NEUROLOGICAL LETTER FROM ...

Malawi

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Malawi is a small country of about 12 million people in Southern Africa. Formerly Nyasaland, it was ruled by Hastings Banda after independence from Britain in 1963 until a democratic government was finally elected in the mid 1990s. It is poor in natural resources, trading in tea, sugar and tobacco and relying on money from the IMF, World Bank and donor nations for much of its economy. This has left it one of the poorest countries in the world.

I have visited Malawi twice in the last two years to teach neurology to medical students at the University of Malawi's College of Medicine in Blantyre. Neurologists have been visiting from the UK to teach since 2001 – Peter Newman, from Middlesbrough in England, taught at the College before me, and still works on epilepsy programmes in the country. As a visiting lecturer I have learned a lot – not just about conditions that are rare in the UK, but also how to attempt to apply UK practice to diseases that are common in both countries such as epilepsy, stroke and Parkinson's disease. There are no neurologists in the Malawi, although all physicians see plenty of patients with neurological problems.

Queen Elizabeth Hospital in Blantyre is the largest medical provider in southern Malawi. It provides care for a city of half a million people, as well as the district hospitals as far north as Monkey Bay and south as Nsanje – a catchment

Figure 1 Queen Elizabeth Hospital, Blantyre is the largest hospital in the South of Malawi.

area of about 4 million people in total. Although it is a large hospital, it has to face the enormous scale of the country's HIV epidemic. In the more rural north of the country, about 10% of men and 15% of women are infected with HIV – in the cities, the HIV prevalence is somewhere between 19 and 28%. The total with HIV infection is about 1 million, one in 12 of the population. Stopping the spread of HIV, and treating people already infected, is a political imperative and the biggest challenge for the health-care system of Malawi.

The proportion of HIV-positive patients presenting to the medical wards is extraordinarily high – about 70% of all ages, and 90% of those between the ages of 30 and 40. Of the patients on the medical wards, 45% have the criteria for a diagnosis of AIDS (Lewis *et al.* 2003). Complications of HIV are therefore always top of the list of differential diagnoses for patients presenting with neurological symptoms. The patient with chronic headache may have cryptococcal meningitis, and new onset hemiparesis is more likely to be due to toxoplasmosis than brain tumour. Neuropathies, myelopathies and dementias may present in young people, most of which are related to HIV infection it-

self. Advanced HIV disease defies Occam's razor, because so many patients have more than one opportunistic infection as well as symptoms from invasion of the nervous system by HIV itself. For example, a 30-year-old man presented with worsening headache, new onset poor vision and difficulty walking. Although he had cryptococcal meningitis, he also had CMV retinitis and a myelopathy, presumably secondary to HIV.

Management of HIV-related neurological disease is often hard in the best of circumstances. Fortunately, Queen's has a CT scanner and basic CSF analysis, although other techniques, such as nerve conduction studies and EEG are not available. Fluconazole has been donated by Pfizer for the treatment of cryptococcal meningitis in Southern Africa, using amphotericin is difficult as routine laboratory monitoring of serum electrolytes or renal function is not possible.

Until recently, treatment of the underlying HIV infection was limited to a few patients. However, Malawi has just received a grant from the Global Fund to Fight HIV, Tuberculosis and Malaria to set up 27 HIV testing and treatment centres throughout the country. One of these will be based in Blantyre, and will hope-

fully begin dispensing antiretroviral therapy as I write. If this programme works, it will be great news for Malawians infected with HIV.

