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General Medicine

NEUROLEPTIC MALIGNANT SYNDROME: AN UNUSUAL CASE TO INCREASE CLINICAL ATTENTION

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ABSTRACT A 26-year-young man was taken to the hospital with symptoms of schizophrenia, and treatment began with a high dose of antipsychotic medication. After receiving medication for 3–4 days, the patient experienced persistently high body temperatures, tight muscles, and raised blood levels of CK-MB and CK-NAC. The results of all other investigations were normal. A rare Neuroleptic Malignant Syndrome (NMS) was made and treatment started with immediate withdrawal of the causative drug, and timely supportive therapy led to a successful recovery. This case illustrates the importance of adopting a broad differential diagnosis for fever, carefully reviewing the prescription lists of all patients, and taking NMS into account in patients who have both fever and stiffness.

KEYWORDS : Neuroleptic Malignant Syndrome, Antipsychotic Drugs, Hyperthermia.

[1] INTRODUCTION:

A rare but possibly fatal neurological disease caused by neuroleptics is called Neuroleptic Malignant Syndrome (NMS).[1] Hyperthermia, rigidity of the muscles, a rise in Creatinine Phosphokinase, and instability of the autonomic nervous system are its defining features.[2] The case study in this essay is that of a 26-year-old schizophrenic boy who was identified as having NMS.

[2] Case Presentation:

A 26-year-young man presented with the chief complaints of decreased sleep and talk, irrelevant talk, decreased oral intake, suspiciousness, and decreased self-care for the last 8–10 days. The patient has been known to have schizophrenia for the last 3 years. He was continuously on medications, but for the last one month he stopped the medications and the symptoms returned. Earlier, he used to sleep for 6-7 hrs/day, but now his sleep has decreased to 1-2 hrs/day. He just keeps lying in bed with his eyes open. He also starts talking like a teacher, "bacho aaj ye padhenge" and starts talking to himself. He rarely speaks more than 1-2 words when asked anything. He has also become suspicious towards things and people.

On March 29, 2022, the patient was admitted to the psychiatric ward, and his vital signs were normal.BP- 122/84 mm hg, Pulse-92 b/m, Respiratory rate-18 b/m, Temperature-98.1 degrees Fahrenheit, SPO_2-99% on room air.

After admission, routine investigations like CBC, electrolytes, RFT, LFT, Blood Sugar, urine routine & microscopy, and viral markers were sent and treatment started with antipsychotic drugs like injection haloperidol 2 amp BD, inj. Prometharzine 1 amp BD, inj. Larazepam 1 amp BD, Tab. Bisacodylt, and syrup lactulose 30 ml HS.

On the third day of admission, March 31, 202, the patient became febrile, decreased talk, decreased oral intake, and stood in one place for an extended period of time. Vitals were: temp. 102.4 degrees Fahrenheit, BP-130/90 mm hg, pulse-102 b/m, respiratory rate-20 b/m, and SPO_2-99% on RA. ECT was postponed and a reference call was sent to the medicine department.

On the 4th day (01/04/2022), the patient was transferred to the medicine ward. The patient has continued high body temperature; therefore symptomatic treatments with antipsychotics were continuous. Repeated routine investigations and fever marker samples were sent.

All of the reported results were within normal limits, and symptomatic treatment was given, but the patient still had high grade fever and muscle stiffness, raising the possibility of neuroleptic malignant syndrome (NMS). On 03/04/2022, all the antipsychotic drugs were stopped and we continued with symptomatic treatment.

After 1-2 days, the patient's body temperature started to fall within the normal range. CK-NAC and CK-MB values were very high at 9168 IU/L and 64 IU/L, respectively. After that, neuroleptic malignant syndrome was diagnosed and continuous symptomatic treatment was provided. After 3–4 days, the patient condition improved.

[3] Investigations:

Routine blood investigations were done at the time of admission and, after that, all the fever marker investigations were performed before diagnosing the Neuroleptic Malignant Syndrome. All the investigations were within the normal range, except CK-NAC and CK-MB. High level values of CK-NAC and CK-MB help to finalise the diagnosis. The list and values of all the investigations are presented below in the table.

