

Permanent Loss of Finger Nails from Sensitization and Reaction to Acrylic in a Preparation Designed to Make Artificial Nails

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Six years ago a patient suffered a severe allergic reaction from Sensitization to methyl methacrylate in a mixture of materials designed to make artificial nails. There was marked erythema, edema, and pain of the eponychial and paronychia tissues with persistent paresthesia of the finger tips. Gradual destruction of the nail plates developed and since no regrowth of the nails resumed in six years, the loss of the finger nails is found to be permanent.

GIBBS AND LEIDER recently tabulated and illustrated several nail changes due to various causes.¹ Under "eczematous conditions," the authors state: "Contact dermatitis from primary irritants and from allergic mechanisms, nummular eczema, and secondarily eczematized conditions in, under and around the nails cause transient distortion of nail plates."^{2,3} This is true, but it must be noted that occasionally an allergic contact reaction under and around nails produces prolonged distortion of nail plates,^{2,3} and on at least one occasion, here reported, caused permanent anonychia.

CASE REPORT

In 1973, a 40-year-old woman, whom I saw in consultation years later, had purchased a nail preparation consisting of a kit containing liquid methyl methacrylate monomer and powdered methyl methacrylate polymer, which when mixed according to the instructions provided with the package, form a paste that, applied to nails, hardens to clear plastic coats that resemble natural nails. The

patient followed these instructions and so treated her finger nails, which were short, but otherwise normal. A few days after the patient had applied the acrylic mixture properly, swelling, redness, severe pain, and paresthesia of all ten fingers developed in the eponychial and paronychia areas. She was seen by several physicians who established the fact of sensitivity by a patch test with 5% methyl methacrylate monomer in olive oil, which resulted in a strongly positive reaction within 48 hours. Topical treatment prescribed was not effective.

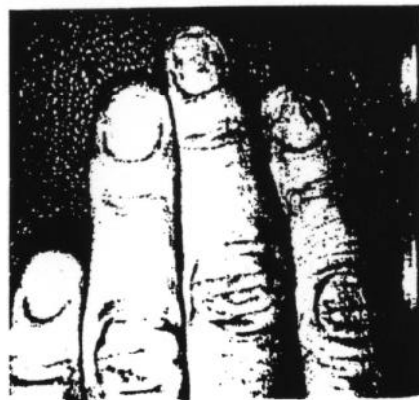


FIGURE 1 Loss of finger nails after an allergic reaction to an acrylic nail preparation

Three years later, in 1976, the patient sought attention again because none of her finger nails had regrown, the paronychia areas continued to be swollen and tender, and the paresthesia persisted although she had not used the material she was sensitive to ever again. A patch test with 5% methyl methacrylate monomer in olive oil still produced a markedly positive allergic reaction.

A recent examination in June 1979 revealed that the patient's finger nails were still gone and that the nail beds were exposed and keratinized (Fig. 1). Also, there was still some edema of the paronychia tissues, and marked tenderness of the tips of the fingers and the uncovered nail beds. The patient continued to complain of persistent paresthesia of the finger tips in the form of burning, tingling, and "pins and needles" sensations in the distal portions of the fingers.

COMMENT

In my book, I made note of paresthesia of the finger tips in surgeons who became sensitized to methyl methacrylate monomer from handling acrylic bone cement in operations of fashioning artificial hip joints.⁴ Mathias et al. reported the case of a laboratory technician who developed allergic contact dermatitis from hydroxyethylmethacrylate and suffered persistent paresthesia of the finger tips.⁵

The loss of the nails from sensitization to acrylics is accompanied not only by pain, tenderness, and paresthesia of the finger tips, but patients so afflicted find it difficult to pick up small objects such as coins and needles, and to open or close catches on jewelry and garments. In the case herein reported, the patient was severely handicapped in her ordinary daily activities. The slightest trauma or handling of common, everyday objects caused her aggravated pain and increased paresthesia in her fingers. The failure of regrowth of her nail plates in six years makes it likely that the anonychia will be permanent. It is probable that the matrices of the nails were irretrievably damaged. A search of the literature reveals no reported instance of permanent anonychia of all finger nails from an allergic reaction to a chemical.

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