

46 Psycho-social problems in surgery

B.W. Ellis and M.W. Johns

- 46.1 Introduction 804
- 46.2 Basic theory 804
- 46.3 Coping 805
- 46.4 Coping with the stress of surgery 805
- 46.5 Determinants of coping with stress 805
- 46.6 Common causes of psychological distress in surgery 807
- 46.7 Clinical patterns of coping 807
- 46.8 Failure to cope and maladaptive coping 808
- 46.9 Acute brain syndrome 809
- 46.10 Aids to patients' coping 810
- 46.11 Stress as affecting surgeons and their performance 810
- 46.12 Dying and bereavement 811

46.1 INTRODUCTION

It is a commonly held view that to be scientific in medicine is necessarily to be a reductionist, one who tries to understand bodily function only in terms of smaller and smaller structural units and eventually reduces all relevant enquiry 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 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 realize 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 when considering the structure and function of whole people.

The concept of homeostasis 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. 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 social behaviour—levels which are characterized 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. In general, our understanding of all mechanisms whereby the highest levels of integrative functioning, such as behavioural state, are controlled is less than that of molecular processes.

46.2 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 where social interaction is involved. In both instances extraneous events can act as stressors to displace this equilibrium. To these, there is a stabilizing response or adaptation, but if the required degree of

this exceeds the limits of the usual range in which integrative activity can be sustained (e.g. the protective mechanisms of the duodenal mucosa or the psychological mechanisms which are used to minimize subjective distress) then illness or disease may result.

Although in the past our main concern may have been limited to organic pathological changes or functional disturbances in systems, these labels are deceiving ones. Despite a degree of autonomy at each level of structure and function in the whole organisms, 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, the form of presentation of a drug or treatment, the explanation or impression given by the prescribing doctor, all may be as important in determining the patient's response as the known pharmacological or therapeutic effects. Side-effects, including skin rashes and gastrointestinal disturbances, are reported by patients taking placebos almost as commonly as by those who consume active drugs. The placebo response is no less important in patients undergoing surgical procedures and may be expected to occur in at least one-third of all those exposed.

Placebo-responders are not all 'neurotic' and 'weak' people with imaginary symptoms; they are merely those 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 symbolic and psychological aspects of the relationship with patients. However, greater awareness 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 concern for the surgeon as for any other doctor, because some degree of psychological distress or adaptation is involved in any 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 would suggest that an enthusiastic individual or team approach does affect outcome, but the magnitude of this contribution is unknown.

Certainly it is most doctors' experience that to treat a patient as a 'person' rather than as a 'case', that is, to follow established social etiquette by introducing himself and shaking hands is not only reassuring but also reinforces the confidence of the patient.

Touch probably plays a major part in this; that is apart from the conventional 'laying on of hands'. To sit on a patient's bed and hold his hand while talking to him may mean a great deal to an insecure patient.

46.3 COPING

In the study of psycho-social factors in illness emphasis is increasingly being placed upon patients' coping. Coping entails the whole range of activities and mechanisms of a psychological, behavioural, and social nature which everyone uses in adapting to stresses and in 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, our 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 effects 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 conceptual framework against which the total patient involvement in illness can begin to be understood.

46.4 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, on the one hand, both physical and objective, and on the other hand, symbolic or subjective—produced by his perception of the situation. However, physiological concomitants of the response to both physical and symbolic stresses are very similar. The fact that the majority of patients can cope with 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 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.

46.5 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 generalized 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 objective differences in the nature of external stresses, 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: psychological, socio-economic, physical and metabolic, environmental, as well as the duration for which the stress is applied. It is said that low intelligence reduces a patient's level of cooperation. This may sometimes be so, particularly in circumstances where an understanding of a new complexity of life—for example a colostomy—is needed. However, high intelligence is no guarantee for greater cooperation or of more successful coping with an illness.

Personality structure and coping style are overlapping concepts. Coping with physical illness evokes the patient's characteristic ways of dealing with stresses of life in general, but sometimes in a more 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. The actual mechanisms used by a particular patient in coping with surgery are often less important than the overall success or failure of that coping.

