THE PATIENTS' ATTITUDES TO LEUCOTOMY AND ITS EFFECTS.*

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IT is perhaps not surprising that there have been no studies on the leucotomized patients' attitudes to the operation and its effects. There has been no practical reason for giving that problem special attention. Leucotomized patients have not spontaneously voiced complaints about the operation, even when the result was unsatisfactory. It seems that their apparent silence has been taken so much for granted that psychiatrists have failed to realize that it is an astonishing phenomenon. Here is a group of patients who have been subjected to an operation of which the pros and cons have been widely discussed in public. Many have left hospital free from symptoms but socially handicapped by the side-effects of the operation. Yet there has been, as far as this writer is aware, no instance of litigation in connection with the surgical treatment of mental illness. Part of the explanation for what seems to be a collective indifference to, if not general approval of, the operation and its effects may be found in the type of mental disorder for which this treatment has been most frequently applied: among the patients thus treated there have been many schizophrenics who even after the operation remained out of touch with reality, but that explanation does not apply to the numerous patients who were operated on for affective illnesses and neuroses.

How do patients suffering from mental disorder react to surgical interference other than leucotomy? Many, it is true, show a remarkable indifference, especially schizophrenics. From time to time one comes across a paranoid patient who has experienced an operation as an act of hostile interference to which he attributes special significance. In schizophrenics the break in the body surface which an operation usually implies may give rise to delusions concerning the boundaries of the self (Hemphill and Stengel, 1940†). It is also known that in neurotics injury to, and operations on the head, which holds a special position in the body schema, sometimes give rise to morbid preoccupations. In patients who are given to hypochondriacal complaints an operation, however successful it may have been surgically, may become the focus of persistent grievances. Do leucotomized patients show similar reactions? This is one of the problems on which this clinical study may throw some light.

The observations presented in this paper were made in the course of a follow-up study carried out at Graylingwell Hospital, Chichester, where the bulk of the case-material was studied (Stengel, 1950‡), and continued at the Institute of Psychiatry of the University of London. Each patient was questioned by the writer on his or her attitude to the operation and its effects. First it was ascertained whether the patient realized that he had had an operation. Then he was asked what he thought of the operation, whether it had helped him and in what respect, and what other effects the operation had had. Leading questions about the nature of those effects were avoided. The case-material consisted mainly of schizophrenics, including the paranoid reaction types, and affective disorders. There were 66 of the latter, and 140 of the former. There was, in addition, a small group of 18 patients consisting of neurotics, psychopaths, mental defectives and a few organic cases. The total number of patients questioned was therefore

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224. They had been operated on from one to five years before they were questioned. The case-material followed up was much larger, but in this study only those patients were included who were able to appreciate the questions and to give relevant answers. In all cases the operation had been the standard leucotomy of Freeman and Watts.

Denial of the Operation.

Thirty-one, i.e., over one-seventh of the patients, were not aware that they had had an operation. Ten of them, when told that they had had the operation, seemed to accept this without surprise, but when questioned a few hours later produced the same negative reply. The rest, when told that they had had an operation on the head, denied it more or less emphatically. When the scars on their temples were pointed out to them they produced all sorts of rationalizations. Some said that their heads had been shaved only. Two patients maintained that the scars were due to electrical treatments, of which they had had many before, and some since, the operation. One patient asserted that they were due to shrinking of the skin. The rest insisted on their denial of ever having had an operation on the head, but several among them spontaneously referred to other operations which they had actually had before or since they had entered hospital, such as teeth extractions and hernia operations. Several of the patients said that they had been better for some time, but they were unable to suggest when approximately the improvement had set in. They did not refer to personality changes such as were related by many patients who were aware that they had had an operation (see below). It was impossible to ascertain whether or not those patients had been unaware of the operation from the beginning as they had not been questioned about this before the present investigation; nor was it known what their attitude to surgical treatment had been before the operation.

