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Contact dermatitis to compound tincture of benzoin applied under occlusion

Sir,

Tincture benzoin is a relic of a bygone era of dermatology. Relics, however, are not always obsolete. Natural benzoin is still used in tinctures as a solvent for drugs, for example, tincture podophyllin.^[1] Tincture benzoin continues to be used to provide tackiness for enhancing the adhesive property of tape and as a solvent in tincture podophyllin, used in the treatment of venereal warts.

Fissures of the feet are a common condition.^[2] To study the effect of micropore tape occlusion in this condition, we applied the tape overnight over the fissures in 26 patients and removed it the next day. Tincture benzoin was applied prior to application of the tape to increase the tackiness. After initial improvement, two patients complained of a burning sensation of the sole (corresponding to the site of occlusion) with aggravation of the fissures in the third week, and dermatitis extending to the skin around the ankle. Micropore tape occlusion and tincture benzoin application were stopped and both patients were treated with topical clobetasol propionate for 7–10 days. After the acute phase of inflammation characterized by burning sensation and erythema had resolved, they were patch-tested with compound tincture benzoin “as is” and control with white petroleum using Finn chambers (supplied by Systopic Lab, New Delhi). The results were interpreted as recommended by the ICDRG. Both patients developed erythema, papules, and vesicles (++) to tincture benzoin at 48 and 96 hours. To rule out the possibility

of an irritant reaction, these patch tests were subsequently performed in 10 normal volunteers. One developed erythema, papules, and vesicles (++) after 48 hours, whereas the others had a negative result.

Benzoin is a balsamic resin obtained from *Styrax benzoin* Dryander and other species of *Styrax* (*Faro. styraceae*). The chief constituents of benzoin are resin, benzoin, and cinnamic acids and their esters. In Sumatra benzoin, cinnamic acid predominates, but in Siam benzoin, benzoic acid is more abundant. In addition to esters of cinnamic acid, traces of vanillin, benzaldehyde, styrol, and styracin are also present. Several cases of contact dermatitis to tincture benzoin have been reported.^[3,4] Cross-reaction to similar allergens (fragrance mix, balsam of Peru, colophony, and tea-tree oil) have also been reported in patients with contact dermatitis to tincture benzoin.^[3]

Tincture podophyllin is used in the treatment of venereal warts. Cell-mediated immunity appears to be the principal mechanism for the rejection of warts.^[5] We hypothesize that the resolution of the warts following podophyllin application could be attributed to both the action of podophyllin and the inflammation resulting from contact dermatitis. Patients complaining of burning and irritation following the use of tincture podophyllin may be patch-tested with tincture benzoin. Wherever adhesion is required, gum mastic obtained from the Mastic tree is an alternative with superior adhesive qualities and a lower incidence of complications.^[6] However, it is not commercially available.

To conclude, tincture benzoin is a safe, natural substance to increase tackiness; however, it can rarely cause allergic contact dermatitis.

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