



## RESEARCH ARTICLE

### DICLOFENAC GEL INDUCED CONTACT DERMATITIS: AN ATYPICAL CASE REPORT

Shreeya Pokharel<sup>1,\*</sup>, Lopamudra Dhar Chowdury<sup>2</sup>, Abhik Saha<sup>3</sup>, Koustuv Chowdhury<sup>4</sup> and Dr. Subhayan Das<sup>5</sup>

<sup>1</sup>3rd Year MBBS Student, R G Kar Medical College, Kolkata; <sup>2</sup>Professor & Head, Department Pharmacology, R G Kar Medical College, Kolkata; <sup>3</sup>Jr. Pharmacovigilance Associate, Indian Pharmacopoeia Commission, National Coordination Centre, Pharmacovigilance Programme of India; <sup>4</sup>Assistant Professor, Department Pharmacology, R G Kar Medical College, Kolkata; <sup>5</sup>Senior Resident, Department Pharmacology, R G Kar Medical College, Kolkata

#### ARTICLE INFO

##### Article History:

Received 20<sup>th</sup> October, 2024  
Received in revised form  
17<sup>th</sup> November, 2024  
Accepted 24<sup>th</sup> December, 2024  
Published online 30<sup>th</sup> January, 2025

##### Key Words:

Adverse Drug Reaction, Contact Dermatitis, Diclofenac.

\*Corresponding author:  
Shreeya Pokharel

#### ABSTRACT

Diclofenac is a nonsteroidal anti-inflammatory drug (NSAID) of the phenylacetic acid class that preferentially inhibits cyclooxygenase (COX-2). This case highlights the unusual presentation of contact dermatitis induced by diclofenac gel in a 21-year-old male. Case presentation A 21-year-old male presented to Dermatology OPD with a large rash and numerous blisters on the anterior aspect of both upper arms. The case was suspected to be a potential adverse reaction to topical diclofenac. The relationship between the diclofenac gel and the adverse reaction was assessed according to the WHO causality scale and was determined to be 'Probable/Likely'. Management The diclofenac gel treatment was stopped immediately, and oral prednisolone and oral antihistamine were given. Conclusion Our case contributes to the increasing evidence of occurrence of diclofenac gel-induced contact dermatitis. This suggests that clinicians should be vigilant for adverse effects of diclofenac gel before prescription and consider contact dermatitis as a possible side effect.

Copyright©2025, Shreeya Pokharel et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Shreeya Pokharel, Lopamudra Dhar Chowdury, Abhik Saha, Koustuv Chowdhury and Dr. Subhayan Das. 2025. "Diclofenac gel induced contact dermatitis: An Atypical case report". *International Journal of Current Research*, 17, (01), 31280-31282.

## INTRODUCTION

Diclofenac is a nonsteroidal anti-inflammatory drug (NSAID) of the phenylacetic acid class that preferentially inhibits cyclooxygenase (COX-2). Thus, it has anti-inflammatory, analgesic, and antipyretic properties and is commonly prescribed to patients of rheumatoid arthritis, gout, migraine, or sprains/strains of muscles or ligaments<sup>[1,2]</sup>. Oral diclofenac preparations are associated with gastrointestinal, cardiovascular, renal, and hepatic adverse effects. Existing literature has shown that topical diclofenac is well tolerated and has equal efficacy as oral preparations, with a lower incidence of systemic adverse effects<sup>[3]</sup>. Although rare, cases of contact dermatitis have been reported as a potential adverse reaction to topical diclofenac. Contact dermatitis is an inflammatory dermatological condition caused by exposure to external irritants or allergens. The two forms of contact dermatitis, irritant and allergic, exhibit two different mechanisms. Irritant contact dermatitis is caused by damage to the skin barrier by various irritants, which induces an innate immune response<sup>[4]</sup>.

Prior exposure to the irritant is not necessary for the development of irritant contact dermatitis. Allergic contact dermatitis is a T-cell mediated, delayed-type hypersensitivity reaction to previously exposed allergens. Acute presentations comprise burning, pain, erythema, papules, and bullae formation, while subacute and chronic presentations include scaling, fissures, and lichenification<sup>[4]</sup>.

**Case Description/History:** A 21-year-old male presented to Dermatology OPD with a large rash and numerous blisters on the anterior aspect of both upper arms (Fig 1). He had applied diclofenac gel on both arms for muscle pain and developed erythematous painful blisters a day later (see Fig 1). The diclofenac gel treatment was stopped immediately. With time, the blisters gradually increased in size (see Fig 2). After performing a physical examination and extensive personal history, the condition was diagnosed to be contact dermatitis. It was managed by giving oral prednisolone and oral antihistamine. Over time all the blisters coalesced to form a single bullous lesion, which healed over time to form a scab that fell off after 2 days

(see Fig 3,4). According to the WHO causality scale, the relationship between the diclofenac gel and the adverse reaction was assessed, and was determined to be 'Probable/Likely'.



