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Case Report

Facial and Hand Oedema Secondary to Olanzapine Medication in a Lady with First Episode Psychosis: A Rare Case Report

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Abstract

Background: There have been few reports of antipsychotic-related peripheral oedema, especially with the second-generation antipsychotics (SGAs). Olanzapine is one of such drugs but almost all these reports came from developed countries (the increasing use of second-generation antipsychotics in the developing world notwithstanding) and the oedema was almost always in the lower limbs.

Case Report: Reported here is the case of a 28-year old trader with first episode of psychotic illness that started shortly after giving birth to her first child. She developed swellings on the face and the hands three days after she was commenced on olanzapine. The oedema resolved when the drug was completely withdrawn but re-occurred following a re-challenge.

Conclusion: Clinicians in the developing world are reminded that there is a possibility of peripheral oedema following olanzapine medication and such oedema can occur on any part of the body. For early management of this adverse effect that can embarrass an uniformed patient and the family, the author recommends that routine enquiries on this side effect as well as education of patients about it is vital as its early recognition and prompt intervention by the discontinuation of olanzapine could be of great value.

Keywords: *Olanzapine; Oedema; Hand; Face; Discontinuation*

Abbreviations

α: Alpha adrenergic; D: Dopamine; H: Histamine; 5-HT: 5-Hydroxytryptamine or Serotonin; ICD-10: International Classification of Diseases and Related Health Problems, Tenth Revision; M: Muscarinic; SGA: Second-Generation Antipsychotic

Introduction

Olanzapine is a second-generation antipsychotic (SGA) that belongs to the thienobenzodiazepine class that mediates its antipsychotic activity through serotonin type 2 (5-HT2A) and dopamine type 2 (D2) antagonism as well as via other multiple neurotransmitter receptors: D1, D4, α1, 5-HT1A, muscarinic M1 – M5, and H1 receptors [1]. It is indicated in the management of conditions such as schizophrenia and bipolar affective disorders, among others.

Adverse drug reactions are common, especially among persons on psychiatric medications, ranging from the common but discomforting extra-pyramidal symptoms like tremor to the rarer and often less-reported conditions like peripheral oedema. Whatever the drug-related adverse effect might be, it is important that it is recognized and addressed early enough to avoid, among other consequences, the patient's compliance to medication being compromised.

Oedema following olanzapine medication has been described [2,3], often from researchers in developed countries, and rarely of cases involving the face. Here is reported (with the accompanying explicit images) a case that involved the hands and face, managed in a tertiary health institution in Nigeria.

Case Report

Mrs QRS is a 28 year old petty trader with first episode of mental illness that started three weeks after the birth of her first child. Key presenting features were poor sleep, suspiciousness, restlessness, belief that people knew her unspoken thoughts, ideas of reference, and hearing of voices of unseen persons in clear consciousness running commentaries on whatever she did. A diagnosis of acute schizophrenia-like psychotic disorder (ICD-10, Code F23.2) was made. She was admitted and placed on periodic parenteral haloperidol and diazepam. After 48 hours, she was switched over to oral olanzapine, 5 mg nocte due to worsening oculogyric crisis. By the third day of olanzapine treatment, facial puffiness and swelling of the hands were noticed (Figures 1A and 1B).