Twenty-eight of the thirty-one patients who denied having had the operation were schizophrenics of five to twenty years' standing, two were depressives, and one was a mental defective with epileptic fits. Only one of this group, a paranoid schizophrenic, could be classified as improved; the rest had shown no material change, though there had been some improvement of behaviour in most of them. The schizophrenics showed varying degrees of personality deterioration with marked thought disorder and delusions and hallucinations; their symptoms had remained unaffected by the operation. Their average age did not differ from that of the rest of the patients. All clinical sub-types of schizophrenia were represented in this group. There was no indication that in these patients the operation had been followed by prolonged states of clouded consciousness.

Memory impairment could not be regarded as responsible for the denial of the operation. Only in two of the thirty-one cases was there a memory disorder; the one was a 65-years-old chronic depressive patient with dementia, and the other was the imbecile epileptic. In none of the other patients were there signs of memory impairment. The denial of the operation could not be attributed to negativism. These patients were no less ready than the others to talk about themselves and to answer questions. Body image disturbances were not more frequent among them than among the rest. In fact, they did not show any feature which did not occur also among the rest of the patients. Most of the patients who denied having had the operation were euphoric, but it could not be definitely established that euphoria was comparatively more frequent or more prominent among them than among the others. Nor was it possible to relate that feature to the site of the cuts through the frontal lobes.

The Patients' Self-observations on the Effects of Leucotomy and their Evaluation.

All the patients questioned, with the exception of the group described above, and of those who were unable to give a comprehensible answer, were aware that they had had the operation which they called either "leucotomy" or "an operation on the head" or "an operation on the brain." None of the patients broached the subject of the operation spontaneously. In reviewing the patients' answers it is necessary to distinguish between (*a*) self-observations on the changes which the operation had brought about and their evaluation, and (*b*) emotional attitudes

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to the operation itself. There was often an unexpected and apparently paradoxical discrepancy between the former and the latter. In this chapter it is proposed to deal with the former only.

Of the 193 patients who were aware of having had the operation, 112 were schizophrenics, including those with paranoid states; 64 had been suffering from affective psychoses, mainly depression. The remaining 17 belonged to the miscellaneous group.

The patients' observations on the effects of the operation could be grouped under three headings: (1) gains; (2) losses; (3) no change. These observations often appeared to be unrelated to the clinical results of the operation as assessed by relatives and doctors.

(1) *Gains.*—Under this heading were listed alleviation or disappearance of symptoms, and personality changes which were described by the patients as improvements on their pre-operative disposition. The changes most commonly referred to were the disappearance or alleviation of the tendency to worry and the reduction of tension and anxiety. " I can take things easy; I can relax; life has become brighter " were frequent observations. Sometimes the same adjective was used for different experiences; e.g., a depressive patient praised the operation for having made him " less conscious " of himself, while a schizophrenic patient who had not lost his hallucinations and delusions said that he had been much better since the operation as it had made him " more conscious " of himself.

(2) *Losses.*—These were changes such as worsening of symptoms, affective loss, disappearance or reduction of sexual desire or potency, lack of energy and efficiency, increased irritability, self-confessed lack of consideration for others, etc. Epileptic fits, which had occurred in about ten per cent. of the patients questioned, have not been included in this category. None of the patients referred to them spontaneously, and when asked about them they did not regard them as a liability. There was in many cases a marked discrepancy between the patients evaluation of the effects of the operation and that by the relatives and the psychiatrists.

Among the schizophrenics there were 21 who thought that the operation had resulted in losses, but 17 of those had noted gains also.

Of the 64 patients who had been operated on for affective illness, 28 had registered losses, but only 2 of these had failed to observe gains also.

It was remarkable how lucidly and fully many of the patients described their gains and losses. Only three expressed regret and resentment about what they had lost. Two of them had suffered from depression and appeared to have made a complete recovery; the third, whose symptoms had not completely disappeared, resented the loss of initiative and blamed the operation for it. Many of the others related their observations in a matter-of-fact manner as if they did not concern them personally. They seemed to be capable of a surprising degree of detachment, but their awareness of the changes that had taken place, especially of the personality changes, must have been very definite and unequivocal, so precise were their descriptions. This was particularly impressive in those patients whose delusions and hallucinations, together with a degree of thought disorder, had continued unchanged after the operation. The contrast between the acute awareness of the personality changes and the lack of insight into their symptoms was very striking indeed.

