



DR. UGO CERLETTI

HISTORICAL NOTES

THE STORY OF THE FIRST ELECTROSHOCK TREATMENT

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I recently asked Professor Ugo Cerletti of Rome, Italy, to tell me the story of the first electroshock treatment.

Prior to assuming the professorship in psychiatry in Rome in 1935, Cerletti had for a number of years been investigating histopathologic cerebral changes consequent to convulsions in animals. To avoid artifacts, from toxic substances or from the passage of electricity through the brain, he did not use drugs to produce the convulsions and placed the electrodes one in the rectum and the other in the mouth (Viale method). This method did not entirely prevent electricity reaching the brain as was later shown by Bini. With the Viale method, not a few of the dogs died from cardiac arrest as the current traversed the heart. To avoid this complication, convulsions were produced with the least possible quantity of electricity given for a very short time (60-70 volts for 0.1 second).

Soon after Meduna published his experiences with Cardiazol Convulsive Therapy in Psychiatric Conditions, Cerletti introduced this therapy in Rome. It then occurred to almost all those in his group who were daily inducing electric convulsions in dogs, to apply this method therapeutically to man. Most of the researchers, however, were timid and feared causing death, irreversible brain changes and epileptic states. Cerletti was the least fearful, but as yet he did not dare to initiate the procedure. Later seeing a parallel between the cardiazol convulsion and the convulsions caused by transcranial application of electricity; using a bi-temporal application of the electrodes, he experimented on many pigs which were placed at his disposal at the slaughter house in Rome. With these animals he changed the scope of his experiment and instead of using the least amount of current to produce the convulsion, he set out to

find the quantity of current needed and for how long a period of time it should be applied to kill an animal. After noticing that in order to do this a tremendous amount of current had to be used for a prolonged time, and that there was a vast difference between a convulsant and a killing dose of electricity, he became certain that the method would be safe in man and decided to go on with it. This was his decision and no one else had anything to do with this aspect of the procedure. Cerletti asserts that EST was not an invention but it was merely an audacious act. He gives to Meduna the honor of having invented the convulsive therapies.

Bini together with the electrical engineer of the clinic constructed the machine which had two circuits:

A direct circuit for the measurements of the resistance of the patient's head, measured in ohms. The other, an alternating current to elicit the convulsion. This circuit included a timer which measured time in 1/10 of a second up to a minute; a potentiometer which allowed the voltage to vary from 50 to 150; and an ammeter to indicate the milliamperage which flowed between the electrodes. The circuits were contained in a metallic case which made the apparatus quite heavy. Dr. Renato Almansi who worked with Dr. Cerletti, brought one of these machines to America in 1939 which he and I used in our experiments on dogs, and in our first patient.

Now came the search for Rome's first patient. For obvious reasons this was not a simple matter. Then, luckily, a patient from North Italy was admitted to the clinic who was a catatonic schizophrenic and who spoke an incomprehensible gibberish. He was unable to give his name or to state anything about himself. No one could identify him. Dr. Cerletti decided he should be the historic patient. Following

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adequate preparations the first treatment was given in 1938. Present were Cerletti, Bini, Longhi, Accornero, Kalinowsky and Fleischer. The patient was brought in, the machine was set at 1/10 of a second and 70 volts and the shock given. Naturally, the low dosage resulted in a petit mal reaction. After the electric spasm, which lasted a fraction of a second, the patient burst out into song. The Professor suggested that another treatment with a higher voltage be given. The staff objected. They stated that if another treatment were given the patient would probably die and wanted

further treatment postponed until the morrow. The Professor knew what that meant. He decided to go ahead right then and there, but before he could say so the patient suddenly sat up and pontifically proclaimed, no longer in a jargon, but in clear Italian : "Non una seconda ! Mortifera !" (Not again, it will kill me). This made the Professor think and swallow, but his courage was not lost. He gave the order to proceed at a higher voltage and a longer time : and the first electroconvulsion in man ensued. Thus was born EST out of one man and over the objection of his assistants.