Electrical treatment ... a balanced view

Fear and misunderstanding have made ECT the 'ogre' of treatment for mental illness. Dr. Harold Mersky, consultant psychiatrist at the National Hospital, explains the method and explores the reservations, criticisms and hostility which surround its continuing use.

Electro-convulsive therapy was first introduced on the basis of a hypothesis which has since been shown to be wrong. No one can say precisely how it works and descriptions of it can sound highly alarming. Yet there are few, if any, general psychiatrists who would be willing to relinquish the use of this treatment at present for some of their patients. Controlled trials have shown that ECT is the most effective treatment for a particular form of depression. Therefore it is worth explaining how it came to be used and what happens during ECT. To do this a few words about the history of ECT, and the nature of epileptic fits, are necessary.

As long ago as 1798 the administration of camphor was recommended in sufficient dosage to produce epileptic fits, as a medical treatment. In 1933 the use of injections of camphor in schizophrenic patients, again with the aim of producing fits, was suggested by Meduna. It seemed to him that epilepsy and schizophrenia were biologically antagonistic, i.e. the presence of one seemed to mean that the other would not occur. This has since been shown to be mistaken but at the time
Meduna went ahead and it seemed to work quite well.

In 1937 a method was introduced by Cerletti and Bini in Italy which proved far more acceptable to the patient and was easy to use. This involved passing an electric current between two electrodes placed on the forehead. This technique of producing fits has been used on hundreds of thousands of people, with only minor modifications.

When an epileptic fit occurs naturally in someone who suffers from epilepsy there is a rapid discharge of electrical activity by the brain. Normally, the brain is electrically active and the activity fluctuates. During an epileptic fit it becomes more intense and synchronized and affects the whole brain, the patient loses consciousness and the discharge of nerve cells and nerve fibres leads to a general contraction of his muscles, and then a series of muscular jerks, fairly regular and rhythmical and affecting the whole of the body. After the jerks have subsided the patient lies still, the muscles are paralysed and breathing may not occur for some seconds; the epileptic may become blue but breathing always returns after a fit and consciousness is recovered soon after.

This was also the sequence of events when ECT was first introduced. In 1947 the practice of giving ECT with an intravenous anaesthetic and a muscle-relaxant drug began. This meant that, although the same electric discharge was applied to the brain, it was possible to paralyse the muscles beforehand so that the muscle jerks, which were such a dramatic feature of the original unmodified ECT, were eliminated or reduced to very small and mild movements. This method of giving ECT is now probably universal in this country.

A patient who has ECT is required to fast for 4 hours before treatment because of the anaesthetic. He lies down on an ordinary clinical couch or bed and receives the anaesthetic injection in an arm, usually Methohexitone (Brietal), one of the barbiturate group. 'A muscle-relaxant is given next and all movement is almost paralysed. The anaesthetist then blows oxygen into the patient's lungs through a mask, to compensate for the paralysis of breathing and, after this, electrical treatment is applied.

The patient knows nothing of the whole procedure. He may come round with a mild headache, or nausea from the anaesthetic, and some confusion or lack of awareness of his surroundings. Many people have this treatment in Out-Patient Departments and can go home an hour or two later with the help of a relative or friend. Some people, who are used to the treatment, find their own way home afterwards without difficulty, although this is not recommended.

To the outsider ECT is alarming. Even under modified treatment some patients have sustained fractures from excessive contraction of groups of muscles pulling against each other. The increased muscular activity puts a strain on the heart and people with heart disease or weak chests cannot have the treatment.

Even to the medically-trained person the treatment could look horrifying. The doctor, like the patient, is bound to wonder whether the electricity damaged the brain and whether it could have a future effect comparable to repeated blows to the head. In fact these fears, reasonable though they may seem, are almost wholly unjustified. In moderate dosage, ECT was found to have marvellous curative effects in some illnesses and to cause very little trouble to the patient in other ways.

What trouble can it cause? As with any anaesthetic, there is a risk of mishap causing death. This is extremely rare in the case of the anaesthetic for ECT and happens less than once in 28,000 treatments. The only occasion when I have known a patient die in connection with ECT was when a lady had a heart attack in the waiting room before the treatment—of which she was not afraid and to which she was already accustomed. This was a coincidental death rather than one due to the treatment.

The commonest unwanted effect of ECT is to produce a temporary disturbance of memory of events around the time when the patient was undergoing treatment. For example, someone who has six treatments over the course of two or three weeks is likely to experience loss of memory for things which have happened recently. If he has met people during the weeks when the treatment was given, or received gifts, he may not remember them. With a limited number of treatments, this disturbance is mild. It is even milder if, as in a recent modification, the treatment is given unilaterally (i.e. only to one side of the head).

