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Neuroleptic Malignant Syndrome Unmasked by Absence Seizures: A Case Report

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Abstract **Case Report**

Introduction*:** Neuroleptic malignant syndrome (NMS) is a rare but potentially life-threatening complication of antipsychotic treatment, characterized by hyperthermia, muscle rigidity, and altered mental status. This report presents a case of NMS revealed by a seizure in a patient treated with risperidone. ***Case Presentation: A 25-year-old male with schizoaffective disorder, managed with risperidone (8 mg/day), experienced a tonic-clonic seizure with tongue biting and urinary incontinence. Postictal examination revealed muscle rigidity. Laboratory tests showed elevated creatine phosphokinase (6000 U/L) and leukocytosis. EEG and brain MRI were conducted for further evaluation. ***Discussion:*** NMS is typically triggered by neuroleptics, usually within the first two weeks of treatment, though delayed cases can occur. Seizures as an initial presentation of NMS are rare, complicating the diagnosis. The pathophysiology involves central dopaminergic dysregulation. This case highlights the importance of recognizing NMS signs early and discontinuing the causative agent promptly. Treatment includes supportive care, rehydration, and medications such as dantrolene and bromocriptine. ***Conclusion*:** This case emphasizes the need for clinicians to be vigilant for NMS signs, even in atypical presentations such as seizures, and to act quickly to prevent severe complications.

Keywords: Neuroleptic Malignant Syndrome (NMS) Risperidone Absence Seizures.

INTRODUCTION

Neuroleptic malignant syndrome (NMS) is a rare but potentially fatal condition characterized by hyperthermia, autonomic dysregulation, altered mental status, and muscular rigidity. This syndrome is most commonly associated with the use of antipsychotic medications, which function primarily by blocking dopamine receptors [2, 1]. While the overall prevalence of NMS is relatively low, estimated at 0.02-3% of patients treated with neuroleptics, its high morbidity and mortality rates necessitate prompt recognition and management [2].

Risperidone, an atypical antipsychotic, is frequently prescribed for the management of various psychiatric disorders, including schizophrenia and schizoaffective disorder [2]. Despite its efficacy, risperidone has been associated with several adverse effects, including the potential to trigger NMS. This paper presents a unique case of NMS unmasked through absence seizures in a patient treated with risperidone, further complicated by dyspnea and elevated creatine phosphokinase (CPK) levels.

Absence seizures, characterized by brief, sudden lapses in consciousness, are uncommon but notable presentations in patients undergoing antipsychotic treatment. These seizures pose a diagnostic challenge and may obscure the underlying etiology, particularly when complicated by severe systemic symptoms such as those seen in NMS [1]. The case described here highlights the need for heightened clinical vigilance and the importance of considering NMS in the differential diagnosis when managing psychiatric patients presenting with seizure activity and systemic complications.

This report details the clinical course, management, and outcomes of a 25-year-old male with schizoaffective disorder who developed NMS under risperidone treatment, initially presenting with absence seizures and later complicated by dyspnea. The patient's response to diazepam and supportive care underscores the necessity for prompt, effective intervention strategies in resource-limited settings.

By documenting this case, we aim to contribute to the existing body of knowledge on NMS, particularly

in the context of atypical antipsychotic use and its rare presentations. This report also emphasizes the critical role of clinical awareness in early diagnosis and management to prevent potentially fatal outcomes [1, 2].

CASE PRESENTATION

A 25-year-old male with a diagnosis of schizoaffective disorder was hospitalized in a psychiatric ward due to a symptomatic reactivation of his condition. He was being managed with risperidone at a dose of 8 mg/day. During his stay, the patient experienced sudden onset of absence seizures, characterized by brief lapses in awareness. During these episodes, the patient would stare blankly into space and become unresponsive to external stimuli. These seizures lasted for several seconds and occurred frequently throughout the day.