Illness may have some reward or gain which helps to 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 (sometimes) 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 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 exists a class of patients, not infrequently seen by surgeons and sometimes operated upon, with whom it is difficult to establish a meaningful relationship. Such people appear to have high expectations of the doctor's capabilities, often bordering on the supernatural. At the same time they complain of multiple symptoms which may affect several body symptoms, and which are influenced by or, in some cases, arise directly from an inability to cope with life's stresses.

These symptoms may be 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 patient, 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 drives the conventional doctor and his erstwhile patient further apart.

The influence which major life events and socio-economic changes have on disease processes has received little attention in surgery. However, social upheaval, changes in work and family relationships or other major changes in life situations seem to predispose patients to the development of physical illnesses of all kinds, from pulmonary tuberculosis to myocardial infarction. The impact of social changes may be ameliorated to a large extent by the effects of close personal relationships, whether they be within the subjects' nuclear family or within other ethnic, social or cultural groups.

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 required.

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 hypoglycaemia, hypothyroidism, hypoxia, cerebral tumour, toxæmia and fever, uraemia, hepatic failure, hyperparathyroidism, hyperadreno-corticoidism and long-term semistarvation. Apart from the effect of organic disease on cerebral function, quantitative and qualitative disturbances in sleep probably 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.

Of clearer practical significance is the recognition that during wakefulness an optimal amount of meaningful sensory input 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 midbrain ascending reticular activating system and the non-specific thalamic projection system. With too little input during wakefulness (such as occurs in experimental isolation experiments), or relative absence of meaningful sensory stimuli cerebral function becomes in-

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

The combination of a low level of meaningful sensory input combined with a high level of abnormal stimuli (pain, unusual environment and high noise levels) may seriously affect the intensive care patient. The general relationship between the performance of any particular function and the degree of central nervous system activation takes the form shown in *Figure 46.1*. Optimum

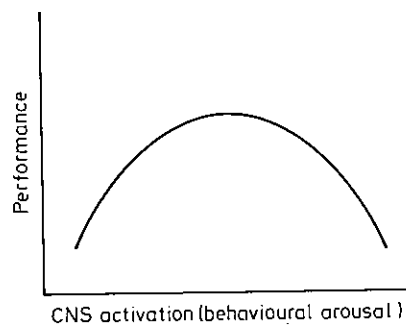


Figure 46.1 *The general relationship between a subject's performance at a task and the activation of his central nervous system*

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. Although this knowledge has important implications in relation to the handling of an acutely ill patient, 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 tranquilizers) 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 cerebral and brainstem 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 benzodiazepine groups will necessarily provide a complete answer for the patient who is hyperaroused. However, their use is greatly to be preferred by comparison with 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 for the individual. Abrupt changes in the physical environment call for adaptation both at levels of social behaviour and physiological performance: for example, under conditions of raised temperature or humidity after moving from a temperate to

a tropical climate. Even in the absence of such environmental changes behaviour and performance vary with time 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 but also the speed and accuracy with which a routine task can be performed. 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. However, the intensity of noise required to waken someone from sleep depends on the time of night, and, as with all reactions to stressors, on the meaning of the noise for that particular person. 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. However, the deepest sleep (requiring the loudest noise to waken anyone) tends to occur within the first three hours of sleep.

Not surprisingly hospital wards and in particular intensive care units are very noisy places. Peak noises above 70 dB(A), the equivalent to heavy traffic, are common. Most of the noise originates from staff and equipment. Much can be done with sound proofing but awareness of the problem by all staff is most important.

Finally, as with other classic 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 some 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 some days or weeks, but thereafter a new equilibrium is reached as psychological defence mechanisms are mobilized 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 whether the person is able to cope and modify this reaction over the following days and weeks, or whether a condition of chronic distress will result.

46.6 COMMON CAUSES OF PSYCHOLOGICAL DISTRESS IN SURGERY

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 his propensity for 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, 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 helplessly to the total control of another person, and of 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 fears that after leaving hospital the patient 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. The scars which result from severe injuries such as burns may have this effect.

