TOXIC DELIRIOUS STATE DUE TO ACCIDENTAL INGESTION OF DATURA

J. VENKATESAN, M.D., D. P. M., M. N. A. M. S.
V. BALAN, M.D., D. P. M.
T. R. SURESH, M.B. B.S.

SUMMARY

Four cases of toxic delirium resulting from accidental ingestion of datura seeds are reported. All of them had features of anticholinergic delirium.

Psychosis resulting from atropine instillation into the eye for mydriasis (Shah, 1966; Baker and Farley, 1958) or following preanesthetic atropine medication (Granville-Grossman, 1971) has been commonly reported. It is often encountered in those who abuse it for its psychodelic effects (Merring, 1966; Rosen and Lichner, 1962) and during atropine coma therapy used in psychiatry (Forrer and Miller, 1958). We report here four patients all of whom developed a toxic delirious state following accidental ingestion of toddy mixed with datura seeds.

CASE REPORTS

Mrs. X, a forty years old female, housewife, hailing from an agricultural family, was admitted as a case of Schizophrenia in the psychiatric ward at night through the casualty department. She was excited and the physician on duty who was called in gave her chlorpromazine 50mg intramuscularly. The patient went to sleep after 10 minutes. Next morning she was awakened by the psychiatrist during ward rounds and she was found to have mild confusion. It was presumed that she might have recovered from a hysterical psychosis which is quite common. She had a temperature of 100°F, pulse rate of 104 per min., B. P. of 120/82 mg. of Hg and the skin was warm. History, which was elicited an hour later in detail, helped in making a correct diagnosis.

The patient was living near a coconut grove. The grove was leased for toddy tapping. There was constant pilferage of toddy from the grove and the excise contractor hatched a plan to detect and deter the regular thieves. He mixed about 100 grams of powdered datura seeds with about three liters of toddy on the night of patient’s admission. Patients’ husband, who is a toddy drinker, saw some persons pilfering the toddy and to silence him, he was offered about 400 ml of the adulterated toddy. He took it home and went out again. While he had gone out, his wife drank the toddy to “gain strength”. He returned about ten minutes later for supper. While serving food, his wife complained of dizziness, and was excited. She tried to run out and was restrained. She was fearful and was shouting that a number of people were coming with sickles to kill her. She heard accusatory voices from a distance. She removed her clothes, tried to pull out imaginary insects from her thighs and made searching movements on the ground. She could not recognise her husband when he tried to console her. She felt warm and was sweating. In this state she was brought to the hospital and admitted. In the
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in the morning she was amnesic about the events which had lasted ten hours from the time she complained of dizziness. She had never taken alcohol before. Family history was negative. Examination even after ten hours showed warm skin, widely dilated pupil not reacting to light or accommodation. She recovered totally and was discharged after 48 hours. A diagnosis of Datura intoxication was made because of the physical signs and history of delirium and consumption of the offending agent.

The other three individuals who consumed around 300-500 ml of the adulterated toddy also became exited and confused. They had visual and auditory hallucinations and were running about with fear. They were taken to the nearby PHC by their relatives separately. Two of them were given parenteral Diazepam 10 mg with which they quietened down and were normal in the morning. The other got better while on way to the hospital and was therefore taken back to his house. All of them had a warm skin. They were called to the psychiatric department and found to have amnesia for their psychotic behaviour, which had lasted 4, 3 and 1 hours respectively. They had no other abnormal features.

COMMENT

Stramonium poisoning has been reported as early as 1676. Homer has referred to its use in his ‘Oddyssey’. Cleopatra had used it to entice Antony. But the toxic effect of Stramonium and drugs containing atropine alkaloids used in bronchial asthma have not been commonly reported in psychiatric literature. The cause of toxic confusional state produced by these agents may sometimes be difficult to identify. The history of consumption of datura seeds in the present case helped in easy diagnosis. The consumption of toddy alone could not have been the cause since the amount consumed was relatively small and all the four had a similar stereotyped presentation of behavioural symptoms with an associated physical effects of datura. The three pilferers who were regular toddy drinkers had never behaved like this with toddy consumption earlier.

All the four patients had an acute organic brain syndrome which started within ten minutes of ingestion, with disorientation, excitement, visual and auditory hallucinations, paranoid ideation, and fear. All had amnesia for the episode. Behavioural toxicity due to anticholinergic drugs given for parkinsonism and tricyclic antidepressants are also reported to produce similar confusion, with behavioural and physical effects (Stephens, 1967). The signs and symptoms have been described as “hot as a hare, blind as a bat, dry as a bone, red as a beet and mad as a hen”. This anticholinergic syndrome has been sometimes mistaken as an LSD trip or amphetamine psychosis. These produce sympathetic overactivity rather than anticholinergic activity, with anxiety, cold skin, feeble pulse and dilated pupils. The warm skin failure of accommodation and delirium is said to help in a proper diagnosis (Goldsmith, 1968). The methacholine test can help in confirming the diagnosis of atropinic delirium (Dameshek and Feinsilver, 1937).

Chlorpromazine, though theoretically can potentiate the anticholinergic effects (Digiacoma, 1958), has been given by the duty physician by mistake without making the correct diagnosis, but it actually had induced a good sleep and quietened the patient. Though physostigmine is a safe and effective antidote for anticholinergic delirium (Duvorsen and Katz, 1963) the necessity for its use did not arise in our patient since she was already free of symptoms when the correct diagnosis was made. Forced di-
Diuresis has also been used in treating atropine poisoning since it is excreted in the urine (Groden and Williams, 1964). Though the duration of the delirious episode has been noted to last from a few hours to even a few days (Korolenko et al., 1969) it did not last more than ten hours in the present series.

REFERENCES

Baker, J. P. and Farley, J. P. (1958). Toxic psychosis following atropine eye drops. B.M.J., 2, 1380
Dameshek, W. and Feinsilver, O. (1937). Human autonomic pharmacology XIV, the use of mecholyl as a diagnostic test for poisoning by the atropine series of drugs. J.A.M.A., 109, 561.
Dioiaoma, J. N. (1958). Toxic effects of Stramonium simulating LSD Trip. J. A. M. A., 204, 264.
Duvorsen, R. C. and Katz, R. (1963). Reversal of central anticholinergic syndrome in man by physostigmine. J. A. M. A., 206, 1964.
Forrer, G. R. and Miller, I. J. (1958). Atropine coma, a somatic therapy in psychiatry. Amer. J. Psychiat., 115, 455.
Granville Grossman, J. A. (1971). Recent Advances in clinical psychiatry. Volume 1, London, Churchill.
Goldeith, S. R. (1968). Poisoning from ingestion of a Stramonium Belladonna mixture. J. A. M. A., 204, 169.
Gorden, B. M. and Williams, W. D. (1964). Atropine poisoning treated by forced diuresis. Postgrad. Med. J., 40, 28.
Korolenko, C. P., Yesvseyeva, T. A. and Volioy, P. P. (1969). Data for a comparative account of Toxic Psychosis of various aetiologies. Brit. J. Psychiat., 115, 273.
Merring, P. De. V. (1966). Poisoning by Datura stramonium. South African Med. J., 40, 311.
Rosen, C. S. and Lichner, M. (1962). Jimson weed intoxication. New Eng. J. Med., 267, 448.
Shah, P. M. (1966). Toxic effects of atropine eye drops. Indian J. Ped., 33, 13.
Stephens, D. A. (1967). Psychotogenic effects of benzhexol hydrochloride (Artane). Brit. J. Psychiat., 113, 213.