

Abstract

There is now a well publicised increase in cases of sofa dermatitis since 2007. These have been linked to allergic contact sensitization to dimethylfumarate, a novel contact allergen. We report on a case associated with a two year history of a treatment resistant dermatitis.

Introduction

A 43 year old housewife presented to our department with an itchy rash on her right buttock. It started on her lower back two years previously. She purchased a sofa four weeks prior to developing the rash. The rash on her back cleared when she protected her back with a cushion. Her rash subsequently appeared on her buttocks and lateral thighs. It cleared when the patient went on holidays and recurred upon her return, particularly on her right lateral thigh. She had a partial response to moderately potent topical steroids and emollients. She tended to sit on her right side on the sofa. She had a history of asthma and allergic rhinitis. No household contacts were affected by the rash.

Case Report

On examination at presentation she had a lichenified erythematous plaque with surface erosion affecting 50% of the right lateral thigh and some superficial scale. This was consistent with lichen simplex chronicus. She also had scattered small eczematous patches on her back spreading to her lateral but not anterior trunk. A full blood count, eosinophil count and IgE normal. A diagnosis of sofa dermatitis was made.

Figure 1a: Patch test reading day 4 showing positive reaction to dimethylfumarate 0.1%



She was patch tested to the British contact dermatitis series which contains forty two of the most common allergens, textile, colour and finish battery, rubber additives, plastics and glues, epoxy battery and dimethylfumarate 0.1%. Patch testing was read at 48 hours, 96 hours and 168 hours. The only positive reaction was to dimethylfumarate 0.1% which showed an erythematous papulovesicular eruption (+++) at 48 hours, 96 hours and a papular reaction (++) at 168 hours (Figure 1 a & b). She has avoided the sofa since the diagnosis of sofa dermatitis was made. Her rash resolved within six weeks of this and did not recur. The firm she bought the sofa from had gone into receivership so it was not possible to obtain information on the chemical constituents of the sofa.

Figure 1b: Patch test reading day 4 showing (+++) papulovesicular reaction to dimethylfumarate 0.1%



Discussion

A small epidemic of severe contact dermatitis associated with newly acquired leather sofas and chairs has been reported in the UK and Finland since 2007.¹ The patients were resistant to potent topical corticosteroids and often required hospitalization due to the severity of the dermatitis. The distribution involved the trunk, limbs, buttocks and face. The rash developed within 3 weeks to 9 months of acquiring the furniture. Dimethylfumarate is an antimicrobial and mould preventative agent contained in sachets used in the finishing and wrapping phase of furniture production. The allergen was identified after chemical analysis was performed on furniture samples from the newly purchased sofas or chairs of five patients with sofa dermatitis. Concentrations of up to 470 mg kg⁻¹ of dimethylfumarate was found in chairs. The patients showed strong positive patch test reactions to fabric samples and to dimethylfumarate down to a dilution of 0.001%.² The sofas were traced back to a Chinese manufacturer. Reports of allergic contact dermatitis associated with dimethylfumarate in clothing³ and shoes⁴ have since been reported. The EU has banned the use of dimethylfumarate in consumer products.

Our case is of interest because of the two year duration of the sofa dermatitis prior to presentation. Our patient presented with a chronic eczema rather than an acute severe eczema which has been frequently described in sofa dermatitis. The unusual distribution of the dermatitis involving the buttocks and lower limbs is a clue to the diagnosis. Patch testing to dimethylfumarate confirms the clinical suspicion and outrules other potential allergens. It is important that dermatologists remain vigilant as patients may present with dermatitis up to several years after first contact with the sofas has been made.

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