

# Psychosocial problems in surgery

A review

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It is a commonly held view that to be scientific in medicine is necessarily to be a reductionist, who tries to understand bodily function only in terms of smaller and smaller structural units and eventually reduces relevant inquiry to the realms of biochemistry and biophysics. This approach has yielded and will continue to yield outstanding advances in our knowledge. Yet few would deny that the functions of the whole organism are always greater than those of its many parts. In an analogous situation, to appreciate a painting we need to view it in its entirety; a detailed analysis of the metal oxides used in the oil-paints, fascinating though this may be, will not enable us to comprehend what the artist is trying to communicate. Similarly, to understand a patient and his distress or disease we must try to realise that he is more than a complex collection of molecules and cells, more than a grouping of organ systems, some of which may be malfunctioning: he is a person with a unique genetic endowment, past experience and present life-style, with hopes and possibilities for the future. Most important, he is a highly social being with the greatest powers of reasoning, imagination and communication of all animals. Thus, there is need for a *non-reductionist* or *integrative* approach (Mason, 1970; Thorne, 1972) when

considering the structure and function of the whole man.

The concept of homeostasis (Cannon, 1939) with negative feedback systems of control is usually applied to maintenance of the *milieu interieur*—for example, such variables as the concentration of blood glucose or hydrogen ion. However, it appears that there are similar systems of control and feedback to maintain dynamic equilibrium within a limited range at all levels of function from the molecular, cellular and glandular, up to and including psychological and behavioural—levels which are characterised by increasingly complex structure, function and systems of control, and may thus be looked upon as forming a hierarchy. Each level of the hierarchy has its own characteristics and some degree of autonomy but also forms part of a larger and more complex whole (Koestler, 1967). In general, our understanding of the mechanisms whereby the highest levels of integrative functioning, such as behavioural state, are controlled is less than that of molecular processes.

## Basic theory

Each of us tends to have a fairly constant pattern of secretion of cortisol or gastric juice from day to day. Similarly, we tend to behave in the same way in repetitive situations in which social interaction is involved. In both instances extraneous events can act as "stressors" to upset this equilibrium. To these there is a stabilising response or adaptation but, if the required degree of this response exceeds the limits of the usual range in

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which integrative activity can be sustained (e.g. the protective mechanisms of the duodenal mucosa or the psychological mechanisms which are used to minimise subjective distress) illness or disease may result.

In the past our main concern has been limited to organic pathological changes or functional disturbances in systems, but these terms are deceiving. Despite a degree of autonomy at each level of structure and function in the whole organism, influences from higher levels of integration may be very important at all lower levels. The *placebo effect* illustrates this point well: a non-specific result may follow the administration of either a drug or a pharmacologically inactive substance (placebo). The colour of the tablet or the form of presentation of a drug or treatment and the explanation or impression given by the prescribing doctor may be as important in determining the patient's response as the known pharmacological or therapeutic effects (Wilson, 1962). Side-effects, including skin rashes and gastrointestinal disturbances, are reported almost as frequently by patients taking placebos as by those who consume active drugs (Wolf and Pinsky, 1954). The placebo response is no less important in patients undergoing surgical procedures and may be expected to occur in at least one third of them (Beecher, 1961). Placebo-responders are not all "neurotic" and "weak" people with imaginary symptoms; they are individuals who for various reasons are readily influenced by us at several levels of their integrative function. The physiological mechanisms which mediate these effects are not well understood, but failure to comprehend does not reduce their importance.

The traditional "bedside manner" of doctors has always made use of these psychological aspects of the relationship with patients. However, greater aware-

ness of the importance of psychological and social factors in disease processes and in the doctor-patient relationship increases the possibility of benefit to patients. These matters are as much a concern for surgeons as for any other doctor, because some degree of psychological distress or adaptation is involved in every patient's response to illness. Somewhat strangely, little if any study has been made of the influence of positive attitudes by surgeons on patients' survival or morbidity. Casual observation suggests that an enthusiastic individual or team approach does affect outcome, but the magnitude of this contribution is unknown.

