Multimodal Sensory Distortions in Postpartum Exacerbation of Schizophrenia

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Abstract

Background: Sensory distortions of body image commonly occur during migraine, seizures, nondominant cortical infarcts and hallucinogen abuse. **Methods:** We report the case of a 30-year-old woman with paranoid schizophrenia presenting with postpartum onset multimodal sensory distortions in the absence of any neurological disorders or substance use. **Results:** Her symptoms involved persistent facial/body metamorphopsia (distorted images) and vocal paracousis (distorted voices), in the absence of visual hallucinations, illusions or agnosia. Neuropsychological assessments revealed deficits on visual processing tasks. Neuroimaging, electroencephalography and ophthalmological evaluation revealed no abnormalities. The multimodal sensory distortions responded to antipsychotic treatment, paralleling improvement in other schizophrenia psychopathology, over a period of one month. **Conclusions:** Prominent and persistent multimodal sensory distortions like metamorphopsia and paracousis in the presence of psychotic symptoms warrant a detailed neurological and general medical work-up. These symptoms presenting in the absence of neurological or substance use disorders may be a component of schizophrenia.

Key Words: Phenomenology, Puerperal Psychosis, Paracousis, Sensory Distortions, Metamorphopsia

Introduction

Sensory distortions or anomalous experiences are perceptual abnormalities defined as deviances in perceiving a material object relative to past or shared human experiences in presence of the stimulus (1). Sensory distortions of body image should be phenomenologically differentiated from illusions (misinterpretation of stimuli), hallucinations (false perception in the absence of stimuli), and agnosia (lack of recognition). They are also essential symptoms of the "Alice in Wonderland" syndrome described by Todd (2) and are seen in a wide range of neuropsychiatric disorders, but are most commonly described in delirium, migraine, epilepsy, hallucinogen use and visual/auditory impairments (1).

Though sensory distortions have been described in prodromal states of schizophrenia as basic symptoms (3), there have been no reports of multimodal sensory distortions in functional psychiatric disorders in the absence of neurological disorders or substance use. We report a patient with paranoid schizophrenia in whom multimodal sensory distortions appeared during postpartum exacerbation of her symptoms and resolved after treatment with antipsychotic medication.

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Case Report

A 30-year-old woman, having delivered a baby two months back, presented to the emergency psychiatry services with a ten-day history of acute onset of intense agitation, fearfulness associated with multiple distortions of sensory stimuli, predominantly visual and occasionally auditory. She perceived her husband's arms and legs to be bigger in size, bulkier and more muscular, like that of a bodybuilder, suggestive of *body macropsia* and *metamorphopsia*; his face

appeared distorted to her (nose flatter, ears protruded outwards, angle of the jaw rounded, eyebrows and moustache darker in color and bushier, lips and mouth resembling that of his father or brother), suggestive of *facial metamorphopsia*; she saw her own face as distorted in the mirror (eyes were enlarged, often appearing as an overlapping set of three eyes on each side, eyebrows bushier and darker, and angle of the jaw rounded), suggestive of *mirror metamorphopsia*; and, voices of her daughter and her husband (even his snoring) sounded to be of a "scary and screeching" quality, suggestive of *vocal paracousis*.

Prominent and persistent multimodal sensory distortions like metamorphopsia and paracousis in the presence of psychotic symptoms warrant a detailed neurological and general medical work-up. These symptoms presenting in the absence of neurological or substance use disorders may be a component of schizophrenia.

These distortions were persistent, noted consistently for all the family members including her children, but were not present for inanimate objects. They were associated with intense fear and avoidance; however, she did not misidentify her family members as others. While looking at strangers, she appeared perplexed and was not able to ascertain if their appearance/voice was distorted as she had never interacted with them before. She lacked insight into these phenomena, and firmly believed that the changes she described were true and that it was not "as if" they were changed. Throughout the course of her illness, she had no impairments in attention, concentration or memory and was oriented to time, place and person, ruling out delirium.

On further enquiry, she revealed that for the past two years she had been experiencing auditory hallucinations (voices of 1 man and 2 women, coming from the terrace or from elsewhere, discussing her life, commenting on her daily activities, instructing her how to and how not to perform her daily chores), misinterpretation delusions (a real estate magazine kept on the table indicated that her husband was being controlled by a special power "*shree-yantra*"—divine machine—to sell their property; her daughter running around a table indicated that she had become more mischievous, also under the influence of this "power") and referential delusions (office colleagues teasing her and talking about her).

She had not sought treatment for these symptoms over the last two years. These symptoms had worsened in the past ten days, along with the onset of the sensory distortions. She had a past history of similar symptoms (without sensory distortions) seven years back, lasting ten months, and had completely improved with treatment (6 mg risperidone and 2 mg trihexyphenidyl) at a different clinic. She was on medications for only four months, after which she discontinued them because of adverse effects (facial acne). She remained symptom free and did not follow-up with a psychiatrist until the current exacerbation of symptoms.

