

The effects of facing such issues may be difficult for the patient—as in the present instance. It is important to decide whether the patient is demoralised and lacking in confidence because of the uncertainties surrounding his problem or whether he is suffering from a late-life depressive illness precipitated by his physical afflictions. The former demands a strongly positive approach, attempting to get him back to his normal work in a graded manner; the latter may require a psychiatric consultation and, possibly, antidepressant drugs. Serious depressive illness may mean that he is temporarily unfit to work or carry a burden of responsibilities; hence the great importance of differentiating these two possible causes of his dilemma. After these issues have been carefully discussed by his GP and consultant advisers, and if he is deemed fit to work, a positive and constructive approach on what he can do, as opposed to a series of daunting prohibitions on what he can't do is important: such management might conceivably have averted his present state.

On the facts presented I can find no definite indication of intellectual decline or dementia, and in the absence of previous strokes or transient ischaemic attacks there is little justification for the label cerebral arteriosclerosis. An organic basis for the "weak turns" would need to be based on observations during such spells. If they last long enough he should be brought to his GP's surgery or to hospital when next they occur, because if as seems likely they are manifestations of anxiety, possibly with panic and phobic overtones, strong reassurance could then be soundly based.

Assessment of such patients is most difficult, but there is little doubt that the anxieties besetting the medical attendants may be transmitted to the patient with disastrous effect. With adequate rest and active recreational interests, the patient may

well be capable of return to work. The position should be explained to his colleagues (with the patient's consent), and if they are favourably inclined a programme of gradual renewal of his duties may be devised. Should his colleagues insist on his retirement, the golden handshake could be well used in the rediscovery of past hobbies and interests. But a positive attitude is vital in either case, both to the patient and to his wife, who seems as deeply involved in the gloom as the patient himself.

Postscript to the problem

The different emphases of these commentaries reflect well the difficulties this problem presented. The issue of further referral was evaded for several months and eventually resolved by a further acute episode of weakness at work. On this occasion a pulse rate of below 40/min persisted for 24 hours by which time a domiciliary visit had been arranged and the patient admitted as a case of heart-block. Since the installation of pace-maker—now three years ago—the patient has been free of attacks. He has officially retired but works two mornings a week, and he and his wife have resumed active roles as grandparents. The only problem is recurrent inflammation at the site of implantation of the pace-maker, and this is a cause of quite substantial discomfort and inconvenience.

References

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Where Shall John Go?

Nepal

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I flinch whenever I receive my copy of the *BMJ*, not from ingratitude—for I thoroughly appreciate the reduced "missionary" rate, whereby I can keep up with British and worldwide medicine—but because there's someone somewhere in one of the processing offices who insists on addressing my copy to "Shanta Bhawan Hospital, Kathmandu, Nepal, India." Nepal is a virile, proud, independent nation and has never been under Indian, British, or any other kind of foreign rule. The world's only Hindu kingdom, Nepal maintains dual relations with China and Chinese Tibet to the North, and India to the South; receives with equal courtesy the representatives of Soviet Russia and the United States; but owes sovereignty to none.

Imagine the Lake District in its most frequent mood: the summits of green hills draped with sombre clouds dripping over

the valleys. You now have a good image of Nepal in the monsoon, except that you must omit the lakes, add villages going all the way up to the ridges of the mountains, and extend it to about 500 by 80 miles. When the monsoon ends, though, the country escapes comparison with Britain. Under blue skies the middle hills are seen to be only the foreground for the great white turreted wall of the Himalaya, the Home of the Snows—the highest mountain range on earth.

The problems

After seven years here, I can imagine no more congenial place to practise medicine, provided one can adapt one's training to entirely different conditions, and one's thinking to deep cultural differences. Medicine, as we learnt it, is applicable to the wealthy of Kathmandu; the bulk of the population need the "medicine of poverty"—their problems are those of combined malnutrition and infection. Malnutrition is due less to poverty than to ignorance and traditional habits. Poor hygiene results in dysentery, enteric fever, cholera, poliomyelitis, hookworm, roundworm, and amoebiasis. Overcrowding, especially in towns,

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encourages tuberculosis and leprosy. The stage is set for preventive programmes: smallpox eradication has almost succeeded, but maternity and child care programmes still face a child mortality of nearly 50%. In most places sewage and water supplies are not yet separated. Malaria, after initially successful eradication measures, is returning in some of the areas below 4000 ft (1216m).