The role of sleep in coping with stress has been alluded to (section 46.5). It has been shown that sleep prior to surgery is disturbed and that the severity of the disturbance probably depends on the environment and the degree to which the patient copes with the stress of the admission to hospital and the anxiety about his operation. The nature of the disturbance is frequent arousal; however, the inherent rhythmicity is unaffected. The result is markedly diminished REM (Rapid Eye Movement) sleep, which may further impair coping ability. After surgery the disturbance is different in that slow wave (deep) sleep is almost absent, together with REM sleep. Furthermore the inherent rhythmicity is either lost or suppressed since the patient becomes 'entrained' to an extrinsic rhythm dictated by the frequency of observations, administration of analgesics and other extraneous factors such as noise. The severity of these changes is probably related to the degree of the injury (operation), they last from several days to up to six weeks.

46.7 CLINICAL PATTERNS OF COPING

Although rigid categorization is dangerous, it is pragmatic to attempt to define the major patterns of coping behaviour in illness. Knowledge of this kind is a suitable reference for those engaged in day-to-day patient

care. Further work will undoubtedly refine and alter it; but at the moment it throws some light on the coping behaviour of the patients we encounter in outpatient clinics or in wards.

Two of the commonest psychological methods for coping with stress of illness are minimization and vigilant focusing. In their extreme forms these reactions would not be seen together in the same person, but may follow one another at different stages of illness.

Minimization is the tendency to ignore, deny or rationalize the personal significance of information related to illness and its consequences. The degree of minimization 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').

Minimization is common in the early phase of acute illness, particularly when partial knowledge of the real situation exists.

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

As an antithesis to minimization, vigilant focusing is a characteristic way of coping with stresses in those who are obsessional, alert, and anxiety-prone, for whom clarity and ability to explain what is happening are all important. Such individuals can show all intensities of this attribute, ranging from realistic appraisal of the dangers of the illness to anxiously 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, 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 any 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 to doctors, nursing staff and the institution. For many, this is a welcome retreat which involves regression to a more child-like behaviour and thinking, a stance that enables them better to cope with their illness. However, for some, in whom illness-behaviour is perceived as weakness, the acceptance of this role as a hospital patient may be the cause of distress. For such patients complete bed-rest and

immobilization may be more physiologically and psychologically disturbing than is 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 mobilization 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 and the normal traffic of conversation and gossip begin to be restored with visitors from outside the hospital and through discussions with other patients. For some, the adoption of a particular role in the hospital hierarchy may help; we are all familiar with the surgeon's favourite, the confidant of the ward, the organizer, and others who remind us of our social organization in other spheres. 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 role of dependence in the service of recovery, some patients are then loath to resume their former roles in the outside world when discharged from hospital. Convalescence should be geared to a gradual change in the patient's role which matches his actual and perceived physical disability.

46.8 FAILURE TO COPE AND MALADAPTIVE COPING

Some patients use coping methods which are efficient in reducing their subjective distress, but in a way which is maladaptive for ultimate survival. For example, a woman may use strong denial in minimizing the psychological impact of a basal cell carcinoma which is eroding away 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 indifference') 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. There may be impairment of cognitive function, alterations in mood, (including anxiety, 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. However, relative failure to cope with the stresses of life and of physical illness is common in hospital patients. The superficial approach of the average hospital doctor fails to elicit these problems which can however be uncovered either by careful conventional history-taking or the use of an inventory of symptoms. 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 psychotic patients. 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 with 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 has seen what he believes to be a mentally healthy individual in the outpatient clinic and is now confronted with bizarre behaviour, in the pre- or post-operative phase. The chronic psychotic, provided extremes of intelligent cooperation are not required and the illness is well controlled by psychotropic agents, seems to suffer little distress with major surgery.

