

Research

## The Role of Contact Allergy in Rosacea

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**Key Words:** Rosacea, contact allergy, patch test

### Abstract

**Objectives:** Rosacea is a common recurrent and inflammatory dermatosis characterized by transient or persistent central facial erythema, visible blood vessels, papules and pustules. Though the cause of rosacea remains unknown, several factors are implicated in the pathogenesis. It is well-known that rosacea patients are more susceptible to irritants, but little is known about allergy. The aim of our study was to find out if contact allergy plays a role in the pathogenesis of rosacea.

**Methods:** Twenty-five patients, aged between 23-77 years with rosacea of the face were enrolled to our study. The control group consisted of 20 healthy individuals with matching ages and socio-economic status. The patient and the control groups were patch tested with European Standard Series and Cosmetic Series. Patch tests were read after 2, 4 and 7 days.

**Results:** Eight (32%) patients showed positive reactions to 1 or more allergens in the European Standard Series and 8 (32%) patients to 1 or more allergens in the cosmetic series. Eight (32%) individuals in the control group showed positive reactions to 1 or more allergens in the European Standard Series. None of the individuals in the control group showed positive reaction to any of the allergens in the cosmetic series.

**Conclusion:** In our study contact allergy in rosacea was found to be more frequent than normal population. Contact allergy might play a role in the pathogenesis of rosacea. Further enlarged studies are needed to assess the relation between rosacea and contact allergy.

### Introduction

Rosacea is a common recurrent and inflammatory dermatosis characterized by facial flushing, telangiectatic vessels and persistent redness of the face, papules, pustules and hypertrophy of sebaceous glands [1]. Though the cause of rosacea is poorly understood, several factors including sun damage, abnormalities in cutaneous vascular homeostasis, climatic exposures, dermal matrix degeneration, chemicals and ingested agents, pilosebaceous unit abnor-

malities and microbial organisms are suggested in the etiology [2]. It is known that rosacea patients are more susceptible to irritants but, there is not much knowledge about allergy. The aim of our study was to find out if contact allergy plays a role in the pathogenesis of rosacea.

### Materials and Methods

Twenty-five patients, 7 males, 18 females, aged between 23-77 years (mean age: 51,4±2,3 years) with rosacea of the face enrolled to our study. The control group consisted of 20 healthy indi-

viduals with matching ages and socioeconomic status. The patient and the control groups were selected from individuals using cosmetics. The patient and the control groups were patch tested with European Standard Series and Cosmetic Series. Patch test substances were obtained from Chemotechnique diagnostics, Sweden. Patch tests were read after 2, 4 and 7 days. Patch test reactions between + and +++ in any evaluations were considered to be positive.

**Results**

Eight (32%) patients showed positive reactions to 1 or more allergens in the European Standard Series and 8 (32%) patients to 1 or more allergens in the Cosmetic Series (Table 1). 6 (30%) individuals in the control group showed positive reactions to 1 or more allergens in the European Standard Series. None of the individuals in the control group showed positive reaction to any of the allergens in the Cosmetic Series. When positivities for each allergen was compared one by one between the patient and the control groups using chi-square test, no statistically significant difference was found (p>0,05). When the number of patients who showed positive reactions to 1

or more allergens in the Standard Series were compared with the control group using chi-square test, no statistically significant difference was found (p>0,05). Though the number of patients who showed positive reactions to 1 or more allergens in the Cosmetic Series were higher than the control group, no statistical comparison could be made as the number of individuals in the control group who showed positive reactions to one or more allergens in the Cosmetic Series were 0.

**Discussion**

Rosacea is a relatively common disease. Though several hypotheses have been suggested, the exact pathophysiology is still unclear. Rosacea patients generally experience aggravation of erythema, scaling and itching in the course of their disease. Patients with rosacea have a lower threshold for irritation from topically applied substances. Topically applied products may exacerbate stinging and burning and also cause itching [2, 3]. Also sensitive and inflamed skin may be more prone to delayed type hypersensitivity. It has been suggested

**Table 1.** Positive Patch Test Results in the Patient Group

Number of the Patient	Patch Tests	
	Cosmetics Series	Standart Series
1	Dimethylaminopropylamine	
2		4-phenylendiamine
3		Benzocaine Nickelsulfate hexahydrate Colophony
4	Chlorhexidine digluconate Paraben mix	N-isopropyl-N-phenyl-4-phenylenediamine Lanolin alcohol
5	Sorbitan sesquileate	Nickelsulfate hexahydrate
6	Phenyl salicylate	Colophony
7		Potassium dichromate
8	Poloxyethylenesorbitan monooleate Octyl gallate Hexamethylene tetramine Chlorhexidine digluconate Hexahydro-1,3,5-tris triazine Phenyl salicylate 2-Hydroxy-4-methoxybenzophenone Benzyl alcohol Me-Isouthiazolinone	Potassium dichromate
9	Sorbiton oleate	Potassium dichromate Thiuram mix
11	4-Chloro-3-cresol Tert-Butylhydroquinone	
12	2,6-Di-tert-butyl-4-cresol Cetyl alcohol	

that co-existence of both phenomena in rosacea patients is probably not uncommon [4]. The role of contact allergy in the pathogenesis of rosacea has rarely been investigated. There are some case reports of contact allergy in rosacea patients. De Kort *et al* reported a patient with rosacea who had developed a pustular reaction with the use of clindamycin phosphate 1% solution. They thought that the patient had an exacerbation of pre-existing rosacea and suggested that a sudden flare of rosacea should alert the physician to the possibility of contact dermatitis [5]. Bardazzi *et al* reported two patients with worsening of pre-existing rosacea due to thiomersol and p-phenylendiamine [6]. Sevadijan reported a patient with pustular contact hypersensitivity reaction to fluorouracil with rosacea-like sequel [7]. Corazza *et al* patch tested rosacea patients with the GIRDCA standard series, preservative series, emulsifiers series, perfumes series and their own cosmetics and medicaments. A surprisingly high frequency of allergic reactions were observed and they concluded that patients with rosacea should be patch tested if they give a history of aggravation of symptoms by cosmetics or medicaments [8]. Jappe *et al* investigated patients with rosacea for the role of contact allergy with a retrospective study. They concluded that allergic or irritant contact dermatitis developed in rosacea patients and some of the observed allergens might be related to morbidity-specific exposures [4].

In our study as we found that 32% of the patients had positive patch test reactions to

allergens in the Cosmetic series, we think that contact allergy especially to cosmetics may be playing a role in the pathogenesis of rosacea. However the relation between rosacea and contact allergy might be insignificant because the number of patients in our study were low. We think that further enlarged studies are needed to shed light on the relation between rosacea and contact sensitivity.

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