ELECTRIC SHOCK THERAPY IN THE PSYCHOSES: CONVULSIVE AND SUBCONVULSIVE METHODS

BY SERGE ANDROP, M. D.

The use of electricity in the treatment of mental disorders is not new; we can trace it as far back as the middle of the eighteenth century when it was claimed that all mental diseases had been successfully treated by electricity. For over a century, electrical treatment was extremely popular and widely used, so much so that HufF in 1853 insisted that "no nervous affection whatever should be regarded as incurable until electricity has in some form been tried." Since then, according to the brief résumé of Berkwitz, Arndt in 1870, Alibutt in 1872, Erb in 1883, Hayness in 1884 and Blandford in 1886 all reported encouraging results from its use in the psychoses. Berkwitz further notes that "interest in electric shock treatment gradually waned and by the beginning of this century the treatment was no longer popular." However popular the use of electricity had been prior to that waning of interest, it had never been employed to the point of producing a major convulsion. Cerletti and Bini introduced the treatment of the psychoses with electrically-produced convulsions in 1937. Their aim was to find a method which would eliminate all the dangers and unpleasant concomitants of pharmacological shock therapy and yet retain all its favorable results. Although electric shock therapy is only in its infancy, it has recently come into prominence, and has now gained wide acceptance and usage.

The present writer has used other methods of shock therapy with some degree of immediate success. However, in evaluating results, it was stated: "It has long been known that shock may relieve mental illness, it is also known that severe illness may for a time favorably influence a case of schizophrenia or stop epileptic seizures. All of these effects, however, are transitory. In evaluating the results of shock therapy we are therefore concerned not so much with the immediate effects of the treatment as with its lasting effect, the permanency or duration of the improvement." The present report is based on a group of 50 patients who received over 1,000 electric shock treatments during a period of 12 months;
and although it is recognized that neither the number of patients or treatments, nor the elapsed time following the treatments, will allow a report of any degree of finality, it is felt that much valuable information has been gained, justifying this presentation. The group consisted of male patients, the great majority were chronic schizophrenics, with the duration of illness ranging from one to 15 years.

**The Apparatus and Technic**

There are various machines on the market for use in shock therapy; but, although they are manufactured by reliable firms it is suggested that the Council on Physical Therapeutics of the American Medical Association might well undertake a careful study of them, with a view to standardization in respect to safety, adequacy and accuracy. In view of the abundant literature and descriptive material available, it does not appear necessary to discuss in detail the apparatus used in this series of treatments. It is very simple and is a modification of the one used by Cerletti and Bini and described by Spiegel.\(^5\) An alternating current is used which is the ordinary 50-60 cycle, 110 volt, city-supplied, house current. Without changing the type of current, it is put through an induction or variable voltage transformer and is brought to the desired voltage, while the time of exposure is controlled by a very accurate roentgen ray timer graded in one-twentieths of a second. The apparatus is equipped with adequate safety devices and is easy to operate.

The technic is equally simple; the resistance of the patient's head is determined routinely. The resistance or impedence, according to Krause\(^6\) and his studies on dead mammalian heads, consists of the skin, muscles and periosteum, with the contents of the skull having no influence and the resistance being the same whether the skull is filled with brain or wet sponges. At first, the writer relied upon the resistance to determine the voltage to be used, basing this procedure on the theory that the greater the resistance, the greater the current necessary to overcome it. However, it was found in practice that as soon as electric current is applied, the resistance drops appreciably; this was also reported by Golla, Walter and Fleming,\(^7\) Gonda,\(^8\) Löwenbach, Androp and Lyman\(^16\) and others. In the present series, the resistance dropped immediately upon the