

disappeared after the fourth treatment. A bilateral electrode position had been resumed after the second diagonal ECT.

The patient's subjective impressions were as follows:

1. She experienced slight periods of 'confusion' after coming round from her treatments. This was worse after the second (diagonal) treatment, when she felt 'totally confused for thirty six hours'. The third (bilateral) ECT was described as a 'milestone', by which she meant that she felt considerably improved.
2. After the second treatment she became 'almost completely deaf', her vision became 'very peculiar' and she felt that objects 'jumped' and 'swam'. She described feeling 'extremely frightened'.

The auditory and visual symptoms were not associated with any objective signs on clinical testing; e.g. reduced hearing or nystagmus. These disturbances together with the memory impairment had subjectively resolved within three weeks of the last diagonal ECT.

It is tempting to speculate that the visual dysfunction was related to the close proximity of one electrode to the occipital cortex. We report these incomplete observations as providing probable evidence of the adverse effects of this form of ECT.

Mapperley Hospital,
Nottingham NG3 6AA

Lecturer in Mental Health,
Bristol

Barrow Hospital,
Bristol

C. R. SHAWCROSS

G. L. HARRISON

M. S. PRESTON

ECT AND CEREBRAL DAMAGE

DEAR SIR,

We feel that Professor Kendell, in his review of the present status of electroconvulsive therapy, overstates the case when he says that there is no evidence from animal studies that electrically induced convulsions produce cerebral damage.

The results from two animal studies (Ferraro *et al.*, 1946; Hartelius, 1952) indicate that there are structural changes in neurones and glial cells, especially in the frontal area, following electrically induced convulsions, and that the degree of damage is proportional to the number of convulsions received.

Computerised tomography has now provided a non-invasive method of examining structural changes in vivo. Weinberger *et al.* (1979) performed CT scans on 75 chronic schizophrenics and found that in 17 ECT-treated patients there was significantly more

cortical atrophy than in 58 patients who had not received ECT. In 41 elderly depressives who had CT scans as part of an earlier study (Jacoby and Levy, 1980) we found a statistically significant association between frontal lobe atrophy and previous treatment with ECT (Calloway *et al.*, 1981).

In view of these findings, a comprehensive study to investigate the association between ECT and cortical atrophy is being undertaken in the Academic Department of Psychiatry, the Royal Free Hospital.

S. P. CALLOWAY
R. DOLAN

The Royal Free Hospital,
Pond Street,
London NW3 2QG

References

- CALLOWAY, S. P., DOLAN, R. J., JACOBY, R. J. & LEVY, R. (1982) ECT and cerebral atrophy; A computed tomographic study. *Acta Psychiatrica Scandinavica* (in press).
- FERRARO, A., ROZIN, L. & HELFAND, M. (1946) Morphologic changes in brain of monkeys following convulsions electrically induced. *Journal of Neuro-pathology and Experimental Neurology*, 5, 285-308.
- HARTELIUS, H. (1952) Cerebral changes following electrically induced convulsions. *Acta Psychiatrica et Neurologica Scandinavica*, 77, Suppl. 3, 128.
- JACOBY, R. J. & LEVY, R. (1980) Computed tomography in the elderly. III. Affective disorder. *British Journal of Psychiatry*, 136, 270-6.
- WEINBERGER, D. R., TORREY, E. F., NEOPHYTIDES, A. N. & WYATT, R. J. (1979) Structural abnormalities in the cerebral cortex of chronic schizophrenic patients. *Archives of General Psychiatry*, 36, 935-9.

POST OPERATIVE DEPRESSIVE STUPOR REQUIRING ECT

DEAR SIR,

It is well known that minor psychiatric complications may follow surgery, but occasionally a severe psychiatric illness can occur. Knox (1961) estimated that 1 in every 1600 surgical procedures was followed by a severe disturbance of which one third were due to depression.

We would like to report what we believe is a unique case—of a severe depressive stupor occurring within a few days of surgery where it was necessary to administer electroconvulsive therapy (ECT).

Case report

A 71-year-old man, who had no previous psychiatric illnesses, presented with dysphagia due to carcinoma of the oesophagus. He was admitted to hospital and an oesophagectomy was carried out. For the first three days post-operatively he appeared quiet and withdrawn but fully orientated. This state rapidly worsened and by the fifth day after surgery he was mute and unresponsive, although