

Short Communication

Erythema multiforme like contact dermatitis due to rubber gloves

Dear Sir,

Rubber gloves are one of the most frequent causes of allergic contact dermatitis (ACD) especially in health care workers. It can be due to latex itself or chemicals used in rubber processing.¹ Contact dermatitis (CD) can develop due to any of these chemicals, although rubber accelerators seem to be the most common cause. We report a case of erythema multiforme (EM) like contact dermatitis to rubber gloves in a laundry worker which is a very rare manifestation of non-eczematous contact dermatitis. To the best of our knowledge, only three such cases have been reported so far in the literature.

A 27-year-old Philipino female presented to us with severe itchy and painful diffuse erythematous plaques over both hands & forearms in a bilaterally symmetrical fashion. She had history of using a new type of long rubber gloves provided by laundry for a month. She had no direct exposure to work related chemicals. She had no personal or familial history of atopy/asthma. There was no history of any herpes simplex infection in the past. On

examination, she had diffuse erythema over both of her hands and distal two thirds of forearms involving both dorsal and ventral aspects with a clear proximal border (**Figure 1a**). She had multiple targetoid lesions (**Figure 1b**) and few vesicles and bullae (**Figure 1c**) mostly over the dorsal aspects of hands and upper border of rash.

She had few satellite lesions around proximal margin of rash and over ventral part of left arm. There were no lesions elsewhere on body. Her mucosal and systemic examination was unremarkable.

Based on history and classical distribution of rash, the diagnosis of EM like contact dermatitis was made. Patch test was not done due to non-availability of testing kit in our hospital. Patient did not give consent for any provocative test with the material of rubber gloves she used and thus was not done. Her routine laboratory investigations were unremarkable. She was prescribed oral prednisolone 0.5mg/kg/day for a week and tapered slowly over 3 weeks. Topical fucidic acid in combination with betamethasone and oral antihistamines were given.



Figure 1 Diffuse erythematous plaques over hands and distal 2/3rds of the forearms with clear cut demarcation (a). There are targetoid lesions (black arrow) over the proximal border of rash (b). Bullous lesions (red arrow) can be seen near the proximal part of the rash (c).

Her rash resolved with medication and no new rash developed since she substituted her gloves with special double layered gloves having cotton layer from inside. At two months follow up, she was asymptomatic without any new or pre-existent rash.

Differential diagnosis of this case included contact urticaria to latex/latex allergy, atopic dermatitis, photo-contact dermatitis, contact urticaria, herpes simplex virus infection, drug induced rash, etc. Latex allergy can manifest clinically ranging from contact dermatitis to anaphylaxis, which can be confirmed by Latex RAST test/ prick test with natural rubber extract. Atopic dermatitis is characterized by itchy scaly rash predominantly over flexures of limbs in adults with no clear cut margin like this case. Photo-contact dermatitis can develop over limbs due to various allergens but doesn't manifest with clear cut margin as was present in this case. Herpes simplex has classical dermatomal grouped vesicles. Drug induced rash can manifest as erythematous macules, papules or vesicles involving trunk, limbs & mucosae unlike typical localized rash seen here.²

Around 4000 odd environmental chemicals have been identified as contact allergens,² of which rubber glove chemicals are among the most frequent cause of ACD specially in health care providers.^{3,4} The cases are increasing day by day due to frequent use of gloves and pandemic

covid-19 as a result of frequent glove use.^{3,4} EM like contact dermatitis is a type 4 hypersensitivity reaction that has been reported due to various, metals, plants or topical medications, etc.⁵

Natural rubber is a milky substance extracted from the bark of tree *Hevea brasiliensis*, it is then processed to achieve the final usable rubber with desirable physical and chemical properties. The process involves many steps using different chemicals like activators, accelerators, vulcanizing agents, antidegradants and retarders. Carbamates and thiurams are the most commonly used rubber accelerators involved in CD.⁵ According to various studies done worldwide, thiurams are the most frequent cause of CD followed by carbamates.²

Despite recent shift from use of natural rubber latex gloves to synthetic gloves, there are still increasing cases of contact dermatitis due to rubber accelerators. There seems to be under reporting of cases possibly due to lack of easy availability of patch testing kits and financial constraints. Only three cases of EM like contact dermatitis (**Table 1**) due to rubber gloves have been reported so far in the literature to the best of our knowledge. This case is probably the fourth one. Patients with ACD to gloves can be advised alternative gloves like nitrile, vinyl, neoprene, etc.

Table 1 Erythema multiforme like contact dermatitis due to rubber gloves.

S.No.	No. of patients	Age/sex	Duration of exposure (weeks)	Site & Clinical Presentation at primary site	Patch test done	Allergen identified	Year of publication	Reference
1	1	26/ F	8 weeks	Both hands/forearms	Y	Y	1996	[6]
2	1	48/ F	4 weeks	Both hands/forearms	Y	y	2001	[2]
3	1	38/ F	4 weeks	Both hands/forearms	Y	Y	2006	[5]
4	1	27/ F	4 weeks	Both hands/forearms	N	N	2022	Present case

References

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