

## CASE REPORT

## Homemade Remedies Causing Contact Dermatitis: Case Report on Two Patients with Acne

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### ABSTRAK

*Produk semulajadi sering dirasakan selamat digunakan kerana ia dianggap suci dan bebas dari sebarang bahan kimia. Walaubagaimanapun, ramai yang tidak menyedari bahawa sebahagian daripada kandungan bahan semulajadi boleh mengakibatkan kesan negatif kepada kulit. Kulit kayu manis dan limau adalah di antara ramuan semulajadi yang kerap digunakan sebagai rawatan tradisional untuk mengubati jerawat. Kedua-dua bahan ini boleh menyebabkan keradangan apabila bersentuhan dengan kulit manusia. Tujuan utama artikel ini ialah untuk menekankan bahawa penggunaan bahan semulajadi tidak semestinya bebas dari sebarang kesan sampingan dan ia perlu diambil kira sebagai penyebab masalah kulit seseorang pesakit yang menggunakannya. Pengamal-pengamal perubatan perlu peka tentang kewujudan masalah ini dan harus menyoal pesakit tentang penggunaan rawatan-rawatan buatan sendiri, kerana pesakit kadang-kala tidak memberikan maklumat ini secara sukarela. Pengenalpastian bahan penyebab dan kaunseling amat penting agar pesakit tidak mengulangi penggunaan bahan tersebut bagi mengelakkan sebarang komplikasi di masa hadapan.*

*Kata kunci: alahan, jerawat, kayu manis, limau*

### ABSTRACT

Natural products are often perceived as safe due to the absence of artificial or chemical materials in its content. However, many are unaware that some of these compounds, albeit natural in existence, can cause harm. Cinnamon and lemon are two commonly used home remedies for acne. Both these naturally existing ingredients are capable of producing dermatitis upon contact with the human

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skin. The aim of this article is to create awareness among physicians that natural remedies are not free from harm hence, should look out for any possible untoward reactions that these products may cause. Physicians need to explore the possible use of homemade remedies to treat common or minor ailments during history taking as this information may not be given voluntarily. Early identification of the offending agent, adequate management and future avoidance could help prevent further episodes of contact dermatitis and its complications.

Keywords: acne, cinnamon, contact dermatitis, lemon, lime, phytophotodermatitis

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## INTRODUCTION

Numerous homemade remedies have been touted beneficial for acne. In fact, natural remedies may be the first or the preferred option advised by elders or peers for treating acne. This may be due to the perception that natural products are safe for the skin and have less potential to cause adverse effects (Magin et al. 2006). Hence, many maybe unaware that certain natural remedies can cause harm resulting in underreporting by patients themselves or failure of physicians to detect such cases.

Contact allergy to cinnamon has been described as early in the 1960s when it was noted to cause hand eczema among bakers (Arthur 1960). Lime on the other hand, causes phytophotodermatitis which is a type of dermatitis due to furocoumarin (psoralens) found in certain plants and vegetables. Contact with lime and subsequent exposure to sunlight is responsible for such a reaction (Robert et al. 2008). We here report two female patients who developed contact dermatitis after topical application of cinnamon and lime in an effort to self-treat their acne.

## CASE REPORT

### PATIENT 1

A 22-year-old woman of Malay ethnic origin, presented with redness and burning sensation on her face which started two days before consultation. Initially, lesion appeared on her left cheek then gradually involved other parts of her face. On further questioning, she explained that she had applied a homemade natural remedy for her acne using cinnamon, as advised by her grandmother. Cinnamon bark was first powdered and mixed with water to create a paste and applied over the acne lesions and left overnight. Smiting sensation and erythema first appeared on the third day of application. Clinical examination revealed multiple erythematous patches and over cheeks, chin and philtrum. Multiple closed comedones were noted on the forehead (Figure 1a). Lesions was confined to the face and other parts of the body were not involved. There was no significant personal or family history of allergy or atopy.

