

Brain failure

WHEN most of the vital organs of the body fail, doctors describe the clinical syndromes which result as 'heart failure, 'liver failure' and 'renal failure'. Failure of the brain, however, has usually been labelled as 'senile dementia': 'brain failure' seems simpler because the label is not a definitive diagnosis. A doctor making a diagnosis of heart failure naturally seeks to exclude a primary cause such as anaemia or alteration of thyroid function. Similarly, a doctor diagnosing brain failure should similarly exclude primary causes, including both anaemia and alteration of thyroid function.

Clinical features

The early features of brain failure are the deterioration of intellectual capabilities, especially loss of concentration and memory. Later there is disorientation and often change in personality. Secondary changes in mood, especially depression, are common. Loss of interest, social withdrawal, clumsiness and recurrent accidents should all suggest the diagnosis. It is usually well worthwhile asking family or friends to describe any changes they have witnessed in the patient's behaviour.

This condition is now, with depression, one of the two commonest psychiatric conditions in the elderly and is thought to affect about ten per cent of those over 65, half of these severely (Kay *et al.*, 1964). Thus, a general practitioner with an average list size of 2,400 and the average number of elderly patients is likely to have about 18 such patients. They are often women, over 75, socially isolated, and among the lower social classes.

Just as most causes of heart failure are not found to have a detectable primary cause and only a minority can be treated, so most cases of brain failure seem to be due to a primary degeneration of the brain cells. Nevertheless, good care in general practice now demands that all the common predisposing causes should be excluded. These can be classified as: first, acute infections, usually in the chest or urine, secondly, the commoner chronic medical conditions seen in general practice, such as hypothyroidism (myxoedema madness), anaemias of any cause, or the rarer chronic renal failure, syphilis, malabsorption, and other vitamin deficiencies such as B₁ and B₆. Thirdly, the possibility of the body being adversely affected by external agents should be con-

sidered, for example, chronic alcoholism, the adverse effects of drugs the doctor has himself prescribed, especially psychotropics and hypotensives, or drugs the patient or relatives have acquired. The fourth main category is depression, which can mimic brain failure and which needs to be considered individually in every case. Finally, the presence of a space-occupying lesion in the brain, such as a tumour, often secondary to one in the lung or breast, can cause failure of the brain.

It is remarkable how many doctors are trained to carry out detailed physical examinations but are much less competent in taking a simple history from an elderly patient with a view to determining brain function. Each practitioner should develop his own set of questions to test in a simple and unthreatening way the patient's memory and his orientation in time and space, as well as the capacity for simple verbal reasoning. This assessment must include sight and hearing, because impairment of these may confuse the interpretation of the other tests, and these conditions will often need treatment in their own right.

Failure of the brain is often brought to the doctor's attention because of changes in the patient's behaviour. Wandering, eccentricity, anti-social behaviour, such as undressing in public, or aggression may lead to a call, classically out of hours, when the doctor is greeted by the cry, "Something has got to be done!"

Such situations call for considerable experience and skill from a general practitioner. Hospital admission is by no means always indicated and four out of every five patients with brain failure are cared for in the community and not in institutions (*British Medical Journal*, 1977). The doctor's first job is to exclude or treat any acute medical condition.

Investigations should include testing the urine for sugar and protein, recording the blood pressure, and an examination adequate enough to exclude the known, common predisposing causes. The blood should be tested for haemoglobin, WBC, ESR, WR or equivalent, and serum B₁₂ with whatever thyroid function tests are available locally. Surely every patient is entitled to these tests before the label 'brain failure' can be altered to 'brain failure, no underlying cause found'?

The main role of the doctor, once this diagnosis has been reached, is to spend time and trouble with the relatives, seeking to identify their problems and to meet as many of these as possible, through medical and social services. The sources most usually helpful include: home helps, meals on wheels, day care, visitors,

especially Good-Neighbour visitors, or, for a minority perhaps, Part (3) accommodation, day hospital, or psychogeriatric assessment or admission.