### Coping

In the study of psychosocial factors in illness emphasis is increasingly being placed upon patients' coping (Hamburg and Adams, 1967; Lipowski, 1969). *Coping* entails the whole range of activities and mechanisms of a psychological, behavioural and social nature which everyone uses in adapting to stresses and to meeting life's demands and goals with a minimum of subjective distress and usually with the maintenance of a sense of personal worth. These adaptive mechanisms modify our perception of any situation, or understanding of it, as well as the effect it has on our emotional and behavioural response. Coping also involves some control and limitation of our social interactions with other people. Thus, we tend to associate with those who "get along with us" at home and at work and to avoid those who disturb us. The enduring disposition of an individual to deal with challenges and stresses predominantly by the use of a certain type of psychological and behavioural mechanism might be called his *coping style*. In this area of investigation, cause and effect are seldom clear-cut, the situation at any one time being influenced

by a ceaseless interaction of biological, psychological and social factors. The practical importance of the concept of coping lies in the fact that it provides a framework against which the total patient involvement in illness can begin to be understood.

#### **Coping with the stress of surgery**

In many disorders which require operative surgical treatment the patient must cope with the physical reality of pain and disability as well as with the threat to his self-image and ability to attain previously established goals. The stresses to which he is subject are physical and objective on the one hand and symbolic or subjective—produced by his perception of the situation—on the other. However, physiological concomitants of the response to both physical and symbolic stresses are very similar (Selye, 1956). The fact that the majority of patients can cope with the stresses involved in surgery with little effort on our part is no more reason to ignore the possible benefits of our psychological support than it is a reason to disregard the possible benefits of treatment of duodenal ulcer symptoms because they often subside spontaneously. Some patients, too, are unable to cope with the stress of illness and surgery and require special care and understanding, different perhaps in degree rather than in kind from that which should be afforded to others.

#### **Determinants of coping with stress**

There are many determinants of the ability to cope with stress. The distress of a child admitted to hospital for tonsillectomy, leaving his mother for the first time, is of a different kind and intensity from that shown by an elderly man with generalised arteriosclerosis being admitted to hospital for the fifth time. What is highly distressing for one patient may produce very little reaction

in another. Apart from real differences in the nature of external stressors, it is the patient's perception and appraisal of them—their meaning for him at that time—which determines his reaction. Both the intensity of a stressor as perceived by the patient and the manner of his coping with it are determined by many factors in his or her life-style—psychological, socio-economic, physical and metabolic, environmental—as well as the duration for which the stress is applied.

It has often been said that low intelligence may reduce a patient's level of co-operation. This may sometimes be so, particularly in circumstances in which an understanding of a new complexity of life—for example a colostomy—is needed. However, high intelligence is no guarantee of greater cooperation or of more successful coping with an illness.

Personality structure is probably of greater importance: indeed, personality and coping style are in some ways overlapping concepts. Coping with physical illness evokes the patient's characteristic ways of dealing with stresses of life in general, but sometimes in an exaggerated fashion. For example, an obsessional person may insist on having detailed explanations and ordered instructions to reduce his uncertainty about the illness and its effects; he will cope better if given the information he needs.

Illness may have a reward or a gain which helps perpetuate it despite the apparent suffering which this entails. Gain may take the form of relief from a sense of guilt after the "punishment" of illness, the satisfaction of strong needs for dependency which cannot be met otherwise, or the avoidance of distressing social conflicts. The self-administration of an overdose of hypnotic drugs is the best example of the last—a non-lethal means of escaping from difficult personal relationships or responsibilities—but a

surgical procedure, the disability it leaves or is thought to leave, and the convalescence it entails may be used in a similar way.

Finally amongst psychological factors, the much over-used and relatively little understood (at least by surgeons) phrase "the *doctor-patient relationship*" looms large. A close, but not cloying, association with the patient is one of the most important aspects of his medical care. Normally this is built into good surgical practice, although for some the effort required to do so is greater than for others. However, there is a class of patients, not infrequently seen by surgeons and sometimes even operated upon, in whom the establishing of a meaningful and productive relationship is difficult. Such individuals appear to have high expectations of the doctor's capabilities, often bordering on the supernatural; at the same time their multiple symptoms affecting several body systems arise from an inability to cope with life's stresses and are often misinterpreted by doctors who are trained to search for "organic" disease. When a firm basis in physical diagnosis cannot be found, the doctor may reject the situation, becoming both frustrated and annoyed. These feelings are intensified by the patient's desire for a degree of dependence which the doctor is unable to accept. In addition, a practitioner on the fringe of medicine may appear to have more success in that he sets less value on a scientific or logical explanation and thus is able to offer a more sympathetic response. This further drives the conventional doctor and his erstwhile patient apart.

