8 Allergic and Irritant Contact Dermatitis

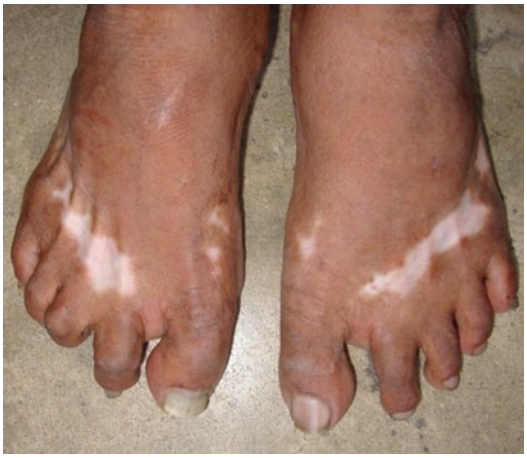
Ranthilaka R. Ranawaka

8.1 Introduction

Allergic and irritant contact dermatitis in a country is related to its occupational and cultural practices. People in Sri Lanka, both men and women wear open shoes commonly. Barefoot walking is a routine in our life irrespective of financial status. Professional men and children wear closed shoes with socks to work or schools, respectively, but at home open slippers or barefoot are the custom.

Therefore, to identify the possible allergens or irritants, it is important to have a reasonable idea about one's occupational and cultural practices. Cultural practices differ in different ethnic groups living in the same country.

(The clinical photographs in this chapter are photographed by Dr. Ranthilaka R. Ranawaka, consultant dermatologist, General Hospital Kalutara, Sri Lanka)



1. A 45-year-old woman came with these vitiliginous lesions on her feet. She was worried that she was getting vitiligo.
   (a) What is your differential diagnosis?
   (b) How do you differentiate them?
   (c) What is the cause for this skin disease?
   (d) What advice would you give the patient?

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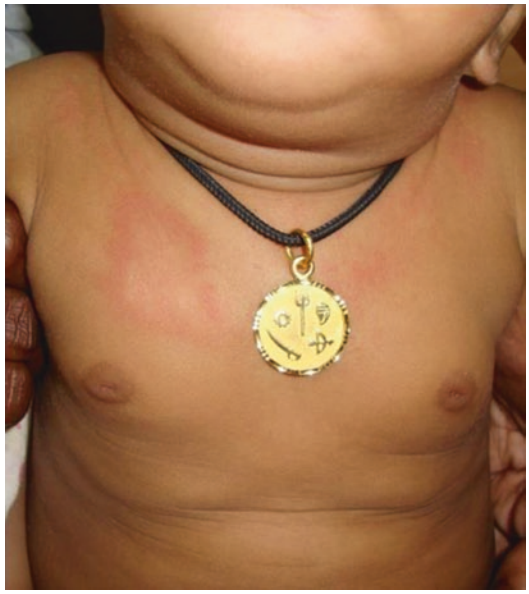
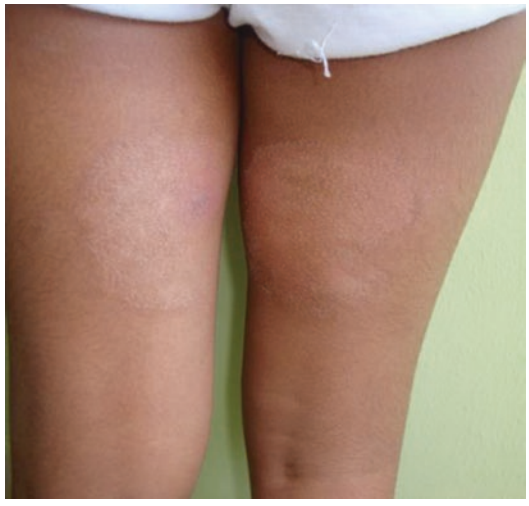
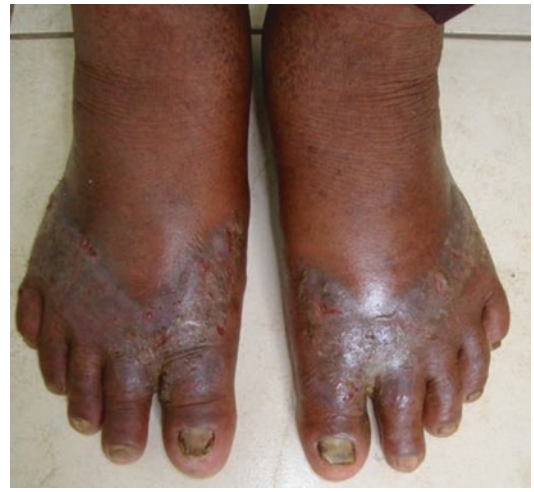


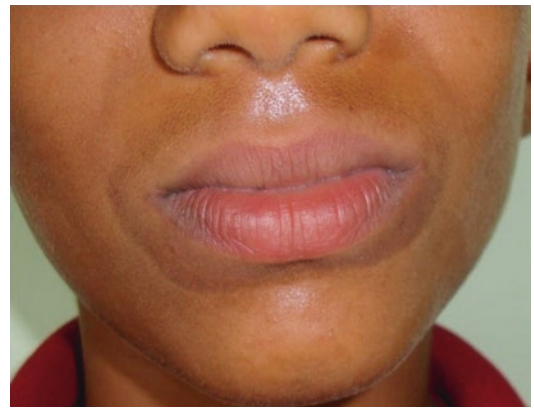
2. A 5-month-old baby had this itchy erythematous patch on her chest.
   (a) What is the diagnosis?
   (b) What advice would you give the mother?
   (c) How do you treat?



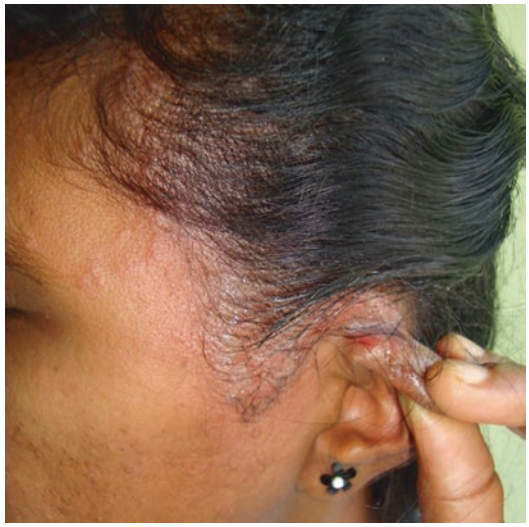
3. A 9-year-old girl came with these itchy lesions on the back of the thighs bilaterally, symmetrically. Despite good response to topical steroids prescribed by her family doctor recurrences were frequent.
   (a) What is the diagnosis?
   (b) What advice would you give to avoid recurrences?
   (c) What are the treatments?



