

Table 1 Differential Diagnosis of Dyshidrosiform Eruptions.

Infantile acropustulosis	Fixed drug eruption
Adult T-cell lymphoma	Friction blisters
Bullous impetigo	Pemphigus vulgaris
Dyshidrosiform pemphigoid	Polymorphic eruption of pregnancy
Linear immunoglobulin A dermatosis	Pustular psoriasis
Epidermolysis bullosa	SAPHO (Synovitis, Acne, Pustulosis, Hyperostosis, Osteitis) syndrome
Erythema multiforme	Scabies
Hand-foot-mouth syndrome	Subcorneal pustular dermatosis
Herpes infection	Small vessel vasculitis

Adapted from Wollina,¹ 2010.

This clinical form was first described in 1988 by Barth and coworkers,⁷ who reported 3 cases. Another case was later described by Duhra and colleagues.⁸ All 4 cases featured palmar involvement. Dyshidrosiform linear IgA dermatosis can be induced by drugs, most commonly vancomycin.^{2,9,10} While no association between fosfomycin and linear IgA dermatosis has been described, we cannot rule out the possibility that fosfomycin acted as a trigger in the present case. Treatment involves the administration of dapsone, together with corticosteroids in refractory cases.⁴

We have presented this case so that linear IgA dermatosis can be included within the broad differential diagnosis of dyshidrosiform eruptions (Table 1).¹

References

1. Wollina U. Pompholyx: A review of clinical features, differential diagnosis, and management. *Am J Clin Dermatol*. 2010;11:305–14.
2. Montagnac R, Reguiai Z, Méhaut S, Bressieux JM, Schillinger F. Drug induced linear IgA bullous dermatosis. *Nephrologie*. 2003;24:287–92.

3. Chorzelski TP, Jablonska S. Diagnostic significance of the immunofluorescent pattern in dermatitis herpetiformis. *Int J Dermatol*. 1975;14:429–36.
4. Ingen-Housz-Oro S, Bernard P, Bedane C, Prost C, Joly P. Centres de référence des maladies bulleuses auto-immunes. Société Française de Dermatologie. Linear IgA dermatosis. Guidelines for the diagnosis and treatment. *Ann Dermatol Venerol*. 2011;138:267–70.
5. Campos-Domínguez M, Suárez-Fernández R, Lázaro-Ochaita P. Métodos diagnósticos en las enfermedades ampollas subepidérmicas autoinmunes. *Actas Dermosifiliogr*. 2006;97:485–502.
6. Mihályi L, Kiss M, Dobozy A, Kemény L, Husz S. Clinical relevance of autoantibodies in patients with autoimmune bullous dermatosis. *Clin Dev Immunol*. 2012;2012:369546.
7. Barth JH, Venning VA, Wojnarowska F. Palmo-plantar involvement in auto-immune blistering disorders-pemphigoid, linear IgA disease and herpes gestationis. *Clin Exp Dermatol*. 1988;13:85–6.
8. Duhra P, Charles-Holmes R. Linear IgA disease with haemorrhagic pompholyx and dapsone-induced neutropenia. *Br J Dermatol*. 1991;125:172–4.
9. Nousari HC, Kimyai-Asadi A, Caeiro JP, Anhalt GJ. Clinical, demographic, and immunohistologic features of vancomycin-induced linear IgA bullous disease of the skin. Report of 2 cases and review of the literature. *Medicine (Baltimore)*. 1999;78:1–8.
10. Fortuna G, Salas-Alanis JC, Guidetti E, Marinkovich MP. A critical reappraisal of the current data on drug-induced linear immunoglobulin A bullous dermatosis: A real and separate nosological entity. *J Am Acad Dermatol*. 2012;66:988–94.

H.A. Borja-Consigliere,^{a,*} N. Ormaechea-Pérez,^a
C. Lobo-Morán,^b A. Tuneu-Valls^a

^a Sección de Dermatología, Hospital Universitario Donostia, San Sebastián, Spain

^b Servicio de Anatomía Patológica, Hospital Universitario Donostia, San Sebastián, Spain

* Corresponding author.