The socio-economic impact on morbidity and mortality from disease has received much emphasis in obstetrics, medicine and psychiatry but, apart from the differences between "public" and "private" patients that feature in the literature of countries with free enterprise

medical services, has been less commented upon in a surgical context. However, social upheaval, changes in work and family relationships or other major changes in life situation seem to predispose patients to the development of physical illnesses of all kinds from pulmonary tuberculosis to myocardial infarction (Rahe and Arthur, 1968). Satisfying personal relationships may be derived not only from the nuclear family but also from ethnic, social or cultural groups. Our own experience of minority migrant communities in Australia has emphasised this very important adjunct to successful coping. By the same token, the strong nuclear family still persisting in many Asian communities can be a more effective support to its members than all the apparatus of welfare agencies in Western communities where family integration is on the decline.

The ability to cope from day to day not only influences but also is dependent upon the efficiency of bodily systems at lower levels of integrative function. Age and physical disabilities such as blindness or the loss of a leg affect coping behaviour. It is well known that the degree of adaptation to a new situation is often greatly reduced in old age when other factors such as family support and useful occupation may also have decreased. Failure to cope is common under such circumstances, especially if additional adaptation to physical illness is called for.

An optimal level of separate and integrated function of the central nervous, autonomic and neuroendocrine systems is important in determining overall behaviour. Various degrees of cerebral dysfunction are known to occur in such disorders as hypoglycæmia, hypothyroidism, hypoxia, cerebral tumour, toxæmia and fever, uræmia, hepatic failure, hyperparathyroidism, hyperadrenocorticoidism and long-term

semi-starvation. Apart from the effect of organic disease on cerebral function, quantitative and qualitative disturbances in sleep may affect the ability to deal with life's stresses. Equally, stress may cause a disturbed sleep situation so that a vicious spiral is set up. Unfortunately, there is little information on sleep disturbance in common organic illnesses but it is known, for example, that the patient with ischaemic heart disease often suffers from lack of sleep and a subjective feeling of poor quality rest (Johns *et al.*, 1970). Studies in progress in this field suggest that even healthy "poor" sleepers may have a higher output of glucocorticoids than those who sleep well (Johns *et al.*, 1971). It is tempting to suggest that this mild hyperadrenocorticoidism may be of more widespread occurrence in disease states associated with sleep lack than we currently are aware, and that both this and the increased reticular system activity of which it may be an indicator have influence on the expression and course of illness.

Of clearer practical significance is the recognition that during wakefulness an optimal amount of meaningful sensory output must be received and this information processed in order to maintain normal mental function. The organism is geared to a certain degree of cerebral activation derived from the ascending reticular activating and the non-specific thalamic projection systems in the brain stem. With too little input during wakefulness (as occurs in experimental isolation experiments) or relative absence of meaningful sensory stimuli (as may occur in certain intensive-care ward situations) cerebral function becomes inefficient, perhaps because the degree of cerebral activation is too low. However, intense and regular sensory stimulation has a similar effect, apparently by producing a protective inhibition of cerebral function. Thus, it is possible to

send subjects to sleep by taping open their eye-lids and bombarding them with rhythmical visual, auditory or tactile stimulation (Oswald, 1962).

The relationship between the performance of a particular function and the degree of central nervous system activation takes the form shown in Fig. 1.

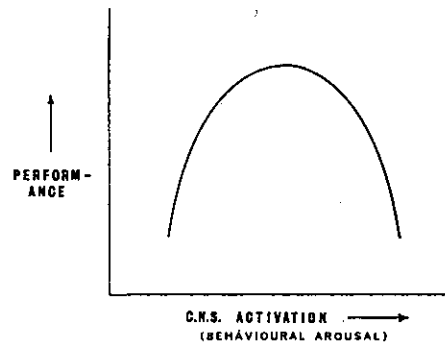


FIG. 1

The "inverted-U" relationship between performance at a task and activation of the central nervous system or behavioural arousal.