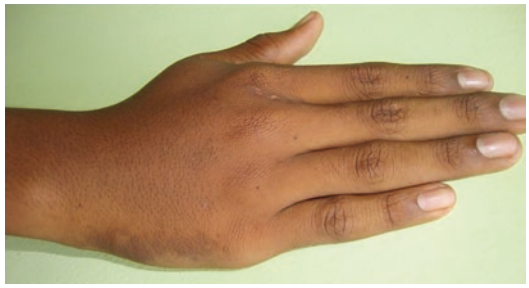
4. A 60-year-old woman came with this rash on feet.
   (a) What is the diagnosis?
   (b) How do you treat this condition?
   (c) What advice would you give the patient?



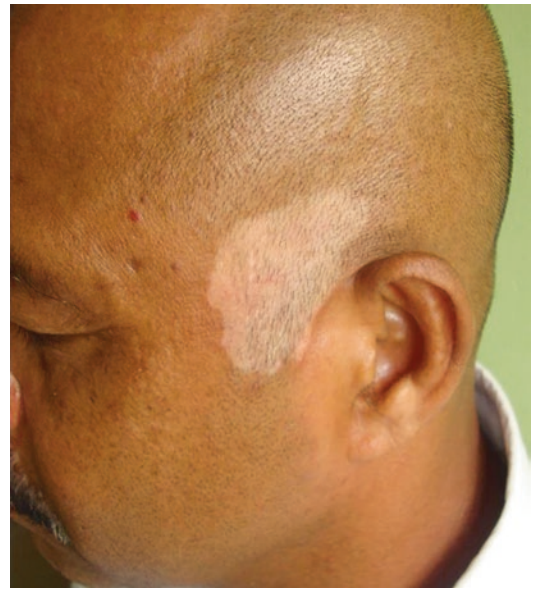
5. An 11-year-old boy had developed this pigmentation around the mouth over 3 months.
   (a) What is the diagnosis?
   (b) How do you treat this condition?
   (c) What advice would you give the patient?



6. A 43-year-old woman came with this eczematous rash for 1-week duration.
   (a) What is the diagnosis?
   (b) What advice would you give the patient?
   (c) How do you treat the patient?

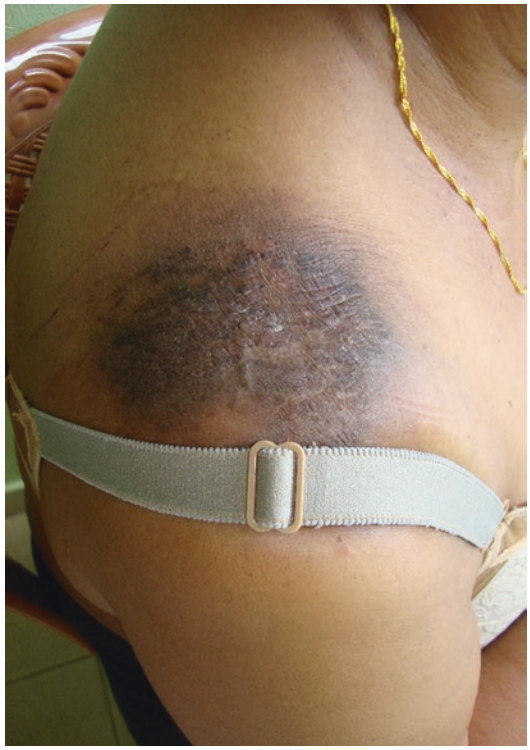


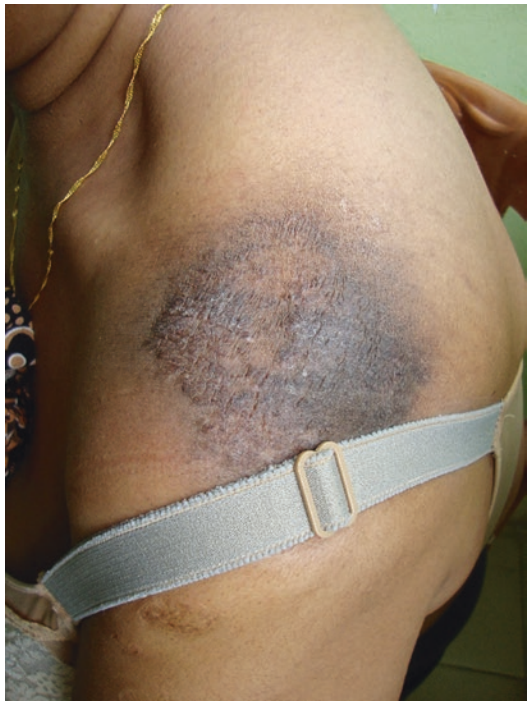
7. A 12-year-old girl came with these hyperpigmented patches at the ulnar border of (arrow) her both hands which she noticed overnight.
   (a) What would you ask her on direct inquiry?
   (b) What is the diagnosis?
   (c) How do you manage this?



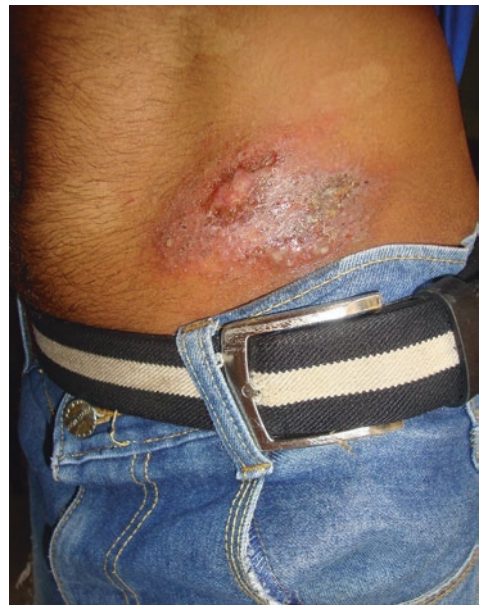
8. A 55-year-old man complained of vitiliginous patches on both sides of the face symmetrically and on the moustache (see Fig. 8.20).
   (a) What is the diagnosis?
   (b) How do you treat this condition?

9. A 32-year-old woman complained of itchy rash on her wrist.
   (a) What is the diagnosis?
   (b) How do you treat this skin problem?
   (c) What advice would you give her?

