

Allergic contact dermatitis to natural resin rare among gum rosin extractors?

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Colophonium is the resin obtained from coniferous trees. Depending on the method of extraction, three types can be obtained: (a) gum rosin, which is the sap tapped from living pine trees in Portugal, China, and in South American countries; (b) wood rosin, which is produced from old pine stumps, and (c) tall-oil rosin, which is more liquid and a by-product of the pulp industry (1, 2, 3).

Despite the significant resin production (83 395 700 tons in 2009–10), no references to allergic contact dermatitis to rosin (colophonium) among gum rosin extractors have been found in Brazil or in any other country where

it is extracted. Modified commercial resins are more allergenic than natural rosin (2).

Case Story

A 30-year-old female rosin extractor presented with a 10-month history of eczematous lesions on the back of her hands, forearms, neck, face, and legs. She considered the problem to be caused by her work and there was improvement when she later left the job. No personal protection equipment was used.

She was patch tested to the Brazilian baseline series (FDA-Allergenic Rio de Janeiro-Brazil) and the extracted resin *as is*, and diluted in 2%, 5% and 10% in petrolatum in Finn Chambers® (Epitest Ltd Oy, Tuusula, Finland) on Scanpor® tape (Actavis Norway AS). Readings were performed on D2 and D4 and the results on D4 were: 2+ to resin *as is*, 2%, 5% and 10% in pet., 1+ to colophonium, fragrance mix 1, turpentine peroxides, epoxy resin, thimerosal, p-phenylenediamine, nickel, and hydroquinone. Patch tests to the resin in 2%, 5% and 10% in petrolatum were done in 11 controls, with negative results, except in one who was also positive to colophonium.

Discussion

Patients with positive reactions to colophonium often also react to *Myroxylon pereirae* and fragrance mix. Other cross reactions described are oil of turpentine, wood tar, pine resin, spruce resin, and tea tree oil (1,2).

Resin acids accounts for 90% of gum rosin and the remaining 10% are neutral matter.

The resin acids are mainly abietic acid and its isomers, neoabietic acid, palustric acid, and levopimaric acid (1, 2).

Although purified abietic acid is non-allergenic, abietic and dehydroabietic acids, found in 30% to 50% of the rosin, have been linked to allergy (1, 2). The main allergenic components in unmodified colophonium are oxidized resin acids formed by air exposure such as 15-hydroperoxyabietic acid and the oxidation products of dehydroabietic acid (1).

Although modified commercial resins are more allergenic than natural rosin, the magnitude of this difference remains unknown (2).

As mentioned above, no references to allergic contact dermatitis to natural rosin, especially among gum rosin extractors, were found in Brazil, where no protective equipment is used (3), or

in any other part of the world. Does this mean such cases are rare? We believe that at least in Brazil they are not reported or not even diagnosed because of the unavailability of patch testing.

References

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