

CASE REPORT

A Case of Diclofenac Induced Rhabdomyolysis with Complications

Iqra Ahmed, Ahmad Asim, Maham Qudoos Nizami, Abid Saeed Khan

ABSTRACT

In Rhabdomyolysis, muscle releases its contents into blood that can cause Acute Kidney Injury. We reported a very rare case of rhabdomyolysis after Diclofenac intramuscular injection with super added gluteal abscess formation, eventually led to acute kidney injury.

Key Words: *Acute Kidney Injury, Rhabdomyolysis, Diclofenac, Gluteal Abscess.*

Introduction

In rhabdomyolysis, muscle injury leads to release of muscle's intracellular contents into blood that can cause acute kidney injury, arrhythmias and death.¹ There are numerous causes of rhabdomyolysis that include trauma, exertion, infections and drugs which commonly include statins, fibrates, recreational drugs. If treated early and aggressively, it has a good prognosis.² Acute kidney injury is the main complication that worsens the prognosis.³ Irrespective of the cause, the mortality rate of rhabdomyolysis can be as high as 8%.⁴

Case

A 62-year-old male presented in Emergency Room of Capital Hospital, Islamabad with presenting complaints of pain and swelling in the left gluteal region. He also complained of nausea, vomiting, abdominal pain and high-grade fever for one week. He had a history of fall a few days back after which he visited a local clinic where he was administered intramuscular diclofenac, 75mg. He developed a gluteal abscess (as shown in the figure) due to intra gluteal injection and hence was admitted for incision and drainage of the abscess by the Surgery Department.

During this admission, he developed decreased urine output along with cold peripheries. On examination he had low blood pressure along with regular feeble pulse. He was jaundiced but rest of the examination was unremarkable. Investigations revealed TLC



$21.14 \times 10^3/\mu\text{L}$, creatinine 4.8mg/dL, urea 231 mg/dL, Sodium ions 131 mmol/L, potassium ions 6.05 mmol/L, and chloride ions 92 mmol/L. Cardiac enzymes were advised which came out to be markedly elevated AST 858 U/L, CPK 50900 U/L, LDH 3238 U/L, and CK-MB 1160 U/L.

Patient was labeled as a case of Acute Kidney Injury secondary to rhabdomyolysis which was due to the diclofenac administration with superadded gluteal abscess formation. Patient underwent multiple sessions of dialysis after which his condition

Department of Medicine

Capital Hospital, Islamabad

Correspondence:

Dr. Iqra Ahmad

Resident Medicine

Capital Hospital, Islamabad

E-mail: iqra.ahmed1997@gmail.com

Received: January 12, 2024; Revised: March 22, 2024

Accepted: March 25, 2024

<https://doi.org/10.57234/jiimc.march24.1961>

improved. On examination his conscious level improved along with improvement in his blood pressure and urine output. The creatinine levels

improved to 0.7 mg/dL post multiple sessions of dialysis. The detailed laboratory findings during the disease course are given in the following table.

Laboratory Findings	At The Day of Admission	During Admission (After Sessions of Dialysis)	At The Day of Discharge	Reference Ranges
TLC	21x10 ³ /μl	11x10 ³ /μl	10x10 ³ /μl	4-11x10 ³ /μl
HEMOGLOBIN	9.4g/dl	10.2g/dl	11.2g/dl	12.0-15.0 g/dl
PLATELETCOUNT	146.4x10 ³ /μl	154x10 ³ /μl	155x10 ³ /μl	150-450x10 ³ /μl
CREATININE	4.8mg/dl	2.3mg/dl	0.7mg/dl	0.4-1.4 mg/dl
UREA	231mg/dl	116mg/dl	84mg/dl	10-50 mg/dl
SODIUM	131 mmol/l	130mmol/l	130mmol/l	130-135 mmol/l
POTASSIUM	6.05 mmol/l	5.5mmol/l	5.3mmol/l	3.5-5.5 mmol/l
AST	858 U/L	400U/L	22U/L	Up to 20 U/L
CPK	50900U/L	2000U/L	180U/L	20-190 U/L
LDH	3238U/L	2020U/L	445U/L	180-450 U/L
CK-MB	1160ng/ml	952ng/ml	25ng/ml	0-25 ng/ml
CRP	335mg/L	110mg/L	12.0mg/L	Negative is <10mg/L

AST: Aspartate aminotransferase

CPK: Creatine phosphokinase

LDH: Lactate dehydrogenase

CK-MB: Creatine kinase-MB

CRP: C-reactive protein

Discussion

Rhabdomyolysis leads to extreme breakdown of skeletal muscle tissues, muscle necrosis and release of muscle enzymes into the circulation. It is characterized by myalgias, myoglobinuria and increased muscle enzymes especially creatinine kinase. It is also associated with electrolyte imbalance and can cause acute kidney injury in 10-15% of the patients. All of its effects can lead to acute tubular necrosis which eventually causes acute kidney injury. Mortality rate is about 10% and even higher with patients presenting with acute kidney injury.²

Our case report adds to the growing evidence where a patient with history of diclofenac injection in the gluteal region presented with rhabdomyolysis

leading to acute kidney injury for which he underwent multiple sessions of wound debridement and dialysis.