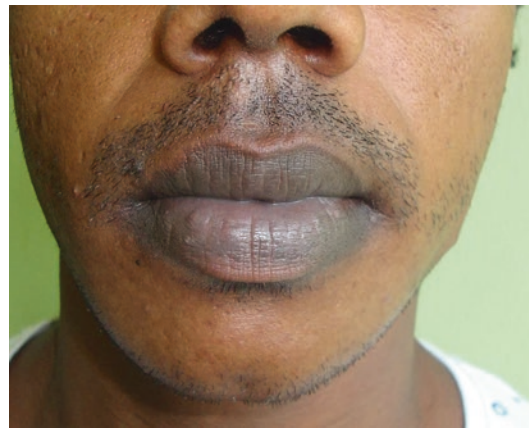




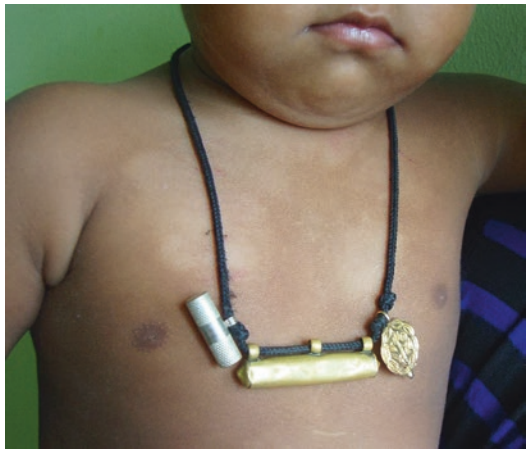
10. A 57 year-old woman came with this hyper-pigmented rash on her shoulders bilaterally which were itchy. She did not have similar lesions elsewhere. She had been treated by several primary care doctors without any success for more than 8 months.
    (a) What is the diagnosis?
    (b) How do you treat her?
    (c) What is the most important step in the management of this condition?



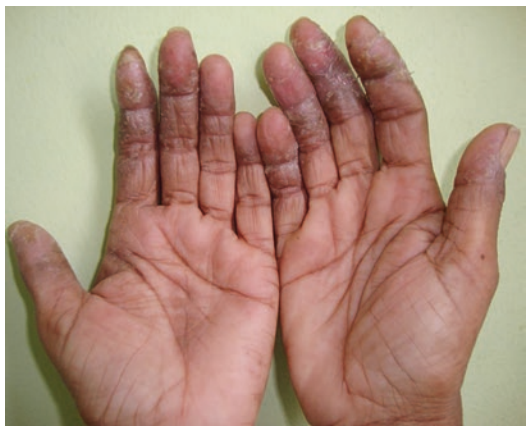
11. A 24 year-old man complained of very itchy rash on his left loin. There were no similar rash elsewhere, and no history of eczema.
    (a) What is the diagnosis?



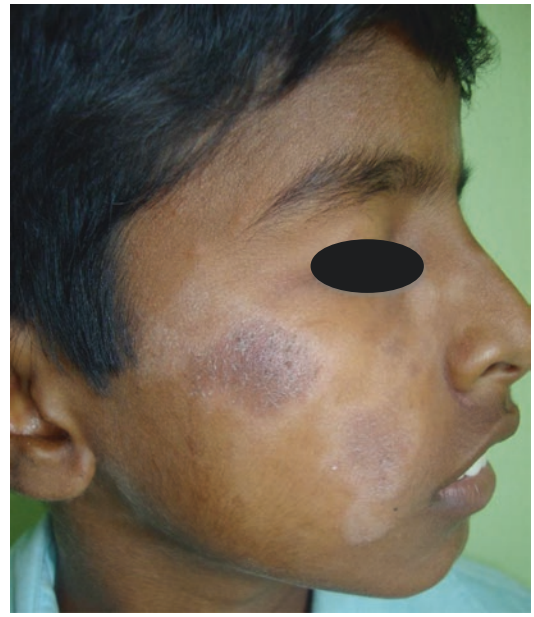
12. A 32 year-old man is worried that he is getting very dark pigmentation of his lips for 3 months.
    (a) What are the differential diagnoses?
    (b) How do you differentiate them?
    (c) What is the diagnosis in this man?



13. This 1-year-old child's mother is worried about mildly itchy hypopigmented patches on his chest for last 6 months which worsen irrespective of treatments taken from their family physician.
    (a) What is the cause for this skin rash?
    (b) What advice would you give the mother?



14. A 50-year-old woman complained of itchy rash confined to her fingers. On direct inquiry revealed that she is a frequent Buddhist worshiper.
    (a) What is the diagnosis and most likely causative factor in her?



15. An 11-year-old boy was brought with this itchy eczematous rash on the face. Initially they have appeared as hypopigmented patches which later became itchy and eczematous.
    (a) What is the diagnosis?

Answers

1. Koebner phenomena in vitiligo, post inflammatory depigmentation, chemical leukoderma

   Look for other sites for vitiligo, follow-up the patient to observe new lesions of vitiligo elsewhere.

   Chemical leukoderma following Shoe (rubber slipper) contact allergy.

   Avoid wearing rubber-made items; such as shoes, slippers, handbags, waist bands, handbags, purse, etc.

2. Contact dermatitis to bronze pendant
   Remove the pendant and not to wear bronze-made products.
   Antihistamine to relieve itch, mild topical steroid (0.5–1% hydrocortisone cream) twice daily.
3. Commode contact dermatitis
   Avoid direct contact with the plastic cover of the commode. Advice to lay a commode paper or fabric covering when she uses the commode.
   Topical steroids twice daily with regular emollients.
4. Shoe contact dermatitis
   Treat as acute eczema
   Should not wear shoes made-up of ingredients which caused allergic contact dermatitis (e.g. rubber or leather)
5. Lip lick dermatitis
   If itchy mild topical steroid, and to apply emollients on lips very frequently to get rid of the dryness and the habit of lip licking
   Explain how he gets it, and advice to stop lip licking
6. Hair dye allergy, she has applied hair dye only on the sideburns which is the earliest to get grey hair
   She has to avoid PPD and ammonia-containing hair dye
   Treat as acute eczema. If severe and extensive can add a short course of oral steroids.
7. This is phytophotodermatitis; usually following contact with lime or related foods, after exposure to sunlight these bizarre hyperpigmented patches appear overnight.
   Identify the causative agent, avoid them. This patch will disappear spontaneously within 2–3 weeks. If itchy, can prescribe mild topical steroid.
8. Chemical leukoderma following Hair dye allergy
   Re-assurance, this will spontaneously re-pigment over 3–6 months. Re-pigmentation can be enhanced by applying 0.1% tacrolimus twice daily.
9. Contact allergy to wristwatch, possibly nickel
   Treat as acute eczema with antihistamines and topical steroids, and advice to avoid wearing nickel
10. Eczematous rash following contact dermatitis to plastic clip in the brazier
    Treat as chronic eczema with antihistamines, condys wash if oozing, and topical steroids
    Explain the patient on causative factors, and advise her to remove all the plastic clips which touches the skin from her underwears.
11. Contact dermatitis to nickel on his waist belt. He used to wear the waist belt to the left side as shown in the picture.
12. Fixed drug eruption (FDE), lip lick dermatitis
    FDE lasts only few weeks, may recur if expose to the offending agent again. Therefore, history of recent drug ingestion and repeated attacks are important clues in the history.
    Observe the patient for lip licking during the consultation. Usually within 5 minutes he will lick lips 5–6 times, which favour the diagnosis of lip lick dermatitis.
    This man's diagnosis was lip lick dermatitis.
13. This child has contact dermatitis to pendants he wear.
    Remove all the pendants and the black thread. Mild steroids and emollients will cure the rash.
14. Contact dermatitis to flower saps. Buddhists pluck white flowers to worship, commonly "Wathusudda" which has lot of saps
15. Photodermatitis (Polymorphic light eruption)

8.2 Allergic Contact Dermatitis

Allergic contact dermatitis is an eczematous reaction that occurs as an immunological response following exposure to a substance to which the immune system has previously been sensitized. The diagnosis of precise allergen can only be confirmed by patch testing which is not routinely performed in Sri Lanka due to the high cost. Contact allergen is suspected from the pattern or distribution of the dermatitis (Warshaw et al. 2019, 2015; Damevska et al. 2019).