Optimum performance is likely around a mid-zone of arousal towards the apex of the inverted U. When drowsy or asleep on the one hand or when hyperexcited on the other hand we can achieve much less. This knowledge has important implications in relation to the handling of an acutely ill patient, and it should also be borne in mind by surgeons lest they overpride themselves on their degree of endurance or underestimate their susceptibility to stress.

Psychoactive drugs (sedatives and tranquillisers) may act at least partly by decreasing the degree of reticular activation, so moving the hyperactive individual towards the mid-zone. However, such drugs decrease other brain-stem activities to abnormally low levels when administered in excess. Therefore it is not to be expected that the use of drugs either of the promazine or minor tranquilliser

group will necessarily provide a complete answer for the patient who is hyper-aroused. However, their use is greatly to be preferred, in contrast to the relatively blind administration of opiates or barbiturates once so common in surgical wards.

Apart from the factors intrinsic to disease and personality, the environment in which an illness is experienced is of significance to the individual. Abrupt physical changes call for adaptation both in social behaviour and physiological performance. For example, both of them are reduced under conditions of raised temperature or humidity or when a sudden change in physical environment occurs, as may take place in moving from temperate to tropical climates. There are changes with time in behaviour and performance as a result of biological rhythms, some of which are related to night and day (*e.g.* the circadian rhythms of sleep and wakefulness, hormonal secretion and electrolyte turnover). These rhythms affect not only the rates of secretion of hormones such as cortisol (Hellman *et al.*, 1970) but also the speed and accuracy with which a routine task can be performed (Klein *et al.*, 1968). There are other less well defined biological rhythms, some with shorter and others with longer periods than 24 hours.

Noise of sufficient intensity can be a stressful stimulus during wakefulness or sleep (Johns, 1967; Scott, 1972). However, the intensity of noise required to waken someone from sleep depends on the time of night—the deepest sleep (requiring the loudest noise to waken anyone) tends to occur within the first three hours of a night's sleep—and, as with all reactions to stressors, on the meaning of the noise for that particular person (Oswald, 1962). Thus, it is well known that a mother is woken by the first soft cries of her own baby, but sleeps soundly through the louder traffic noise outside in the street.

Finally, as with other classical descriptions of illness, it is appropriate to distinguish between the acute and chronic state. The presentation of a new physical stimulus or symbolic threat is usually followed by a form of adaptation. Whatever the nature of this stress, the required response takes time. Thus, the initial physiological impact of travelling from a temperate zone to the tropics is gradually reduced by changes in sweat gland activity and metabolism which may extend over several weeks. Similarly, with psychological stress the initial response often lasts days or weeks, but thereafter a new equilibrium is reached as psychological defence mechanisms are mobilised and behaviour adapts. There is evidence from steroid excretion studies that individuals repeatedly exposed to what most of us would regard as severely stressful situations (combat exposure in rescuing casualties by helicopter) can adapt so that their physiological level of functioning is apparently normal (Bourne, 1970). Thus, the mental impact of an event or threat should not be judged solely on the basis of an initial "shock" reaction. More important is the individual's ability to cope and modify this reaction over the subsequent few days and weeks or the possibility that a condition of chronic distress will follow.

With this general background in mind, it is possible to focus on the causes of psychological distress in surgical patients. Admission to hospital may dislocate such trivial routines as toilet habits, which for the young may be immaterial but for the old are fixed and sacrosanct. There may be new and strange noises, particularly in an open ward, with the added problem of the bizarre habits of the next door neighbour, including the possibility of his unexpected death. These strange sights and sounds are combined with separation from the protective environment and emotional

support of home and family, as well as with the fears of the unknown and of pain and the prospect of death. Apart from these cardinal matters, a surgical procedure may carry with it the fear both of the general anaesthetic and the outcome. The former seems to involve a dislike of giving oneself up entirely to the control of another person and the possibility that inhibitions will be released during anaesthesia so that mental content which is usually repressed will be communicated.

