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Metoclopramide-Induced Oro-Mandibular Dystonia Imitating a Panic Attack: A Case Report

Ismail Hanine(MD)[1*], Khalid Mouhadi[1], Mohamed Gartoum[1], Mohamed Kadiri[1]

[1]Faculty of Medicine and Pharmacy of Rabat, University Mohammed V of Rabat, Morocco

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***Corresponding author:** Ismail Hanine
Faculty of Medicine and Pharmacy of Rabat, University Mohammed V of Rabat, Morocco

Abstract **Case Report**

***Background*:** Other than being a neurological condition, medically-induced dystonia is a frequently observed side effect by psychotropic drugs. One of the most challenging aspects is the fact that it can be triggered by other drugs not used by psychiatrists. Which makes it hard to detect and treat. ***Case Report*:** We report, through this case-report, a patient after diagnosing a gastric illness taking metoclopramide as a symptomatic medication, then presenting oro-mandibulary dystonia which imitated a panic attack and led to mistreatment. ***Conclusion*:** Medically-induced dystonia are not reported enough in developing countries even though they are frequent. This case shows the importance of knowing and being prepared to all side effects on the prescribed drugs, most importantly those over-the-counter.

Keywords: Metoclopramide, Oro-mandibular, dystonia, panic attack.

INTRODUCTION

Neurological side effects are commonly seen in patients taking psychotropic drugs, If psychiatrists are trained to monitor and handle those various unfortunate events, they sometimes are not seen as such in physical medicine, but as symptoms of another physical or psychological condition.

Through this case presentation, we intend to present the example of a patient who, following a stomachache or dyspepsia, was put on metoclopramide, which caused acute dystonia, simulating the diagnosis of a panic attack leading to mistreatment.

The interest of this clinical case is to remind the importance of these events especially on non-psychotropic drugs, taking to the account their low incidence; which are not reported enough in developing countries despite the accessibility to this treatment.

CASE REPORT

Mr. M is a 37-year-old patient, married and father of 3 children, a public sector employee, with no prior psychiatric or medical-surgical record.

One week before his first psychiatric visit, he suffered from pyrosis-type epigastralgia without any regurgitation, thus leading him to seek a consultation with a gastroenterologist who diagnosed dyspepsia.

The patient was then put on a prokinetic drug; Metoclopramide 16 mg 3 times a day, 24 hours after regular dosing, the patient developed numbness of the tongue and protrusion and hypersialorrhea, making speech impossible; these symptoms were considered unusual by the patient.

The crescendo aggravation generated a strong anxiety, making him seek help from his prescribing doctor to ensure that the symptoms were not dangerous. He was then referred to the nearest emergency room.

The reassurance by the ER doctor and taking sublingual anxiolytic, treating the symptoms like those of a panic attack, did not show any improvement.

Few hours later, those symptoms spontaneously vanished since he didn't take the incriminated treatment.

Even though the clinical case was atypical, a psychiatric check-up was proposed to the patient.

The psychiatric examination and the onset of the disorders' review linked the use of metoclopramide to the symptoms experienced. The diagnosis of acute

dystonia was validated and the psychiatric approach was as follows; Due to the unavailability of a parenteral anticholinergic, the patient was put on Trihexyphenidyl with psychoeducation and outpatient monitoring, with the discontinuation of the causative agent which revealed a complete disappearance of the oro-buccal symptoms and the vanishing of the anxiety they were causing.

DISCUSSION

Metoclopramide:

Metoclopramide is a selective dopamine (D2) receptor antagonist that is often used to treat gastrointestinal and neurological disorders, including nausea, vomiting, gastroesophageal reflux disease, gastroparesis, and neurogenic bladder (Ganzini *et al.*, 1993; Rao & Camilleri, 2010).

It is a frequently prescribed and affordable over-the-counter antiemetic. It has a relatively short half-life and also acts as a 5-HT3 antagonist and a 5-HT4.5 agonist.

Dopamine stimulates the medullary chemoreceptor trigger zone, which induces nausea and vomiting.

The antiemetic properties of metoclopramide are due to its ability to inhibit D2 and 5-HT3 receptors in those receptors.

Its effect on dopamine receptors in the basal ganglia disrupts the Da/Ach balance, resulting in decreased central dopamine transmission and increased acetylcholine release compared to dopamine (Ganzini *et al.*, 1993; Rao & Camilleri, 2010).

This is associated with extrapyramidal symptoms, including acute dystonia, tardive dyskinesia, akathisia and parkinsonism.