A search for possible sources of allergic contact dermatitis should include a review of all the patient's activities, but initially should concentrate on (Tan et al. 2014; Nosbaum et al. 2009):

(a) Occupation, present and past
(b) Hobbies
(c) Cosmetics, clothing and personal objects
(d) Home environment
(e) Current and previous topically applied medicaments both prescribed and over the counter

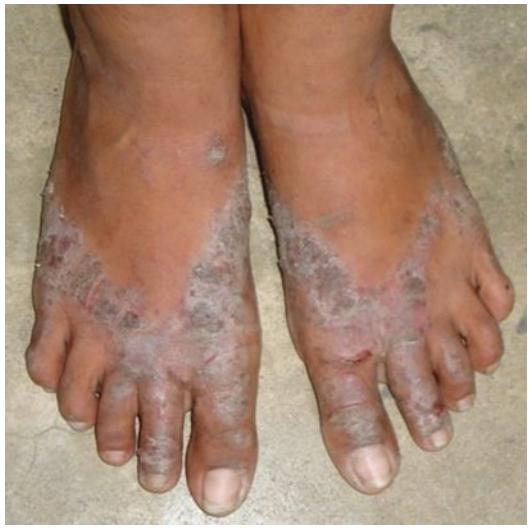


Fig. 8.1 Rubber contact dermatitis. This symmetrical, bilateral, acute eczematous rash is due to allergic contact dermatitis to rubber slippers

Management

- It is important to examine the patient carefully to identify the pattern of distribution of the dermatitis.
- Try to identify the possible causative substance, and advice to avoid it (Ale and Maibacht 2010).
- Use appropriate personal protective equipment (e.g. gloves made of an appropriate material).
- Treat as eczema; with antihistamines, topical steroids, ± condys wash and ± oral antibiotics (Figs. 8.1–8.26).

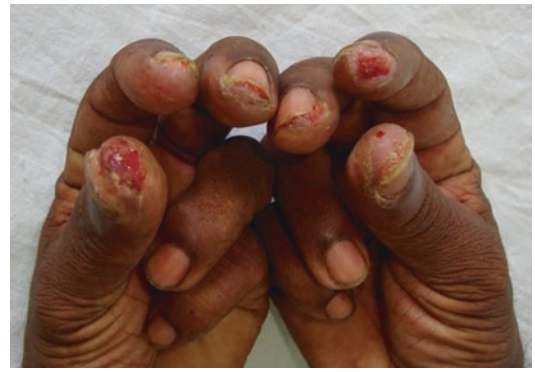


Fig. 8.2 Acute eczematous rash on the first three fingertips on both hands in a frequent Buddhist worshipper; allergic contact dermatitis to "Wathusudda flower" saps. When plucking flowers only first three fingers are used

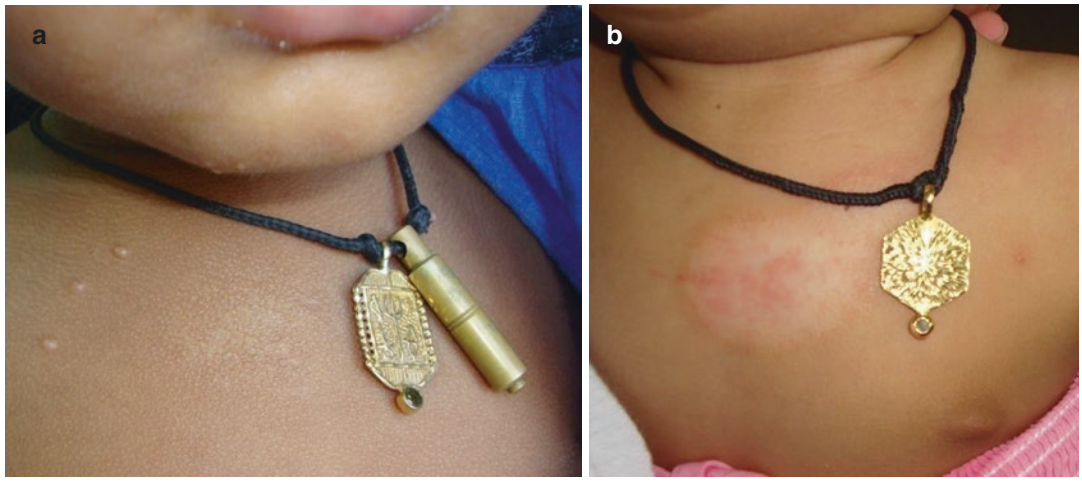


Fig. 8.3 (**a** and **b**) Two infants with allergic contact dermatitis to the pendant. Wearing these traditional pendants made up of gold or bronze (sometimes mixture) is customary in Sri Lanka

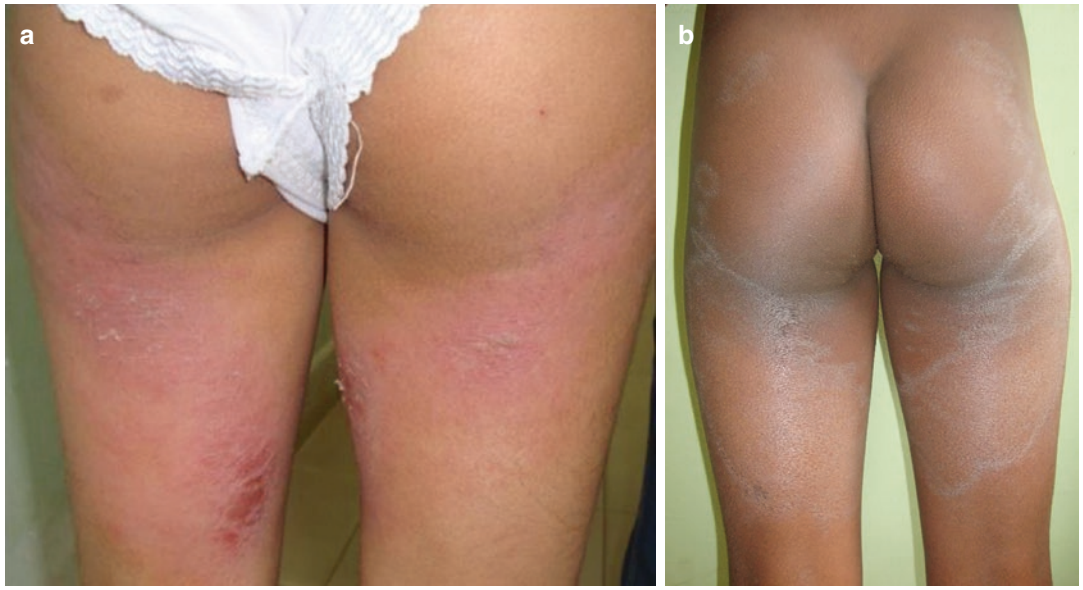


Fig. 8.4 (**a** and **b**) Commode dermatitis; allergic contact dermatitis to the commode, commonly seen in young children. The site and the pattern of the eczematous rash are the clues

