



Opioid Induced Rhabdomyolysis with Acute Sensorimotor Axonal Neuropathy: An Unusual Presentation

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Rhabdomyolysis is a clinical condition of potentially life threatening destruction of skeletal muscles caused by diverse mechanisms including drug and toxins. Opioid is one of the encountered drug which cause rhabdomyolysis in association with renal failure. Paraparesis is one of the important feature of rhabdomyolysis which usually occur due to dyselectrolytemia (secondary hyperkalemic periodic paralysis) recovers completely on normalization of electrolyte, we are presenting a case of opioid induced rhabdomyolysis who develop paraparesis even with normal electrolyte which later on diagnosed as acute sensory motor axonal neuropathy.

Keywords: Dyselectrolytemia; rhabdomyolysis; axonal neuropathy; muscle injury.

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1. INTRODUCTION

Rhabdomyolysis is a condition in which lysis of muscle cell occurs and dissemination of muscle component in whole blood stream. This condition may result in release of muscle component into body fluids (extra cellular and intracellular fluid) major compounds released are potassium, lactic dehydrogenase, uric acid and myoglobin [1]. Major causes of rhabdomyolysis are divided into three groups: impacted muscle contraction (crushing syndrome or prolonged immobilization), extreme physical activities (in people without hyperthermia and sympathetic nervous system disorder) and non exertional and nontraumatic causes (drugs or toxins, infection, or electrolyte disorder) [2,3]. History obtained from patients of rhabdomyolysis (such as muscle contraction or crash syndrome, coma or seizure, surgical trauma and extreme physical activities) is sufficient to reach the diagnosis, but detailed physical examination and laboratory work up are equally important. Apart from physical factors, large number of drugs and over the counter medication can also cause rhabdomyolysis. Beside alcohol, other drugs including heroin, cocaine, amphetamine, methadone, tramadol, and LSD also responsible for rhabdomyolysis [4].

The drugs mainly responsible for rhabdomyolysis are as follows antipsychotics, statins, selective serotonin reuptake inhibitors, zidovudine, colchicine, lithium and antihistamines [3]. Acute opioid overdoses and other drug overdoses are routinely encountered in emergency department and intensive care units. Opioid overdoses can lead to debilitating consequences such as acute renal damage and failure, apart from that neurological manifestation associated are seizures, paraparesis. Studies regarding focal deficit or paraparesis in patients with rhabdomyolysis is lacking in the literature. So further studies in this field is recommended.

2. CASE REPORT

A 28 year male patient presented with history of opioid intake at home followed by altered mental status. Patient become unconscious at home 3 hours after consumption of opioid. At presentation he was in altered sensorium with decreased urine output, after catheterization patient passed small amount of urine which was brownish in color his routine profile shows deranged renal function, with metabolic acidosis. Other work up (cerebrospinal fluid examination and magnetic resonance imaging of brain) for

altered mental status was found to be normal. Patient received two session of hemodialysis in view of azotemia, uremic encephalopathy and metabolic acidosis, urine for myoglobin was found to be significantly high with high serum LDH and high CKMB (serum creatinine kinase n acetyl cysteine) urine for toxic screen was positive for opioid. After hemodialysis his sensorium improved. He starts complaining bilateral lower limb weakness, on examination he was having flaccid weakness without bowel or bladder involvement with patchy sensory losses at thigh, leg, and foot without definite sensory loss. Magnetic resonance imaging of spine was done which was found to be normal, nerve conduction of bilateral lower limb suggestive of acute sensory and motor axonal neuropathy. Which was an unusual finding in our patient with rhabdomyolysis. Patient was managed conservatively with IV hydration and hemodialysis. His urine output start improving after 4 session of hemodialysis and renal function was also improved. Patient was started on Intravenous immunoglobulins for polyneuropathy after five days of initiation of therapy his weakness was improved significantly, patient can stand with help of support of relatives, over a period of 1 month he recovered completely.

3. DISCUSSION

Multiple drugs, like psychotropic drugs, narcotics, and alcohol frequently encountered as a cause of rhabdomyolysis. As rhabdomyolysis associated with renal failure so clinical suspicion, early diagnosis and initiation of treatment measure at early stage can reduce complication: awareness of symptoms and early treatment are especially significant. In literature a lot number of studies where rhabdomyolysis considered as significant clinical problem, but recent studies show a higher incidence of this disorder [5]. Rhabdomyolysis is important cause of acute renal failure [3,6]. However studies explaining relation of rhabdomyolysis with renal failure are scarce in the literature. Opioid overdoses was considered as important risk factor for rhabdomyolysis in a study of Iran which was conducted by Mousavi et al. [7] and Talaie et al. [8] Moreover, in the studies of Koffler et al. Gabow et al. [9] and Taheri et al. [10], opium and alcohol abuse have been reported to be main cause of rhabdomyolysis. Talaie et al. found that opium poisoning was the most common cause of rhabdomyolysis [8]. Neurological manifestation has reported with opioid overdose are seizure

and gluteal compartment syndrome [11]. No one case of sensory motor axonal neuropathy has been reported in literature in past. In our case patient with opioid overdose presented with rapidly progressive renal failure with paraparesis which later on diagnosed as a case of acute sensory motor axonal neuropathy with rhabdomyolyses.

4. CONCLUSION

Incidence of opioid induced rhabdomyolysis is quite high in developing country, as addiction impart important role in this field. Drug overdoses and opioid overdoses especially in younger patients cause rhabdomyolysis with life threatening complications, such as progressive renal failure. Poisoning and drug overdoses is more common in younger patient so it impart high mortality in same. It is necessary to pay more attention to early diagnosis and treatment of these patient. Studies regarding neurological manifestation in opioid overdoses are very scarce in literature, further studies on etiology on paraparesis is required in patients of rhabdomyolysis.

CONSENT

As per international standard, patient's written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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