

## SHOCK THERAPY IN THE PRESENCE OF PHYSICAL CONTRAINDICATIONS.

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SINCE its inception, shock therapy has become rather more restricted in its field of application. During the initial phase of enthusiasm and trial it was used freely in all the functional psychoses, but now many observers are agreed that its main usefulness lies in the group of depressive reactions and the melancholias. The results in the schizophrenic group are generally disappointing. In reviewing a large series of shock-treated cases, Penrose (1) reports 1.4 per cent more treated schizophrenics in hospital than expected in comparison with a control group.

The field of treatment has generally been further restricted to patients who are in an acceptable state of physical health. Smith, Hughes *et al.* (2), in discussing electro-shock in the psychoses, indicate a number of generally observed contra-indications to treatment. Included are evidences of cerebral lesions, inanition, especially if accompanied by prolonged inactivity or bed confinement, tuberculosis, heart and bone disease and others. One assumes, of course, that each patient before having this form of therapy receives a careful physical and neurological examination. The treatment is not without risk, and deaths, though uncommonly rare, have been reported in the literature (3, 4). Shock in the presence of organic brain disease has met with unsatisfactory results. Heilbrunn and Feldman (5) have reported the use of electro-shock in a small group of paretics. The treatments were accompanied by alarming cardiovascular and respiratory failure and had to be discontinued. It is incomparably safer, of course, to treat patients who are in good physical health, yet contra-indications to any form of therapy are never absolute. One has always to balance the risk of the particular therapy against the expected result, having in mind, in addition to other factors, the natural course of the disease.

At this clinic we have recently had good success in treating a number of patients with physical conditions which would excite caution in the use of shock therapy.

### MATERIAL.

CASE 1.—A married woman, aged 52, was admitted to hospital in an excited, elated and over-talkative state which followed upon several minor depressive episodes in preceding months. The pertinent etiological factors appeared to be menopausal changes, the death in action of one daughter's fiancé and the approaching birth of a first child to another daughter whose husband was away in the army. Two years prior to admission the patient had suffered a hemiplegia of sudden onset, involving speech, the left face, right arm and leg. There were prolonged periods of unconsciousness and it was not expected that she would survive. However, after several months she could speak a little and she subsequently made an apparently complete recovery, with no neurological sequelae.

Following abrupt onset of the mental illness she remained under hospital care eleven months. She was constantly restless and noisy in spite of hydrotherapy, sedation and forced feedings, and lost weight and strength. At the time shock treatment was commenced, she had been in hospital ten months and weighed 78 lb. Physically she manifested no neurological findings, though she was never accessible for detailed examination. A total of ten electro-shock treatments were given. An interesting feature of the convulsive therapy was the repeated production of an orderly Jacksonian progression, beginning in the left upper limb, involving next the face and lower limb, then extending to the right side. There was marked improvement mentally, and a gain of more than 20 lb. She was able to leave hospital, the only symptoms still present being some irritability. This represents a case successfully treated in the presence of two physical contra-indications, a recent cerebral lesion and inanition.

TABLE I.

Case	Age.	Psychiatric diagnosis.	Duration of illness.	Physical findings.	Pertinent medical history.	Type of treatment.	Number of shocks.	Results.
1	52	M.D., manic	10 months	Inanition	Hemiplegia two years previous	Electroshock	10	Recovered.
"	37	M.D., depressed	9 "	Increased deep reflexes; spasticity	Encephalomyelitis 18 months previous	"	17	"
"	60	M.D., mixed	10 "	Hyperactive deep reflexes	Fractured skull; aphasia 10 months previous	"	11	"
"	19	Catatonic; schizophrasia	6 "	Inanition; anaemia (Hb 57 per cent.); tachycardia	? Rheumatic fever; persistent tachycardia	"	12	"
"	49	M.D., depressed	9 "	Atrophic, flaccid; paralysis left leg	Old poliomyelitis	Metrazol	9	"
"	45	Involuntal	17 "	Atrophic, flaccid; paralysis left arm	Old poliomyelitis; recent thyroidectomy	"	18	"
"	45	M.D., depressed	6 "	Pneumonia R.L.L. during hospitalization	Negative	"	6	"
"	53	M.D., manic	12 "	Healing fracture of ulna	Thyroidectomy one week before admission	Electroshock	8	"
"	64	M.D., depressed	6 "	Inanition; Mild hypertension; anaemia (Hb 68 per cent.)	Periodic dizzy spells; occasional cardiac symptoms	"	10	"
"	55	M.D., mixed	6 "	Inanition; anaemia (Hb 73 per cent.); arteriosclerosis	Negative	"	10	Much improved.