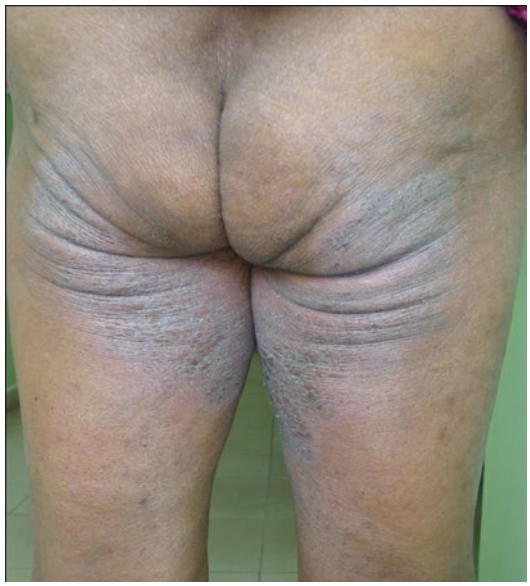


Fig. 8.5 Commode dermatitis in a 75-year-old woman. This is not common in adults

8.3 Irritant Contact Dermatitis

Irritant contact dermatitis is the cutaneous response to the physical or toxic effects of a wide range of environmental exposures (Bains et al. 2019; McGuckin et al. 2017) (Figs. 8.27–8.31).

8.4 Lip Lick Cheilitis

Moist or fissured eczema around the mouth is common in children with atopic eczema. It can also occur as a result of food allergy and in children with no known atopy or allergy. Its persistence, and perhaps its origin, is attributable to habits of lip licking, thumb sucking, dribbling or chapping. Contact sensitivity, for example, to toothpaste ingredients especially herbal products, can occasionally be demonstrated.

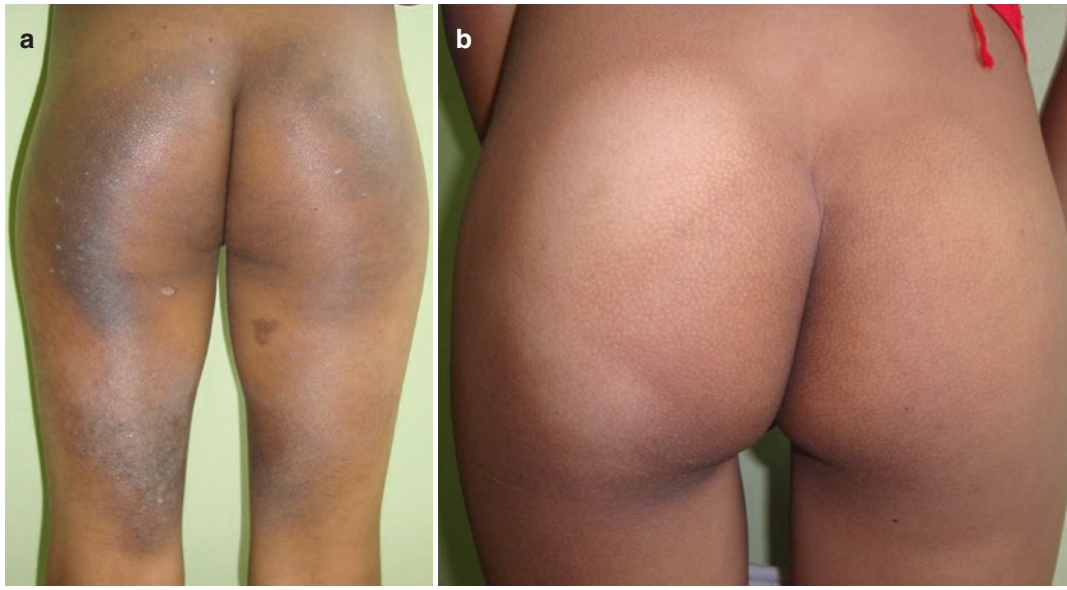


Fig. 8.6 (**a** and **b**) Commode dermatitis showing hyperpigmentd and hypopigmented lesions

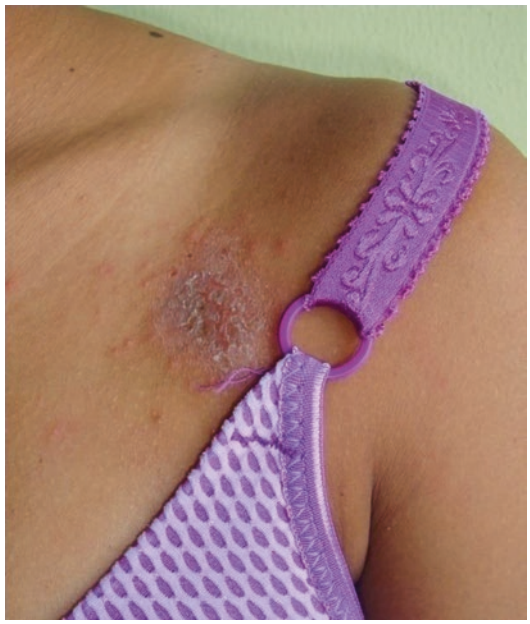


Fig. 8.7 Contact dermatitis to plastic clip of the brazier

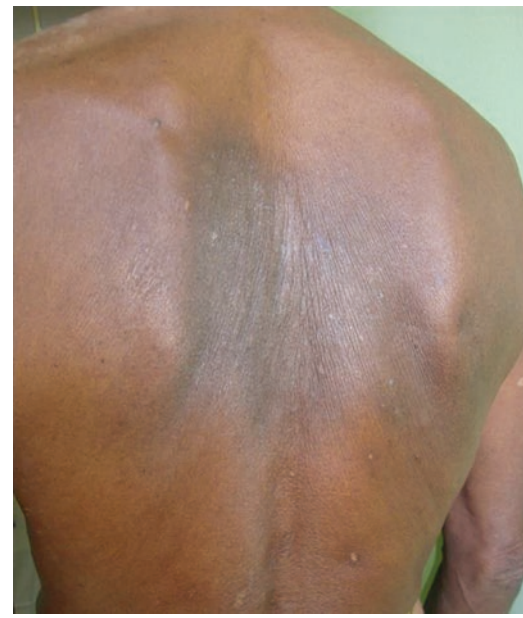


Fig. 8.8 A 49-year-old manual labourer came with this itchy hyperpigmented patch on his back**.** He did not have eczematous rash elsewhere, no history of eczema or atopy. This was contact allergic dermatitis to raw rubber sheets which he carries at the back. Careful history taking in relation to daily activities and occupation is important to elucidate the possible allergen. It is important to explain it to the patient and to avoid or prevent the contact allergen

The regular application of 1% hydrocortisone ointment and moisturizers to avoid drying of lips is helpful (Mini and Anoop 2017; Hisa et al. 1995) (Figs. 8.32–8.37).

