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DEATH FOLLOWING E.C.T. – A CASE REPORT

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Electro-convulsive therapy (E.C.T.) is regarded as a safe procedure since although several thousands of treatments are given annually worldover, the occurrence of serious complications is rare (Sargant and Slater, 1963; Cropper and Hughes, 1964; Royal college of Psychiatrists, 1977; Kalinowsky, 1980 and Shukla, 1981). Nevertheless, complications do occur and are, at times, fatal (Barker and Baker, 1959; Arneson and Butler, 1961; Heggtveit, 1963; Kalinosky and Hippius, 1969 and Gomez, 1974). To our knowledge there has been no report of death following E.C.T. from India. This prompted us to report the present case who died within 10 hours of E.C.T. and in whom E.C.T. and/or anaesthesia could be inferred to have caused or contributed towards death.

Case Report

R.K., 15 years, unmarried and uneducated Hindu female was admitted on 20th September 1983 with a three weeks history of abnormal behaviour consisting of excitement, irrelevant talk, auditory and visual hallucinations and sleeplessness. Her illness had started with fever with chills and rigor and cough with expectoration - all lasting a week and subsiding with treatment by the family psysician. However, the abnormalities in her behaviour, sleep and talk persisted and went on increasing in severity. On examination, the patient was persistently moaning and groaning in a sonorous whimper, completely oblivious of her surroundings and did not respond to questions. She resolutely refused meals and was totally uncooperative. These features were punctuated with outbursts of unprovoked excitements in which she tried to run away from bed and became assualtive and violent if someone tried to stop her. At times, she would tear off her clothes and become naked.

Laboratory investigation reports were: Haemoglobin - 10 Grams%; Total Leucocyte Count - 9,000 per Cubic Millimetre; Differential Count - Polymorphs 64%, Lymphocytes 30%; Eosinophils 4% and Monocytes 2%; E.S.R. - 30 millimetre in the first hour and Blood Urea - 24 Milligram%. X-ray chest and C.S.F. examinations were within normal limits. The patient was put on Chlorpromazine (100 mg), Trifluoperazine (5 mg), and Benzhexol (2 mg) - all three times a day and Nitrazepam (20 mg) at bed time. All these had to be given through a nasal tube. In addition, intramuscular Chlorpromazine was given, as and when needed, to curb excitement.

As she was poorly responding to pharmacotherapy and as her excited and uncooperative behaviour was making it difficult to manage her in the open medical ward (where the psychiatric beds are also located), she was put on modified E.C.T. under Thiopentone + Atropine + Suxamethonium, thrice a week. After four treatments, the patient was showing definite improvement viz., her excitement became less and she started accepting oral feeds and medication. After

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the fifth treatment (on 1st October 1983), while still under the effect of anesthesia, the patient started having cough. Throat was cleared by suction and mopping whereupon her cough subsided. However, she did not regain consciousness eventhough her blood pressure and pulse rate remained within the normal limits. Her respiration continued to remain shallow and erratic and stopped suddenly in the evening, followed soon after by cessation of the heart beat. In spite of all efforts at resuscitation the patient did not come around and was declared dead at 6.30 P.M. Her relatives did not agree for autopsy.

Comments

In M.L.B. Medical College, Jhansi, Psychiatric facilities including E.C.T. were started in 1977. Excepting for the first two years when anaesthetic help was scarce, E.C.T.s are given under intravenous anarestheis (Thiopentone 250 mg and Atropine 0.1 mg) and relaxant (Suxamethonium 1 mg/kg body weight). During the period of 7 years (1977-1983), 1399 patients were subjected to E.C.T. and a total of 7620 E.C.Ts administered to them. The death of the present case, thus gave a case fatility rate of 0.07 % and a treatment fatality rate of 0.013 %.

Though rare, deaths do occur following E.C.T. However, their exact frequency vis-a-vis the total number of patients treated as well as the total number of treatments administered is not known. In the earlier literature the estimated case fatality rate was estimated to range from 0.05 % to 0.8 % and treatment fatality rate from 0.007 % to 0.04 % (Barker and Baker, 1959; Arneson and Butler, 1961 and Higgtveit, 1963). Kalinowsky and Hippius (1969) feel that these rather high figures could have been due to the inclusion of many deaths unrelated to but occuring in temporal proximity to E.C.T. and due to the fact that curare was used as relaxant in those days. Kalinowsky (1980) has given a very low treatment fatality rate (0.002 - 0.003 %). He asserted that these figures were in no way higher than those in other procedures done under anaesthesia. However, it must be accepted that fatalities are not always reported and this is particularly true in India where there has been virtually no documented case of death following E.C.T. while, in fact, most of the psychiatrists would admit having had such cases.

Our patient was physically quite healthy and entirely fit to receive E.C.T. Further, the treatment was carried out with the help of a qualified anaesthetist. Not only that, the death occured after the team had had an experience of administering the treatment for several years. It would therefore appear that there is no way of predicting the possibility of fatality occuring following E.C.T. On the other hand, several poor-risk patients have received the treatment without any untoward effect. Similar has been the experience of other workers also (Arneson and Butler, 1961 and Gomez, 1974). Arneson and Butler, (1961) concluded that a patient's apparently good physical health was not guarantee against fatal cardio-vascular and respiratory complications.

As regard the cause of death following E.C.T., there is a consensus that it is predominantly cardio-vascular in form of cardiac arrest or coronary occlusion (Barker and Baker, 1959; Arneson and Butler, 1961; Heggtveit, 1963; Cropper and Hughes, 1964 and Kalinowsky and Hippius, 1969), followed by cerebral and respiratory (Arneson and Butler, 1961 and Gomez, 1974). Our patient in all probability died of respiratory complications since respiratory arrest

occurred before the cessation of the heart beat. Unfortunately, due to prevailing socio-cultural facors, autopsy, which could possibly have given some aetiological clues, was not possible. However, even autopsy in most of such cases is not much informative (Arneson and Butler, 1961 and Kalinowsky and Hippius, 1969).

The patient withstood first four treatments and died after the fifth one. Heggtveit (1963) pointed out that although death after the first E.C.T. was common, the majority of fatalities occurred following subsequent treatments. It could therefore be concluded that though the risk of death following E.C.T. is small, it is not an entirely innocuous procedure and must never be given without careful consideration of the petient's physical state. Further, in the absence of any foolproof way of predicting or preventing such an eventuality (Arneson and Butler, 1961 and Abramezuk and Rose, 1979), all the treatments must be taken as potentially fatal and one has to be continuously on guard. It is therefore axiomatic that medical and nursing staff should be aware of the possibilities and have the knowledge and equipments to deal with them.

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