

Key words: allergic contact dermatitis; colophony; compress; hydrogenated rosin glycerol ester; ketoprofen; menthol; photoallergic contact dermatitis; rosin.

Case Report

A 14-year-old Japanese man playing baseball almost everyday visited us with a rectangular-shaped severe painful bullous and erythematous macular lesion on the left wrist, after using compresses, Mohrus Tape® (Hisamitsu Pharmaceutical Co. Inc., Tosu, Japan) for 7 days. The compress contains ketoprofen, menthol, and hydrogenated rosin glycerol ester. The patient had no personal or familial history of atopic dermatitis. He had not previously used any other topical ointment or cream including ketoprofen. He had no personal history of contact dermatitis due to adhesives, tapes, and powder for ballplayers.

The manufacturers provided us with all the ingredients prepared with the same concentration in the compress. The patch and photopatch testing was done as reported previously (1) with irradiation to one side with 4 J/cm² of broadband ultraviolet A, with readings at D1, D2, and D3 after irradiation. Reactions are shown in Table 1.

Discussion

The patient showed concomitant development of photoallergic contact dermatitis from ketoprofen and allergic contact dermatitis from menthol and rosin (colophony) in the compress. As compress is directly applied to skin, ingredients can continuously penetrate. Cases of allergic sensitization to constituents in compresses have been reported previously (2, 3).

Concomitant development of photoallergic contact dermatitis from ketoprofen and allergic contact dermatitis from menthol and rosin (colophony) in a compress

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Table 1. Results of patch and photopatch testing

	% Vehicle	Patch test			Photopatch test		
		D2	D3	D4	D1	D2	D3
Ketoprofen	2% pet.	—	—	—	++	++	++
Menthol	pet. ^a	+	+	+	+	+	+
Hydrogenated rosin glycerol ester	pet. ^b	++	++	++	++	++	++
Other ingredients		—	—	—	—	—	—
pet.	As is	—	—	—	—	—	—

Patch testing was done with the same concentration contained in Mohrus Tape®.

^aThe concentration of menthol in Mohrus Tape® was more than 2%.

^bThe concentration of hydrogenated rosin glycerol ester in Mohrus Tape® was less than 20%.

Ketoprofen is a non-steroidal, anti-inflammatory drug derived from propionic acid. In Japan, compress containing ketoprofen is commonly used for topical treatment. Photoallergic contact dermatitis from ketoprofen is not rare.

Menthol, a cyclic terpene alcohol and main component of peppermint oil, is used in medicaments, cosmetics, and confectionaries as a cooling agent. Allergic sensitization to it is rare. Cases with allergic sensitization from mentholated cigarettes and toothpaste flavours have been reported. The patch test concentration and vehicle is recommended as 1%–2% pet. (4). The concentration of menthol in Mohrus Tape[®] should be changed from more than 2% to less than 1% to reduce the possibility of developing contact sensitization.

Hydrogenated rosin glycerol ester, a tackifying agent, may contain unmodified rosin to which the sensitized individuals may react. Cases of allergic contact dermatitis from hydrocolloid dressings containing residual rosins have been reported previously (5). We speculate that our patient reacted to the unmodified rosin.

References

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