**CASE 2.**—A married woman, aged 37, was admitted to hospital in a depressed, retarded and perplexed state following a serious domestic upheaval, a recent hysterectomy and a severe and prolonged physical illness which had diminished her resources and handicapped her in the management of her customary household duties. Eighteen months previous to our hospitalization the patient had developed a non-specific encephalomyelitis following an upper respiratory infection. This confined her to general hospital care for over three months, and there followed a prolonged convalescence in which the main persisting symptom was weakness of both legs. The initial findings were fever, leucocytosis, one hundred lymphocytes in the spinal fluid, an increasing weakness of the lower limbs, together with bladder retention. Positive Babinski was elicited bilaterally over a prolonged period. During this illness the patient remained mentally clear.

While under our care the neurological finds were consistently hyperactive deep reflexes in the lower limbs and a mild degree of spasticity. Under conservative treatment the patient was rapidly losing ground, and it was felt that shock therapy would be justified. After twelve induced convulsions the patient had greatly improved. However, a review of the tangled domestic situation was again followed by some depression, indecision and feelings of unreality, and five more shocks were given. The patient was then judged completely recovered and was able to leave hospital to carry on her usual tasks. No complications arose during the convulsive procedure.

**CASE 3.**—A widow, aged 60, was admitted in a depressed and agitated state. There was a history of several previous depressions with recovery. Eight months previously she had been struck by a car and suffered a fractured skull together with some brain damage. At that time the fracture line was clearly visualized crossing the middle meningeal artery and operation was considered, as she was unconscious about four hours and manifested a temporary motor aphasia. She made a gradual recovery neurologically, but mental symptoms arose shortly, and she was finally admitted to us.

Examination revealed the typical findings of an agitated depression. She was hallucinated in several fields, refusing food, and a difficult nursing problem. Neurological examination was negative. After a trial of more conservative treatment had failed to influence the situation electro-shock treatment was begun. A total of eleven convulsive shocks were given, with complete recovery, and the patient was able to leave hospital.

**CASE 4.**—A single girl, aged 19, was admitted to hospital in a mute, stuporous, negativistic state. She was completely inaccessible and incontinent and refused nourishment. The illness had developed gradually, and apparently arose from a long period of bed confinement on the orders of her physician because of persistent tachycardia and supposed heart disease.

The physical findings were a persistent tachycardia, ranging between 110 and 140, a marked secondary anaemia (Hb 57 per cent.) and a state of marked weakness and inanition following upon prolonged rest in bed and refusal to take nourishment. For weeks the main concern and aim of treatment was to keep this patient alive. Regular tube feedings, iron and liver extract and other supportive measures were undertaken. With the issue still in doubt, and the patient only weighing 72 lb., shock therapy was undertaken. A total of twelve electro-shock treatments were given with marked improvement in both the physical and mental sphere, and the patient was able to leave hospital. No complications were noted.

In addition to these cases, presented in some detail, there were treated successfully two patients with old poliomyelitis completely paralysing one extremity, one patient with a healing fracture of the ulna, one patient two weeks after recovery from an observed pneumonia, and two other patients in an emaciated and feeble state (see Table I).

#### COMMENT.

No complications occurred in any of the ten cases. It is interesting to note the type of seizure consistently obtained in Case 1. This may be taken as definite evidence of an existing cerebral lesion in this patient. The results were extremely gratifying. Nine patients have recovered and are out of hospital. One patient is still convalescing following the completion of treatment and will shortly be discharged. In the first case the patient had been hospitalized for ten months without improvement. The three cases suffering with inanition were threatened with death from exhaustion. In all the other cases a trial of conservative therapy had failed to produce improvement before shock therapy was instituted. It should be emphasized that less drastic measures are unquestionably preferred, and it was only after considered judgment and free discussion of the risk with the relatives that this therapy was attempted.

#### SUMMARY.

Ten patients with defects generally believed to contraindicate shock therapy were successfully treated. The exercise of care in the selection of patients suitable

for shock therapy is recommended, but it is emphasized that physical contraindications are only relative.

Where shock is the treatment of choice in patients with moderate physical disabilities, one may proceed with a reasonable margin of safety.

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