

antidepressants, there are some pointers in that direction. The report of some differences between individuals who respond to cognitive therapy and those who respond to drug treatment and the report of an additive effect between drugs and interpersonal therapy make it reasonable to try psychological treatment in such cases when there are relevant problems for the therapists to work on. Neither form of psychological treatment has been shown convincingly to reduce the relapse rate below that in patients receiving maintenance antidepressants, but there are individual patients in whom relapse seems to be closely related to cognitive factors or interpersonal problems, and in these cases psychological treatment can be tried when other measures have failed.

Although the findings of this large American trial do not support a stronger endorsement of these specific techniques of psychotherapy for depressive disorders, its results are of great interest. Our understanding of depressive disorders would be greatly increased if we knew how specific psychological therapy in some moderately depressed patients may bring about changes comparable with those of drug treatment. The results of further investigations, including the remaining results of the American study, should help to answer this important question.

M G GELDER

Professor of Psychiatry, University of Oxford,  
Warneford Hospital, Oxford OX3 7JX

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## Simulation in surgical training

### *Trainee surgeons need to acquire skills outside the operating theatre*

Pressure on theatre time, the accelerating pace of technical innovation in surgery, greater expectations of patients, and the need for surgeons to eliminate the morbidity associated with the learning phase of any new procedure—all these provide a stimulus for both surgical trainees and trained surgeons to introduce and practise techniques before bringing them to the operating theatre.

Aspiring surgeons have traditionally been introduced to their craft in the operating theatre. Such a training has three phases. Firstly, the trainee helps the trainer in the operating theatre and observes the procedures. Then gradually the surgeon in training assumes the role of operator rather than assistant, and he or she is introduced to the use of surgical instruments and the principles of dissection, ligation, and suturing under the supervision of a senior surgeon. Eventually, when sufficient skill and confidence have been developed, trainees are allowed to operate on their own.

In many instances, however, training falls short of the ideal. Current surgical practice militates against training junior surgeons in the operating room. Good surgeons do not always make good teachers. Teaching in the operating theatre must inevitably add to the time taken for the operation. As a result of budgetary constraint and a more rigid attitude of staff towards hours of work in many NHS hospitals nowadays operating lists are run much more strictly within predetermined time limits. Surgeons are increasingly under pressure to reduce waiting lists and may feel compelled to complete as much operating as possible in the allocated time. In this "service first" environment the training and experience of the surgical trainee inevitably suffer. Initial training using animals in the laboratory has never been widely practised in Britain because of strict controls on surgical procedures on

animals. This alternative is being used less often in the United States because of animal rights legislation.<sup>1</sup>

All these trends have generated increasing interest in the use of simulation to introduce trainees to the craft of surgery.<sup>2</sup> In some specialties simulation techniques are already well advanced. In orthopaedic surgery, for example, courses using simulated bones and joints have been organised by Swiss surgeons at Davos for over 20 years. Fracture fixation,<sup>3</sup> joint replacement, and arthroscopic surgical techniques are now widely taught in this way. Trainees in otolaryngology, too, are commonly introduced to the use of the operating microscope on the bench before being allowed to develop their skills further in the operating theatre.

The need to teach general surgical trainees the rudiments of anastomotic technique is now well recognised, and anastomosis workshops introduced to Britain by the Royal College of Surgeons of England are now regularly held in many large hospitals.<sup>4</sup> Junior trainee surgeons can be taught how to anastomose bowel, blood vessels, and other hollow viscera using animal tissues and specially designed jigs.<sup>5,6</sup> The concept of this type of craft workshop has been so well received by surgeons in training that new variations on this theme are being explored.

Is it appropriate to extend this principle further to teach advanced procedures to more senior surgical trainees or even to introduce new techniques to consultant surgeons who wish to expand their surgical repertoire? These are the aims of the "surgical masterclass" organised annually by the Royal College of Surgeons of Edinburgh. If advanced workshops like this are to fulfil their potential then more realistic simulations will have to be developed so that the problems of surgical access are reproduced accurately. Collaborative work

to design such models is already under way using bioengineers and moulding technicians as well as surgeons. Although it is reasonably straightforward to simulate anastomosis of hollow viscera, a much greater challenge faces design teams in creating simulated tissues for dissection and resection.

