

Allergic contact dermatitis caused by topical propranolol in a 5-month-old baby

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Oral propranolol has been shown to be effective for the treatment of the deep and superficial components of haemangiomas (1). Topical 1% propranolol ointment and other β -blockers, such as timolol, have also been shown to be effective for the treatment of superficial haemangiomas (2, 3). We report here a case of allergic contact dermatitis caused by propranolol hydrochloride topically applied for the treatment of a superficial haemangioma.

Case Report

A 5-month-old girl presented with a superficial haemangioma of the right hand (Fig. 1a). Topical propranolol 1% (lipid cream base) was applied twice daily. One month later, the haemangioma was less red. Two months later, the parents reported worsening of the haemangioma associated with pruritus. On examination, scaling was evident on the haemangioma, and, at its periphery, there were vesicles and scratch marks (Fig. 1b).

We immediately stopped the application of propranolol, and prescribed daily application of corticosteroids.

One month after the complete resolution of dermatitis, the patient was patch tested with propranolol 1% pet., propranolol 1% aq., and timolol 0.5% aq. Patch tests were applied on the back, and left in occlusion for 2 days with the AI test (Euromedical®, Calolziocorte, LC, Italy) on Scanpor® tape (Norgesplaster A/S, Vennesla, Norway). The test readings were performed after 48 and 96 hr (D2 and D4). The reactions were classified according to ICDRG guidelines. Readings showed positive reactions (++) only to propranolol 1% pet. and propranolol 1% aq. (Fig. 1c). Ten healthy volunteers were patch tested with the same substances, and the results were negative.

Discussion

Since 2008, propranolol (1) and timolol (3) have been used for topical treatment of haemangiomas. A concern was raised regarding the possible sensitizing capacity of propranolol when used for percutaneous application (3). Although propranolol has been used since 1964, both

Fig. 1. (a) A 3-month-old baby girl with a superficial haemangioma of the hand. (b) Eczematous lesions in the same patient, 2 months after topical treatment with 1% propranolol. (c) Positive patch test reaction to topical propranolol.



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orally and parenterally, there are no reports in the literature of allergic contact dermatitis in patients or nursing staff who come into prolonged contact with the drug, but a few studies have described allergic contact dermatitis

in industrial workers involved in its production (4–6). Patch tests performed in 36 patients applying topical propranolol and in 40 family members involved in the administration of the drug gave negative results (3).

Hence, we report the first case of allergic contact dermatitis caused by topically applied propranolol. The lack of cross-reactivity with timolol could be useful in cases of allergic contact dermatitis caused by propranolol.

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