Though the usual surgical problems are here, the surgery of trauma and orthopaedics is predominant. Falls from trees, cuts with the khukri (the national weapon and tool-of-all-work), burns from open fires, and amputations as a result of the merciless tourniquet treatment of snakebite in the villages, take up a good deal of the surgeon's time. Osteomyelitis seems surprisingly common, and so also is tuberculosis of bones, joints, and spine. Intra-abdominal tuberculosis also is prevalent, but for some reason renal TB is extremely rare.

The gross national product and health budget remain among the lowest in the world. The funds available for curative medicine are strictly limited, leading to agonising decisions. You would like to treat this case of resistant TB with ethambutol, pyrazinamide, and ethionamide—better still, rifampicin. But the cost would be so enormous that you could be treating some 50 patients with the first-line drugs for the same cost. You have to choose—you have to put the community before the individual, and you cannot leave it to the administrators of the NHS to worry about the cost of the medicines you prescribe. Some doctors find this unsatisfactory; others enjoy the challenge of finding the right level of medicine to fit the circumstances.

Not only is there a new dimension to decision-making, but it has to be done in a shorter time. I couldn't resist a smile at the results of a British hospital work load survey for 1973. The average consultant physician and his team apparently see about 10 new patients and 56 old ones a week. I see that number on my own in one day. Admittedly some are "general practice" cases, but many are also very complicated. This is not a boast; I would prefer to spend more time with fewer patients, but this is just another of the compromises necessary in a country with a doctor-patient ratio of 1:36 000 (1:154 000 in rural areas). His Majesty's Government of Nepal and the Institute of Medicine are, wisely, relying mainly on the training of paramedicals to overcome the manpower problem. The challenge for doctors is to share in the training and supervision of these workers and to appreciate the usefulness of those who are trained in practical rather than theoretical ways.

Research interests

The most relevant form of research in Nepal is the study of methods of delivering health education and health care to remote traditional village communities (living anything up to 10 days' walk from a road). Some recruits for technical training were on their way to join their school and were heard to express their amazement at the first wheeled transport they had ever seen. A lorry? A fast car? No, it was a bullock cart. A remote village received an important visitor by helicopter, and hospitable villagers were found attempting to feed the machine with grass. For this kind of community health care must be basic, meaningful, clearly beneficial, and extremely economical.

Nevertheless, there are other "medical" problems of interest in Nepal. Why, for instance, is wound tetanus rare in the hills but common in the strip of plain bordering North India? What is the cause of travellers' diarrhoea? How can malabsorption be demonstrated satisfactorily without expensive and complicated equipment? Liver disease would make a fascinating study in Nepal. Infective hepatitis is very rare in Nepalese but very common in visitors and travellers ("hippy's disease"). Yet in 1972-3 there was a sizable epidemic of hepatitis A among Nepalese, which makes untenable the concept of early-acquired resistance (as in poliomyelitis). Non-alcoholic cirrhosis is also very common; is there any connection?

Emphysema and chronic bronchitis (the "English disease")

are, if anything, commoner in Nepal than in Britain. Coronary artery disease is extremely rare. The Nepalese smoke local tobacco but my impression is that they smoke much less heavily than the British. Comparison of the types of tobacco and smoking habits might be interesting.

My own main "academic" interest has been acute mountain sickness. This affects almost exclusively visitors who go trekking in the high mountains, so that its main importance for Nepal itself is an economic one. I did recently, however, have to attend a Nepalese lady who became unconscious on arrival at the famous pilgrimage shrine of Muktinath, which lies at 13 000 ft (3952m). This condition is a fascinating one with several unanswered questions: why do some people succumb to altitude and not others? Is there a factor other than hypoxia? Why does fluid accumulate in lungs or brain or both? What are the extra- and intracellular mechanisms of the process we call acclimatisation? What is the place of drug prophylaxis?

Culture and medical care

The Nepalese are a mixture of tribes and castes, derived from Rajput warriors of India, Mongoloid hill tribes, Tibetan and Burmese traders, and others, such as the Newars, who have inhabited the Kathmandu Valley from ancient times and whose origin is untraced and probably untraceable. Hinduism and Buddhism live side by side, sharing gods, goddesses, idols, and festivals. Yet beliefs and customs are so variable that one can rarely state with confidence "All Nepalese believe this."