[4] Treatment:

Patient initial treatment for schizophrenia was started with antipsychotic drugs including Injection haloperidol 2 amp×IM×BD, Inj promethazine 1 amp×IM×BD, Inj lorazepam 1 amp×IM×BD. After diagnosis of NMS antipychotic drugs were stopped and only symptomatic treatment was provided with inj. Piptaz 4.5 gm×IV×TDS, Inj Ciprofloxacin 100 ml ×IV×BD, IV fluid DNS 5%×BD×500 ml, IV fluid NS ×500 ml×BD, Inj Paracetamol×500 mg×TDS followed with tab PCM× 500 mg×TDS and then SOS, Syrup lactulose 30 ml ×HS and cold tepid sponging ×SOS, Inj. Lorazepam 1 amp×IM×BD for 5 days. For definitive treatment of NMS tab. Bromocriptine 2.5 mg×BD continued for 2 weeks. Dantrolene was not given to patient due to unavailability in city market.

[5] DISCUSSION:

NMS is a rare, but potentially fatal, illness that is commonly missed in individuals who present with fever.[3] As with our case, new-onset fevers without a defined explanation prompted us to broaden our differential diagnosis to include noninfectious reasons. We carefully examined his medication list and found that he was using a lot of antipsychotic drugs, which are known to be NMS triggers. NMS is most frequently brought on by first-generation antipsychotics with high potency, including haloperidol.

Four key clinical signs—fever, stiffness, altered mental status, and autonomic instability—characterize the classic clinical picture of NMS.[4] The classic "lead pipe" rigidity, which is defined by higher resistance to all ranges of motion in all extremities, is observed during a physical examination.[5] The majority of the time, hyperthermia is greater than 38 degrees C, while it can infrequently approach 40 degrees C. The autonomic nervous system is dysregulated, resulting in tachycardia, hypertension, and tachypnea. Normal serum creatine kinase levels are larger than 1,000 mcg/L, while severe NMS can cause values as high as 10,000 mcg/L (10-120 mcg/L).[6-7] Additionally, NMS might arise days to weeks after obtaining a high dose of an antipsychotic; in our case, it did so three days after that.

There are many management options accessible when NMS is discovered. It is crucial to stop the suspected causative substances first, and to keep the patient properly hydrated, in order to prevent acute renal failure. Antipyretics have been used to treat hyperthermia in a range of illnesses, despite the literature's lack of strong evidence in favour of their efficacy. Bromocriptine, a dopamine agonist, and dandrolene, a muscle relaxant, can be taken for seven to ten days. As

with our patient, clinical improvement can be seen within a few days, and the syndrome is typically gone after two weeks.[8-9]

With better detection and diagnosis of the illness over the last 15 years, the prognosis of NMS has considerably improved. The mortality rate is approximately 10% (5–20%), however most patients recover completely. The severity of the disease and medical consequences such as renal failure influence mortality. Early detection and a high level of clinical suspicion are essential for detecting and treating NMS.[10-11] As a result, we were rather certain that our patient had NMS; we eliminated the causing drugs and provided supportive therapy to prevent hyperthermia and fluid volume loss. That's how we treated NMS, and the patient's symptoms went away.

[6] CONCLUSION:

Only careful observation of the clinical symptoms, a comprehensive physical examination, and a strong suspicion of the offending medications can lead to the diagnosis of NMS. It is crucial to thoroughly check the medication lists of all newly admitted patients and to keep a high clinical suspicion of NMS in patients taking antipsychotic medications, such as haloperidol, who experienced hyperthermia, dysautonomia, altered mental status, and elevated CPK levels in the blood. Treatment is often supportive, consisting of stopping the offending medication, improving hydration, and rebalancing electrolytes. The disease may be treated with medications like benzodiazepines, dopamine agonists, and dantrolene.

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