Admission to hospital, especially for a surgical procedure, may invoke a loss of self esteem, particularly in those who have prided themselves on their physical fitness or immunity from disease. The symbolic threat of some operations—particularly those involving the integument or a threat to gender—may contribute to the patient's feeling of inadequacy. Associated with this, or as a separate entity, may be the patient's fear that after leaving hospital he or she will be unable to undertake activities previously central to his or her existence, or that an image will be presented which will lead to less love and concern from others. We have found the latter to be a source of deep concern in the severely burned. Detailed studies of the coping ability of this group are becoming more important as survival, albeit with gross cosmetic and functional incapacity, becomes increasingly likely (Masterton *et al.*, 1973).

### Clinical patterns of coping

Given these threats to self esteem and the basic mechanisms which are at man's disposal for coping, can a profitable classification be made of the methods used by individuals to meet the psychological challenge of illness? Although rigid categorisation is dangerous, we believe it is pragmatic to attempt to define the major ways in which humans react.

Knowledge of this kind is suitable for those engaged in day-to-day patient care. Further study will undoubtedly refine and alter it; but at the moment it throws some light on the coping behaviour of the patient we encounter in out-patient clinic or wards.

Two of the commonest psychological methods for coping with the stress of illness are "minimisation" and "vigilant focusing" (Lipowski, 1970). In their extreme forms these reactions do not occur together in an individual, but may follow one another at different stages of illness.

*Minimisation* is the tendency to ignore, deny or rationalise the personal significance of information related to illness and its consequences. The degree of minimisation ranges from delusional denial of illness (*e.g.* the failure of a traumatic amputee to admit that his limb is missing) to selective misinterpretation of facts so that their threatening aspects may be eliminated (*e.g.* calling the chest pain of myocardial infarction "indigestion"). Minimisation is common in the early phase of acute illness, particularly when the patient has partial knowledge of the real situation.

There is evidence that excessive minimisation by a surgical patient in the preoperative period leaves him unprepared for the reality of stressors in the early postoperative period (Janis, 1958). To this extent, mild emotional distress, more usually preoperative, may act as a stimulus for the use of better, more adaptive coping methods; the patient is then more able to cope post-operatively.

*Vigilant focusing* is a characteristic way of coping with stresses by patients who are obsessional, alert, and anxiety-prone, for whom clarity and full explanation of what is happening are all important. Such individuals can show all intensities of this attribute, from realistic appraisal

of the dangers of the illness to anxious ruminating about them.

It should not be forgotten that bed rest and admission to hospital have an important bearing on coping behaviour. Both do afford nursing care and a reduction in physical exertion (not that this is often all that strenuous in the Western world), but they also bring about psychological and behavioural changes. The psychological effects of bed rest under these circumstances probably far exceed the effects of a reclining posture and a reduced energy expenditure. It is characteristic of some patients with a wide variety of illnesses that their general condition improves rapidly after admission to hospital before a specific treatment has been given. The patient is removed from an active and sometimes hostile world with its responsibilities, frustrations and interpersonal relationships, and is placed in a passive and dependent relationship with doctors, nursing staff and the institution. For many this is a welcome retreat, which involves regression to more child-like behaviour and thinking, a stance that enables them better to cope with their illness. However, for patients in whom illness-behaviour is perceived as weakness, the acceptance of this rôle as a hospital patient may be the cause of distress. For them complete bed-rest and immobilisation may be more physiologically and psychologically disturbing than moderate activity and an out-patient regimen.

After the acute stage of adaptation to illness or operation (lasting for a few days) there is commonly a period of behavioural withdrawal and depression. This is followed by the use of recovery mechanisms involving especially the mobilisation of hope. The patient sees for himself or accepts reassurance from outside that others have been through similar illnesses and have recovered, and

that the medical staff are not only willing but are also able to help. Interpersonal relationships, the normal traffic of conversation and gossip, begin to be restored with visitors from outside the hospital and through tension-relieving discussions with other patients. For some the adoption of a particular rôle in the hospital hierarchy may help: we are all familiar with the surgeon's favourite, the confidant of the ward, the organiser, and others who remind us of our social organisation in other spheres (Downison, 1968). Medical complications involving minor or major set-backs at this stage readily recreate anxiety or depressive reactions. However, some patients may learn new coping strategies which, if successful, broaden their problem-solving capabilities and their adaptations to illness in the future. Illness is thus not entirely without benefit.