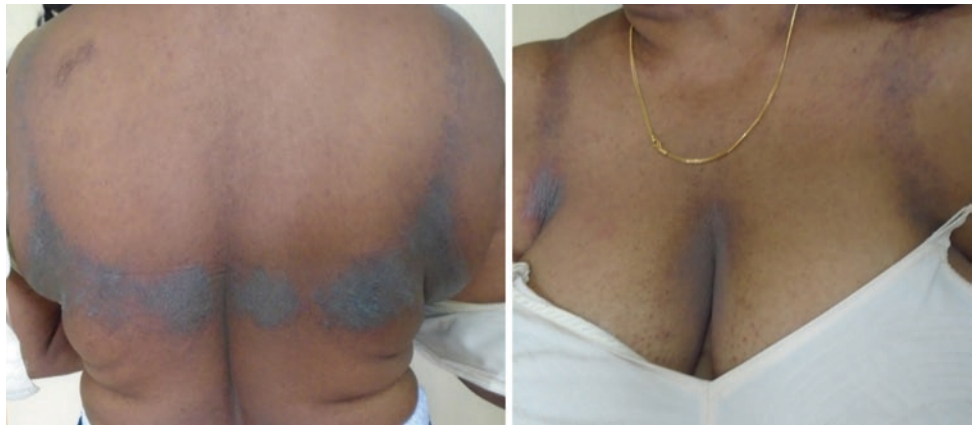


Fig. 8.9 Eczematous rash following allergic contact dermatitis to the brazier. It may be either to the fabric material or the fabric dye in the brazier. Patch testing was not performed as a routine in our clinical practice

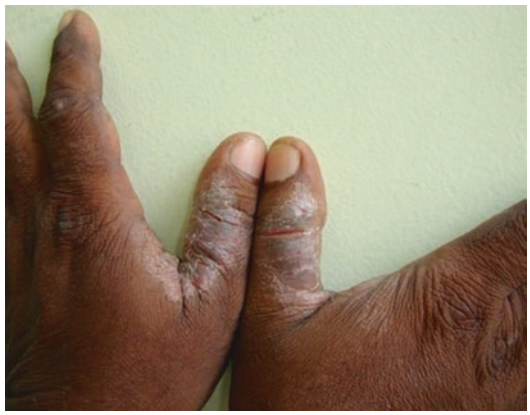


Fig. 8.10 A professional driver with chronic eczematous rash; allergic contact dermatitis to the rubber covering of the steering wheel

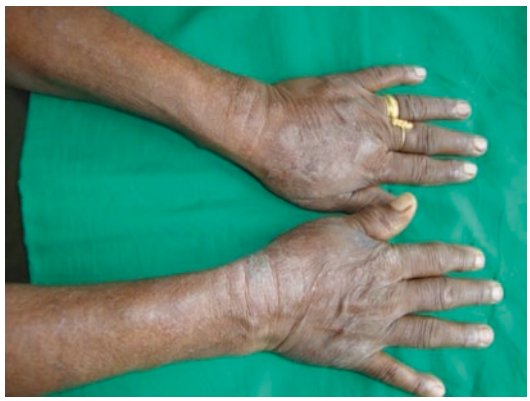


Fig. 8.11 An eczematous rash on both dorsum of hands extending to forearms of a farmer's wife; allergic contact dermatitis to cow milk. Villagers in Sri Lanka extract cow milk by barehand

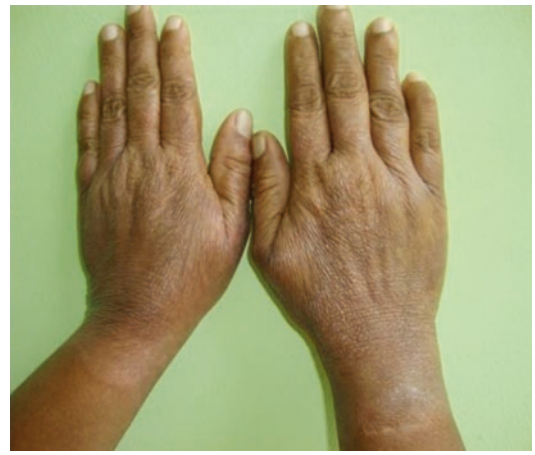


Fig. 8.12 An itchy eczematous rash on both hands of a healthcare worker; allergic contact dermatitis to hand gloves. Note bilateral symmetrical involvement and clear demarcation at the wrist

8.5 Phytophotodermatitis

An inflammatory and pigmentary reaction of the skin to light, potentiated by furocoumarins in plants. Common presentations in our setting are after squeezing limes, handling celery, etc. (Choi et al. 2018; Fitzpatrick and Kohlwes 2018; Matthews et al. 2017; Safran et al. 2017) (Figs. 8.38, 8.39).

Clinical Features Asymptomatic, linear or bizarre shape pigmentation which appeared within a day is the clue to diagnosis. Most patients and relatives do not relate the causative incident unless inquired directly.

Diagnosis Clinical

Management When the causative agent is avoided the pigmentation fades after weeks or months. Most patients are satisfied with the explanation and reassurance.

Berloque dermatitis is a type of photocontact dermatitis. It occurs after perfumed products containing bergamot (or a psoralen) are applied to the skin followed by exposure to sunlight. Striking linear patterns of hyperpigmentation are characteristic, corresponding to local application of the scented product. In the acute phase, erythema and even blistering can be seen (Zaynoun et al. 1981; Gruson and Chang 2002).

