

Erythema multiforme-like contact dermatitis from primin

Domenico Bonamonte¹, Raffaele Filotico¹, Valentina Mastrandrea¹, Caterina Foti¹ Gianni Angelini¹

¹ Unit of Dermatology, Department of Internal Medicine, Immunology and Infectious Diseases, University of Bari, Bari, Italy

Correspondence to Caterina Foti
Unit of Dermatology
Department of Internal Medicine
Immunology and Infectious Diseases
University of Bari
Bari
Italy
e-mail: c.foti@dermatologia.uniba.it

Copyright © Blackwell Munksgaard 2008

KEYWORDS

contact allergy • erythema multiforme-like contact dermatitis • primin • primula contact dermatitis • Primula obconica

ABSTRACT

No Abstract

Received: 11 April 2008; Accepted: 18 August 2008;

DIGITAL OBJECT IDENTIFIER (DOI)

10.1111/j.1600-0536.2008.01369.x [About DOI](#)

Article Text

We report a case of occupational contact dermatitis (CD) manifesting as an erythema multiforme-like eruption caused by contact with *Primula obconica*.

Case Report

A 35-year-old female working in a plant nursery presented with a 5-day history of itchy, eczematous

lesions on her hands, followed by an erythematopapular polymorphous rash tending to confluence on her forearms and face ([Fig. 1](#)). Upon questioning, the patient reported that in the previous days, she had been tending *Primula obconica*. She had handled these plants in previous years during spring without any problems.

She was patch tested to the Italian Society of Allergological Occupational and Environmental Dermatology (SIDAPA) baseline series of contact allergens, including primin 0.01% in pet. (FIRMA, Florence, Italy) and ether extracts of the leaves and flowers of *P. obconica*. Patch tests were applied in Finn Chambers[®] (Epitest Ltd Oy, Tuusula, Finland) and fixed with Scanpor tape[®] (Norgesplaster A/S, Oslo, Norway) for 2 D. Readings were made at D2 and D4. She developed a ++ reaction (homogeneous redness, infiltration, and vesicles) to primin, the leaves, and flowers of the plant. The reaction to primin extended beyond the site of application of the test and had an erythema multiforme-like appearance.

Histology of an affected area on the volar aspect of a forearm showed foci of hyperkeratotic orthokeratosis, mild spongiosis, exocytosis, and a few isolated necrotic keratinocytes; at the level of the superficial and mid dermis, a largely perivascular lymphocytic infiltrate was present ([Fig. 2](#)).

Treatment with topical corticosteroids, systemic antihistamines, and temporary absence from work resulted in remission of the clinical picture after 7 D. Other possible causes of erythema multiforme-like reactions were excluded.

Discussion

Recently, Zachariae et al. stated that 'the frequency of contact allergy to primin has decreased significantly after 2000. The decline is seen in all age groups and can be due to a decreased production of *P. obconica* and an introduction of the genetic-modified primin-free variant'[\(1\)](#). These authors had observed a statistically significant reduction in the number of positive patch test reactions, from 1.7% of patients tested between 1985–1989 to 0.5% between 2000 and 2004 [\(1\)](#). Also in Denmark, a marked reduction in cases of contact allergy to primin was observed in the UK in 1995–2002 [\(2\)](#).

Contact allergy to primin has always been rare in Italy; the substance has never been included in the baseline patch test series [\(3, 4\)](#). In our clinic, we have seen five cases, all occupational, since 1980, of about 200 patients tested with primin on the basis of their clinical history. Of these five cases, four were men with CD of the hands with a typical linear erythematovesiculobullous eruption.

The notable historical difference in the prevalence of primula CD between Northern and Southern Europe illustrates how customs can affect the spread of an allergen. The higher frequency of sensitization to primin reported in Northern Europe is because primulas are more commonly cultivated and bought there [\(5–13\)](#). In Italy, traditionally, there has been little market for *P. obconica* but the plants are imported and not grown.

Due to genetic modifications, primin-free *P. obconica* has been available on the market since 2000 (14), resulting in a decline in contact sensitization in Northern Europe in more recent years (1, 2). Primin-free plants have been sold in Italy since 2007; some plants now carry a 'Touch Me[®]' label, although this states that complete protection is not guaranteed against possible allergic reactions.