Having coped with hospital admission and acute illness and after adopting a new rôle of dependence in the service of recovery, some patients are then loath to resume their former rôles in the outside world when discharged from hospital. Convalescence should be geared to a gradual change in the patient's rôle which matches his actual and perceived physical disability.

#### **Failure to cope and maladaptive coping**

Some patients use coping methods which are efficient in reducing their subjective distress but in a way are maladaptive for ultimate survival. For example, a woman may use strong denial in minimising the psychological impact of a basal cell carcinoma which is eroding one side of her face before she seeks treatment, a maladaptive situation in that the delay prejudices her chances of survival. The lack of concern (*la belle indifférence*) of a patient with hysterical paralysis of



the legs is another extreme form of maladaptive coping.

By contrast, relatively inadequate coping is usually accompanied by subjective distress, behavioural arousal and hyperactivation of the central nervous system, probably as a result of increased activity in the ascending reticular activating system and non-specific thalamic projection system in the brain stem. The appearances are not dissimilar to those seen in anxiety neurosis. There are variations in cognitive function, alterations in mood (including depression and hostility), physiological changes in respiratory rate, muscle tone (particularly the gamma-efferent system with the production of tremor), increased cortisol output, disturbed sleep patterns, anorexia, and sexual dysfunction.

This florid clinical picture may appear foreign and rare to most surgeons. Yet relative failure to cope with the stresses of life and of physical illness is common in hospital patients. About 20% of males and 50% of female patients studied in an Australian "public" hospital had emotional disturbances (Johns, 1972). The superficial approach of the average hospital doctor fails to elicit these problems which, however, can be uncovered either by careful conventional history-taking or the use of an inventory of symptoms such as the Cornell Medical Index Health Questionnaire. Feelings of hopelessness and personal inadequacy, combined with disturbances of the patient's work and social relationships, are commonly associated with physical illness, both preceding its onset and as part of the reaction to it.

These significant emotional problems should be distinguished on the one hand from what might be regarded as the normal trepidation surrounding illness and hospital admission, and on the other hand from the gross disturbances in behaviour that may occur in patients with

overt or latent psychosis. A degree of fear based on a realistic appraisal of danger is a common concomitant of illness and surgery, and usually responds to explanation and reassurance. However, some patients are so anxious or hostile that they cannot cooperate with diagnostic procedures and, after a variable period of tension between them and those who are either in authority or attempting to help, discharge themselves from hospital. An alternative reaction is a state of depression which, while it does not occasion frank lack of cooperation, interferes with progress because of refusal to eat, thoughts of or attempts at suicide, and unwillingness to engage in positive activities such as occupational or physical therapy.

Acute schizophrenic or paranoid reactions to the stress of impending surgery are rare but, particularly if they represent the first manifestations of a latent psychosis, may puzzle the surgeon who having seen what he believed to be a mentally healthy individual in the outpatient clinic is then confronted with bizarre behaviour in the preoperative or postoperative phase. The chronic psychotic, provided extremes of intelligent co-operation are not required and the illness is well controlled by psychotropic agents, seems often to suffer little distress with major surgery.

Long-term personality disorder underlies another not uncommon form of behavioural disturbance in surgical patients: sufferers show little anxiety, but complain bitterly about hospital conditions and personnel and may make threats of legal action; others petition excessively for the relief of symptoms, so influencing the surgeon to undertake therapeutic procedures with less than the usual indications. We have already referred to the patient with multiple symptoms and his desire for dependency. Such a patient, if too freely operated

upon in the desperate search for a physical ailment, or if too readily given access to psychotropic drugs, may increase his dependence both on the doctor and on the drugs. It is probable that some patients originally classed as Munchausen syndrome (Asher, 1951) are in this group. However, a long surgical illness with a successful physical outcome may also leave a patient in a transitional dependent state in which withdrawal of therapeutic assistance by drugs and support is viewed as a threat and may occasion bitter recriminations and rejection rather than the gratitude and respect the doctor hopes for.