E-mail addresses: hborja@uc.cl, hernanborja@hotmail.com (H.A. Borja-Consigliere).

Allergic contact dermatitis due to acrylates in acrylic gel nails: a report of 3 cases[☆]

Dermatitis alérgica de contacto a acrilatos por uñas artificiales acrílicas: estudio de 3 casos

To the Editor:

Acrylates in artificial nails are a well-known cause of allergic contact dermatitis (ACD).¹ The recent emergence of photo-

bonded acrylic gel nails has resulted in a growing number of cases of ACD in both manicurists and clients.² As the number of beauty salons offering these new type of nails in Spain is increasing, we might soon see an increase in the incidence of ACD due to acrylates. We describe the case of 3 women, 2 manicurists and a client, with ACD induced by acrylic gel nails. The clinical presentation was different for each patient. Interestingly, 1 of the manicurists experienced an airborne reaction to nail sanding dust.

The epidemiological data, clinical manifestations, and patch test results are summarized in Table 1.

Patch tests were performed according to the International Contact Dermatitis Research Group criteria using the Spanish baseline series (T.R.U.E. TEST and allergEAZE) and an extended series of acrylates (Chemotechnique Diagnostics AB). Positive reactions were observed for 2-hydroxyethyl methacrylate (2-HEMA) and ethylene glycol dimethacrylate

[☆] Please cite this article: Vázquez-Osorio I, Espasandín-Arias M, García-Gavín J, Fernández-Redondo V. Allergic contact dermatitis due to acrylates in acrylic gel nails: a report of 3 cases. *Actas Dermosifiliogr* 2014;105:430–432.

Table 1 Epidemiological data, clinical presentation and patch test results.

Epidemiological data				Clinical presentation	Time ^a	Positive patch test results	
Case	Age, y	Sex	Manicurist or client			Baseline series	Acrylate series
1	27	F	Manicurist	Fingertip dermatitis Nail dystrophy Periungual hyperkeratosis	1–2 wk	Nickel sulfate 5% pet	2-HEA 0.1% pet (++) 2-HEMA 2% pet (++) EGDMA 2% pet (++)
2	52	F	Manicurist	Airborne dermatitis (cheeks, eyelids, forehead and temple area) Fingertip dermatitis	2 wk	–	2-HEMA 2% pet (++) EGDMA 2% pet (++)
3	59	F	Client	Fingertip dermatitis	4–6 wk	–	2-HEMA 2% pet (++) EGDMA 2% pet (++)

Abbreviations: 2-HEA, 2-hydroxyethyl acrylate; 2-HEMA, 2-hydroxyethyl methacrylate; EGDMA, ethylene glycol dimethacrylate; F, female; pet, petrolatum.

^a Time between first contact with gel nails and onset of dermatitis.

(EGDMA) in all 3 patients and for 2-hydroxyethyl acrylate (2-HEA) and nickel in the client. The manicurists' symptoms improved in a few weeks after avoiding contact with the nail gel. The dermatitis on the fingertips of the client resolved following removal of the artificial nails, although nail dystrophy persisted for several months.

ACD due to acrylates in artificial nails was first described in 1956 by Canizares,³ who reported a case of eczema due to acrylic materials present in artificial nails on the left hand of a manicurist. Since then, many other cases have been reported. In Spain, Roche et al.,⁴ in an observational, retrospective study of patients with ACD due to acrylates used in sculptured artificial nails, concluded that acrylate monomers were important sensitizers for contact and occupational dermatitis.

