

physical or chemical therapies for actinic keratoses or squamous cell carcinomas.^{2,3} However, our patient was a young woman who, in addition to lesions on her scalp, also presented with lesions on the external acoustic meatus, umbilicus, vulva and fingertips. There was no erosive pustular dermatosis on the legs, which is usually associated with venous dermatitis and atrophy.^{4,5} A diagnosis of EPDS was therefore unlikely. Although the histological features of the axillary biopsy were similar to those of pustular psoriasis, there was no personal or family history of psoriasis. Pustular psoriasis was therefore also excluded. According to the review of Bénéton *et al.*,⁶ only six of 14 patients with AP with autoimmune diseases were positive for LBT. Therefore, despite the negative LBT, our patient should be carefully followed up for development of collagen diseases in the future.

Department of Dermatology,
Osaka University School of Medicine,
2-2, C5, Yamada-oka, Suita-shi,
Osaka 565-0871, Japan
E-mail: inui@derma.med.osaka-u.ac.jp

S. INUI
H. AZUKIZAWA
H. ASADA
S. ITAMI

References

- 1 Lagrange S, Chosidow O, Piette JC *et al.* A peculiar form of amicrobial pustulosis of the folds associated with systemic lupus erythematosus and other auto-immune diseases. *Lupus* 1997; **6**:514–20.
- 2 Rongioletti F, Delmonte S, Rossi ME *et al.* Erosive pustular dermatosis of the scalp following cryotherapy and topical tretinoin for actinic keratoses. *Clin Exp Dermatol* 1999; **24**:499–500.
- 3 Ena P, Lissia M, Doneddu GM *et al.* Erosive pustular dermatosis of the scalp in skin grafts: report of three cases. *Dermatology* 1997; **194**:80–4.
- 4 Bull RH, Mortimer PS. Erosive pustular dermatosis of the leg. *Br J Dermatol* 1995; **132**:279–82.
- 5 Dawn G, Loney M, Zamiri M *et al.* Erosive pustular dermatosis of the leg associated with compression bandaging and fungal infection. *Br J Dermatol* 2003; **148**:489–92.
- 6 Bénéton N, Wolkenstein P, Bagot M *et al.* Amicrobial pustulosis associated with autoimmune diseases: healing with zinc supplementation. *Br J Dermatol* 2000; **143**:1306–10.

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Occupational photoallergic contact dermatitis in a pharmaceutical worker manufacturing carprofen, a canine nonsteroidal anti-inflammatory drug

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SIR, A 27-year-old woman developed a pruritic, erythematous eczematous eruption. This started on her hands (Fig. 1a) and spread to her arms, face and neck. There was no past history of skin disease.

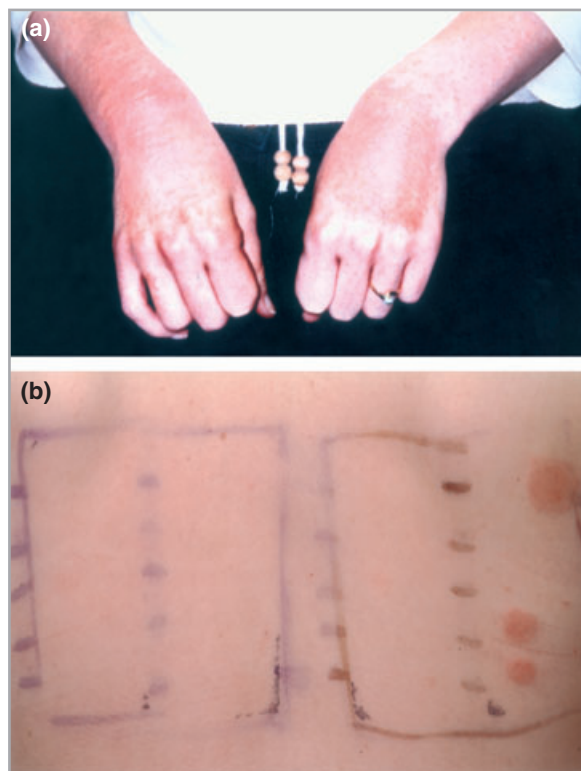


Fig 1. (a) Dermatitis of dorsum of hands. (b) Photopatch tests showing strongly positive reactions at the carprofen irradiated sites.

She had been working for 3 weeks in a factory manufacturing the canine nonsteroidal anti-inflammatory drug (NSAID) carprofen. She was involved in handling the carprofen powder but wore full protective clothing including an air hood and gloves while doing this. No other workers at the factory were affected.

She was treated with oral prednisolone and topical Fucibet® (betamethasone valerate + fusidic acid; Leo, Princes Risborough, U.K.) cream. Her employers moved her to a different part of the factory away from the production of the carprofen tablets. These measures produced a rapid improvement in her symptoms.

She was referred to the Contact Dermatitis Investigation Unit and was patch tested to our standard series, face series, her protective clothing and the pure carprofen powder 1% in white soft paraffin (wsp). An intermediate mixture of carprofen and the tablet base compound (containing 12–14% carprofen and inert agents) handled during the manufacturing process was tested at 1% in wsp. The finished carprofen tablet at 1% in wsp was also patch tested. She had a ++ reaction to nickel which was not felt to be relevant.

