

# Acute Dystonic Reaction as Medical Emergency: A Report of Two Cases

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## Abstract

Drug-induced dystonic reactions are common presentations to the emergency department. Two cases of acute dystonic reactions presenting as acute medical emergency illustrate the associated fatality and possibility of misdiagnosis. This case series reports two cases of medication-induced (haloperidol and metoclopramide) acute dystonic reactions presenting with torticollis, tongue protrusion, and respiratory distress which resolved with the administration of intramuscular biperiden and oxygen by facemask. In developing countries like Nigeria where atypical anti-psychotic medications with fewer and lesser troublesome side effects are not affordable to many, the training of physicians and other doctors should adequately include a high degree of clinical suspicion and knowledge of management of acute dystonic reactions.

**Keywords:** Acute dystonic reactions, Medical emergency, Metoclopramide

## Introduction

Emergency psychiatry has become a subspecialty of general psychiatry requiring specific skills to deal with situations for which immediate therapeutic intervention frequently is necessary.

Drug-induced acute dystonic reaction is a common presentation to emergency department. They occur in 0.5-1% of patients given metoclopramide or prochlorperazine as anti-emetic in the medical ward.<sup>[1]</sup> Up to 33% of acutely psychotic patients will have some sort of drug-induced movement disorder within the first few days of treatment with typical anti-psychotic drugs.<sup>[2]</sup>

Manifestations of acute dystonia can be diverse either appearing alone or in some other combinations, which may however obscure diagnosis. There could be upper airway obstruction from pharyngeal muscle spasms or laryngospasm, which is rare but potentially life-threatening, temporomandibular joint dislocation and oropharyngeal dysphagia.<sup>[3,4]</sup>

The two cases reported below illustrate the critically acute emergency presentations of anti-psychotic medication-induced

acute dystonia, the management and possibility of misdiagnosis because of many close differentials. Permission for the study was obtained from the Research Ethical Committee of LAUTECH Teaching Hospital, Osogbo, Osun State, Nigeria.

## Case Reports

### Case A

A.A is a single 27-year-old male secondary school graduate who presented at the Accident and Emergency Unit of the hospital with 2 h history of difficulty in swallowing, painful contraction of neck muscles, and involuntary tongue protrusion. Symptoms initially resolved within 5 min without any intervention but recurred about 10 min later with increased severity and inability to talk.

There was a preceding 2-month history of paranoid delusions of being monitored by neighbors. As a result, he became physically and verbally aggressive to his family members and neighbors. He was occasionally noticed to be talking and fatuously laughing to self. He admitted hearing voices of unseen individuals discussing with him in clear consciousness and had disturbed sleep pattern.

Patient's contact with orthodox medicine was a day before presentation when he had a private consultation with a "hospital worker" who placed him on unspecified dosage of medications fitting the description of haloperidol and diazepam tablets. Patient later presented at the emergency unit barely 11 h after the commencement of medications.

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DOI:  
10.4103/2141-9248.117932

On examination, patient was in painful distress with marked respiratory difficulty associated with profuse sweating. His tongue was markedly protruding from the mouth and was deeply cyanosed as evidenced by a bluish discoloration of the tongue and oral mucosa including dusky extremities. His neck was fully extended with prominent and engorged neck veins anteriorly. Patient's shoulder appeared hyperextended and was unable to communicate verbally. Pulse rate was 120 beats/min, regular, of full volume and blood pressure was within normal limits. Chest examinations revealed markedly reduced breath sounds and air entry. Patient was immediately placed on oxygen by facemask and given intramuscular biperiden lactate 1 mg stat, while he was reassured as well as the apprehensive relatives.

Severe dyspnea and cyanosis cleared within 5 min. Tongue protrusion, torticollis, and opisthotonus stopped within 10 min of intervention and patient began to communicate verbally within 30 min. Psychoeducation was given about neuroleptic medications, their side effects, and need to receive proper medical consultation in the hospital. Patient was subsequently placed on oral trifluoperazine 5 mg thrice daily, artane 2.5 mg thrice daily, since the relatives could not afford atypical anti-psychotic medications.

### Case B

A.S. is a single 28-year-old female undergraduate who presented to the medical unit with 4 days history of acute lower abdominal pains, high-grade intermittent fever, and persistent vomiting. An assessment of acute pelvic inflammatory disease was made and subsequently placed on antibiotics. However, with persistent vomiting, patient was given intramuscular metoclopramide 10 mg 8 hourly. Patient developed acute tongue twisting barely 24 h after the last injection was given and started having slurring of speech, marked protrusion of the tongue, neck stiffness, and difficulty in breathing.