### PATIENT 2

A 16-year-old girl of Indian ethic origin presented with asymptomatic dark



Figure 1: a) Multiple erythematous patches are seen over the cheeks, chin and philtrum. Few closed comedones are noted on the forehead. b) Dark brown to black patches with ill defined margins are noted on the cheeks. Open and closed comedones are seen over the cheeks, temple and forehead.

brown pigmentation on her cheeks. She had applied lime juice on both cheeks as a remedy for acne as advised by her mother. Lime juice was applied and left overnight. Lesion was observed the following day after returning home from school. Clinical examination revealed dark brown to black patches on both cheeks. The lesions had ill-defined margin and scales were absent. Multiple open and closed comedones were noted over the cheeks, temple and forehead (Figure 1b). No other skin lesions were noted elsewhere. Personal or family history of allergy or atopy was absent.

## DISCUSSION

Contact dermatitis is an acute or chronic inflammatory reaction occurring secondary to contact with a certain allergen on the skin. Allergic contact dermatitis is a delayed hypersensitivity reaction (type IV) affecting those with

previous sensitization. The delayed reaction may take hours up to days after allergen exposure before reactions manifest. This reaction takes place in two phases. Phase 1 is the induction phase, where the immune system is sensitized to a particular allergen while phase 2, triggers the immune response resulting in the manifestation of overt clinical symptoms (Kimber et al. 2002). The distribution of the lesions serves as a clue to the diagnosis of contact dermatitis where the lesions correspond to the areas of contact between skin and the allergen. Linear or splash lesions may be due to contact with fluids while rounded lesions may be a result of application using fingers.

The first patient described in this case report, had developed contact dermatitis to cinnamon. Cinnamon (*Cinnamomum zeylanicum*) is a condiment obtained from the bark of the cinnamon plant. The volatile essential oil (cinnamaldehyde) causes

irritation upon contact with the skin and oral mucosa (Tremblay & Avon 2008). Nutmeg, paprika and cloves are some of the other spices that have been shown to cause contact dermatitis (van den Akker et al. 1990).

The second patient depicts a case of phytophotodermatitis. The psoralen in lime causes a chemical reaction which sensitizes skin to the ultraviolet rays from the sun. Besides citrus fruits, other plants which can cause a similar reaction include carrot and celery (Robert et al. 2008). Contact with these plants, vegetables or fruits followed by exposure to the sun, results in dark pigmentation, mild inflammation or vesicles in severe cases. Chelitis, perioral and periorbital dermatitis have also been described secondary to contact with lime (Thomson et al. 2007). The reaction may occur within a few hours and the affected area usually heals with hyperpigmentation. This reaction is believed to be secondary to D-limonene found in the peel oil (Matura et al. 2002). Some fragrances and flavourings using citrus peel oils may also cause a similar reaction (Duus Johansen 2002)

Diagnosis is made based on history and physical examination. Patch test is the gold standard method to confirm the diagnosis of contact dermatitis however it must be remembered that false negative results are not uncommon (Spiewak 2008). The allergen may be identified with certainty when a similar lesion appears on reintroduction of the allergen.

The most important step in managing a case of contact dermatitis is to identify and eliminate the causative allergen.

Lesions gradually resolve upon removal of the offending agent and may take between two to four weeks for complete resolution depending on the extent and severity of the insult. Emollients may be used to soothe the skin and short term topical steroids may help speed up recovery. More severe symptoms such as vesicobullous lesions or extensive lesions may require a short course of systemic steroid. Post inflammatory hyper or hypopigmentation is a well known complication. Prevention includes avoidance of using cinnamon or any of its derivatives on the skin and washing the parts in contact. Care should be taken after handling lime or citrus fruits by thorough washing of the hands before getting outdoors to prevent phytophotodermatitis.

Patients should also receive counselling about using homemade remedies. Although cinnamon has anti-inflammatory and anti-bacterial properties which form the basis for acne treatment, it needs to be processed to achieve the appropriate concentration before it can be used for this purpose. This process is complicated and is not easily achievable in our homes (Daud et al. 2013).

## CONCLUSION

There is a need to create awareness among physicians and patients of traditional or homemade remedies which may be harmful to the skin. This could avoid adding insult to injury in an attempt to self-manage skin conditions. Since acne is a common condition affecting almost everyone at one stage of their life, it is prudent to inquire into

self-management practices especially if contact dermatitis is suspected. Upon diagnosis with contact dermatitis, adequate management and advice on future avoidance of the offending agent would help prevent similar episodes. Patient education regarding the availability of a wide variety of established treatment for acne needs to be emphasised through community education and counselling in an effort to reduce the incidence of inappropriate self-management for this common condition.

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