Her problems had started during a period of sunny weather in June. It was therefore decided to photopatch test her to our photopatch test series and the carprofen materials she had handled while involved in the manufacture of the tablets. She had strong ++ photoallergic reactions to the three carprofen agents tested (Fig. 1b) following irradiation with 5 J cm⁻²

ultraviolet A using a Hybec H600 Philips TL-40. Ten controls were also photopatch tested with the carprofen agents and none had a positive reaction.

We believe that these reactions are due to photoallergy rather than phototoxicity because the problem took 3 weeks to develop, she demonstrated strong photopatch testing reactions at three different concentrations of carprofen, all of which were well below the 5% used in previous studies,^{1,2} no other workers were affected and no controls reacted.

Carprofen is a propionic acid derivative and was developed for human use but was not launched on the U.K. or U.S. markets. It was subsequently marketed for the management of canine arthritis. One case of canine photosensitivity was reported to the U.S. Food and Drug Administration in 1997.³ This group of NSAIDs are the commonest NSAIDs that cause photosensitivity⁴ from topical and systemic use and include ibuprofen, ketoprofen and benoxaprofen (Opren®), which was withdrawn from the U.K. market in 1982.

She had taken ibuprofen purchased over the counter without any problems in the past. Carprofen, unlike other propionic acid derivatives, undergoes photodehalogenation rather than photodecarboxylation,⁵ which would make a cross-reaction due to previous exposure to another NSAID such as ibuprofen unlikely. Photodehalogenation results in the formation of an aryl radical. This has a potent effect on lipids, which has been demonstrated experimentally by the photoperoxidation of linoleic acid by carprofen.⁶

There have been numerous reports of photosensitivity caused following ingestion of carprofen by humans, some of which were felt to be photoallergic.^{2,7,8} It has not previously been reported as an occupational contact photoallergen and it seems likely that contact occurred following transfer of the carprofen from her protective clothing on to her skin while changing back into her everyday clothes. It is important that precautions are taken to avoid potential allergens while handling them in the workplace and this case highlights the need for employers and their employees to be vigilant that allergens do not cause problems following transfer on to the skin during the removal of protective clothing.

Contact Dermatitis Investigation Unit,
Hope Hospital, Manchester M6 8HD, U.K.
E-mail: drstevewalker@hotmail.com

S.L. WALKER
R.D. EAD
M.H. BECK

References

- Hölzle E, Neumann N, Hausen B et al. Photopatch testing: the 5-year experience of the German, Austrian and Swiss Photopatch Test Group. *J Am Acad Dermatol* 1991; **25**:59–68.
- Goh CL, Kwok SF. Photosensitivity associated with carprofen. *Dermatologica* 1985; **170**:74–6.
- <http://www.fda.gov/cvm/4443.htm> (accessed 4/1/06)
- Ophaswongse S, Maibach H. Topical nonsteroidal anti-inflammatory drugs: allergic and photoallergic contact dermatitis and phototoxicity. *Contact Dermatitis* 1993; **29**:57–64.
- Moser J, Bosca F, Lovell WW et al. Photobinding of carprofen to protein. *J Photochem Photobiol B Biol* 2000; **58**:13–19.
- Bosca F, Encinas S, Heelis PF, Miranda MA. Photophysical and photochemical characterization of a photosensitizing drug: a combined steady state photolysis and laser flash photolysis study on carprofen. *Chem Res Toxicol* 1997; **10**:820–7.
- Merot Y, Harms M, Saurat JH. Photosensibilization au carprofen, un nouvel anti-inflammatoire nonstéroïdien. *Dermatologica* 1983; **166**:301–7.
- Hoting E, Schulz KH. Photoallergische Reaktion auf Carprofen. *Derm Beruf Umwelt* 1984; **32**:215–6.

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Reply to 'Digital dermoscopy analysis and internet-based program for discrimination of pigmented skin lesion dermoscopic images'

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SIR, We are grateful to Rubegni et al.¹ for their response to our letter² in their recently published article in the *British Journal of Dermatology*, which has provided us the opportunity to focus on the differences between the two systems discussed. Firstly, we regret that we were unable to include their more recent publications due to the time delay between submission and publication. We agree that DB-Mips³ works in real-time in vivo in the actual clinical setting and is 'faster' than our system (<http://dermoscopy.soft.ics.keio.ac.jp> accessed 4/1/06). However, we must emphasize that such equipment is costly and is therefore difficult for most doctors to purchase. Conversely, most doctors (indeed, most citizens all over the world) already have access to the internet. Moreover, many patients do not have the option of visiting general hospitals equipped with specialized apparatus, such as DB-Mips. Our method enables general physicians to use the analysis program via the internet and allows more patients to benefit from the latest analytical program because our system is updated frequently by rewriting only the program on our servers. There are often problems with updating and maintenance of local systems and local computers. The use of a server system removes these problems. Of course, our system must overcome concerns regarding security and privacy before it can be put into public use. However, our system already uses Secure Socket Layer (SSL), which is currently in use in many commercial applications, such as banking and internet shopping. SSL transfers all data over the internet using encryption enabled by the server's certificate, a private key and a public key. However, regardless of how secure this system is, informed consent is absolutely necessary before it can be put to use.

Although Rubegni et al. emphasized that the internet is slow, most universities and hospitals have a broadband connection. The development of wireless networking will facilitate high-speed networks becoming ubiquitous in the near future. Networks are becoming faster, and our system will become much faster than it is at present and will become