The proportion of patients who were aware of losses was much higher among those who had considerably improved or recovered than among the others. Of the 21 schizophrenics who had observed losses, 16 had left hospital in varying states of improvement, which in 5 cases was rated as full remission. Of the 28 depressives who had observed losses, all had left hospital; 23 of them were graded as recovered, 4 improved and one as unchanged. Many of the patients who described their personality changes as losses were regarded by their relatives as perfectly well.

None of the patients who were aware of losses as well as gains attempted to balance—one against the other. Any changes they noted were experienced as isolated phenomena.

The patients' statements on their losses almost invariably lacked an undertone of sadness and regret. They sounded rather like reports by an unbiased observer. The changes were described in terms of conventional values which, however, seemed to have lost their feeling tone. There was nothing nostalgic in the way in which the patients talked about their affective losses.

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(3) *No change.*—There were 23 patients, 19 of them schizophrenics and 3 depressives, who denied that there had been any change following the operation. Among them were several who had recovered from their symptoms and showed only slight personality changes.

Attitudes to the Operation.

Three attitudes to their own operation could be distinguished among the patients questioned: (1) A positive attitude, which was one of approval or praise. (2) A negative attitude, expressed in statements such as: the operation was unnecessary; it was unsuccessful; it should not have been done; and, in a few instances, it was harmful. (3) An attitude of doubt or indifference as to whether the operation was a good or a bad thing.

(1) The great majority of the patients when questioned expressed approval or praise of the operation. Among them were many whose condition had not materially changed. All of these patients had, when questioned about the effects of the operation, registered either gains only, or gains as well as losses.

(2) Twenty-two patients, i.e., about one in nine of those able to express an opinion, had a negative attitude to the operation; 15 of them were schizophrenics and 7 depressives. Of the schizophrenics, 4 had left hospital, 2 free from symptoms and socially well adjusted, the other 2 improved; the rest of the 15 schizophrenics had remained in hospital. Only one, who was clinically unchanged, said that the operation had made him worse. Two paranoid schizophrenics regarded the operation as one of the many interferences they had been subjected to. In none of the patients whose attitude to the operation was negative did it occupy a special place among his paranoid preoccupations. In none of them had it become the nucleus of a delusion or the source of persistent spontaneous complaints. The majority of the patients whose attitude to the operation was negative thought that it had been unnecessary or unsuccessful.

The patients' attitudes to the operation did not always correspond with their observations on its effects. Two of the depressive patients who had registered gains as the result of the operation nevertheless felt that it need not have been undertaken. They implied that they would have improved without it. All the depressives with negative attitude to the operation had left hospital. In these patients, that attitude was part of their general hypochondriacal outlook. The operation was to them only one of the many, mostly trivial incidents which they groused about when questioned, but never spontaneously. It never figured as an important experience.

(3) An attitude of doubt or indifference concerning the operation was found in 19 patients. Three of them were depressives, one was the mental defective with epileptic fits, and the rest were schizophrenics. In this group there was a closer correspondence between the patients' attitude to the operation and their observations on the effects of the operation than in the other two groups: 15 out of the 19 patients had stated that the operation had made no difference to their condition, while 4 had observed losses only. On the other hand, these self-observations were in the majority of cases at variance with the clinical assessment. Only 5 of the 19 patients had remained clinically unchanged, 5 had made a complete recovery and the rest showed varying degrees of improvement.

In the small miscellaneous group the first and the third attitude to the operation were found, but this group was too heterogeneous to justify a closer analysis.

