

Dear Editor

Fingertip Dermatitis: Occupational Acrylate Cross Reaction

Allergic contact dermatitis due to acrylates present in the workplace is a disease frequently reported among dentists, printers, and fiberglass workers.¹ Recently, the number of cases of contact allergic dermatitis among beauticians specialized in sculpting artificial nails has increased.

The use of sculptured nails (also called acrylic or porcelain nails) is becoming increasingly popular in beauty treatment centers, and they are also available in kits for do-it-yourself applications at home. In recent years we have witnessed an increase in the incidence of allergic contact dermatitis (ACD) caused by the acrylic products used in artificial nails. ACD mostly affects the professional beauticians who handle the product, but can also be observed in end users.²

A 35-year-old woman, economist and manicurist for hobby for 4 years, presented with severe fingertip dermatitis and nail plate dystrophy (Fig. 1A, B). Eighteen months previously, she had had hair extensions and developed a transient pruritic rash on her arms that cleared after removing the hair extensions.

Acrylate adhesive is used to attach hair extensions and may have been applied in this case. A year previously, she began to work with sculptured acrylic nails and shortly thereafter developed severe vesicular dermatitis on her hands and fingers. About two years, the patient also relates to practice decoupage and use acrylic glue.

She stopped working with artificial nails because contact with nail-sculpturing materials was suspected as the cause of her dermatitis. A few months later, she applied artificial nails on herself and a day later developed severe fingertip dermatitis, which was present on clinical examination, together with nail plate dystrophy.

Patch testing was performed with a European baseline series (TRUE test panels 1 and 2) supplemented with pet.-based selected allergens from a series of adhesive and acrylate chemicals F.I.R.M.A. (Benzoyl peroxide 1%, Methyl methacrylate 2%, Hydroxyethyl methacrylate 2-HEMA 2%, Tripropylene glycol diacrylate 0.1%, Trimethylolpropane triacrylate 0.1%, Urethane diacrylate 0.1%, Urethane diacrylate 0.05%, Ethyl cyanoacrylate [ECA] 10%, Hydroquinone 1%) applied in Finn Chambers on Scanpor tape and read according to the International Contact Dermatitis Research Group scoring scale at D3 and D7.

A TRUE patch test was positive to nickel sulphate (D3+++; D7+) and cobalt (D3+, D7++).

Special series for acrylate chemicals F.I.R.M.A. was positive for ethylcyanoacrylate (ECA) 10% (D3+, D7++).

Allergic reactions to sculptured nails can appear within months or years after use by both professional users and end users, because contact with these substances is in both cases protract in time. Symptoms of sensitization to acrylates in professional beauticians—generally women—consist of subacute or chronic eczema located on the pads of the fingers that come into direct contact with the acrylic resin.³ Typically the fingertip of the first, second, and third finger of both hands are affected—the nondominant hand from holding the client's nail, and the dominant hand from holding the brush. Lesions also frequently occur on the sides of the hands where these rest on work surfaces is likely to carry monomer residues. Typical symptoms are pruritus, fingertip dermatitis and pain once fissures develop. Eczematous lesions frequently occur away from the site of contact as the result of transportation of residues of either the glue monomer or the powder polymer (which can also contain the monomer) from the hands to more distant areas of skin. Symptoms in end users differ from those in professional users. The first sign is itchiness at the nail base, with paronychia, painful nails, and, occasionally, paresthesia subsequently developing. The nail base often becomes dry and thickened, and

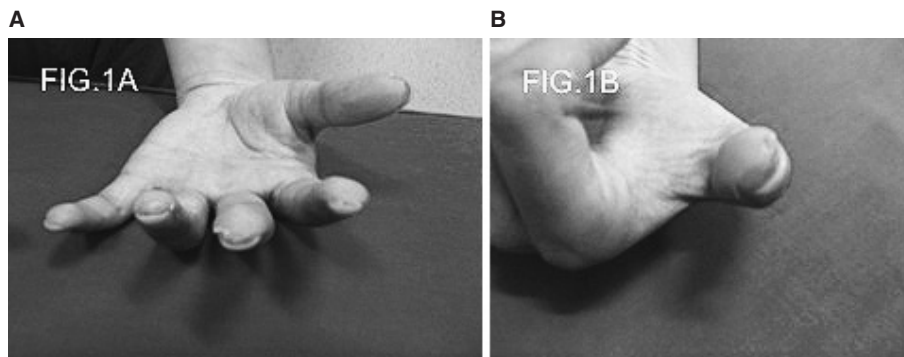


Fig. 1 A, B: Severe fingertip dermatitis and nail plate dystrophy.

onycholysis is frequent. The nail plate may show evidence of thinning, splitting, and discoloration. Once the cause has been eliminated, the nail takes months to recover, although permanent nail loss and intractable prolonged paresthesia are exceptional.⁴

The number of dermatology consultations for contact dermatitis caused by acrylate sensitization is increasing and this has important repercussions for both treatment and work.

Careful history is crucial to diagnose, as symptoms may be due to the direct action of acrylates, is a cross reaction between the acrylate monomers or polymers, as in the case of our patient.

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