MENSTRUAL DISTURBANCES DURING ELECTRIC SHOCK TREATMENT

Relation to Diagnosis and Clinical Improvement

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Electric convulsive treatment, a physical form of psychiatric therapy, produces changes in the psychological and emotional structure of the treated patient's personality. While some of these changes, especially changes in mood, intensity of emotion, and tempo of activity, may be interpreted as intended therapy, a variety of other changes, both psychological and physiological, can be seen only as undesirable side effects. Nevertheless these side effects merit close attention, as they may hold clues to the mechanisms involved in the therapy. Thus the lassitude, decrease in initiative, and disinterest in activity seen after several convulsive treatments is not due merely to fatigue from the exertion of the convulsion but is rather a consequence of decreased cortical activity which may be demonstrated by suitably designed psychological tests.1 The decrease in cortical activity applies, not only to the associative cortex but also to the motor cortex. The tendon reflexes become brisk during treatment and continue to be so for several weeks following a course of electric convulsive therapy. Muscle tonus may also be increased. These changes may be interpreted as indicating temporary decrease of function of the upper motor neurons.2, 3

Not only is cortical activity suppressed, but also activity at the base of the brain. Thus men previously virile may become temporarily impotent, with a pattern which would seem to implicate the hypothalamic region.4 Menstruation is also disturbed as a side effect of shock treatment, the prevailing pattern being temporary amenorrhea.5

The general pattern of the available facts indicates temporary slackening of activity both at the cortical and hypothalamic levels. These observations would seem to shed light on the mechanisms involved in the curbing of manic excitement with its excess of motor, mental and sexual activity, but it is not clear how decrease in brain activity might lead to the lifting of a depressed mood.

Why identical treatment should be effective in two forms of behavioral deviation as opposite as depression and manic excitement

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is a puzzle. One is left to assume that perhaps the diverse forms of illness have their own physiological or pathological structures which react to identical treatment with individualistic patterns. Since the treatment is identical, and some patients recover and others do not, the capacity for recovery must lie within the individual patient. The task then is to find the structural pattern which holds in it the capacity of the patient to recover in response to shock treatment.

In the present study the menstrual disturbances concurrent with ECT will be correlated with improvement from illness and with diagnostic reaction type, with the intention of elucidating the physiological mechanisms of shock treatment.

**METHODS**

Six hundred eighty-seven consecutive records of all female inpatients of the New York State Psychiatric Institute who were treated by electric convulsive therapy during the years 1942 to 1949 inclusive were reviewed for data pertinent to this study. Criteria for selection of cases were: (1) at least one menstruation in the hospital before ECT was begun; (2) a sufficient length of stay in the hospital after ECT for the occurrence of postshock menstruation, or for the establishment of amenorrhea. Only 331 patients of the 687 satisfied these two criteria. The most frequent causes for disqualification were spontaneous amenorrhea because of the mental illness, and inception of shock treatment so early after admission to the hospital that the patient had no recorded menstruation in the hospital.

The number of ECT's given to individual patients varied from one to 54. The frequency of treatments was scattered throughout this range, with heavier clustering at the 10- and 20-treatment frequencies. According to statements in the progress notes, the number was frequently based on the individual patient's clinical condition. Treatments were discontinued early if the patients showed clinical improvement, continued longer if improvement was lacking. The greater accumulations of patients at the 10- or 20-treatment frequencies are probably due to the proclivity of the therapists to select 10 and 20—in our Arabic system of numbering by 10's—for termination points in lieu of other indications for ending treatment.