Following several absence seizures, the patient exhibited postictal muscle rigidity. Laboratory tests revealed markedly elevated creatine phosphokinase (CPK) levels at 6000 U/L and leukocytosis, suggesting significant muscle breakdown and possible infection or inflammation. An electroencephalogram (EEG) and brain MRI were conducted to further evaluate the seizure activity and rule out other neurological conditions.

The patient's condition was further complicated by the development of dyspnea, raising concerns for potential respiratory compromise. Over the course of three subsequent CPK measurements, the levels showed a progressive decrease, ultimately reaching 500 U/L, indicating a resolution of the acute muscle damage.

Given the limited treatment options available in the psychiatric ward, the patient was managed with diazepam (Valium) and encouraged to maintain high fluid intake. Diazepam was chosen for its muscle relaxant and anticonvulsant properties, which helped in managing both the seizures and the muscle rigidity. The abundant fluid intake was aimed at preventing renal complications associated with rhabdomyolysis, a condition indicated by the initial high CPK levels.

The patient showed gradual improvement with the reduction of CPK levels and resolution of dyspnea. The absence of further seizure activity and normalization of laboratory parameters suggested a favorable response to the conservative management approach.

DISCUSSION

Neuroleptic malignant syndrome is a dangerous and potentially life-threatening condition characterized by hyperthermia, muscle rigidity, autonomic instability, and altered mental status. Though its pathophysiology remains not clearly understood, NMS is most commonly associated with the use of antipsychotic medications, particularly those that block dopamine receptors [4, 1].

- **Case Complexity and Management**

The case being reported is a 25-year-old man with schizoaffective disorder treated with risperidone, complicated by neuroleptic malignant syndrome levels. Absence seizures in NMS are very rare phenomena, which make it diagnostically challenging. More commonly, NMS appears with signs such as delirium and muscle rigidity, rather than seizure activity [3]. In this patient, absence seizures were an important early sign and so he required a thorough evaluation including EEG and brain MRI to rule out other neurological conditions. In this case, the management of NMS was complicated by the development of dyspnea, which indicated potential respiratory involvement and which is a rare but documented complication of NMS [6].

- **Limitations in Management**

Due to the few treatments that could be offered in a psychiatric ward, the patient was managed using diazepam (Valium) and encouraged to drink plenty of fluids. Diazepam, as a benzodiazepine, is also frequently used in the treatment of NMS for its muscle relaxant and anticonvulsant effects. Aggressive hydration was applied to prevent renal complications, which, due to rhabdomyolysis, are standard in NMS [5, 2].

- **Physiotherapy Interventions**

Recent case reports have suggested the strong role of physiotherapy in treating NMS, particularly in decreasing muscle rigidity and improving functional mobility. Physiotherapy interventions, such as kinesthetic stimulation, the active cycle breathing technique, and mobility training, support better patient outcomes through the improvement of respiratory function and allowing neuromuscular re-education [9]. In the given case, though a formal physiotherapy session could not be taken due to a lack of resources, active as well as passive exercises were encouraged to prevent complications due to long-term immobility [10].

- **Clinical Implications and Recommendations**

The decline in CPK levels from 6000 U/L to 500 U/L over the three consecutive measurements showed that the acute muscle damage resolved, which can be taken as a supportive measure of conservative management. Such improvement emphasizes the need for early recognition and supportive care of NMS, especially in areas with limited resources [7, 8]. It also highlights a point of suspicion to raise clinical suspicion of NMS for patients undergoing atypical antipsychotic treatment regimens with agents such as risperidone, which are efficacious but carry risks for severe adverse reactions, including NMS. Early discontinuation of the offending agent and supportive care are important in patient recovery [10, 4].

CONCLUSION

In essence, this case adds to the knowledge reservoir on NMS, especially about its atypical

presentations and management challenges. The presence of absence seizures as the first symptom of NMS in this patient puts significant emphasis on the need for comprehensive neurological assessment in suspected cases. Effective management would therefore depend on early diagnosis and prompt supportive care to avert fatal outcomes even with limited resources [1, 3].

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