Indigenous health practices include a good deal of dietary adjustment, depending on whether an illness is classified as "hot" or "cold." The ancient Ayurvedic medical system uses preparations from indigenous plants, and is respected by many people. I don't know of any attempt to assess the results of Ayurvedic treatment, but believe such a study would be of great value. When a group of indigenous midwives from a remote area were assessed, in the course of friendly discussion with Western doctors, their practices were found to accord quite well with accepted obstetric principles. The "jhankri" or "dhami" is the witch doctor of Nepal. His "treatment" consists of ritual beating of drums, animal sacrifices, and prescribed "puja" or worship.

Relatives usually want to remove patients from hospital if they seem to be dying. In a case of advanced and incurable disease, this is quite a help and the family is consoled if the patient dies by a river or in a temple. This is considered to be an auspicious way of dying and to ease the passage of the deceased through the terrors that obstruct the path to the next incarnation. Nevertheless, it may be very distracting for a doctor who is trying to save a young patient with an acute and curable infection whose life is in the balance. We wish to give the patient every chance of survival, the relatives wish to guard against an inauspicious death. The resulting tug-of-war may be both distressing and undignified.

Language

Nepali, also known as Gorkhali, is the national language. It is not really difficult except for the script, Devanagiri, which hangs beneath the line and is the same as used by Hindi. Also there are some pronunciation problems such as the four d's, four t's, two k's, g's, j's, b's, and p's. These are clearly distinguished by Nepali speakers and an error can entirely alter the meaning of the word. The Nepalese, however, are usually tolerant of our mistakes—especially as the various tribes have their own mother tongues and maltreat the national language almost as severely as we do.

Except for technical advisers, I think doctors can be of little use here if they do not learn sufficient Nepali to conduct their clinics in that language. There are risks, however: in my first year I was describing to relatives the treatment that we had given a deceased patient. It seems that, instead of "heart medicine,"

I said "we gave him death medicine." But it works both ways: a patient with epididymo-orchitis averred in English that he had a pain in his spectacles.

Opportunities

To my embarrassment, I must admit that opportunities for British doctors in Nepal are very limited. The Department of Health Services of His Majesty's Government of Nepal is responsible for health care over the whole country, providing zonal and district hospitals, health posts, and preventive programmes. A great deal has been achieved but much still needs to be done. I'm not aware of any doctor from abroad who has come here under contract to work directly with the DHS, though some have been seconded as advisers.

I make no apology for mentioning my own organisation, as it is the main employer of foreign doctors in the country. The United Mission to Nepal is composed of about 200 workers seconded by 30 different mission bodies in 14 different countries. It is a Protestant, interdenominational Christian mission concerned with medical and educational work, with technical and development services, and with training. There are four hospitals with associated community health programmes, and some staff are further seconded to the Institute of Medicine to help in the training of paramedicals. The UMN at present needs surgeons, paediatricians, obstetricians, and general practitioners. Doctors would normally need to be accepted by one of the member missionary societies in the home country, but an initial inquiry could be addressed to the Health Services Secretary, United Mission to Nepal, PO Box 126, Kathmandu, Nepal.

A similar organisation is the International Nepal Fellowship, which runs the Shining Hospital in Pokhara. The INF is also taking part in a leprosy campaign in Western Nepal. The address is the Shining Hospital, PO Box No 5, Kaski Jilla, Gandaki Anchal, Pokhara, Nepal.

The Himalayan Trust is a New Zealand organisation which dates back to the first ascent of Everest and Sir Edmund Hillary's interest in the Sherpas living in the Solu Khumbu district of the south of Everest massif. As well as providing schools, scholarships, and some technical help, the trust runs a hospital at Kunde at around 12 750 ft. This is in the centre of Sherpa land, close to Namche Bazaar, and the trust has been doing hospital and public health work. Recently opened is their new hospital at Paphlu, at 8000 ft, where Sherpa territory borders that occupied mainly by the Rai tribe (who have a fine record with the British Gurkhas). Though the hospitals have been staffed mainly by New Zealanders I believe that applications from British doctors would also be considered. Those interested should write to the Medical Director, Himalayan Trust, 10 Morvern Road, Mount Eden, Auckland 4, New Zealand.