Long-term personality disorder underlies another not uncommon form of behavioural disturbances in surgical patients. Sufferers show little anxiety, but nevertheless 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. The patient with multiple symptoms and his desire for dependency has already been mentioned. Such patients, if too freely operated upon in the desperate search for a physical ailment, or if too readily given access to psychotropic drugs, may increase their dependence both on the doctor and on the drugs. It is probable that some patients originally labelled as Munchausen's syndrome are in this group. However, a long surgical illness with a successful physical outcome may

also leave the patient in a transitional dependent state where the poorly-timed withdrawal of therapeutic assistance by drugs and psychological support is viewed as a threat and may be the occasion of bitter recriminations and rejection rather than the gratitude and respect the doctor hopes for.

46.9 ACUTE BRAIN SYNDROME

Surgeons must carefully analyse acute disturbances of perception, thinking, emotion and behaviour which may occasionally appear pre-operatively, but are more common after major surgery. These disorders, now usually referred to by the nosologically interested as 'acute brain syndrome', are characterized by rapidly fluctuating levels of consciousness, memory deficit (mainly for recent events), confusion, restlessness, delusion and disorientation in space and time and occasionally with problems of self-recognition. There is an impressive list of conditions which are associated with acute brain syndrome, either as direct causes of disordered cerebral metabolism or as factors whose presence exacerbates the disorder (*Table 46.1*).

TABLE 46.1 DISORDERS ASSOCIATED WITH ACUTE BRAIN SYNDROME

Poor oxygenation of brain:	hypoxia (P_{O_2} less than 60 mmHg) cerebrovascular disease
Cerebral embolism:	fibrin plugs or platelet aggregates (cardiopulmonary bypass), fat emboli
Electrolyte disturbance:	water intoxication magnesium deficiency
Metabolic disturbance:	hypercalcaemia hypoglycaemia uraemia porphyria hepatic encephalopathy
Infections and toxæmia:	intracranial or systemic infections pneumonia cerebrovascular syphilis
Intracranial space occupying lesions:	
Head trauma:	
Drug withdrawal:	especially from alcohol (delirium tremens), barbiturates, amphetamines, but also from benzodiazepines, glutethimide, chloral hydrate, etc.
Sensory deprivation or monotony:	Intensive-care ward after ophthalmic surgery, sleep deprivation

The importance of sleep deprivation in acute brain syndrome remains in doubt. The original hypothesis, that absolute sleep lack and relative lack of dreaming (REM) sleep might be of major importance has proved too simplistic. Purposeful deprivation of REM sleep for prolonged periods does not lead to psychosis in previously healthy people, as was suggested some years ago. Nor 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 recognized and treated.

46.10 AIDS TO PATIENTS' COPING

A patient's success in coping with the stress of illness and surgery, while largely dependent on his previous experience and strength of coping mechanisms, is influenced also by the interaction with other people and especially medical staff at the time. There are certain aspects of this interaction which can be modified to the patient's benefit:

- (1) Try to understand the coping style of each patient; how stressful situations have been handled in the past is a reasonable guide to future behaviour.
- (2) Listen to patients, even if they seem to talk irrelevancies. Encourage them to talk about their fears and worries by asking them such open-ended questions as 'How do you feel about having the operation?'
- (3) Explain where the patient will be post-operatively, who will be looking after him, what degree of pain to expect (this is often exaggerated by patients), and the analgesic relief which can be offered. Such explanations enable the patient to recognize and feel prepared for events and places as they confront him. The physiological effect of predictable stressors are less than those of unpredictable stressors probably because the meaning of the stressor has changed.
- (4) Explain to the patient how he will feel during induction of anaesthesia and what the surgical procedure is likely to achieve. Patients often have quite unrealistic expectations of surgery and quite erroneous ideas about body structure and function, and about anaesthesia. It has been shown that such simple aspects of the personal contact with patients pre-

operatively significantly reduces their distress and their need for sedatives, tranquillizers and analgesics post-operatively.

- (5) With elective surgery give the patient time to cope pre-operatively. Decisions about the need for an operation should be made at least one week and up to three weeks beforehand. The patient then has time to mobilize psychological defences and make social and financial arrangements before admission to hospital.
- (6) It should be remembered that reassurance is derived not only from verbal but also from non-verbal communications, from the doctor's appearance, personal interest and manifest competence.
- (7) The professional social worker can do much to help with financial and social arrangements, emotional problems, and in general can assist those patients who find difficulty in coping (e.g. with children who need to be cared for while their mother is in hospital), or with a change of employment which may be required after illness.
- (8) Post-operative care should not routinely involve waking the patient at night to measure pulse rate, blood pressure or temperature. The importance of undisturbed sleep must be weighed against the likely benefit from making such observations.

