

IMAGE FOR EDUCATION

Misdiagnosed Pruritus; Formication due to Chronic Amphetamine Abuse

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QUESTION

Case history: A 17-year-old man presented to emergency department of Imam Reza Hospital, Mashhad, Iran, with bilateral mydriasis, tachycardia, hypertension, sweating and belligerence. He also had disorientation to time and place. In physical examination, widespread round-to-oval cutaneous lesions were observed all over his limbs and chest (Figures 1 and 2), notably the most easily reached sites of skin to be scratched. The patient had a history of substance abuse and admission to psychiatric hospital due to psychosis.

What are the differential diagnoses for and appropriate approach to this patient?



Figure 1. Cutaneous lesions on the chest of the patient



Figure 2. Cutaneous lesions on upper (A and B) and lower (C) limbs of the patient

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ANSWER

Differential diagnoses: The clinical findings and medical history of the patient was suggestive of substance-induced psychiatric disorders, which in this case could be attributed to the abuse of psychoactive drugs. The set of autonomic signs with psychomotor agitation, mydriasis, sweating and cardiovascular signs such as tachycardia and hypertension are indicative of adrenergic syndrome (1). However, this combination of clinical manifestations can also be seen in serotonin syndrome (1). In either way, abuse of amphetamines, cocaine, ketamine, phencyclidine, synthetic cathinones, or lysergic acid diethylamide (LSD), and overdose of serotonin reuptake inhibitors, monoamine oxidase inhibitors, tricyclic antidepressants, ephedrine, or caffeine can be taken into account (1,2).

Approach and disease course: The patient was admitted to the toxicology ward and received supportive treatments including benzodiazepines. Although the psychotic manifestations started to subside, mydriasis did not show remarkable change. Urine toxicology screening test was positive for 3,4-methylenedioxy-methamphetamine (MDMA). Routine imaging, blood tests and liver function tests were normal and he was negative for HIV, hepatitis B and C (HBV and HCV). On day two of hospitalization, the patient regained normal state of consciousness and his mydriasis resolved, but he complained of pruritus and sensing the movement of insects under his skin. Further medical history showed that he had abused amphetamines for more than two years along with persistent pruritus, for which he had visited different physicians who mainly had made the diagnosis of allergy or dermatitis for him. He had been treated with antihistamines (hydroxyzine) for a long period. He declared that he had no familial history of eczema. He also had been diagnosed with scabies and treated with topical permethrin and lindane lotion. Despite receiving these treatments, he continued to have pruritus particularly on his forearms and hands. Dermatologic symptoms of the patient might be mistaken with ectoparasitosis (3); however, his delusions of sensing insect movement beneath his skin were mainly visual, and moreover, he did not respond to standard treatment of dermatitis and scabies. Hence, this diagnosis was ruled out.

The patient had also one episode of admission to a psychiatric hospital emergency following the occurrence of an aggressive mood and psychosis, where after stabilizing his vital signs and administration of antipsychotics and benzodiazepines and remission of symptoms he had been discharged.

Outcome: The patient was finally diagnosed as having "Ekbom's syndrome". He was discharged after complete recovery from psychotic crisis and was referred to rehabilitation and psychosomatic outpatient clinic.

DISCUSSION

Ekbom's syndrome, also known as delusional infestation or delusional parasitosis, is a psychiatric disorder, in which the involved person has a delusional perception of being infested with insects, bugs or in general parasites, although

no such problem exists (4,5). Primary form of delusional parasitosis is uncommon and can be seen in older women (4); however, the more common form of this syndrome is secondary to abuse of psychoactive drugs, particularly amphetamines and cocaine (5). As observed in the current patient, the history of drug abuse had been ignored during several visits of different physicians including dermatologists, and he had received ineffective treatments accordingly.

Amphetamines are recreational drugs with increasing popularity in Iran (6,7). Being sold in different forms (7), amphetamines can be snorted, injected, ingested, or smoked. There are reports on drug-related dermal complications such as toxic dermal necrolysis, dermatographia, xeroderma and pustular eruption following amphetamine use (8,9); however, they are few to be considered as medically important. Hence, the etiology of pruritus and sense of parasite movement beneath the skin in chronic amphetamine use is psychological rather than organic.

In our patient, we deduced that amphetamine-induced delusion was the potential cause of his cutaneous lesions, since no evidence of dermal infestation was found, and moreover his history showed unresponsiveness to standard treatments for dermal infestations as well as allergic dermatitis. It is known that amphetamines undergo hepatic metabolism and affect liver system (10), and since our patient was negative for HIV, HBV and HCV, with normal liver function tests, such dermal lesions cannot be attributed to impairment in hepatic system.

Having cognitive impairments, patients involved with Ekbom's syndrome fallaciously believe that there are bugs moving under their skin and claims to see them. Striving to remove the bugs, the patient picks and digs into the skin resulting in excoriation, scarification and lacerations (11-13). This syndrome has been classified in non-schizophrenic delusions. Nevertheless, it has also been described in schizophrenia, affective disorders, and induced psychosis (13,14). Treatment is mainly comprised of a combination of psychological rehabilitation therapies and antipsychotic and dermatological drugs (14).

CONCLUSION

Chronic amphetamine abuse is associated with refractory pruritus. For patients with allergic dermatologic manifestations in general and pruritus in particular unresponsive to standard treatments, substance abuse should be taken into account as a potential diagnosis. Obtaining an inclusive and accurate history of drugs and substances use, family and past medical history play a key role in expediting the diagnosis; hence, physicians are recommended to pay heed to such critical approach.

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