#### **Acute brain syndrome**

We have previously drawn attention to the need for surgeons to analyse acute disturbances of perception, thinking, emotion and behaviour which may occasionally appear preoperatively but are more common after major surgery (Dudley, 1968). These disorders, now usually referred to by the nosologically interested as acute brain syndrome, are characterised by rapidly fluctuating levels of consciousness, memory deficits (mainly for recent events), confusion, restlessness, delusions and disorientation in space and time (Morse and Litin, 1971). The last may sometimes extend into problems of self recognition, as in one of our patients who insisted he was a motor car.

To the already impressive list of disturbing factors for cerebral metabolism of which the surgeon must be aware has been added cerebral micro-embolism in patients on heart-lung bypass (Brennan *et al.*, 1971; Williams, 1971). A similar situation may pertain in some instances of fat embolism. The importance of sleep deprivation in acute brain syndrome remains in doubt. Our original hypothesis, and that of others, that absolute sleep lack and relative lack of dreaming (REM) sleep might be of

major importance has proved too simple. Purposeful deprivation of REM sleep for prolonged periods does not lead to psychosis in previously healthy people, as was suggested some years ago (Wyatt *et al.*, 1971). Nor, as we have found, does prolonged insomnia always precede the development of acute brain syndrome, although sleep deprivation may make the symptoms worse. Indeed, it becomes increasingly difficult to arouse a patient with acute brain syndrome to alert wakefulness, and increased amounts of disturbed sleep rather than overall deprivation of sleep appear common. The behavioural disturbance is typically worse at night and at other times when sensory cues are reduced (as in darkness, strange surroundings or sensory isolation with bandages covering the eyes after ophthalmic surgery). This sort of cerebral disturbance is reversible, usually within a few days, once the underlying disorder has been recognised and treated.

#### **Dying and bereavement**

Surgeons and doctors are much acquainted with but not often greatly concerned about death, except in so far as it reflects their professional skills (Sudnow, 1967). However, increasing knowledge of the processes of death and their psychological and social impact has forced the doctor to reconsider his attitude. The subject is large and is also greatly influenced by cultural factors (Hinton, 1967). However, there is evidence that the distress of dying patients and their relatives is greatly reduced if a more open and honest approach is adopted by the attending doctor (Kübler-Ross, 1970). This does not mean a simple statement of the fact that a patient is going to die, but a continuing relationship between the patient and the people who have been trying to prolong life. A discussion about the patient's fears, especially about the fear of pain, may enable him to adjust

to the idea of death more easily than we imagine. To venture into this therapeutic field may increase the surgeon's own distress so that he makes conscious or unconscious efforts to modify his behaviour. This may be difficult but the attempt can bring the therapeutic rewards of a job well done. In our experience there is no doubt that it also contributes to the dignity of the dying patient which in Western cultures is so often sadly lacking.

As with dying, so with bereavement. Mourning is a normal biological reaction in social animals to the loss of personal friends and relatives; it occurs in geese and dogs much in the same way as in humans. The emotional adaptation of bereavement is accompanied by physiological changes as in other causes of distress. The clinical classification is familiar to all: a few days of acute grief which dissociates the sufferer from reality but which is often suppressed in Anglo-Saxon cultures because beating the breast and tearing the hair are frowned upon; a longer period of depression and withdrawal, lasting perhaps up to 6 months; and finally a gradual retribalisation with the emergence of motivation and drive. Arrest of progress may occur in any of these phases, particularly if social, economic or cultural factors operate to hinder the patient in working through his emotional reaction and adaptive coping, both with the biological events and the new situations that pertain after the loss of a loved one. Prolonged mourning, with failure to cope, is associated with increased mortality, especially from cardiovascular disease (Murray-Parkes *et al.*, 1969). This is an example of illness following the "giving up—given up" complex of feelings and behaviour described by Engel (1968). There is some evidence that patients in this condition do poorly at surgery (Blackly and Starr, 1964).

## Conclusions

This view of what we believe to be the salient psychosocial problems of which the surgeon has to be aware is of necessity incomplete. We have said little about the stresses affecting surgeons and their performance, which is a large if ill-explored subject in itself; and we have not attempted to consider therapy. What we hope we have achieved is a reminder, if such is needed, that body and mind are as one, even in the context of the physical illnesses with which the surgical craftsman is mainly concerned.

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