The less electric current used the less subsequent memory disturbance there is but, in order to have a curative effect, a fit must take place. Unilateral treatment makes it possible to use the minimum of current in the least disturbing position. It is not quite as effective as treatment applied to both sides of the head but, for equivalent relief of depression, gives less disturbance of memory.

There is no reasonable doubt that ECT is of enormous benefit to a large number of patients with severe depression, particularly endogenous depression. This type of illness is sometimes triggered off by stress like bereavement, but can also occur after viral influenza, after the use of certain drugs which are needed in medicine, or for spontaneous reasons—possibly related to internal chemical changes in the nervous system.
Most observers agree that these illnesses have some physical basis, albeit still obscure, and the whole pattern of illness can be dramatically dispelled by electrical treatment. In well chosen cases, improvement occurs in a way which leaves no doubt about the relationship between the treatment and the recovery. One can see patients getting increasingly better with successive treatments and returning to an entirely spontaneous and happy state of mind when they had been in the depths of depression. There are few responses to treatment in medicine which are more convincing.

If any additional proof is needed, one has only to look at the enormous effect that ECT has had upon the population of mental hospitals. The older generation of psychiatrists still recall how every mental hospital had one or two wards full of severely depressed people who would be in-patients for several years. These wards are empty now and most acute treatment units keep depressed patients for only a month or two at a time before they are fit to return to their homes. This trend developed before the introduction of anti-depressant drugs, (Tofranil, Tryptizol, etc. and the MAOI group) which are very useful in the treatment of depression but still not as effective as ECT.

The proof that ECT worked came before these drugs were available. When they were introduced it was found that ECT still cured some patients with whom the drugs had failed, and quite a few patients needed both. Very few indeed now need leucotomy for depression. I have only seen one case in which the combination of drugs and ECT failed to cure an endogenous depressive illness and leucotomy was eventually necessary.

Anti-depressant drugs themselves have a number of risks. There is no need to enlarge on them here but it is possible that the hazards of taking anti-depressant drugs are actually greater than those of ECT.

ECT is also useful for treating patients with excited forms of schizophrenia, catatonic stupor or mania. Again there is a group of drugs available to control most of these symptoms. The drugs, which include the major tranquillisers like lergactil, are extremely efficient and helpful but, for some patients, they are not quite enough and a few ECTs may be needed as well to bring them back to normal—or as near-normal as possible.

Objections to ECT have been raised on a number of grounds. It is said we do not know how it works, therefore it ought not to be given. If we had followed the same logic in the use of quinine for treating malaria many people would have died. If we accepted the same argument for ECT we should have to put far more people back into hospital for months or years, and some would die by suicide or because their depression made their other physical illnesses worse.

Secondly, many people are frightened of ECT because it involves passing an electric current through the brain. I have a lot of sympathy with this fear but the proof of the pudding is still in the eating. I have very few patients for whom ECT is appropriate, who have not been willing to continue with it, and they are little troubled by the physical effect of the electricity. Obviously, no one ought to like having anaesthetic followed by a transitory impairment of memory, but most people who need ECT find the benefits attractive. Although one always wishes to be sparing in the use of ECT, there is every reason to believe that people both with high and low intelligence benefit from it when depressed or schizophrenic.

A third objection raised is that ECT is a treatment for the poor because it is mechanical, whereas the rich have the doctors' time and personal interest and attention. It is likely—especially in countries where treatment is not free—that this does happen; rich patients everywhere probably do get more of the doctors' time. In the National Health Service, the middle class patient is better able to be assertive and so obtain extra attention from hard-pressed medical staff but this has no bearing on the merits of the treatment. I know of patients who should have had psychotherapy and were given ECT but I—and many other psychiatrists—have also seen the reverse, the patient, poor or rich, who has had a lot of unhelpful psychotherapy instead of a few very helpful ECTs.

Finally, it has been said that ECT suppresses or temporarily obliterates, the patient's problems instead of solving them with talk and discussion. The same criticism is sometimes applied to drugs. How one sees this argument depends a great deal on one's personal attitude to psychiatry. It is probably wrong to say that there are any strongly divergent schools of thought on the subject. There have been plenty of disagreements and there still are some but most psychiatrists think that both physical methods of treatment, including drugs and ECT, and psychotherapy have an important place in their work. This article has been about the use and abuse of ECT and it has come out much in favour of ECT. If I had to write on the use and abuse of psychotherapy I should come out very much in favour of psychotherapy. Both treatments are excellent—in their place. How well they are used must depend on the competence and conscientiousness of psychiatrists.