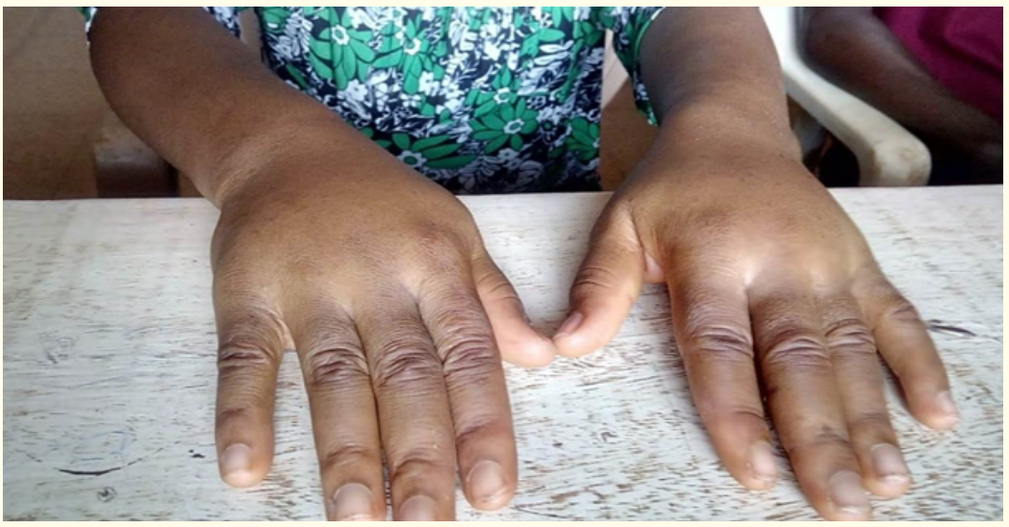

Figure 1A: 3rd day of olanzapine medication.

Figure 1B: 3rd day of olanzapine medication.

Because of her initial restlessness and struggle during the administration of parenteral drugs, we did not suspect olanzapine to be contributory to the swellings but it continued to increase in size on daily basis, especially that of the face. Anti-inflammatory agents were administered but to no avail.

The swelling was on the hands, the face (especially the periorbital area), non-pitting, non-tender, and non-itching. She was not a known hypertensive nor did she have any other co-morbid physical illness and she had no previous history of drug or food allergy, oedema or local trauma. She was also reported not to have had any obvious leg swelling during her pregnancy. There was no associated raised temperature or any evidence of rash, skin thickening, ulceration or pigmentation and she did not take any other medicine outside the ones prescribed for her while on admission. There was also no diurnal variation of the oedema.

She was referred to cardiologists, nephrologists, and ophthalmologists for expert opinions. The reviews and thorough independent evaluations by these experts plus relevant extensive investigations did not reveal any cause of the oedema. The blood pressure was normal and all the haematological and biochemical parameters - full blood count (FBC), serum electrolyte, urea, and creatinine (SEUCr), immunoglobulin E antibody (IgE), fasting blood sugar (FBS), thyroid function test, liver function test, serum proteins, and so on - were within

normal range. Radiological and electrocardiographic results were also normal and her sight was satisfactory.

Frusemide (a diuretic) was administered but the oedema reduced only slightly. The olanzapine was then withdrawn and chlorpromazine commenced. The oedema resolved after 7 days (Figure 2) but she developed worrisome acute dystonia and complained of oversleeping which led to the withdrawal of chlorpromazine and re-commencement of olanzapine, this time at a lower dose of 2.5 mg daily.

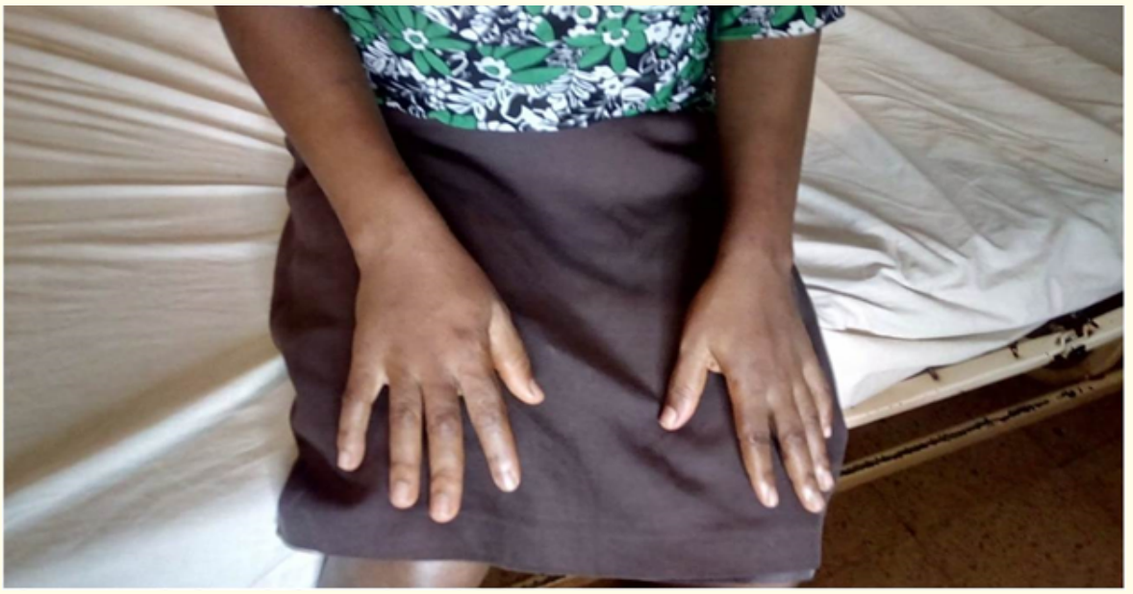

Figure 2: 7th day of olanzapine withdrawal.