The structure of surgical training in Britain is undergoing considerable change at present. Entry to a surgical career in the future seems likely to be preceded by a more thorough assessment of the candidate's potential as a surgeon. Aptitude testing—including evaluation of psychomotor skills such as manual dexterity and eye-hand coordination—is already being used in Holland in selecting surgical trainees.<sup>7</sup> The structure of professional examinations for surgeons is also being radically altered, and discussion is taking place about the possibility of testing manual skills as part of the surgical fellowship examination. Simulation may well find a place in

these assessments of trainees, and its importance in surgical training seems destined to increase.

I M C MACINTYRE

Consultant Surgeon,  
Western General Hospital,  
Edinburgh EH4 2XY

A MUNRO

Consultant Surgeon,  
Raigmore Hospital, Inverness

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## Genetic testing for Huntington's disease

### *Internationally agreed guidelines are being followed*

Recent advances in mapping the gene for Huntington's disease have for the first time made accurate prediction possible for those at risk of carrying the gene for this disorder.<sup>1</sup> A test for the gene has been foreseen and its implications widely debated for some years,<sup>2</sup> but only now is it becoming possible to evaluate its use and the associated problems in practice. Over the past year a series of publications has begun to give us a clear picture of this difficult issue, which is in many ways a prototype for genetic prediction in other late onset genetic disorders, such as some of the hereditary ataxias and familial Alzheimer's disease.<sup>3,5</sup>

For several years after the Huntington's disease gene was first mapped to the short arm of chromosome 4 investigators wisely held back from using this information clinically, and the widespread discussion during this period among professionals and lay groups has resulted in an important set of guidelines, which have recently been published in the *Journal of Medical Genetics*<sup>6</sup> and the *Journal of the Neurological Sciences*.<sup>7</sup> Perhaps the most valuable aspect of these guidelines is that they represent the consensus of a working group of both family members (the International Huntington Association) and professionals (the World Federation of Neurology Research Group on Huntington's Disease). In Britain a multidisciplinary group of professionals concerned with predictive testing has drawn up recommendations for good practice that are complementary to the international guidelines.<sup>8</sup> These recommendations emphasise the need for expert counselling in association with the test; the need for freedom from pressure from relatives, employers, or insurance companies; and the importance of complete confidentiality. They advocate that children should not be tested.

How are these guidelines actually being observed in practice? Several series of predictions from major centres have now been published,<sup>3,5</sup> and probably at least 200 predictive tests have been carried out world wide. The World Federation of Neurology Research Group's meeting in Vancouver in July 1989 gave a valuable opportunity to examine problems and, most importantly, to hear first hand accounts of the experience from some of those at risk of Huntington's disease who had undergone testing.<sup>9</sup>

Even though these results are necessarily preliminary, we may already learn much from what has happened. In almost

all cases so far testing has been preceded and accompanied by skilled counselling, which has been valued by those being tested and which may have contributed to the lack of serious adverse effects so far encountered. Clearly, counselling must be regarded as an integral part of the testing procedure, and in its absence testing would fall short of the expected standard of practice.<sup>10</sup> As laboratory aspects of testing for Huntington's disease become simplified and tests become available for other late onset neurological disorders this point needs to be remembered, especially if economic pressures were to be exerted to cut down on all but the minimal laboratory procedures.

The principal worry of those concerned in predictive testing for Huntington's disease has been the possibility of serious emotional and psychological effects in people whose result indicates a high risk of having the Huntington's disease gene. Although it is too early to determine long term results, there has in fact been a striking lack of such problems.<sup>3</sup> This probably reflects in part the cautious approach to testing and the provision of counselling and support by the centres concerned, but at least as important may be the resilience of those being tested, most of whom have waited many years for such a test and have already prepared themselves mentally for an adverse result. From surveys done so far,<sup>11</sup> particularly a study from Manchester,<sup>12</sup> it is clear that uptake of the test is low, even when those at risk are systematically informed of its availability. Those currently being tested are therefore a self selected group, and those who decline to be tested might be less able to handle the severe stresses entailed.

It would be misleading to imply that predictive testing for Huntington's disease has been completely free of problems. Most of the difficulties expected have occurred, as well as some that were not foreseen.<sup>13</sup> One study of these problems in a large series of people who requested testing reported several requests for testing of children (mostly by parents) and for testing before adoption<sup>14</sup>; all such requests were declined. The question of childhood testing for Huntington's disease and the powerful arguments against it have been discussed in detail in a review from the Vancouver group.<sup>15</sup> An important problem has arisen when individuals who have proved at first interview to be clinically affected request testing; telling such people that they not only have the gene for Huntington's