Hospital during the war as a 'malingerer complaining of backache' to the neuropsychiatric department, where a diagnosis of spinal tumour was soon established.

The tendency to classify human beings into types is an over-simplification of the problem, however useful it may be in practice. There is statistical evidence to show that a high correlation exists between physique and temperament, which suggests that the physiological and psychological attributes of the individual are aspects of an underlying unity, and therefore aspects of one another.

I have pointed out elsewhere[6] that fixed and rigid personalities tend to develop single symptoms, while immature and dependant types develop multiple symptoms. It is also important to remember that in recurrent hypochondrical attacks with obsessional characteristics the underlying depression often remains undetected, and there is then a grave risk of overlooking the possibility of suicide.

TREATMENT

In considering the psychiatric treatment of pain there is no need for me to dwell on what is already familiar—the physical examination, the psychiatric interviews, and the routine psychiatric methods; but I should like to stress the increasing importance of the electro-encephalogram in personality assessment.

Lennox[7] and others have shown that brain waves vary with the physiological state of the body, i.e. in hyperventilation, lowering of the blood sugar and overhydration. The brain waves of the normal adult differ from those of a child. In normal development the patterns of childhood gradually give way to those of the adult as the psyche develops. The presence in the adult of brain-waves like those of the child is abnormal, and is associated with emotional immaturity and constitutional instability of nervous control.

The clinical relationship between physician and patient, like all other human relationships, will always remain an art as well as a science. Bomford,[8] in his Bradshaw Lecture in 1952, discussed the changing concepts of health and disease, and drew attention to the work of Grace, Wolf and Wolf,[9] and to their contributions to the study of man rather than mechanism. These workers showed that while in animal experiment the action of a drug was constant and predictable, there were instances where the effect of the same drug in man depended on the meaning of its administration to a particular person and not on its accepted pharmacological action. In other words, the reaction depended on the emotional relationship of physician and patient. This also confirmed objectively what was common knowledge to psychiatrists, that changes in the colon were greatest in those who appeared to suppress anger. This objective study of changes in the function of the organs of man in health and disease in relation to emotional states and life situations, Bromford regarded as the beginning of a new chapter in the understanding of illness.

The inadequacy of the present theories of psychological causation seems to justify clinical eclecticism, for as McInnes[10] has said, the physician and the patient may differ so much in their natural modes of thought that in attempting to give insight and reveal pathological attitudes, the approach may have to digress from rational intellectual explanations to the use of artistic media by analogy and participation. The misguided advice so often given to neurotic persons to 'pull themselves together' suggests that well-adjusted persons possess an integrating mental capacity, which functions at the level of values and abstract thought. It is interesting to recall that on active service, during the last World War, the ships' companies of submarines and members of air crews were able to endure months of arduous and hazardous duties and were able to integrate these stresses into their general experience without breaking down. This state of high morale was found to depend not only on constitutional factors, but on adequate aims and purpose, good leadership, a sense of discipline, news from home, physical amenities, and the feeling in the individual that he mattered in a group of similar people; yet morale is a psychic phenomenon which belongs to the level of values and is an example of the whole being greater than the sum of the parts.

It therefore seems that any attempt to understand human behaviour by the analytic methods of science in terms of physiology and psychology is explaining the whole in terms of the part. This approach needs to be balanced by increased insight into those aspects of mind which integrate relationships and carry meaning—the need for a personal philosophy of life.

The present concept of psychosomatic medicine indicates a transitional change in medical thought, but the word may itself suggest a false dichotomy and already the phrase 'integral medicine' has appeared in the literature. In the past medicine has enjoyed a unique status because it has considered the whole man. To this end psychiatry may have a contribution to make, although it is not its function to provide a philosophy of medicine. The need for a philosophy of medicine has been ably expressed by Russell Brain,[11] and most psychiatrists would agree with his holistic view that 'man is more than can be explained as a summation of his nervous impulses or the resultant of his conflicting complexes'.

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