The prevalence of epilepsy in Malawi is probably the same as in Europe, although patients find it much more difficult to find treatment. Seizures are often complicated by burns, as people fall into fires or stoves kept on the ground. Epilepsy also carries an enormous stigma – enough to drive some people to suicide. Many seek help from traditional healers, who interpret the initial symptoms of a temporal lobe seizure as insects crawling in the belly, and convulsive seizures as a sign of possession. Whilst the healers may often recognize epilepsy, their treatments are not effective in preventing seizures. Conventional antiepileptic drugs can be used successfully in Malawi,

as described by Dr Watts, a clinical officer in the north of the country in the mid 1980s (Watts 1989). Using a combination of public education, simple treatments, regular review and an adequate supply of free drugs, this programme grew from nothing to treating 461 patients over the course of two years. It has become a model for other epilepsy clinics throughout the country. Phenobarbitone is the drug that is cheapest and easiest to obtain, and has the most regular supply, although phenytoin and carbamazepine are also available.

The beds in Queen Elizabeth Hospital are at a premium – with so many people (especially women) affected by HIV, the ward occupancy is often more than 100%. This leaves people sleeping on mattresses on the floor. Nurses are kept busy for their whole shifts. As there is often only one nurse per ward of

Figure 2 Looking North from the Mulanje Massif, an inselberg in the south of the country.

40 patients, they may have no time to attend to the basics of neurological nursing such as care of pressure areas, nutrition and continence. The hospital has an overworked physiotherapy service and a hard-pressed rehabilitation hospital nearby for some of the patients who wish to go there.

Malawi's medical school is based in Blantyre. Before independence, medical students were sent to Southern and Northern Rhodesia as they were then called, although after the creation of Malawi this became difficult. So students were then sent on grants to the UK – the former dictator, Dr Hastings Kamuzu Banda did part of his medical training in Edinburgh – but many remained overseas to practice and were lost to Malawi. At the time it was said that one was more likely to find a Malawian doctor in Manchester than Malawi. Doctors in Malawi were mainly expatriates. The Malawian government then decided that it needed its own medical school to try to retain medical staff, and so with the help of the British government began to send students to St Andrew's University in Scotland to study, with the intention of bringing them back to Malawi to complete their clinical training. The medical school opened to these returning students in 1991, and the first doctors graduated in 1992. With the new medical school, students were no longer sent abroad, but the British stopped financing the Malawian school as funding priorities changed. Fortunately, the Dutch and Norwegian governments have stepped in in recent years to continue support. The whole course is based around the problems that students are likely to encounter in Malawi, with community practice the first among equals with the other disciplines (Muula & Broadhead 2002).

Neurology is taught for one week in the fourth year of a five year course by a visiting neurologist. Creating a balance between lectures, clinical sessions and seminars is difficult in such a short time, though the students enjoy the subject and appreciate being taught by someone familiar with the concepts and practice of neurology. The year I taught was small – about 15 students – so individual students are well known by their tutors, though the current annual intake has just increased to 65. The cost of education is relatively high – around £140 per year for local students, which is about the average yearly income for a Malawian. Fee-paying students from other African countries pay £4350. A combination of the selection process and the cost of fees has led to a highly motivated group of students, who

are interested and well read. They, unlike many UK medical students, have a sound grasp of the anatomical and physiological background to the practice of medicine.

There are many challenges and questions facing physicians looking after patients with neurological disease in Malawi. Why do so many young people present with stroke? In a cohort of 94 consecutive strokes to the medical wards in Blantyre, more than half were in patients less than 40. Is it just HIV disease, or is there a coexistent opportunistic infection that increases stroke risk in HIV positive people? What are the causes of acute paraparesis? This is a common presentation to the medical wards, and is assumed in most cases to be related to spinal schistosomiasis, but there is no prospective imaging data to look for alternative diagnoses (Naus *et al.* 2003). What are the aims of neurological rehabilitation in a very poor country? Where are people best looked after? What are the frequencies of different neurological presentations of HIV disease in Southern Africa?

What do I hope for the future for Malawi medicine? I hope there will be a successful introduction of free antiretroviral therapy which, although it will be an immense challenge for the clinics, will bring enormous benefits for people with HIV. I hope the medical school continues to produce bright and inquiring doctors who become the foundation for the Malawian healthcare system, and develop solutions to the many unique problems in their country.

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