46.11 STRESS AS AFFECTING SURGEONS AND THEIR PERFORMANCE

Doctors cope with stresses and achieve their goals in life using much the same methods as their patients. The coping methods which we adopt may greatly influence the doctor-patient relationship and the patient's non-specific or placebo response to our treatment. An important aspect of the doctor-patient relationship is the activity and passivity of the respective roles and the omnipotence afforded doctors under some circumstances. While this sort of relationship may be most appropriate in the operating theatre or at the bedside, it may be carried to extreme with patients visiting our consulting rooms. Thus, in influencing patient's ability to cope with illness some insight into our own behaviour is important.

Fatigue during a long operating session or at the end of many hours of continuous work may be thought of as being due to relative failure to cope. It is influenced by the biological need to rest and sleep, the value of which is uncertain. But this need may be overcome, especially of brief intermittent periods, provided high motivation and interest can be maintained. It has been shown that a surgeon's heart rate rises significantly while operating. This tachycardia can be abolished by beta-blockade but at some expense in that reaction time is impaired (Foster *et al.*, 1979).

However, it is not the surgeon, but his assistant with

less responsibility and motivation, who tends to fall asleep at the operating table in the early hours of the morning. The sense of fatigue is hastened by frustration, annoyance and a feeling of hopelessness in one's endeavours. It is then that the ability to make sound judgements and perform well-controlled movements decreases. Environmental factors such as the temperature and humidity of the operating theatre and the relationships with other theatre personnel all play a part in our success in coping with such circumstances.

46.12 DYING AND BEREAVEMENT

Surgeons are much acquainted with, but as with other doctors, not often greatly concerned about death, except in so far as it reflects on their professional skills. Although this statement is broadly true, an increasing knowledge of the processes of death and their psychological and social impact has forced the doctor to reconsider his attitude. The subject is a large one, and is also greatly influenced by cultural factors. However, there is evidence that the distress of dying patients and their relatives is greatly reduced in most cases if a more open and honest approach is adopted by the attending doctor. 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 commonly 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. There is no doubt, in our experience, that it also contributes to the dignity of the dying patient, which at least 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, although these have been little studied. The clinical classification is familiar to all: a few days of acute grief which is often suppressed in Anglo-Saxon cultures, in that beating the breast and tearing the hair is frowned upon; a longer period of depression and withdrawal, lasting up to six months or even a year, and followed by a gradual retribalization 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. 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.

References

- BENTLEY, S., MURPHY, F. and DUDLEY, H.A.F. (1977). Perceived noise in surgical wards and an intensive care area, *British Medical Journal*, **2**, 1503-1506
- BOURNE, P.G. (1970). *Men, Stress and Vietnam*. Boston, Little Brown
- ENGEL, G.L. (1968). A life setting conducive to illness. The giving-up, given-up complex, *Annals of Internal Medicine*, **69**, 293
- FOSTER, G.E., EVANS, D.F., MAKIN, C. and HARDCASTLE, J.D. (1979). Surgeons heart rates and surgical performance; a double blind trial of oxprenol, *British Journal of Surgery*, **66**, 357
- JANIS, I.L. (1958). *Psychological Stress*. New York, John Wiley
- JONES, J., HOGGART, B., WITHEY, J., DONAGHUE, K. and ELLIS, B.W. (1979). What the patients say: A study of reactions to an intensive care unit, *Intensive Care Medicine*, **5**, 89-92
- JOHNS, M.W., HEPBURN, M. and GOODYEAR, M.D. (1971). Use of hypnotic drugs by hospital patients, *Medical Journal of Australia*, **2**, 1323-1327
- OSWALD, I. (1962). *Sleeping and Waking*. Amsterdam, Elsevier