—Looking to the top

Earlier this century, major advances in laboratory neuroscience made little or no impression on the management of neurological diseases. Today, the neurologist in training can see neuroscience research producing achievable therapeutic strategies for tackling major neurological diseases, particularly those that cause the greatest disability and social cost: multiple sclerosis, stroke and common neurodegenerative disorders such as Alzheimer's disease and Parkinson's disease. Examples of areas where science is already beginning to impinge on the neurologist's clinical practice include:

- neuroimmunology: genetically engineered interferons and antibodies directed against subsets of immune cells may prevent progression in multiple sclerosis;
- stroke: clinical trials have recently commenced using excitotoxin receptor antagonists, nitric oxide synthase inhibitors, calcium antagonists and related agents to reduce infarct size, while more interventional strategies for primary and secondary stroke prevention will move stroke management increasingly into the domain of the neurologist;
- Parkinson's disease: in my own area of laboratory research interest, new pharmacological agents (eg genetically engineered growth factors to sustain the remaining nigral cell population) may ultimately halt disease progression. New drugs which affect basal ganglia output pathways downstream of the dopamine receptor, coupled with a more refined MRI/CT guided stereotactic approach to destructive lesions of the basal ganglia may help to ameliorate existing deficits. Although the current availability and benefits of neural grafting in Parkinson's disease are limited, its use seems set to become more widespread with the development of transplantation strategies based on genetically engineered glial or neural cells. Similar advances in Alzheimer's disease, Huntington's chorea and motor neuron disease seem likely.

To prepare themselves for an expanded therapeutic role, trainee neurologists must continue to undergo a period of training in one or more scientific disciplines: these could involve laboratory bench based (eg immunology, cell and molecular biology), clinical (eg genetics, imaging), epidemiological/statistical and/or physiological studies. If the UK neurological community is to play a full part in this exciting enterprise, central government and local management must not sacrifice the long term practical potential of often quite theoretical research for short term savings. The establishment of multidisciplinary neuroscience research centres funded by the Medical Research Council and other grant giving bodies should help to facilitate such training.

It will also be our task to make sure that the values of compassion and meticulous attention to clinical detail which mark what is best in neurology at present are not lost in the excitement of assuming a more interventional role.

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