In any chronic disease process there is an amalgam of clinical and social needs. In the case of brain failure, the main burden will fall on the family, who abdicate their responsibilities surprisingly seldom (Isaacs *et al.*, 1973). The general practitioner will sometimes help, and with the health visitor should assiduously cultivate those good relationships which will enable the family and the patient to recognize a friend in need. Neither consultants in geriatric medicine (one to every 225,000 people), those in geriatric psychiatry, nor yet community hospitals will solve our problems for us. We cannot wait for the promised increases in staff or funds, nor can the hospital service, already one third filled with patients over 65 (Central Statistical Office, 1973), expand indefinitely.

If we are to look less to the hospitals, we should be turning more to co-operation between health and social services—medical advice in day centres and social work skill in the day hospitals—and particularly to more imaginative sheltered housing of all kinds (Tinker, 1976). We should press for a major expansion in day care, with its own effective transport. To try and avoid those disruptive hospital admissions, often barely necessary, we should seek ways of acutely reinforcing community resources to give families help that is neither too little nor too late. Holiday beds should be the rule rather than the exception.

Treatment with drugs is usually much less important than teaching relatives to help care for their old ones more efficiently, though drugs, however, may have a place. First and foremost, any underlying cause must be treated and fool-proof arrangements made for follow-up. Cerebrovascular vasodilators such as cyclandelate ('Cyclospasmol') and isoxsuprine ('Duvadilan') may help, but the evidence of their value is far from being universally accepted (*Drug and Therapeutics Bulletin*, 1975). Sedatives, even for the aggressive or the agitated, should be used with extreme discretion, for they can aggravate as well as aid; promazine ('Sparine'), thioridazine ('Melleril'), and chlormethiazole ('Hemineverin') have the best reputation.

Medico-social parallels

Brain failure is emerging as another of the important medicosocial syndromes regularly occurring in general practice. Like ill-treatment in children and chronic alcoholism, early diagnosis is difficult to make and depends on a sensitive appreciation by the doctor of changes in a patient's behaviour.

Characteristically, the care involves several members of the family; most patients are cared for in the community and not in hospital, and drug treatment is relatively unimportant. The challenge to general practice is to work in partnership with families to arrange care in the community.

The brain is a vital organ. Symptoms of its failure are just as important to identify as those of the failure of other vital organs; and the principle of management in detecting and treating any underlying cause is equally valid.

References

- British Medical Journal* (1977). Editorial, 1, 1301.
 Central Statistical Office (1973). *Social Trends No. 4*. London: HMSO.
Drug and Therapeutics Bulletin (1975). 13, 85-87.
 Isaacs, B., Livingstone, M. & Neville, Y. (1972). *Survival of the Unfittest*. London: Routledge & Kegan Paul.
 Kay, D. W. K., Beamish, P. & Roth, M. (1964). *British Journal of Psychiatry*, 110, 146-158.
 Tinker, A. (1976). *Housing the Elderly: How Successful are Granny Annexes?* HDD Occasional Paper.

Controlling symptoms of chronic asthma

Twenty-eight children with chronic asthma completed a 12-week double-blind trial of treatment with sodium cromoglycate (cromolyn sodium), theophylline, and a combination of both. The three regimens were administered, each for four weeks, in random sequence. Cromoglycate was administered by inhalation in standard doses of 20 mg q.i.d. Theophylline dosage was individualized with the assistance of serum theophylline measurements and averaged 6 mg/kg/dose q.i.d. (range 3.8 to 8.5 mg/kg/dose). Peak expiratory flow rates, measured twice daily on all patients, averaged 75 per cent of that predicted during cromoglycate administration, 79 per cent during theophylline, and 81 per cent during the combined drug regimen ($p < 0.05$). Patients had an average of 59 per cent of days free of symptoms while on cromoglycate and 71 per cent of days symptom-free when on both the theophylline and the combination regimens ($p < 0.025$). None of the 13 patients whose asthmatic symptoms were previously controlled with cromoglycate was unable to complete the four-week trial with theophylline alone. One patient whose symptoms had been previously controlled with theophylline twice developed severe asthmatic symptoms while receiving cromoglycate, and he had to be withdrawn from the study period. No significant differences in adverse effects of the medication were observed during the 12-week trial.

Reference

- Hambleton, G., Weinberger, M., Taylor, J., Cavanaugh, M., Ginchansky, E., Godfrey, S., Tooley, M., Bell, T. & Greenberg, S. (1977). *Lancet*, i, 381-385.