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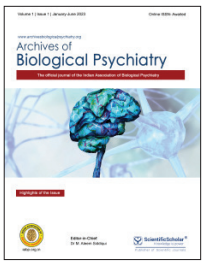

Case Report *Psychiatry*

Generalized myoclonus restricted to the "Smack" withdrawal state: A rare case report

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ABSTRACT

Myoclonus is regarded as a direct neurotoxic effect of opioid metabolites. It is seen less frequently in conjunction with opioid discontinuation (opioid withdrawal myoclonus [OWM]). Only a few case reports from palliative medicine and anesthesia have highlighted the development of OWM. We report an unusual case of a 35 years old, opioid-dependent (smack) adult male who developed abnormal involuntary jerky movements of limbs and torso in the withdrawal phase. There was no change in the level of consciousness. The neurological examination as well as serum biochemistry was normal. The electroencephalogram showed no epileptiform activity. The patient was started on oral substitution therapy (tramadol 150 mg/day) after which abnormal movements subsided within 72 h. We conclude that myoclonus can be a part of opioid withdrawal. Appropriate recognition of its benign nature and psycho-education to patients and families shall foresee better outcomes.

Keywords: Opioid withdrawal, Opioid dependence syndrome, Myoclonus, Benign

INTRODUCTION

Myoclonus is a sudden involuntary shock-like movement of a muscle or group of muscles that may follow a pattern or may be sporadic.[1] It is usually found in neurological disorders such as multiple sclerosis, epilepsy, or tumors of the central nervous system (CNS).[2] Myoclonus has been classified into four categories: Physiologic, epileptic, essential, and symptomatic. One among symptomatic myoclonus reported is opioid-related myoclonus (ORM).[1] Several mechanisms are putatively involved in causing myoclonus, such as inhibition of inhibitory interneuron, direct stimulation of G protein coupled receptors (GPCRs), and direct neurotoxic effect of opioid metabolites.[3] ORM is more commonly reported during opiate administration. Whereas, opioid withdrawal myoclonus (OWM) is reported only in a few case reports. Most OWM cases, be it multifocal or generalized, are from palliative medicine anesthesia (particularly fentanyl). Generalized myoclonus secondary to smack withdrawal has been rarely reported. Moreover, its pathophysiology is even more poorly understood.[1] We report a rare instance of an adult male, taking smack for the past 5 years in a dependence pattern, who developed generalized myoclonus on abrupt discontinuation of the offending substance.

CASE REPORT

A 35-year-old married male, with a bachelor's degree, runs his own business and comes from an urban area with a middle socioeconomic status presented to the outpatient department with

chief complaints of abnormal repetitive jerky movements and disturbed sleep since the past 8 days, muttering to self and irrelevant talk since past 5 days. He was admitted to the male psychiatry ward for a detailed workup.

Attendants gave the history of opioid intake for the past 5 years and a dependence pattern. He would inhale the vapors from smack heated on aluminum foil, tentative quantity of about 1–1.5 g/day. The last intake was 9 days back. The patient was motivated enough so he decided to abstain from substances abruptly due to which he had generalized body weakness, back pain, lacrimation, and abnormal repetitive jerky movements before presentation to the outpatient department. On examination, his attention was arousable but not sustained. He was oriented to time, place and person but appeared confused and was occasionally talking irrelevantly. Abnormal brief jerky movements on the upper limb, lower limbs, and torso were noted throughout the interview. These are present in the awake state and even during walking.

He would also smoke half a bundle of cigarettes per day. The last intake was 5 days back. There was a history of cannabis intake in a dependence pattern, but currently, he has been abstinent for the last 1 year. Alcohol intake was limited to social gatherings only and the last intake was 1 month back.

Attendants gave a history of similar abnormal involuntary jerky movement after abruptly abstaining from substance, a year back. The patient again started taking substances as he was not able to bear "sickness" and subsequently those movements subsided.

There was no history of any injectable drug intake, no history of head injury, no history of fever, and no history of any surgical procedure in the recent past. No significant family history of seizure disorder or any other medical condition.

All the laboratory investigations such as complete blood count, liver function test, serum electrolytes, blood glucose, and kidney function test were done which were normal. Electroencephalography was done which showed no epileptiform activity. Citing the attenuation of jerky movements after opioid substitution therapy, neuroimaging was not planned. A diagnosis of opioid use disorder was made, and the patient was started on tablet tramadol 150 mg in three divided doses. Gradually myoclonus subsided within 72 h. The patient was discharged on request after 3 days with advice to gradually taper tramadol within 7 days. Neuroimaging was not considered citing the restriction of these movements in the withdrawal phase.

DISCUSSION

Opioids are a large class of medications derived from the resin of the opium poppy, *Papaver somniferum*. The natural alkaloids include morphine and codeine. Synthetic derivatives include heroin, fentanyl, hydromorphone, methadone, buprenorphine, and others. They are used clinically as analgesic agents but are also illegally abused on the street by the names "smack" "dope," and "horse".[4]

Among cases reporting OWM (in contrast to our case) most of them have offending agents (diamorphine and fentanyl) applied through infusion or transdermal route. Myoclonus was either multifocal or generalized and resolved within a few days of discontinuation.[3,5,6] The case reported by Paul KJ Han and colleagues was of similar age as in our case in contrast to the other two cases having extremes of ages.[3,5,6] Myoclonus is very much reported as part of the withdrawal of smack or another illicit opioid intake. But those are benign and are frequent in sleep as very much part of "kicking the habit."

Long-term opioid usage causes a transient imbalance between the CNS's excitatory and inhibitory circuits that control motor activity. Exogenous opioid agonists can cause long-term "desensitization" of specific opioid receptors that are a part of these inhibitory circuits. On withdrawal, there is a temporary reduction activity of the inhibitory pathway which leads to OWM.[3]

CONCLUSION

We conclude that myoclonus can be a part of opioid withdrawal manifested due to the recruitment of different neurophysiological signatures when compared to more common opioid-induced myoclonus. Appropriate recognition of its benign nature and psycho-education to patients and families shall foresee better outcomes.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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