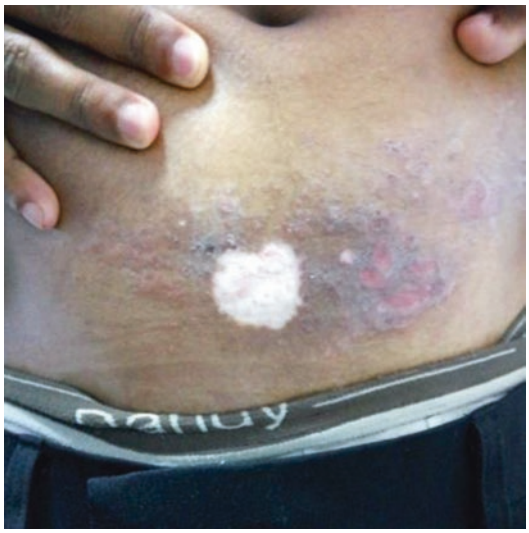


Fig. 8.13 Depigmentation and eczematous rash is due to allergic contact dermatitis to nickel in his waist belt

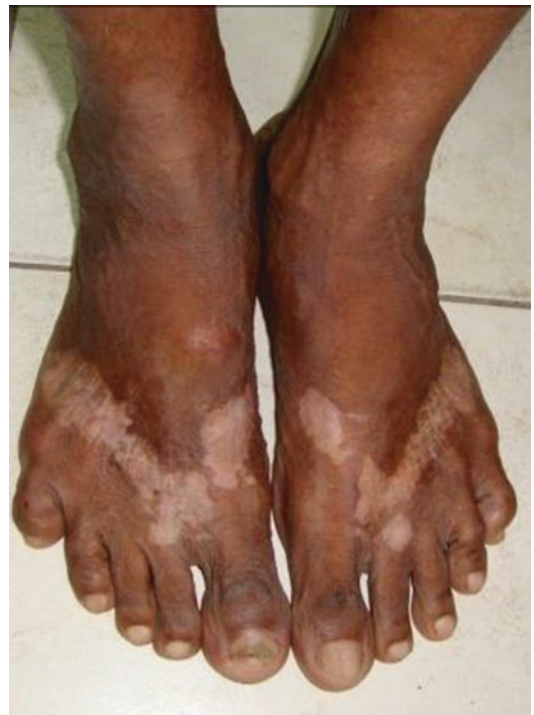


Fig. 8.15 Chemical leukoderma. This vitiliginous lesions due to allergic contact dermatitis to footwear, rubber slippers

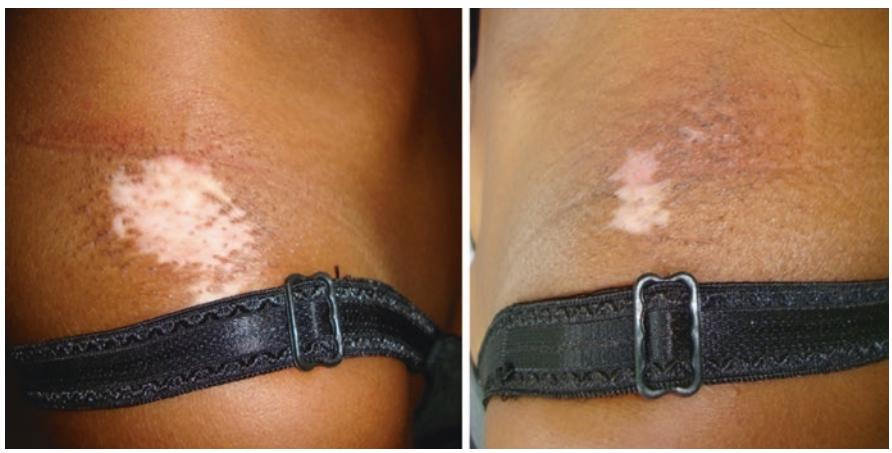


Fig. 8.14 Chemical leukoderma. Allergic contact dermatitis to plastic clip in the brazier. This woman had this itchy vitiliginous patch bilaterally on her shoulders and did not have similar vitiliginous lesions elsewhere

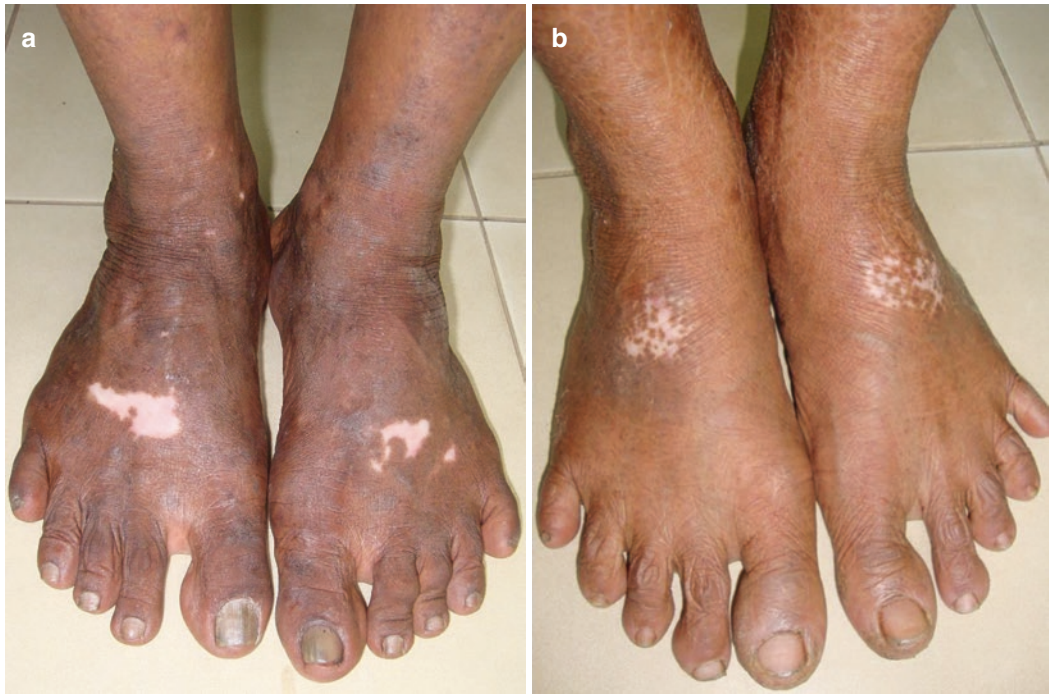


Fig. 8.16 (**a** and **b**) Chemical leukoderma. These symmetrical bilateral vitiliginous lesions are due to allergic contact dermatitis to PTBC. (PTBP-Para tertiary butylphenol formaldehyde resin is a phenol-formaldehyde resin found in commercial adhesives, and in particular in adhesives used to bond leather and rubber, particularly in the manufacture of shoes)

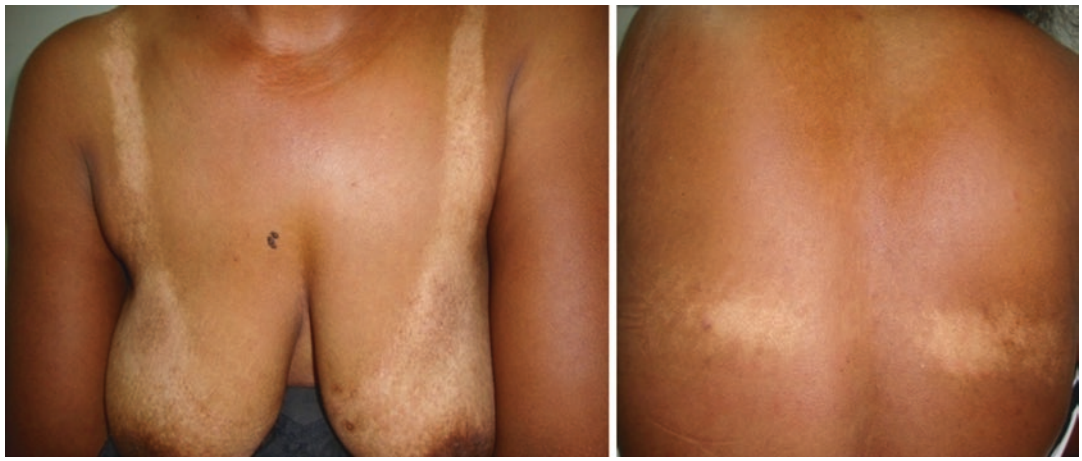


Fig. 8.17 Chemical leukoderma. Asymptomatic well-demarcated depigmentation; possibly the contact dermatitis to black colour in brazier. She admitted that she wears only black colour braziers