The Himalayan Rescue Association is unlike any rescue

group in Europe. Rescue teams cannot go rapidly to Himalayan altitudes either by foot (because of distance) or helicopter (because of the need for acclimatisation). The main work of the Association, therefore, is prevention. An aid post has been opened, with Japanese help, at Pheriche, which lies at 14 000 ft on the trekking route to the Everest base camp. This is manned by a volunteer doctor whose job is to try to prevent trekkers from going too high, too fast, badly equipped, or badly prepared. He also treats those who need it, and helps arrange evacuation for those who suffer serious illness or accident. The seasons are October to December and February to May. The Rescue Association can provide only a living allowance and travel expenses within Nepal. Anyone interested in this unusual job in a spectacular location is invited to write to me.

Save the Children Fund has an agreement with Bal Mandir, the Nepal Children's Organisation, and runs a child health clinic in Surkhet. There are possible new projects for the future, and there may be openings for doctors. The address of the Field Director is PO Box 992, Kathmandu.

Those with experience in ophthalmic surgery might be interested in working in association with the Nepal Eye Hospital. There could be opportunities for clinical or research work in Kathmandu and in eye camps in remote areas. These offer a great deal of intensive operating experience as well as a good opportunity to see the country. Inquiries should be addressed to the Secretary, Nepal Eye Hospital, PO Box 335, Kathmandu.

Living conditions

For those who have the means, living conditions in Kathmandu are good. Excellent Western-style houses are available, with running water, plumbing, and electricity. Domestic help is remarkably cheap. Those who plan to eat food to which they are accustomed at home will find the cost-of-living high, but one can live more cheaply on a rice-based local diet. Needless to say, the more remote one's location the more hardship one encounters and the harder it is to obtain the fruits of civilisation.

For children in Kathmandu there is an international play group, a British primary school, and an American school, which caters for children from 5-15 of various nationalities. There are tutorial groups under a teacher in several of the UMN projects, and at Pokhara under the INF.

When writing a letter in Nepali it is customary to end by asking forgiveness for all one's mistakes. This I think is appropriate here too, for it is extremely difficult to avoid giving offence when trying to interpret one culture and its problems to another. In addition, I have been limited both by available time and the geography of the land and thus unable to make exhaustive inquiries about the various projects. Doubtless I have omitted at least one, and done less than justice to others. At least I have made it clear that Nepal is not in India.

I have heard that chrome deficiency may be a causative factor in diabetes. Is there any pharmaceutical preparation available that contains this mineral?

Yeast extracts were first shown to have an insulin-potentiating effect in 1929. It was not until the 1960s, however, that the active principle was identified as a complex of trivalent chromium and nicotinic acid—the "glucose tolerance factor" (GTF). The richest natural source of GTF is brewer's yeast. Animals fed on a diet deficient in this complex develop impairment of glucose tolerance that may progress to a frank diabetic syndrome. The condition can be reversed by oral or intravenous chromium supplements. Both in-vivo and in-vitro studies have shown that chromium potentiates the action of insulin. A complex may be formed between chromium, insulin, and insulin receptors in cell membranes. GTF is at least 10 times more readily absorbed than inorganic chromium and has much greater biological activity. Man may have a variable capacity to synthesise the complex from inorganic chromium salts. Both synthesis and storage probably occur in the liver, insulin acting as a releasing factor. The latter property has led

some investigators to designate GTF a hormone; it is certainly an essential micronutrient in man and animals. The role of chromium in human diabetes is not clear. Adding chromic chloride to the diets of maturity-onset diabetics improved glucose tolerance in about half. In this type of trial it is difficult to measure the chromium nutritional state in man. Probably only chromium-depleted diabetics would respond to supplementation. The inference from human experiments is that chromium deficiency may aggravate diabetes but is unlikely to be a major causative factor. There are two hard facts: (1) body chromium content declines in the elderly, and (2) insulin-dependent diabetics excrete abnormally large quantities of chromium in their urine. Therefore, diabetics should include in their diet foods rich in GTF such as liver, beef, bread, and mushrooms. Attempts to synthesise GTF have been only partially successful, and it is not yet available commercially.

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