Most patients who had remained in hospital and some who had been discharged were questioned more than once. Their observations on the effects of the operation and their attitudes to it were both remarkably consistent. There was only one patient whose attitude to the operation showed definite changes. This was a woman who had been operated on for a long-standing obsessional neurosis. After operation she had become subject to periods of severe depression. When she was depressed she blamed the operation for her condition, but as soon as she had recovered from the depression her attitude to the operation, which had almost completely removed her obsessional symptoms, became one of approval.

Comments.

This is no more than a preliminary study of a subject that is worthy of close attention. The present report serves to show the various types of reaction to

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the operation that could be observed in a large series. The observations need further elaboration in individual patients.

The changed feeling tone of emotional patterns.—The study of the patients' attitudes to the operation and its effects might be of value for the understanding of their mental reactions in general. The operation is something that has happened to all of them and their reactions to it can be compared. It is a crucial event imposed from outside and initiating a new era in the lives of most patients thus treated. Of this significance of the operation many patients are aware. Yet it hardly stands out from their day-to-day experiences, even where the awareness of the changes attributed to it by the patients themselves is very real and acute. The detachment with which the patients relate their losses is very striking. A change in the feeling tone of emotionally charged experiences has taken place. Whether this is due solely to quantitative changes, i.e., to the reduction of emotional charge, or whether qualitative changes have also taken place it is not possible to state.

The peculiar character of the leucotomized patient's attitude to changes observed by him, especially to those designated here as losses, becomes clearer if one compares it with that of other patients who have become aware of changes in their emotional reactions: such as the young schizophrenic who complains about his emotional impoverishment, or the ageing man who compares his emotional responses with those of his prime. They are obviously able to relate present to past patterns of emotional response and to compare them. It appears that the leucotomized patient is unable to match correctly emotional patterns in this way, possibly because not only the present but also the past patterns of emotional response have lost their appropriate feeling tone. This may be the reason why in the leucotomized patient the awareness of loss is hardly experienced as deprivation although it is described as such, and why it does not engender a real sense of frustration and is not felt as a mental trauma. This may also explain why leucotomy as an experience is hardly ever productive of new symptoms as other operations sometimes are; and why the impact on other persons of the patients' observations of their losses is so different from that of the complaints of patients such as those already mentioned: they lack the tragic character of which one becomes aware when listening to the schizophrenic talking about his emotional impoverishment, or to the ageing man's observations on his waning powers.

The denial of the operation.—A group of patients appeared to be unaware of having had the operation. The reasons for this are far from clear. Had it perhaps not been made plain to them that they were going to have surgical treatment, or had they failed to understand what they were told? This is unlikely to be the explanation. If it were, unawareness of the operation would probably be more frequent than it was found to be; in fact, many of the patients to whom that explanation may apply were aware that they had had the operation. Whether or not patients get to know of operations carried out on them, or of injuries sustained, does not depend only on what they have been told about them before or afterwards. They become aware of those events retrospectively by inquiries and circumstantial evidence. It is true that leucotomized patients often fail to ask questions when they find themselves in bed after the operation, but they usually draw the correct conclusions from the treatment they receive after the operation. Memory disorder or prolonged post-operative clouding of consciousness could be excluded as the causes of the ignorance and denial of the operation. Nearly all the patients belonging to this group were old-standing schizophrenics: advanced autistic withdrawal from reality obviously favours that particular attitude of denial in leucotomized subjects. It was also noteworthy that the majority of the patients who denied having had the operation were not aware of having undergone any change. This may have been another factor contributing to the denial of the operation. However, there were many old schizophrenics unchanged or not greatly improved, who were aware of the operation, and among them some who had not noticed any changes. It cannot, therefore, be assumed that unawareness of changes satisfactorily explains the denial of the operation. Indeed, the denial of that event may tend to inhibit awareness of change.

There is a possibility that damage to certain areas of the cortex, or to certain parts of the fronto-thalamic tracts, may, together with other factors, be responsible for that phenomenon. It is known that the lesions produced by the standard leucotomy vary greatly.