Fig 1. Erythema and blisters seen on both arms 1 day after application of diclofenac gel



Fig 2. Blisters enlarged and coalesced to form bullae



Fig 3. Bullae formed scabs and fell off

## DISCUSSION

Commonly reported side effects of topical diclofenac comprise skin reactions including rash, itching, or burning<sup>[3]</sup>. Cases of contact dermatitis induced by diclofenac gel use have also been documented in medical literature<sup>[5,6,7,8]</sup>. Diagnosis of contact dermatitis is based on a thorough history, clinical

presentation, and patch testing. Patch testing is used to identify the exact allergens causing the reaction and is considered the gold standard in diagnosing contact dermatitis<sup>[9]</sup>. Treatment involves identification and avoidance of the causative substances, which in this case is diclofenac gel, and the usage of emollients to maintain and reinforce the skin barrier<sup>[10]</sup>. A short course of topical corticosteroids is the first line of treatment for contact dermatitis, but long-term use has been linked with skin atrophy and increased sensitivity to irritants. Systemic corticosteroids may be used if the contact dermatitis is severe. Calcineurin inhibitors are the second line of treatment and are used when topical corticosteroids are ineffective or not well tolerated. Topical immunomodulators including tacrolimus and pimecrolimus may also be used<sup>[11]</sup>. The prognosis depends on the cause and lifestyle. Cases are often acutely managed if the offending irritant is avoided while non-compliant patients tend to have a chronic course. Relapses are very common<sup>[12]</sup>.

## CONCLUSION

This case highlights the unusual presentation of contact dermatitis induced by diclofenac gel in a 21-year-old male. Though rare, diclofenac gel-induced contact dermatitis has been previously recorded in medical literature<sup>[5,6,7,8]</sup>, and our case contributes to the increasing evidence of occurrence. This suggests that clinicians should be vigilant for adverse effects of diclofenac gel before prescription and consider contact dermatitis as a possible side effect.

## ACKNOWLEDGMENT

We thank Indian Pharmacopoeia Commission for providing a platform to detect and monitor this case as reported.

**Conflict of interest:** Authors declare no conflict of interest.

## REFERENCES

1. Altman R, Bosch B, Brune K, Patrignani P, Young C. Advances in NSAID development: evolution of diclofenac products using pharmaceutical technology. *Drugs* [Internet]. 2015 May 12;75(8):859–77. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/25963327> Available .2020 .NHS .[netInter]Diclofenac .NHS[2] from <https://www.nhs.uk/medicines/diclofenac/>
2. Gan TJ. Diclofenac: an update on its mechanism of action and safety profile. *Current Medical Research and Opinion* [Internet]. 2010 Jul 1;26(7):1715–31. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/20470236>
3. Tan CH, Rasool S, Johnston GA. Contact dermatitis: Allergic and irritant. *Clinics in Dermatology*. 2014 Jan;32(1):116–24.
4. Lynde CB, Pierscianowski TA, Pratt MD. Allergic contact dermatitis caused by diclofenac cream. 2009 Oct 26;181(12):925–6. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2789129/>
5. Beutner C, Forkel S, Kreipe K, Geier J, Buhl T. Contact allergy to topical diclofenac with systemic tolerance. *Contact Dermatitis*. 2021 Sep 6;86(1):41–3.

6. Langer H. Topical Diclofenac Induced Asthma And Contact Dermatitis. *Journal of Allergy and Clinical Immunology*. 2006 Feb;117(2):S295.
7. Induced Allergic -Diclofenac .Chiriac A ,Gulin SJ [8] Drug .tsA Series of Four Patien :Contact Dermatitis cited ] 23Nov 2016 .[Internet]Case Reports -Safety Av .(1)3;[10Jan 2023ailable from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5120621/#>
8. Elmas ÖF, Akdeniz N, Atasoy M, Karadag AS. Contact dermatitis: A great imitator. *Clinics in Dermatology*. 2020 Mar;38(2):176–92.
9. Li Y, Li L. Contact Dermatitis: Classifications and Management. *Clinical Reviews in Allergy & Immunology*. 2021 Jul 15;61(3):245–81.
10. Rashid RS, Shim TN. Contact dermatitis. *BMJ* [Internet]. 2016 Jun 30;353. Available from: <https://www.bmj.com/content/353/bmj.i3299>
11. Litchman G, Nair PA, Atwater AR, Gossman WG. Contact dermatitis [Internet]. PubMed. Treasure Island (FL): Stat Pearls Publishing; 2023. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK459230/>

\*\*\*\*\*