Three days later, oedema re-occurred, still on the face and hands. She was then changed to trifluoperazine and was later discharged after about 24 days of inpatient care. She had successfully used trifluoperazine for over eight months before this report was written.

[Note: The swelling was more prominent in the face than in the hands but the husband to the patient approved the use of only the pictures of the hands for this publication].

Discussion

The mechanism by which olanzapine, as well as other antipsychotics, leads to oedema is not very clear [4] though various possible pathogenesis have been suggested [3,5]. Olanzapine-related oedema can present unique diagnostic and management challenges at times, as noticed in this case that did not only attract the attention of other specialists but also the trial of various typical antipsychotics known to have less propensity to cause oedema.

Although immune reactions have been implicated in the mechanism of drug-induced oedema [6], no immunological abnormality was remarked in this patient as have equally been reported sometimes with olanzapine [7,8].

Assessment with the Naranjo score - an Algorithm or Adverse Drug Reaction Probability Scale used to assess whether there is a causal relationship between an identified untoward clinical event and a drug using a simple questionnaire to assign probability scores [9] – gave a score of 10, suggesting a definite probability of the oedema being due to olanzapine medication.

Few cases of facial oedema due to olanzapine have been reported [10,11] and so with hand oedema following olanzapine treatment [12,13].

There was a temporal relationship between the commencement and withdrawal of olanzapine and the development and resolution of oedema, respectively, as previously reported [8,10].

The time of onset and ceasing of antipsychotic-induced oedema varies among individuals. In this patient, onset and resolution of oedema occurred in few days to one week – a similar finding by some researchers [11] but some others have reported cases where patients took olanzapine for many weeks before developing oedema and also the oedema lasted for some weeks after olanzapine withdrawal before resolving completely [14].

A re-challenge led to the re-emergence of oedema, a finding in line with some earlier reports [12,13], suggesting that prior reactions may pose a risk for re-occurrence and that clinicians should be careful while recommencing a patient on the same antipsychotic after an initial negative reaction, as a re-challenge could result in worse oedema [15].

Dosage reduction did not lead to oedema resolution; only complete drug withdrawal did – an experience similar to that of Nayak and colleagues [14].

The results of the investigations carried out were within normal limits which is often the case with olanzapine-related peripheral oedema [7,12,14] and neither an anti-inflammatory agent nor a diuretic could resolve the swelling as long as the patient continued on olanzapine – an earlier experience of some foreign authors [12].

The absence of negative findings on extensive physical examinations and investigations, the failure of anti-inflammatory and diuretic drugs to resolve the oedema, the spontaneous resolution of the oedema each time the drug was withdrawn, and the Naranjo score of up to 10, all strongly suggest that the oedema was due to olanzapine medication.

Conclusion

Oedema associated with olanzapine medication could occur on any part of the body and may often not be brought to the notice of the clinician but can impact negatively on the patient by leading to poor medication adherence, unnecessary costly investigations, or relapses, among others.

Recommendations to Clinicians and Consumers

- Clinicians should enquire at every check-up about peripheral oedema especially on their patients on antipsychotics.
- Every hospital or psychiatric unit should engage some staff to routinely educate patients on the side effects of their drugs and what to do when they notice any of such side effects.
- Such education should emphasize that peripheral oedema is rare but does occur and when noticed, patients should not regard it as an entirely different illness that would warrant going to another hospital or doctor or from one prayer house to the other.
- Patients taking olanzapine (and indeed any antipsychotic, especially the atypical variety) should note that the drug can cause peripheral oedema and when such is noticed the patient should immediately go to the hospital and report to his/her doctor.
- Further studies in this field especially regarding the mechanism and characteristics of those likely to develop the adverse effect are encouraged.

Consent

An informed consent was obtained from the patient and her husband for the publication of this case report and the accompanying images.

Conflict of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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