On examination, she was in severe distress, conscious but deeply cyanosed (as evidenced by bluish coloration of the tongue) and had intermittent stiffness of the body. Vital signs were fairly stable. Intranasal oxygen was promptly administered. Cyanosis cleared within a few minutes and patient was given intramuscular biperiden lactate 1 mg stat, with resolution of spasms. Within 20 min, patient started communicating and the offending drug was discontinued.

## Discussion

Acute dystonic reactions are characterized by involuntary, slow, and sustained contractions of muscle groups which may result in twisting, repetitive movements, and abnormal posturing. Acute dystonia occurs after a few days of commencing or increasing the dosage of neuroleptic medications such as anti-psychotic medications or other medications like anti-emetics (e.g., metoclopramide), tricyclic anti-depressants (e.g., amitriptyline), or anticonvulsants (e.g., carbamazepine).

It usually presents as oculogyric crisis (upward and outward turning of the eyes), torticollis or opisthotonus, tongue protrusion, and laryngeal spasm, which may cause upper airway obstruction.<sup>[5]</sup> Although the pathophysiology of acute dystonic reactions is still unclear, it is believed to be due to a deficit in central dopamine transmission resulting in overactive striatal acetylcholine release.<sup>[6]</sup> This striatal overactivity is reversed with the use of anti-cholinergic medications such as benztropine.

Acute dystonic reaction in the medical unit poses a very serious challenge because of the high probability of misdiagnosis.<sup>[7,8]</sup> Possibilities of labyrinthitis, allergy with swollen tongue, or hyperventilation syndrome could mask the diagnosis of acute dystonic reactions. When there is a dystonic reaction, possibilities of tetanus, partial seizures, strychnine poisoning, hypocalcaemia, or other electrolyte imbalances could be top on the list of differentials by the attending physician,<sup>[5,9]</sup> which may delay intervention and result in fatal outcome. Case B clearly illustrates this point. She was being managed for a medical condition and an anti-emetic (metoclopramide) was used when the reaction occurred. Timely intervention by the hospital consulting psychiatrist promptly invited by the casualty officer prevented possible misdiagnosis and mismanagement of this acute dystonic reaction.

Metoclopramide is a dopamine receptor antagonist used in the treatment of gastrointestinal and neurological disorders such as vomiting, gastroparesis, neurogenic bladder, and migraine headaches. Its antagonistic action at the dopamine receptor in the basal ganglia is associated with extrapyramidal side effects such as acute dystonia, tardive dyskinesia, akathisia, and drug-induced parkinsonism.<sup>[10]</sup> Metoclopramide-induced extrapyramidal side effects are observed in 1:500 patients.<sup>[10]</sup> Females, children, young adults, and those taking high doses are particular risk of developing metoclopramide-induced acute dystonic reactions.<sup>[11,12]</sup> The manifestations of an acute dystonic reaction following the administration of an anti-emetic may be life-threatening in rare instances,<sup>[13,14]</sup> as illustrated by the two cases presented. Classical presentations usually take the form of throat discomfort and mild aphonia<sup>[13]</sup> which may be easily overlooked, but patients may also present with acute chorea<sup>[15]</sup> and organic affective syndromes.<sup>[16]</sup>

A previous study reported that patients with hypocalcaemia are more susceptible to acute dystonia when given methotrimeprazine, thus emphasizing the potential increased sensitivity of hypocalcemic patients to the extrapyramidal adverse effects of anti-psychotic drugs.<sup>[9]</sup> However, in the two cases presented, only one of them had calcium level studies, which was normal.

In the management of acute dystonias, a high level of clinical suspicion is crucial which should be extracted from the drug history among other issues. Therefore, it is advisable that if the diagnosis is doubtful, one can reasonably treat

as a medication-induced acute dystonic reaction in the first instance and then investigate further if there is no response. This becomes very crucial in developing countries where predisposing factors for acute dystonias are very common especially the rampant use of typical anti-psychotics in the management of mental illness and as “sedatives” in the medical ward.

## Conclusion

The two cases presented clearly illustrate the possibility of fatality that could be associated with acute dystonic reactions especially severe dyspnea with attendant cyanosis. In a developing country like Nigeria where atypical neuroleptic medications with fewer and less troublesome side effects are not easily affordable, there should be a high degree of clinical suspicion and knowledge of the management of acute dystonic reactions. Therefore, the training of physicians and other doctors should adequately include management of acute psychiatric emergencies such as acute dystonic reactions, which could be easily managed with appropriate intervention. Consultation – liaison services with the psychiatric unit should be encouraged with the slightest suspicion of acute dystonic reaction, as the consulting psychiatrist may be key in providing diagnostic clarity, advice on management, and on-going staff education.<sup>[8]</sup>

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**How to cite this article:** Oyewole AO, Adelufosi AO, Abayomi O. Acute dystonic reaction as medical emergency: A report of two cases. *Ann Med Health Sci Res* 2013;3:453-5.

**Source of Support:** Nil. **Conflict of Interest:** None declared.