Artificial nails can contain many kinds of acrylic monomers,² but most cases of ACD are induced by 2-HEMA, 2-hydroxypropyl methacrylate (2-HPMA), and EGDMA.¹ Both manicurists and clients can be affected.^{5,6} Patients present a wide variety of symptoms, such as hand eczema (the most common symptom), nail changes, paraesthesia, and airborne dermatitis.⁷

Photobonded acrylic gel nails are the latest trend in artificial nails and need weak exposure to UV radiation to polymerize.² In 1990, Fisher⁸ presented a case of a woman with paraesthesia and nail dystrophy secondary to sculptured acrylic nails. Acrylic gel nails were recently introduced in Spain, and as they are quite affordable, it is possible that we will see many new cases in the coming years. Most patients usually present with fingertip and/or nailfold dermatitis but other manifestations include facial dermatitis and paraesthesia.² Acrylic gel nails contain similar acrylate compounds to those found in other artificial nails, with 2-HEMA and EGDMA being the most common.² Our 3 patients had all been in contact with gel nails before they developed ACD.

Our 3 case reports illustrate that exposure to acrylates in gel nails can induce a wide variety of clinical manifesta-

tions in both manicurists and clients. These manifestations include nail dystrophy and airborne dermatitis caused by nail dust. Moreover, acrylates may be present in other common materials such as dental materials or orthopedic prostheses,⁹ so previously sensitized patients may experience allergic reactions—and even cross-reactions with other acrylic monomers—after re-exposure.¹ Individuals with ACD to acrylates in artificial nails can safely use silk wrap nails providing they are not allergic to ethyl cyanoacrylate,^{1,2} which is present in all nail glues. Furthermore, in cases of occupational ACD, manicurists who decide to continue working with these nails should wear a mask and 4H gloves, which are safer than others as the penetration time for acrylates is over 4 h.¹⁰

Finally, it is important to alert both manicurists and wearers of artificial nails about the sensitizing potential of acrylates to facilitate the adoption of preventive measures.

References

1. Lazarov A. Sensitization to acrylates is a common adverse reaction to artificial fingernails. *J Eur Acad Dermatol Venereol*. 2007;21:169–74.
2. Constandt L, Hecke EV, Naeyaert JM, Goossens A. Screening for contact allergy to artificial nails. *Contact Dermatitis*. 2005;52:73–7.
3. Canizares O. Contact dermatitis due to the acrylic materials used in artificial nails. *Arch Dermatol*. 1956;74:141–3.
4. Roche E, de la Cuadra J, Alegre V. Sensitization to acrylates caused by artificial acrylic nails: review of 15 cases. *Actas Dermosifiliogr*. 2008;99:788–94.
5. Ramos L, Cabral R, Gonçalo M. Allergic contact dermatitis to acrylates—a 6 year study. Proceedings of the 11th Congress of the European Society of Contact Dermatitis; 2012 June 13–16; Malmö; Sweden. *Contact Dermatitis*. 2012;66:45–6.
6. Laguna C, de la Cuadra J, Martín-González B, Zaragoza V, Martínez-Casimiro L, Alegre V. Allergic contact dermatitis to cosmetics. *Actas Dermosifiliogr*. 2009;100:53–60.

7. Freeman S, Lee MS, Gudmundsen K. Adverse contact reactions to sculptured acrylic nails: 4 case reports and a literature review. *Contact Dermatitis*. 1995;33:381–5.
8. Fisher AA. Adverse nail reactions and paresthesia from “photobonded acrylate sculptured nails”. *Cutis*. 1990;45:293–4.
9. Sidhu SK, Shaw S. Allergic contact dermatitis to acrylates in disposable blue diathermy pads. *Ann R Coll Surg England*. 1999;81:187–90.
10. Conde-Salazar L, Díaz-Martínez B, Valks R, Gatica ME. Dermatitis alérgica de contacto profesional por uñas artificiales. *Piel*. 2004;19:261–4.

I. Vázquez-Osorio,^{a,*} M. Espasandín-Arias,^a J. García-Gavín,^b V. Fernández-Redondo^a

^a *Servicio de Dermatología, Complejo Hospitalario Universitario, Santiago de Compostela, A Coruña, Spain*

^b *Servicio de Dermatología, Complejo Hospitalario Universitario, Vigo, Pontevedra, Spain*

* Corresponding author.

E-mail address: rogivaos@gmail.com

(I. Vázquez-Osorio).