

Case Report

A CASE OF RHABDOMYOLYSIS FOLLOWING HALOPERIDOL INDUCED SEIZURE

***Hemanta Dutta and Soumik Sengupta**

Department of Psychiatry, LGB regional Institute of Mental Health, Tezpur, Assam, India

**Author for Correspondence*

ABSTRACT

Rhabdomyolysis is a clinical syndrome characterized by the breakdown of the muscles due to severe traumatic muscle injury. It carries diverse etiological factors and seizure is one of them. Breakdown of the muscles after a single episode of seizure is not an usual sequel. Here, we are reporting a case of Rhabdomyolysis which was induced by a single episode of seizure.

Keywords: *Rhabdomyolysis, Haloperidol, Seizure Disorder*

INTRODUCTION

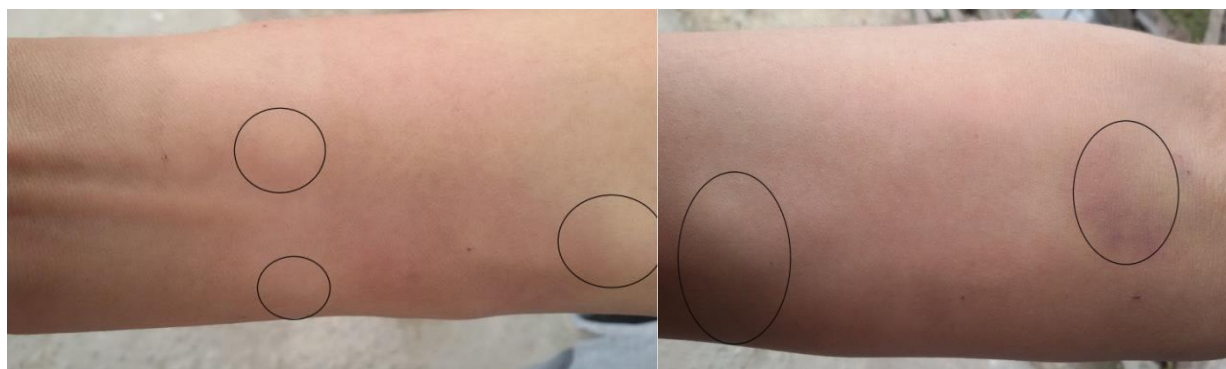
Rhabdomyolysis is a clinical syndrome which occurs due to the breakdown of the muscles resulting from skeletal muscle injury (Sauret *et al.*, 2002; Vanholder *et al.*, 2000). Breakdown of the muscles causes release of myoglobin in the blood stream (Sauret *et al.*, 2002; Vanholder *et al.*, 2000). Various causes of Rhabdomyolysis are mainly extreme physical exercise, delirium tremens, seizures, crush syndrome, blast injury, arterial thrombosis, hyperthermia, hyperglycemia similar state. Among the medications, mainly statins, fibrates, antipsychotics, neuromuscular blocking agents, diuretics, poliomyositis, dermatomyositis etc. ; infections caused by Influenza, salmonella, the herpes virus , is well known to cause Rhabdomyolysis (Vanholder *et al.*, 2000; Huerta-Alardín *et al.*, 2005). The pathophysiological process of Rhabdomyolysis can be explained by severe muscle injury which is followed by the release of intracellular calcium and myoglobin (Vanholder *et al.*, 2000). The release of these substances causes depletion of ATP and ultimately leading to cell death (Vanholder *et al.*, 2000). It is characterized by muscle weakness, muscle tear, subcutaneous nodules, dark colored urine, confusion, muscle pain and renal failure (Sauret *et al.*, 2002; Vanholder *et al.*, 2000; Huerta-Alardín *et al.*, 2005). While diagnosing Rhabdomyolysis elevated level of Creatinine Phosphokinase (CPK) is considered to be most reliable and diagnostic parameter (Sauret *et al.*, 2002; Vanholder *et al.*, 2000; Huerta-Alardín *et al.*, 2005). Rhabdomyolysis is generally reported after an episode of status epilepticus (Mishra and Dave, 2013). A single episode of a tonic clonic convulsion is unusual to induce severe muscle injury (Mishra and Dave, 2013). Here we have depicted a case of Rhabdomyolysis, which was a consequence of a single episode of seizure induced by Haloperidol.