The clinical features of primula dermatitis are variable. The typical pattern consists of linear streaks of erythema, vesicles, and bullae. Various authors have reported an eruption resembling erythema multiforme (3, 4, 15), like the one presented here. The differential clinicohistopathological features of true erythema multiforme and erythema multiforme-like contact reactions are shown in Table 1(16, 17).

Table 1. Clinicohistopathological differential diagnosis between EMLCD and TEM

Clinical signs	EMLCD	TEM
Primary CD focus	Present	Absent
Onset of lesions	Simultaneous	Subsequent
Number of lesions	Generally numerous	Generally few
Confluence of lesions	Rapid	Slow
Target lesions	Generally not exudative	Occasionally exudative
Acral area	Rarely involved	Involved
Mucosal involvement	Absent	Possible
Fever	Absent	Possible
Course	Cause dependent	Spontaneous
Patch testing	Positive	Negative
Spongiosis	++	-/+
Exocytosis	++	+
Keratinocyte necrosis	+	+++
Bullae	Intraepidermal	Subepidermal
Vacuolization of epidermal basal layer	+	+++
Dermal infiltrate	++	++

CD, contact dermatitis; EMLCD, erythema multiforme-like contact dermatitis; TEM, true erythema multiforme.

References

- 1. Zachariae C, Engkilde K, Johansen JD, Menné T. Primin in the European standard patch test series for 20 years. *Contact Dermatitis* 2007; 56: 344–346. [Links](#)
- 2. Connolly M, Mc Cune J, Dauncey E, Lovell CR. Primula obconica– is contact allergy on the decline? *Contact Dermatitis* 2004; 51: 167–171. [Links](#)
- 3. Virgili A, Corazza M. Unusual primin dermatitis. *Contact Dermatitis* 1991; 24: 63–64. [Links](#)
- 4. Gallo R, Sorbara S, Rongioletti F. Contact erythema multiforme from Primula obconica. *Contact Dermatitis* 2005; 53: 351–352. [Links](#)
- 5. Ferguson J. Primula obconica. *BMJ* 1890; 2: 955. [Links](#)
- 6. Rook A, Wilson H T H. Primula dermatitis. *BMJ* 1965; i: 220–222. [Links](#)
- 7. Hjorth N. Primula dermatitis. Sources of errors in patch testing and patch test sensitization. *Trans St Johns Hosp Dermatol Soc* 1966; 52: 207–219. [Links](#)
- 8. Hjorth N. Primula dermatitis. In: *Botanical Dermatology*, Mitchell J C, Rook A R (eds): Vancouver, Greengross, 1979: 554–565.
- 9. Schubert H J, Prater E, Sell M. Patch testing with primin in white petrolatum. *Contact Dermatitis* 1985; 13: 286. [Links](#)
- 10. Van Ketel W G, Bruynzell D P. Contact dermatitis due to plants in Amsterdam. *Bollettino di Dermatologia Allergologica e Professionale* 1987; 1: 132–138. [Links](#)
- 11. Logan R A, White I R. Primula dermatitis: prevalence, detection and outcome. *Contact Dermatitis* 1988; 19: 68–69. [Links](#)
- 12. Dooms-Goossens A, Biesmans C, Vandaele M, Degreef H. Primula dermatitis: more than one allergen? *Contact Dermatitis* 1989; 21: 122–124. [Links](#)
- 13. Ingber A, Menné T. Primin standard patch testing: 5 years experience. *Contact Dermatitis* 1990; 23: 15–19. [Links](#)
- 14. Christensen L P, Larsen E. Primin-free Primula obconica plants available. *Contact Dermatitis* 2000; 43: 45–46. [Links](#)
- 15. Lengrand F, Tellart A S, Segard M, Dejobert Y, Thomas P. Erythema multiforme-like eruption; an unusual presentation of primula contact allergy. *Contact Dermatitis* 2001; 44: 45–46. [Links](#)
- 16. Foti C. Dermatite allergica da contatto non eczematosa. In: *Dermatologia professionale e ambientale*, Vol. II, Angelini G, Vena G A (eds): Brescia, ISED, 1999: 545–556.
- 17. Goh C L. Non-eczematous contact reactions. In: *Textbook of Contact Dermatitis*, 3rd edition, Rycroft R J G, Menné T, Frosch P J, Lepoittevin J-P (eds): Berlin: Springer-Verlag, 2001: 413–431