

CONTACT POINT

A safety illustration printed on an intermittent pneumatic compression device caused allergic contact dermatitis

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Intermittent pneumatic compression devices (IPCDs) are used for the prophylaxis of venous thromboembolism in high-risk surgical patients.¹ Correct application of the device to the lower legs is very important, and illustrations that clearly outline the correct technique are beneficial. Here, we report a case of allergic contact dermatitis caused by an illustration printed on an IPCD.

CASE REPORT

A 15-year-old male was referred to us with pruritic eruptions on the lower legs where an IPCD had been applied, and on the abdomen where adhesive tape had been applied. The patient had been diagnosed with refractory chronic hepatitis due to pancreas divisum, and from allergic contact dermatitis caused by adhesive tape used for medical purposes. Seven days previously, the patient had undergone pancreatoduodenectomy, and the eruptions on the abdomen had appeared 5 days before his referral. The eruptions on the lower legs were first seen 2 days earlier.

Physical examination revealed pruritic erythematous figures on the lower legs (Figure 1) and pruritic erythematous linear macules and vesicles on the abdomen. The shape and size of the eczema on the lower legs completely corresponded to the figures printed on the device. In addition, linear eczema was present on the areas where adhesive tape had been applied. Patch testing with Patch Test Panel(s) (Sato Pharmaceutical, Tokyo, Japan) was performed using the Japanese baseline series and showed a + positive reaction to colophonium at day (D) 2 and D4. The manufacturer of the device disclosed that the illustration printed on the IPCD contained hydrogenated rosin ester, but had no further information on the other chemicals used in the illustration. Patch testing with the other ingredients was not performed because the patient's parents did not consent to further examination. Topical application of difluprednate 0.05% ointment to the lesions led to their resolution.



FIGURE 1 Pruritic erythematous figures were present on the lower legs. The size and shape of the figures were completely coincident with those of the figure printed on the intermittent pneumatic compression device

DISCUSSION

To improve patient safety, clear instructive illustrations are useful in reducing the likelihood of incorrect device application. Unfortunately, allergic contact dermatitis may be caused by chemicals used in the illustration on the device, as shown in our case. Patch testing indicated the occurrence of allergic contact dermatitis in

response to hydrogenated colophonium ester due to cross-reactivity with colophonium, as the modified colophonium retains its potential to sensitize.^{2,3} The occlusive exposure to the design may promote elicitation of allergic contact dermatitis in sensitized individuals. This case highlights the need to improve the method of IPCD instruction for patient safety.

CONFLICTS OF INTEREST

The authors declare no conflicts of interests.

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REFERENCES

1. Pavon JM, Adam SS, Razouki ZA, et al. Effectiveness of intermittent pneumatic compression devices for venous thromboembolism prophylaxis in high-risk surgical patients: a systematic review. *J Arthroplasty*. 2016;31(2):524-532.
2. Sasseville D, Tennstedt D, Lachapelle JM. Allergic contact dermatitis from hydrocolloid dressings. *Am J Contact Dermat*. 1997;8(4):236-238.
3. Pereira TM, Flour M, Goossens A. Allergic contact dermatitis from modified colophonium in wound dressings. *Contact Dermatitis*. 2007;56(1):5-9.

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