CASES

A 30 years Hindu male, who was a known case of Schizophrenia, was admitted with relapse of psychotic symptoms like fearfulness, suspiciousness, hearing of voices not heard by others, talking to self, restlessness etc. for 2 weeks. The patient was on maintaining well on Risperidone, but later on he failed to show any response to that. Subsequently, tablet Haloperidol was started and titrated up to 20 mg/day. After some days, patient developed 2 episodes of generalized tonic clonic seizure movement. Following the seizure, he became confused and remained in the same state for the next 24 hours. Along with he developed fever upto 102 degree F, but it lasted only for 3 hours. After 24 hours gradually he started regaining consciousness, but he complained of disproportionate generalized weakness. There was excessive difficulty in walking. All laboratory parameters are performed and they revealed all normal except AST (1089U/L), ALT(248 U/L) And creatinine phosphokinase 4000 U/L. Following a couple of days the patient developed subcutaneous nodules over upper, lower limb, chest, abdomen etc. along with high colored urine. Urine myoglobin could not be done as the facility is not available in our vicinity. Looking at the whole scenario and the sequences of the events like onset of seizure followed by raised

Case Report

liver parameters , CPK, development of subcutaneous nodule and high colored urine led us to diagnose him as a case of rhabdomyolysis due to haloperidol induced seizure. The patient was managed conservatively with supportive treatment. Urine colour became normal after 5 days of supportive treatment, CPK returned within normal limit after 1 week and subcutaneous nodules took 2 weeks to disappear. Following that tab Aripiprazole was started he was discharged . He was (maintaining well in subsequent visits. Following photographs has shown the subcutaneous nodules and high coloured urine in our patient.



Picture 1 & 2: Pictures showing subcutaneous nodules in black circles



Picture: 3: Showing tea coloured urine of the patient

DISCUSSION

Rhabdomyolysis is not a frequent terminology to be heard in the day to day psychiatry practice. However, apart from various infections and traumatic etiology, Antipsychotics are considered to be an important etiological factor (Sauret *et al.*, 2002; Vanholder *et al.*, 2000; Huerta-Alardín *et al.*, 2005; Mishra and Dave, 2013; Gabow *et al.*, 1982). Studies have shown that seizure is associated with Rhabdomyolysis. Mishra and Dave (2013) had depicted a similar case of Seizure induced Rhabdomyolysis in a 35 years old male patient. Mishra and Dave (2013), their patient suffered from Acute renal failure as a consequence of seizure induced Rhabdomyolysis. Majidi and Neukoeifard (1982) described a similar case of Rhabdomyolysis which caused by Tramadol induced Seizure. Raised CPK has been considered to be a diagnostic indicator for Rhabdomyolysis (Sauret *et al.*, 2002; Vanholder *et al.*, 2000; Huerta-Alardín *et al.*, 2005; Mishra and Dave, 2013; Gabow *et al.*, 1982; Majidi and Neukoeifard 1982). Elevation of CPK can be divided as mild (2000 IU/L), moderate (2000- 10000 IU/L) and severe (> 10000 IU/L) respectively. Level above 5000 -6000 IU/L carries a risk for acute renal failure (Mishra and Dave, 2013). In our case also CPK was raised upto 4000 IU/L which is an indicator of moderate

Case Report

muscle injury (Mishra and Dave, 2013). However in our case renal parameter was in normal limit, indicating no renal injury. As a consequence of the seizure episode, our patient had developed confusion, subcutaneous nodule and dark colored urine, which indicates the possibility of electrolyte imbalance, muscle tear and increased level of myoglobinuria. Estimation of Myoglobin plays a crucial role in this type of case. But due to unavailability of the laboratory facility, it could not be estimated. Raised CPK up to a significant level along with generalized body weakness, confusion, development of subcutaneous nodules helped us to arrive at a diagnosis of possible occurrence of Rhabdomyolysis due to Haloperidol induced Seizure. Motivation behind highlighting this case was to make clinician`s aware regarding this dreaded clinical condition which may be a sequale of a seizure episode.

The authors would be interested to hear similar case from others.

REFERENCES

Gabow Patricia, Kaehny A, William D Kelleher and Stephen P (1982). The Spectrum of Rhabdomyolysis. *Medicine* **61**(3) 141-152.

Huerta-Alardín AL, Varon J and Marik PE (2005). Bench-to-bedside review: Rhabdomyolysis – an overview for clinicians. *Critical Care* **9**(2) 158–69.

Majidi M and NekouEIFard S (1982). Seizure and Rhabdomyolysis: Serious Complications of Tramadol Overdose. *Asia Pacific Journal of Medical Toxicology* **3**(2) 90.

Mishra A and Dave N (2013). Acute Renal Failure Due to Rhabdomyolysis Following a Seizure. *Journal of Family Medicine and Primary Care* **2**(1) 86-87.

Sauret JM, Marinides G and Wang GK (2002). Rhabdomyolysis. *American Family Physician* **65**(5) 907-912.

Vanholder R, Sever MS, EreK E and Lameire N (2000). Rhabdomyolysis. *Journal of the American Society of Nephrology* **11**(8) 1553-1561.