

## Case Report

# Allergic contact dermatitis to topical chloramphenicol: The role of patch testing

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## ABSTRACT

Chloramphenicol is commonly used in ophthalmology for its broad-spectrum antibacterial activity. However, it is a potential sensitizer and may cause allergic contact dermatitis (ACD), particularly with prolonged use. ACD affecting the eyelid and periocular area can mimic conjunctivitis or cellulitis, resulting in delayed diagnosis. We report a case of a 47-year-old male who developed severe periorbital dermatitis following the use of multiple topical ophthalmic preparations containing chloramphenicol. Patch testing with the medications “as is” revealed positive reactions to chloramphenicol-containing formulations and helped in early diagnosis and management.

**Keywords:** Allergic contact dermatitis, Chloramphenicol, Eye dermatitis, Mimicking cellulitis, Patch test

## INTRODUCTION

Chloramphenicol is widely used for ocular and periocular infection due to its antibacterial activity. The eyelid skin is thin and prone to develop allergic contact dermatitis (ACD). Topical ophthalmic drugs can act as allergens, causing eye redness, swelling, and eyelid dermatitis.<sup>[1]</sup> These symptoms often mimic conjunctivitis or cellulitis, leading to frequent misdiagnosis and delayed treatment. Chloramphenicol is a known sensitizer and has been implicated in delayed-type hypersensitivity reactions, especially with prolonged topical use.

We report a patient treated for conjunctivitis and developed ACD to topical chloramphenicol.

## CASE REPORT

A 47-year-old male presented with eye redness, watering, swelling, a burning sensation, and photophobia and was diagnosed with conjunctivitis. His ophthalmologist prescribed topical chloramphenicol ointment, but his condition worsened, leading to severe conjunctival redness and periorbital dermatitis [Figure 1]. A second ophthalmologist prescribed chloramphenicol with hydrocortisone acetate (CD Eye Ointment), moxifloxacin drops, and ganciclovir ointment. However, as his condition deteriorated further, dexamethasone + chloramphenicol (Dexoren-S drops) was prescribed. He was referred for further evaluation as his conjunctival erythema and periorbital redness worsened. We suspected ACD and patch testing was



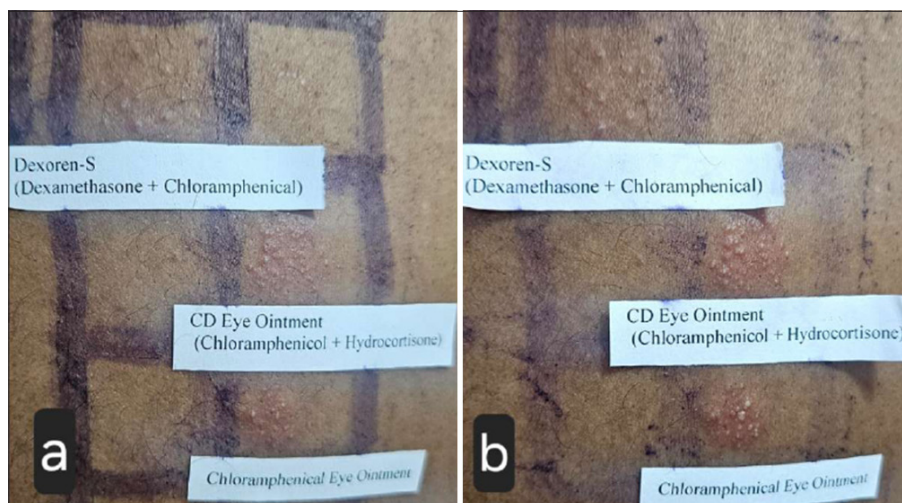
**Figure 1:** (a-c) Conjunctival redness with erythema, scaling, and erosion with crusting noted over lateral and lower eyelid extending to the cheek.

performed using the eye drops and ointments “as is.” The test preparations were applied on aluminum Finn chambers, fixed with micropore tape, and occluded for 48 hours. Readings

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**Figure 2:** Patch test reading at (a) D2 and (b) D4—showed positivity for chloramphenicol ointment (++/+++), dexamethasone+chloramphenicol (+/+), and chloramphenicol + hydrocortisone (++/+++).

