

Case Report

Multimodal Hallucinations in Schizophrenia and Its Management

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ABSTRACT

A cluster of symptoms including hallucinations characterizes schizophrenia. Hallucinations that occur in more than one modality simultaneously and emanate from a single source are called multimodal hallucinations (MMHs). The occurrence of simultaneous hallucinations as the major manifestations of a psychiatric disorder often was dismissed as factitious disorder or malingering. Conversely, MMHs have been reported in severe mental disorders including schizophrenia. Here, we report MMH in two patients of treatment-resistant schizophrenia and its successful management with clozapine. The significance of MMH on the course, prognosis, and treatment resistance of schizophrenia needs to be elucidated. Further systematic research is needed to address these issues.

Key words: *Multimodal hallucinations, schizophrenia, treatment, treatment resistance*

INTRODUCTION

Schizophrenia is characterized by a cluster of symptoms including hallucinations.^[1] Hallucinations can occur either in single modality or more than one modalities in schizophrenia.^[2] Hallucinations that occur in more than one modality simultaneously and emanate from a single source are called multimodal hallucinations (MMHs).^[3] The significance of MMH in schizophrenia is unexplored. Here, we report MMH in two patients of treatment-resistant schizophrenia and its successful management with clozapine.

CASE REPORTS

Case 1

A 50-year-old male with a diagnosis of treatment-resistant schizophrenia had a continuous illness for 30 years. His psychopathology was characterized by delusions of control, made acts, somatic passivity, and hallucinations in different modalities. The patient used to hear voices in isolation and could hear the voices of multiple unknown males and females coming from a distance of few meters,

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discussing and commenting on him in a derogatory manner. While hearing the voices, he also visualized the unknown male and female figures in the external space in the background of his surroundings. These figures were seen as vividly as other real objects, making gestures, lip movements, and uttering the words. He would have these experiences in clear consciousness and was experiencing them every day for few hours since many years. Many times, he had acted out on these hallucinations, leading to significant dysfunction. Similarly, but less frequently, the patient also reported experiencing the smell and taste of certain food items simultaneously in clear consciousness in the absence of any external source. Would describe the taste and smell to be pleasant at times and unpleasant at other times. In addition to these experiences, the patient also had hallucinatory experiences in different modalities occurring from different sources at different times but not simultaneously. He had failed adequate trials of risperidone, olanzapine, and fluphenazine.

He had no physical comorbidity. General physical examination and detailed systemic examination did not reveal any abnormality. Full blood picture, peripheral smear, liver and renal functions, blood glucose levels were within reference limits, and a computed tomography scan of the head was normal. In view of treatment resistance, he was started on clozapine and the dose was gradually increased to 300 mg/day over 4 weeks with regular monitoring of adverse effects. Brief Psychiatric Rating Scale (BPRS) score before starting clozapine was 63 and at the end of 3 months of treatment, it reduced to 37 (hallucinatory behavior score decreased from 7 [extremely severe] to 3 [mild]). It has now been 9 months since starting clozapine, and the patient is sustaining improvement.

Case 2

A 23-year-old male presented with a continuous illness of 8 years suggestive of treatment-resistant schizophrenia. He had multiple first rank symptoms and hallucinations in different modalities. One of the hallucinatory experiences was the presence of simultaneous auditory and visual hallucinations. He could see a doll-like figure of a human being (culturally accepted entity) in clear consciousness in addition to his immediate surroundings. He could visualize the doll-like figure as vividly as other real objects and could see the movements of its different body parts as well. At the same, he would hear commanding verbal auditory hallucinations originating from that source with synchronized lip movements. These verbal auditory hallucinations would threaten him of adverse consequences if he did not follow the instructions. He had these experiences every day for 6 years and had acted out on these voices. He had attempted suicide

thrice and homicide once over last 6 years under the influence of these hallucinations.

He had no physical comorbidity. Physical examination did not reveal any abnormality. Routine hematological and biochemical investigations were within reference limits. A magnetic resonance imaging scan of the brain was reported as normal. He was started on clozapine, and the dose was gradually increased to 300 mg/day over 4 weeks with regular monitoring of adverse effects. BPRS score before starting clozapine was 70 and at the end of 3 months of treatment, it reduced to 28 (hallucinatory behavior score decreased from 7 [extremely severe] to 1 [not present]). He has sustained the improvement in symptoms for over 1 year now.

DISCUSSION

Various terms such as MMHs, multiple hallucinations, polysensory hallucinations, and dissociative hallucinations have been used to describe hallucinations occurring in more than one modality.^[2,4,5] These terms have described different permutations and combinations of source and timing of the hallucinations occurring in more than one modality.^[3] Reviewing the heterogeneity in the phenomenon described by these terms, Chesterman and Boast operationally defined MMH as mentioned above.^[3] The hallucinatory experiences occurring in more than one modality but at different times (e.g, visual hallucinations in the morning and auditory hallucinations in the evening) are considered sequential instances of unimodal hallucinations.^[6]

The occurrence of simultaneous hallucinations as the major manifestations of a psychiatric disorder have been often dismissed as factitious disorder or malingering.^[3] In addition, many terms used to describe simultaneous hallucinations such as dissociative hallucinations carried the disadvantage of implying a particular diagnosis.^[4] Actually, MMHs have been reported in many organic conditions and severe mental disorders including schizophrenia.^[2] About 50% of the patients with schizophrenia were found to have simultaneous auditory and visual hallucinations.^[2] In addition, few published reports of MMH occurring in other psychotic disorders are also available.^[7,8] Both of the above patients had MMH involving auditory and visual hallucinations. In addition, one of them had MMH involving smell and taste, and to our knowledge appears to be the first of its kind.

Another important finding in this report is that both of our patients with MMH were treatment resistant, and responded well to clozapine. We could not find any data on the association between the presence of MMH and treatment resistance in schizophrenia. Whether the

presence of MMH suggests greater severity of disease process and higher chances of treatment resistance needs to be evaluated. Both of our patients responded to clozapine and the study on the differential efficacy of antipsychotics in schizophrenia subjects with MMH may shed more light on the treatment of such subjects.

The available data on neurobiology of MMH in psychotic disorders is derived from few case reports and a study with small sample size (n-10).^[8-10] These reports have consistently shown that cortical activation during MMH follows the sensory hierarchy, with consistent activation of heteromodal cortical regions involving temporoparietal junction, posterior superior temporal sulcus, and inferior parietal region.^[6,8] Jardri *et al.* found superior temporal sulcus activation to be specific for MMH.^[8] In these studies, subjects primarily had MMH involving visual and auditory modalities. It would be interesting to find the cortical activation during MMH involving other sensory modalities in different permutations and combinations.

CONCLUSION

MMHs are interesting phenomena seen in schizophrenia and other psychotic disorders. The neurobiology and effect on course, treatment resistance, and prognosis of schizophrenia need elucidation by systematic research with adequate sample size. Preferential use of clozapine may be considered if MMH is associated with treatment resistance.

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Conflicts of interest

There are no conflicts of interest.

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