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The reactions which these patients display when they are told about the operation are very similar to those seen in patients with anosognosia when they are told the truth about their limbs of whose paralysis or even existence they are unaware. Both either accept the truth for the moment, only to disregard it soon after, or they stubbornly refuse to accept it and resort to rationalizations when called on to explain undeniable facts. This similarity suggests that ignorance of the operation not based on memory loss is a neglect phenomenon akin to anosognosia, and that one is justified in speaking of " unawareness of the operation." Psychopathologically the phenomena are clearly related. The patients who deny the operation are unaware of interference with their physical and mental integrity. It is true that the patient with anosognosia apparently denies an existing disability, while the patient unaware of leucotomy denies a past event, but is this difference a real one? Do not both types of patients deny the advent of change as well as its persistence? Does not the patient with anosognosia deny the loss of motor power as well as its continued absence? And do not certain blind patients deny the actual loss of vision as well as their blindness? It seems that some leucotomized patients deny the event that caused the change as well as the change itself.

Anosognosia and other neglect phenomena occur when a combination of cerebral lesions results in a certain constellation of mental changes. The mood of these patients is almost invariably one of euphoria. In the patients with unawareness of leucotomy euphoria appeared to be more marked than in the others. But this was no more than a clinical impression, which it would be difficult to establish in view of the frequency of euphoria after the operation.

There is still another reason for assuming that unawareness of leucotomy and anosognosia are kindred phenomena. Anosognosia as originally described by Babinski has been found to be associated with thalamic lesions, while in other forms of unawareness of, or indifference to, physical disabilities the frontal lobes were involved, the same parts of the brain, therefore, whose functions are modified by leucotomy.

Unawareness of the operation is not the only neglect phenomenon occurring in leucotomized patients. Many of those with a positive attitude to the operation who were aware only of gains showed marked changes of which they were unaware. Possibly the mechanisms underlying that unawareness were similar to those responsible for the denial of the operation. It is hardly possible to attribute unawareness of personality changes entirely to the desire to overlook unpleasant realities. Leucotomized patients seem to be less subject to that tendency than are others. This is borne out by the free and detached manner in which they speak of their losses and shortcomings. The frequent unawareness of change may be partly attributable to these patients' difficulties in integrating experiences of various kinds and in appraising their total situation in relation to their environment. Isolated experiences are particularly liable to neglect and extinction. Nevertheless, the tendency to repress what is unpleasant cannot have been absent in those patients, otherwise the proportion of patients who had noticed losses would have been much greater. That tendency was obviously less effective where clinical improvement had been greatest: many more were aware of losses among those who had improved greatly or recovered from their symptoms than among the rest.

Summary.

Attitudes to the operation and its effects have been studied in a large series of schizophrenic and depressive patients treated by the standard leucotomy.

A group of patients, about one-seventh of the total, denied having had the operation. When told about it their reactions were similar to those of patients with anosognosia and other neglect phenomena: some accepted the fact temporarily, while others persisted in their denial. That group consisted mainly of advanced schizophrenics. The psychopathological significance and the origin of the denial of operation have been discussed. It has been suggested that gross unawareness of changes following leucotomy is a kindred phenomenon.

The patients' self-observations on the effects of the operation have been registered. Awareness of losses was much more frequent among those recovered or greatly improved than among the rest. The peculiar quality of detachment with which the patients recorded their gains and losses has been discussed. It has been suggested that it is not due solely to quantitative changes, but that, as the result

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of the operation, the patients have become unable to match correctly present and past patterns of emotional response as both have lost their feeling tone.

The patients did not spontaneously attempt to balance the losses against the gains.

Three attitudes to the operation have been distinguished—a positive, a negative, and that of doubt and indifference. Often these attitudes did not tally with the self-observations on the effects of the operation.

One in nine of the patients had a negative attitude to the operation which, however, was never expressed spontaneously.

In none of the patients had the operation become the source of a delusional idea or the focus of hypochondriacal preoccupations.

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