These events occur within 24 to 72 hours of metoclopramide use (Bateman *et al.*, 1985).

Acute Dystonia

Acute dystonias or dyskinesias induced by a drug are observed at the initiation of treatment or at the change of dosage, they present as intermittent or persistent muscle contractures, especially at the cephalic extremity with trismus, tongue protraction, oral contractures, perioral, swallowing difficulties, blepharospasm, oculogyric crises. More rarely, it is a presentation of muscular contracture at the level of the body axis (opisthotonos, torticollis).

Oro-mandibular dystonia is one of the well-known varieties of focal dystonia which represents 4% of dystonias according to a 2010 study (Esper *et al.*, 2010). Oro-mandibular dystonia is a specific type of focal disorder affecting the muscles of the lower facial region. It results from sustained and repetitive contractions of the tongue, chewing and other muscles of the lower face (Saraf *et al.*, 2022).

Various drugs are known to cause dystonia.

Dopaminergic antagonists are the most common contributors to these acute extrapyramidal reactions, including neuroleptics, antiepileptics (Carbamazepine, Phenytoin) (van Harten *et al.*, 1999), antihypertensives, anesthetics (Propofol) (Sherer *et al.*, 2017), and antiemetics.

Acute dystonia has a wide range of differential diagnoses Dystonia is frequently misdiagnosed as tetanus (Dingli *et al.*, 2007), meningitis, seizures, encephalitis, electrolyte abnormalities (especially dyscalcemia) and conversion disorders (Ferrando & Eisendrath, 1991).

Treatment is based on restoring the disturbed dopaminergic/cholinergic balance in the basal ganglia and stopping the incriminated agent.

The most common medications available for emergency treatment of acute dystonic reactions are diphenhydramine and benztropine.

Symptoms usually improve or disappear dramatically within 30 minutes of administration of parenteral anticholinergics. The half-life of most drugs that induce these side effects is longer than that of anticholinergics, which sometimes requires there readministration (Lewis & O'Day, 2022).

Our Patient

Our patient who has no neuropsychiatric history, after administration of metoclopramide for an ulcer pathology, presented a prostration of the tongue, which vanished after treatment discontinuation.

The clinical presentation initially suggested it was a panic attack, especially after a set of physical, psychic and behavioral criteria were gathered.

However, the physical examination actually revealed a muscular contracture of the tongue, which dissuaded us from the purely psychiatric cause of this presentation.

The appearance of the symptoms after the intake of the antiemetic and the disappearance after the introduction of the anticholinergic, as well as the absence of relapse after suppression of the metoclopramide can only be in favor of dystonia.

The rarity of dystonia with this molecule is what struck us in this clinical case. In fact, few studies based on this event are reported in developing countries despite the accessibility of this molecule.

Epidemiology

Acute dystonia on metoclopramide occurs in 0.2-25% of patients (Chua *et al.*, 2019; Jo *et al.*, 2012).

In a study conducted at a teaching hospital in southwestern Nigeria, found that 0.48% of the juvenile population had drug-induced dystonia, 11.8% of which was caused by metoclopramide (Babatola *et al.*, s. d.).

Its incidence in studies in developed countries is reported to be 1 per 500 patients (Ganzini *et al.*, 1993; Guala *et al.*, 1992).

The risk factors include:

- The pediatric population (Geyer & Bressman, 2006),
- Age under 30 years (Geyer & Bressman, 2006),
- Female gender (Geyer & Bressman, 2006),
- Repeated dosing (cumulative effect of the drug) (Akbuga-Ozel *et al.*, 2017),
- Individuals with a genetic polymorphism responsible for low CYP450 2D6 metabolism (van der Padt *et al.*, 2006).
- Pregnancy: increased estrogen levels that decrease CYP450 2D6 metabolism (Chua *et al.*, 2019).

CONCLUSION

Acute dystonias are relatively common especially in their drug-induced forms. The most common are those induced by antipsychotics, but other agents prescribed in various medical fields can also be incriminated, and therefore a wrong diagnosis can lead to a waste of resources, an increase in the length of hospitalization of the patient and the setting of potentially inappropriate treatments.

Somatic physicians, especially gastroenterologists, are called upon to be aware of the side effects of prescribed medications.

DECLARATION

- **Ethics Approval and Consent to Participate:** There is no ethical issue.
- **Consent for Publication:** The patient has given consent for publication.
- **Competing Interest:** The authors declare that they do not have any competing interests.
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