

angioendotheliomatosis: is it 'intravascular histiocytosis'?  
J Eur Acad Dermatol Venereol. 2005;19:216-9.

A. Agusti,\* P. Hernández, V. Oliver, R. García,  
and V. Alegre de Miquel

*Servicio de Dermatología, Consorcio Hospital General*

*Universitario, Valencia, Spain*

\*Corresponding author.

E-mail address: annaagusti@comv.es (A. Agusti).

## Blepharoconjunctivitis Due to Phenylephrine

### Blefarconjuntivitis alérgica por fenilefrina

*To the Editor:*

Phenylephrine is an  $\alpha$ -adrenergic receptor agonist used in topical preparations such as eye drops, ear drops, and skin creams.

We present the case of a 60-year-old man who had suffered acute myocardial infarction and a cerebrovascular accident in 1980. In April 2009 he attended the Ophthalmology Emergency Department of our hospital with a bilateral mucopurulent conjunctival secretion that had developed 3 days earlier. In the preparation for the ophthalmological examination, various eye drops (Colircusi Atropine 1%, Colircusi Anesthetic, Colircusi Tropicamide, Colircusi Cycloplegic, and Colircusi Phenylephrine) were used. These had been administered to the patient on 2 previous occasions for similar examinations. After the examination he was diagnosed with acute bacterial conjunctivitis, for

which various eye drops (Azydop [azithromycin dihydrate] Acuolens [sodium chloride and hypromellose] and Lipolac [topical carbomer]) were prescribed, but not used.

Two hours after discharge from the emergency department, the patient began to experience increased reddening of the eye and progressive edema of both eyelids (Figure 1). The marked worsening of the patient's condition, with involvement of the skin of the eyelids and the appearance of vesicles on an erythematous plaque on the neck, led to a suspicion of contact dermatitis. The patient was told not to use the eye drops that had been prescribed and treatment was started with methylprednisolone aceponate cream, applied once daily for 4 days. The initial conjunctivitis resolved spontaneously, as the eye drops were never applied, and the lesions on the eyelids improved, with complete resolution of the symptoms in 10 days.

Due to the suspicion of contact dermatitis caused by a component of the eye drops used to prepare the patient for ophthalmologic examination in the emergency department, we performed patch tests. The standard batteries of the Spanish Contact Dermatitis and Skin Allergy Research Group (GEIDAC) (Thin-layer Rapid Use Epicutaneous [TRUE] Test, Mekos Laboratories, ApS, Denmark, and additional allergens of Chemotechniques Diagnostics, Sweden), the Martí Tor ophthalmic tray (atropine sulfate 1%, chlorhexidine digluconate 0.5%, disodium edetate 1%, phenylmercuric acetate 0.5%, phenylmercuric nitrate 0.01%, idoxuridine, papain 1%, pilocarpine chloride,



**Figure 1** Edema of the eyelids following the application of eye drops in the emergency department.



**Figure 2** Patch tests. Positive (+++) on day 7 for Colircusi Phenylephrine. It can be seen that the results were negative for the entire standard battery, including thimerosal, and for the other eye drops used.

pindolol 2%, polymyxin B sulfate 3%, propranolol chloride 2%, sodium cromoglycate 2%, benzalkonium chloride 0.1%) (Martí Tor Laboratories, Barcelona, Spain) and the specific substances used in the eye drops that had been applied in the emergency department (Colircusi Atropine 1% [atropine sulfate], Colircusi Anesthetic [nephazoline hydrochloride and tetracaine hydrochloride], Colircusi Tropicamide [benzalkonium chloride and tropicamide], Colircusi Cycloplegic [cyclopentolate and sodium sulfite], and Colircusi Phenylephrine [thimerosal, sodium sulfite, and purified water]) were applied to the patient's upper back using Finn Chambers patches (Tuusula, Finland) and left in place for 48 hours.

Results were read at 72 and 168 hours in accordance with International Contact Dermatitis Research Group (ICDRG) criteria. Tests were positive (+++) on days 3 and 7 for only one of the products that had been administered to the patient— Colircusi Phenylephrine eye drops—and negative for the rest (Figure 2).

