

Aripiprazole-induced writer's cramp: a case report

Abstract

Dystonia is a movement disorder, which causes sustained muscle contractions, twisting movements, and abnormal postures. Writer's cramp is the most commonly identified task-specific focal dystonia of writing, characterised by abnormal muscle spasm of hand and arm. Even in the tenth revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10), writer's cramp is classified under idiopathic nonfamilial dystonias. Our case was a 20 years, Hindu, unmarried, literate of middle socioeconomic status, from urban part of Tripura. He presented with history of difficulty to write because of a stiffening of his right hand and also he noticed that prolonged period of writing caused cramping pain. He was a diagnosed case of paranoid schizophrenia (F20.0) as per ICD-10 for last three years and was on tablet aripiprazole. Diagnosis of writer's cramp was made which developed after six months of treatment with aripiprazole 15 mg.

Keywords: Dystonia. Movement Disorders. Antipsychotic Agents.

Priyajyoti Chakma¹, Punyadhar Das²

¹Registrar, Department of Psychiatry, Agartala Govt Medical College, Agartala, Tripura West, India, ²Professor & HOD, Department of Psychiatry, Agartala Govt Medical College, Agartala, Tripura West, India

Correspondence: Dr. Priyajyoti Chakma, Registrar, Department of Psychiatry, AGMC & GBP Hospital, Agartala-799006, Tripura, India. pjchakma84@gmail.com

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Introduction

Neuroleptic-induced dystonia might be focal or generalised. Focal dystonia is most commonly reported to be oromandibular, blepharospasm, or torticollis.[1] Writer's cramp, also called mogigraphia and scrivener's palsy, is a disorder caused by cramps or spasms of certain muscles of the hand and/or forearm, and presents itself while performing fine motor tasks, such as writing or playing an instrument.[2,3] Writer's cramp is a task-specific focal dystonia of the hand and the most common dystonia occurring in the setting of repetitive movements disorders.[4] The symptoms may appear only during a particular type of movement such as writing or playing the piano, but dystonia may spread to affect many tasks.[5] The basal ganglia mediate involuntary and voluntary movements, and it is believed that the indirect striatopallidal pathway is overactive in idiopathic dystonia.[6] At the neurotransmitter level, dopamine D2 receptors antagonism in the basal ganglia produces the neurological side effects of neuroleptics.[7]

Case

A 20-year-old right handed Hindu, unmarried, male, a college student of middle socioeconomic status, from urban part of Tripura, India reported in Psychiatry outpatient department (OPD) of Agartala Govt. Medical College & GBP Hospital, India with a three-year history of aggressive behaviour, assaultiveness, sleep disturbances, irritability, crying and muttering to self, auditory hallucinations, persecutory delusions, delusions of reference, and he was diagnosed as suffering from paranoid schizophrenia (F20.0) as per the

tenth revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10).[8] He was on tablet olanzapine 20 mg for last two years and initially he was maintained on it but later on he again complained some symptoms like irritability, aggressiveness, paranoid delusion while on medications; in the mean time he also complained of weight gain and increased appetite. So tablet olanzapine was replaced by tablet aripiprazole. Initially we started tablet aripiprazole 10 mg, later on increased up to 15 mg. This switching led to complete remission of his schizophrenic symptoms and he had no adverse event. Six months after aripiprazole therapy, he complained that it was hard to write because of stiffening of his right hand, and these episodes occurred whenever he was willing to write. He noticed that prolonged period of writing caused cramping, aching, and incoordination of the right hand, and he also observed that his handwriting gradually deteriorated. However, he had no symptoms on doing other activities and household works. General physical examination and detailed neurological examination were normal. When given a paper and pen to write he showed tight grip of the pen, hyperextension of the wrist joint, flexion at elbow joint, and abduction at shoulder joint when writing. He also had tremors in the affected hand while writing. Neurological consultation was done to rule out other possible neurological disorder. He had no abnormal findings on haematology tests, biochemistry tests, magnetic resonance imaging of the brain, and electroencephalography. He had no other movement disorders except these symptoms. He also had no family history of dystonia or other movement disorders. His diagnosis was made as writer's cramp induced by atypical antipsychotic aripiprazole. The dosage

of aripiprazole was gradually decreased and completely discontinued, and put into physiotherapy along with shift to tablet amisulpride 100 mg with addition of tablet trihexiphenidyl 4 mg in divided doses. He was responding with current medications.

Discussion

Drug-induced dystonia is the most common form of secondary dystonia and exposure to neuroleptics is the leading cause.[6] Neuroleptics that induce dystonia are dopamine blocking agents suggesting that dopamine blockade plays a key role in the production of dystonia.[6] Our patient had no episode of writer's cramp in the past. He developed this movement disorder while on aripiprazole therapy. He had two well-known risk factors for dystonia, i.e., being young and male.[9] He also fulfilled the criteria for tardive dystonia involving presence of chronic dystonia, history of antipsychotic drug treatment, negative family history for dystonia, and exclusion of known causes of secondary dystonia.[10] It was recently reported that the writer's cramp could be caused by atypical neuroleptics like risperidone and olanzapine in young patients.[11,12] Since aripiprazole exhibits a pharmacological effect different from that of other atypical and typical antipsychotics, it has been considered to be less likely to cause tardive dystonia than other neuroleptics. Trugman *et al.*[13] has proposed that pathophysiology of tardive dystonia involves repetitive stimulation of D1 receptors by endogenous dopamine in the presence of D2 blockade, causing sensitisation of D1 mediated striatal output, which is directed preferentially to globus pallidus internal and substantia nigra. This result in relative overactivity of the striatopallidal pathway.[6] The neuropharmacological changes underlying tardive dystonia also remained poorly understood. However, we suggested that aripiprazole can induce a writer's cramp in young male patient. The Naranjo adverse drug reaction (ADR) probability scale was administered. The Naranjo criteria classify the probability that an adverse event is related to drug therapy based on a list of weighted questions, which examine factors such as the temporal association of drug administration and event occurrence, alternative causes for the event, drug levels, dose response relationships, and previous patient experience with the medication. The ADR is assigned to a probability category from the total score as follows: Definite if the overall score is nine or greater, probable for a score of five to eight, possible for one to four, and doubtful if the score is zero.[14,15] In this case the Naranjo ADR probability score was six.

Conclusion

This report also underlines the importance of caution in prescribing antipsychotic and need for periodic assessment of symptoms and adverse effects as these drugs may produce disabling neurological disorder. However, more study is needed to explore this.

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