There are quite a few cases reported with patients developing rhabdomyolysis after being administered with diclofenac injection which eventually leads to acute kidney injury.⁶⁻⁷ Similarly, another case was reported in which the patient developed rhabdomyolysis thirteen days after diclofenac injection administration. Patient had markedly raised creatinine phosphokinase levels and he eventually developed mild renal failure.⁸ Another case was reported in which a 32 years old male received an intramuscular injection in his right thigh which eventually leads to acute rhabdomyolysis secondary to necrotizing fasciitis and eventually acute kidney injury. He went into septic shock and finally died after 5 days.⁹

There is scarcity of the literature available that confirms rhabdomyolysis as a side effect of diclofenac injection but some literature along with

this one adds to the significance of diclofenac induced rhabdomyolysis as an adverse reaction. This is because inappropriate intramuscular administration can cause muscle injury and superadded infection which can get complicated with necrotizing fasciitis, rhabdomyolysis and acute kidney injury.—"5 So, diclofenac injections should be administered cautiously and a clinician should be aware of its one of the life-threatening side effects i.e., rhabdomyolysis. As, early intervention could be lifesaving.

REFERENCES

1. (NIOSH) TNI for OS and H. Rhabdomyolysis | *NIOSH (The National Institute for Occupational Safety and Health) | CDC (Internet)*. 2023. Available from: <https://www.cdc.gov/niosh/topics/rhabdo/default.html>
2. Zutt R, van der Kooi AJ, Linthorst GE, Wanders RJA, de Visser M. Rhabdomyolysis: review of the literature. *Neuromuscul Disord*. 2014 [cited 2024 Feb 7];24(8):651–9. doi: 10.1016/j.nmd.2014.05.005.
3. Boudhabhay I, Poillerat V, Grunenwald A, Torset C, Leon J, Daugan M V. et al. Complement activation is a crucial driver of acute kidney injury in rhabdomyolysis. *Kidney Int* [Internet]. 2021 Mar 1 [cited 2024 Feb 7];99(3):581–97. doi: 10.1016/j.kint.2020.09.033.
4. Bagley WH, Yang H, Shah KH. Rhabdomyolysis. *Intern Emerg Med*. 2007 Oct [cited 2024 Feb 7];2(3):210–8. doi: 10.1007/s11739-007-0060-8.
5. Russom M, Fitsum Y, Abraham A, Savage RL. Diclofenac and the Risk of Rhabdomyolysis: Analysis of Publications and the WHO Global Pharmacovigilance Database. *Drugs - real world outcomes*. 2021 Sep 1 [cited 2024 Feb 7];8(3):263–75. doi: 10.1007/s40801-021-00240-z.
6. Knobloch K, Rossner D, Gössling T, Lichtenberg A, Richter M, Krettek C. [Rhabdomyolysis after administration of diclofenac]. *Unfallchirurg*. 2005 May [cited 2024 Feb 7];108(5):415–7. doi: 10.1007/s00113-004-0874-z.
7. Manigandan G SM. Diclofenac-Induced Rhabdomyolysis - A Great Masquerader - PubMed. *J Assoc Physicians India*. 2016 [cited 2024 Feb 7];Nov;64(11):90–1. PMID: 27805347.
8. Delrio FG, Park Y, Herzlich B, Grob D. Case report: diclofenac-induced rhabdomyolysis. *Am J Med Sci*. 1996 [cited 2024 Feb 7];312(2):95–7. doi: 10.1097/00000441-199608000-00008.
9. Furkan Demir B, Katipoğlu B, Yırgın G, Acehan F, Ateş İ. A Rare Case Due to Intramuscular Diclofenac Injection: Necrotizing Fasciitis, Rhabdomyolysis and Acute Kidney Injury. *TheUlutas Medical Journal*. 2018[cited 2024 Feb 7]; doi: 10.5455/umj.20180207122003.

CONFLICT OF INTEREST

Authors declared no conflicts of Interest.

GRANT SUPPORT AND FINANCIAL DISCLOSURE

Authors have declared no specific grant for this research from any funding agency in public, commercial or nonprofit sector.

DATA SHARING STATMENT

The data that support the findings of this study are available from the corresponding author upon request.

This is an Open Access article distributed under the terms of the Creative Commons Attribution- Non-Commercial 2.0 Generic License.