**Table 1:** Table showing reports of patch testing with chloramphenicol.

Author(s), year	Article title	Patch test result (cases)
Rudzki <i>et al.</i> , 1976 <sup>[5]</sup>	Drug reaction with positive patch test to chloramphenicol	Positive (1 case)
Kubo <i>et al.</i> , 1987 <sup>[6]</sup>	Contact sensitivity to chloramphenicol	Positive (1 case)
Moyano <i>et al.</i> , 1996 <sup>[7]</sup>	Allergic contact dermatitis to chloramphenicol	Positive (1 case)
Lee and Yoo, 1999 <sup>[8]</sup>	Chloramphenicol induced AGEP proved by the patch test and systemic provocation	Positive (1 case)
Sachs <i>et al.</i> , 2001 <sup>[9]</sup>	Molecular features determining lymphocyte reactivity in allergic contact dermatitis to chloramphenicol	Positive (2 cases)

AGEP: Acute generalized exanthematous pustulosis

were taken on day (D) 2 and D4 according to International Contact Dermatitis Research Group criteria [Figure 2]. The results showed positive reactions for chloramphenicol ointment (++/+++), dexamethasone + chloramphenicol (+/+), and chloramphenicol + hydrocortisone (++/+++), and negative for moxifloxacin and ganciclovir, thus confirming topical chloramphenicol as the allergen. The low positivity for dexamethasone + chloramphenicol was likely due to the inhibitory effect of topical dexamethasone. The patient was treated with systemic and topical steroids and fully recovered within 2 weeks.

## DISCUSSION

ACD is frequently misdiagnosed as conjunctivitis and cellulitis and presents symptoms such as redness of the conjunctiva and eyelid swelling, itching, and tearing.<sup>[2]</sup> It can be diagnosed by the drip pattern, where dermatitis involves the lower, lateral eyelids and cheeks and is caused by topical eye drops or ointments. It has to be differentiated from contour pattern, where the upper eyelid and periorbital region are involved due to application of cosmetic products, and the unilateral pattern, which is due to ectopic ACD, where allergens are transferred from hands.<sup>[3,4]</sup> In severe cases, hypersensitivity may extend beyond the periorbital region, triggering systemic symptoms. Given that most prior reports of chloramphenicol hypersensitivity confirmed by patch testing are older, this case revisits the option of employing patch testing in evaluating delayed-type reactions to topical ophthalmic antibiotics [Table 1].<sup>[5-9]</sup> Common sensitizing agents in ophthalmic preparations include preservatives such as benzalkonium chloride and thiomersal, as well as active drugs such as neomycin, which can act as potential confounders. Patch testing is essential for early identification of the causative allergen, enabling prompt discontinuation of the offending agent and the selection of alternative antibiotics. Patch testing “as is” with actual drops or creams<sup>[4]</sup> helps confirm sensitivity and guides personalized management strategies.

## CONCLUSION

Patch testing is important to confirm the diagnosis of drug-induced allergic contact dermatitis (ACD) and differentiate it from other mimickers such as conjunctivitis.

**Ethical approval:** The research/study was approved by the Institutional Review Board at PSG Institute of Medical Sciences and

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## REFERENCES

1. Bhat YJ, Zeerak S, Hassan I. Allergic contact dermatitis to eye drops. *Indian J Dermatol* 2015;60:637.
2. Chisholm SA, Couch SM, Custer PL. Etiology and management of allergic eyelid dermatitis. *Ophthalmic Plast Reconstr Surg* 2017;33:248-50.
3. Rozas-Muñoz E, Gamé D, Serra-Baldrich E. Allergic contact dermatitis by anatomical regions: Diagnostic clues. *Actas Dermosifiliogr (Engl Ed)* 2018;109:485-507.
4. Landeck L, John SM, Geier J. Topical ophthalmic agents as allergens in periorbital dermatitis. *Br J Ophthalmol* 2014;98:259-62.
5. Rudzki E, Grzywa Z, Maciejowska E. Drug reaction with positive patch test to chloramphenicol. *Contact Dermatitis* 1976;2:181.
6. Kubo Y, Urano Y, Kumazawa R, Miyauchi H, Matsunaga K. Contact sensitivity to chloramphenicol. *Contact Dermatitis* 1987;17:167.
7. Moyano JC, González-Pérez R, Martín L, Conde-Salazar L. Allergic contact dermatitis to chloramphenicol. *Contact Dermatitis* 1996;34:304.
8. Lee AY, Yoo DS. Chloramphenicol-induced acute generalized exanthematous pustulosis proved by patch test and systemic provocation. *Dermatology* 1999;198:178-80.
9. Sachs B, Erdmann S, Malte Baron J, Neis M, Merk HF, Gleichmann E. Molecular features determining lymphocyte reactivity in allergic contact dermatitis to chloramphenicol and azidamphenicol. *Br J Dermatol* 2001;145:771-9.

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