Medical Memoranda

Ephedrine Psychosis

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Two cases of toxic psychosis associated with excessive self-medication with ephedrine are reported.

CASE 1

A 65-year-old retired lorry driver with a previously negative psychiatric history presented with a very florid and turbulent acute paranoid psychosis of some two months' duration. He was convinced that his wife was being persistently unfaithful to him with an ex-lodger; he claimed he had seen this man climbing over the wall on several occasions and had repeatedly heard him talking to his wife. He also described seeing flashing lights in the garden at night, and, armed with an iron bar, had been searching for this phantom intruder. He showed no evidence of clouding of consciousness and was extremely angry and hostile. He lacked insight, and had to be admitted to hospital under a compulsory order.

He had a history of chronic bronchitis and asthma, and had radiological evidence of old pulmonary tuberculosis. He was supposedly being treated at home with ephedrine (60 mg. t.d.s.) and betamethasone (0.5 mg. daily), but only the latter was continued after admission. Apart from mild bronchospasm and small pupils, physical examination was negative, as were routine laboratory investigations, including serology. There was no evidence of sympathetic overstimulation. Psychological testing shortly after admission revealed a rather specific and unusual impairment of grasp.

Within four days of admission his florid psychotic symptoms had evaporated and he had partial insight. He then admitted taking up to 200 ephedrine (60 mg.) tablets a week for some years and to having even further increased his ephedrine consumption in recent weeks. He had in the past used them partly for their alerting effect when driving long distances. Since taking very excessive amounts of ephedrine he had become impotent.

Within a week he had full insight. He was given no ephedrine after admission, and his asthma did not flare up while he was in hospital. He was discharged symptom-free after two weeks with strict instructions to take no further ephedrine. He has been followed up for three months and has remained psychiatrically well.

CASE 2

The above case brought to mind another patient with a more complicated history who was presenting a difficult treatment problem.

A childless married Polish woman aged 54 had a 25-year history of severe chronic pulmonary tuberculosis, recurrent attacks of bronchitis and chronic asthma, and a 10-year history of recurring episodes of atypical psychosis characterized by depression with paranoid features and vivid auditory hallucinations. During attacks she had paranoid delusions about her husband. In April 1967, after being well for nine months, she again became depressed, with persistent auditory hallucinations of a persecutory nature in clear consciousness. This relapse coincided with an exacerbation of her asthma and bronchitis. Chemotherapy produced little improvement, and she was subsequently given a course of electric convulsion therapy, which produced a good affective response but no lessening of the hallucinations. Throughout she maintained partial insight into the hallucinatory nature of the voices, which were those of children talking in Polish and using abusive language she had first heard in a Russian prison camp. However, their content greatly distressed and sometimes frightened her, and massive doses of phenothiazines produced only slight abatement.

At this point she admitted, on questioning, to having taken increasing quantities of ephedrine over the past 20 years, latterly up to 15 ephedrine (30-mg.) tablets five times a day during exacerbations of her asthma.

In retrospect, many of her attacks of psychiatric illness appear to have coincided with exacerbations of her chest condition and to have been associated with marked tension and tremulousness and increased difficulty in sleeping.

She was readmitted to hospital, ephedrine and all phenothiazines being discontinued. On admission she had an attack of acute bronchitis, which responded to ampicillin. In place of ephedrine she was given proxiphylline (300 mg. t.d.s.) and an inhaler containing isoetharine mesylate, phenylephrine hydrochloride, and thelyldiamine hydrochloride (Bronchilator). Within four days the hallucinations had disappeared, leaving her with a mild depressive state, of which lethargy was the most prominent symptom. She was discharged after a week on trimipramine, with strict instructions to take no further ephedrine. Her hallucinations returned within four weeks of her discharge, shortly after the onset of a further exacerbation of her asthma and bronchitis. She strongly denied taking ephedrine again, but a sample of her urine sent for analysis to the area laboratory at West Park Hospital was positive for ephedrine.

COMMENT

Ephedrine is a widely used bronchodilator. Though initially effective, prolonged use leads to loss of effect, and patients are therefore inclined to increase the dose of their own volition. Bleuler (1949) commented on the stimulant effect of large doses of amphetamine being followed by unpleasant fatigue, tending to drive patients to maintain and increase the dose. The same effect seems to occur with ephedrine. It is the only sympathomimetic amine available without prescription, and costs only 3s. 8d. per 100 30-mg. tablets.

So far as we can discover there have been no previous reports of toxic psychosis related to ephedrine. Though the second patient experienced tremulousness and increased disturbance of sleep, these autonomic side-effects were easily mistaken for symptoms of functional origin. The first patient experienced no marked autonomic side-effects, having a relative bradycardia throughout and unexplained pupillary constriction. Neither patient showed any marked physiological withdrawal symptoms, though withdrawal of ephedrine could be held responsible for the second patient's residual complaints.

The clinical picture resembles that of classical amphetamine psychosis (Connell, 1958), being primarily a paranoid psychosis with delusions of persecution, and auditory and visual hallucinations, in a setting of clear consciousness. Both patients remained fully orientated. However, the hallucinatory phenomena were particularly vivid, and neither patient showed the extreme terror sometimes associated with amphetamine psychosis. Furthermore, recovery was much more rapid than that usually seen with amphetamine psychosis.

Ephedrine psychosis is probably rare, but it is worth drawing its occurrence to the attention of physicians.

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