Phenylephrine eye drops are used routinely in ophthalmology to produce mydriasis. Although eye drops containing antibiotics are the most common source of sensitization, cases of allergic contact dermatitis of the eyelids have also been reported after the use of phenylephrine.<sup>1-6</sup> The presentation in our patient was similar to that of other cases described in the literature.<sup>1-6</sup> Patients presented with ophthalmologic symptoms that worsened after the administration of mydriatic eye drops for the ophthalmological examination. In 2 of these cases, both in Spain, Colircusi Phenylephrine (excipients: thimerosal, sodium sulfite, and purified water) had been used and phenylephrine was also shown to be the allergen responsible for the dermatitis in these cases.<sup>2,6</sup> The ophthalmic series used for the patch tests in our case does not include phenylephrine, although another of the product's components (thimerosal) is included in the standard battery. Sodium sulfite was ruled out as the probable allergen because it is also present in another of the eye drops that had been administered to the patient (Colircusi Anesthetic). The diagnosis was thus one of exclusion. Thus it was the eye drops administered to the patient that gave us the clue we needed to reach the etiological diagnosis.

Although the majority of cases of allergic contact dermatitis caused by phenylephrine have been due to the use of eye drops, there have been reports of cases in which this active substance has given rise to eczema in other areas. There have also been reports of contact dermatitis on the pinna of the ear due to the use of ear drops,<sup>7</sup> in the anus and on the perineum due to the use of hemorrhoid ointments and creams,<sup>8,9</sup> and a single case on the legs due to the use of an ointment for postthrombotic therapy.<sup>10</sup> It thus appears that any formulation of phenylephrine can produce contact dermatitis in sensitized patients. Our patient, in whom the eye drops had been used in previous

ophthalmologic examinations, had already been sensitized; this explains the rapid progression of the condition when the drops were applied again.

The present case demonstrates that in a patient with ophthalmologic symptoms that worsen with treatment, a probable complication with allergic contact dermatitis caused by one or more of the eye drops used should be considered. In addition, the importance of including the specific products applied to the patient in the patch tests must be stressed because the potential allergens are not always present in the commercially available batteries, as occurred in our case.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

## References

1. Barker K. Allergic contact to phenylephrine. *Contact Dermatitis*. 1983;9:274-7.
2. Camarasa JG. Contact dermatitis to phenylephrine. *Contact Dermatitis*. 1984;10:182.
3. Ducombs G, de Casamayor J, Verin P, Maleville J. Allergic contact dermatitis to phenylephrine. *Contact Dermatitis*. 1986;15:107-8.
4. Tosti A, Bardazzi F, Tosti G, Colombati S. Contact dermatitis to phenylephrine. *Contact Dermatitis*. 1987;17:110-1.
5. Aihara M, Ikezawa Z. Neonatal allergic contact dermatitis. *Contact Dermatitis*. 1988;18:105.
6. Añibarro B, Barranco P, Ojeda JA. Allergic contact blepharoconjunctivitis caused by phenylephrine eye drops. *Contact Dermatitis*. 1991;25:323-4.
7. Bardazzi F, Tardio M, Mariani R, Rapacchiale S, Valenti R. Phenylephrine in eardrops causing contact dermatitis. *Contact Dermatitis*. 1991;24:56.
8. Roed-Petersen J. Contact sensitivity to metaoexadrine. *Contact Dermatitis*. 1976;2:235-6.
9. Wilkinson SM, Kingston TP, Beck MH. Allergic contact dermatitis from phenylephrine in a rectal ointment. *Contact Dermatitis*. 1993;29:100-1.
10. Thomas P, Rueff F, Przybilla B. Allergic contact dermatitis from phenylephrine in a phlebological ointment. *Contact Dermatitis*. 1995;32:249-50.

V. Monsálvez,\* L. Fuertes, I. García-Cano, F. Vanaclocha, and J. Ortiz de Frutos

*Servicio de Dermatología, Hospital Universitario 12 de Octubre, Madrid, Spain*

\*Corresponding author.

*E-mail address:* [monsalvezhonrubia@hotmail.com](mailto:monsalvezhonrubia@hotmail.com) (V. Monsálvez).