There was no history of other visual disturbances, migraine, epilepsy, stroke, altered sensorium or features of depression, derealization or depersonalization. There was no history of fever or any other signs and symptoms of focal/systemic infections (e.g., malaise, myalgia, cough with expectoration, burning micturition, ear discharge or abdominal pain). Psychoactive substance use or recreational/illicit drug use was ruled out based on the history given by the patient and her husband, with whom she stayed. She was well adjusted premorbidly and had an unremarkable family history. Her general and systemic (including neurological) examination revealed no abnormalities. Laboratory investigations including complete blood count, serum electrolytes (sodium, potassium and chloride), serum creatinine, liver enzymes, thyroid profile and serum vitamin B12 levels were within normal limits. Neuropsychological assessment showed deficits in verbal and visual working memory and in tasks requiring visual processing abilities (digit symbol substitution, complex figure and stroop tests). She had no signs of visual agnosia.

She was breastfeeding and precautions were taken to feed the infant before or at least five hours after the night dose of olanzapine. There were no signs of dehydration. Ophthalmological evaluation revealed no abnormalities related to cornea, lens, fundus or refraction. There was also no evidence of sensorineural or conductive hearing impairment. Electroencephalography showed background alpha activity of 7–9 Hz, with no epileptiform discharges. The 3-tesla magnetic resonance imaging of the brain revealed no structural abnormalities. She was diagnosed with paranoid schizophrenia according to the *ICD-10* criteria (4). In accordance with treatment guidelines for acute stage schizophrenia (5), she was treated with olanzapine tablets (20 mg/day), which were well tolerated. Her symptoms improved over a period of four weeks. Improvement in the multimodal sensory distortions (assessed using visual analogue scale) mirrored that of her schizophrenia psychopathology (assessed using Positive and Negative Syndrome Scale [PANSS]) (6) as is depicted in Table 1. She continued to remain symptom free when she visited us last during her six-month follow-up.

Table 1 Depicting the Course of Typical Schizophrenia Symptoms (Measured Using the PANSS) and Multimodal Sensory Distortions (Measured Using a Visual Analogue Scale) in the Patient

	Positive Symptoms (PANSS)	Negative Symptoms (PANSS)	General Symptoms (PANSS)	PANSS Total	Visual Analogue Scale for Sensory Distortions
Baseline	30	20	54	104	100/100
2 weeks	11	11	24	46	30/100
4 weeks	10	9	20	39	20/100

PANSS=Positive and Negative Syndrome Scale

Discussion

This case report highlights the presence of multimodal sensory distortions in a patient with paranoid schizophrenia in the absence of any neurological/ophthalmological/auditory disorders or substance use and their response to olanzapine. Sensory distortions—especially facial/body metamorphopsia—have always been reported in the context of neurological disorders like migraine, epilepsy, neuroinfections and infarcts in nondominant hemisphere or hallucinogen drug abuse. With the given presentation, we suspected neurological causes and investigated for the same. The clinical examination and investigations ruled out the presence of above-mentioned neurological causes.

This case report highlights the presence of multimodal sensory distortions in a patient with paranoid schizophrenia in the absence of any neurological/ophthalmological/auditory disorders or substance use and their response to olanzapine.

Her multimodal sensory distortions improved with olanzapine 20 mg/day, closely paralleling her improvement in the typical schizophrenia symptoms (see Table 1). Thus, we surmise that the multimodal sensory distortions she experienced were a component of schizophrenia. An essential feature of our patient was that, despite experiencing long-standing multiple auditory hallucinations and delusions, her multimodal sensory distortions presented acutely, approximately six weeks postpartum and were associated with exacerbation of other schizophrenia symptoms and visuo-spatial neuropsychological deficits. The postpartum period is known to be associated with a sudden withdrawal of estrogen and progesterone. Hormonal withdrawal is also associated with migraine (7) and seizures (8), both of which are known to be associated with facial metamorphopsia. In keeping with these, our patient had prominent visuo-spatial performance deficits along with metamorphopsia in her postpartum exacerbation.

In summary, this case illustrates that multimodal sensory distortions can also occur as part of psychopathology in schizophrenia. As these phenomena are most commonly associated with neurological conditions, we suggest that patients presenting with prominent and persistent multimodal sensory distortions should be investigated for these conditions. In the absence of evidence for neurological disorders, one may consider a differential diagnosis of schizophrenia. This case also highlights that multimodal sensory distortions appearing as part of schizophrenia may respond well to antipsychotic medications.

Conflicts of Interest/Funding

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Ethics

Written informed consent was obtained from the patient and all measures have been taken to ensure confidentiality.

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