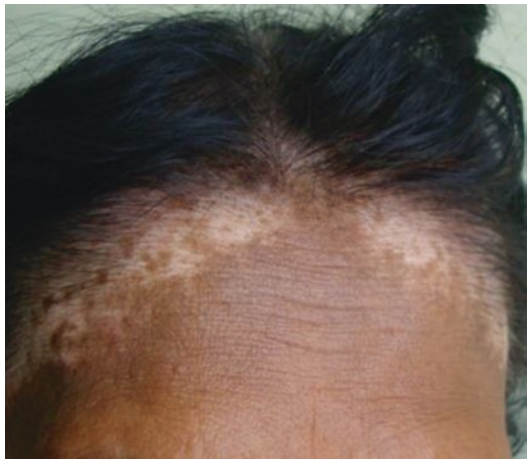


Fig. 8.18 Chemical leukoderma. This depigmentation is due to the black hair dye applied along the frontal hair line

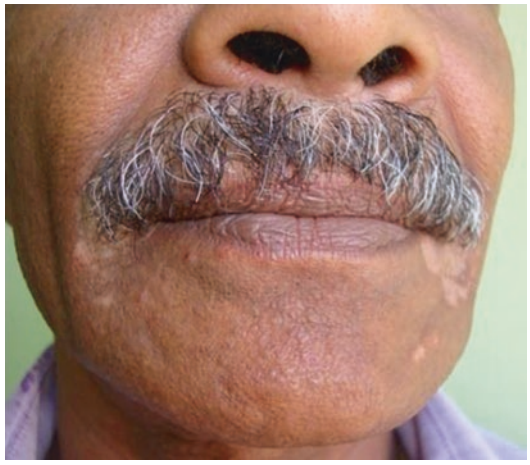


Fig. 8.19 Chemical leukoderma. Depigmentation following black hair dye applied to moustache

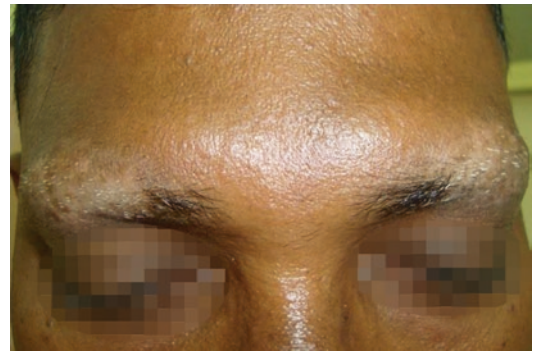


Fig. 8.20 Chemical leukoderma. Depigmentation following black hair dye applied to eyebrows

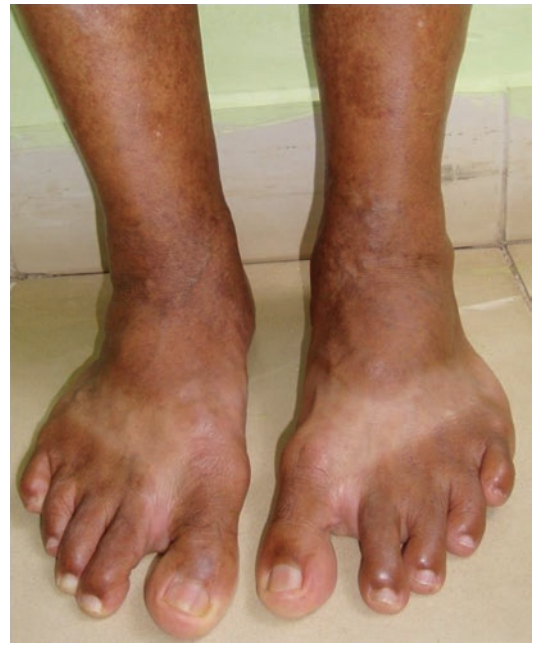


Fig. 8.21 Hypopigmentation along the shoe contact

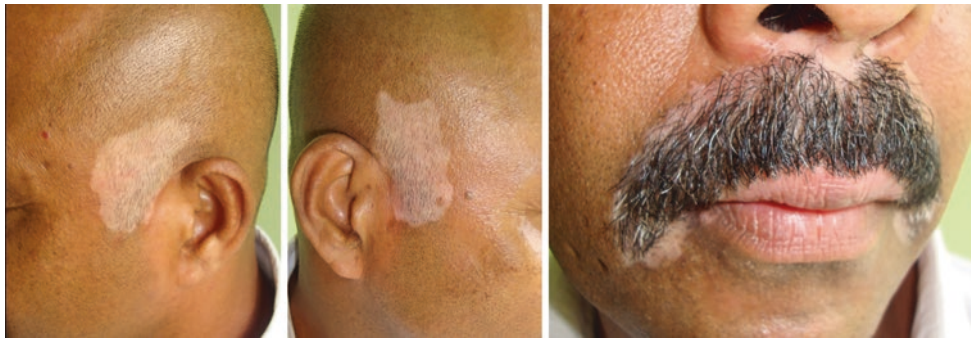


Fig. 8.22 Chemical leukoderma. Vitiliginous depigmentation following hair dye. This man had applied hair dye only on the temporal area bilaterally and on the moustache (Damevska et al. 2019)

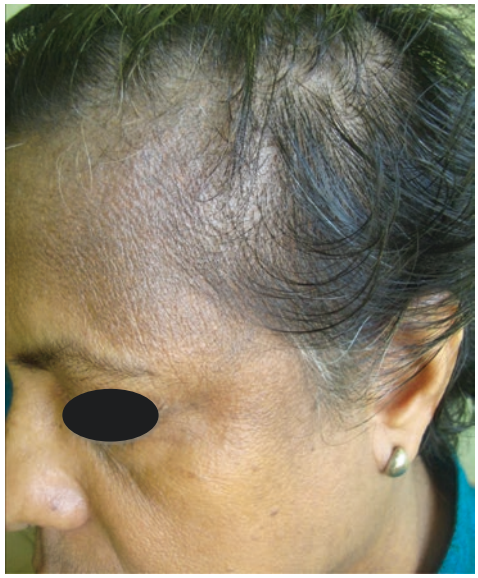


Fig. 8.23 Ashy dermatoses like hyperpigmentation following chronic allergic contact dermatitis to hair dye

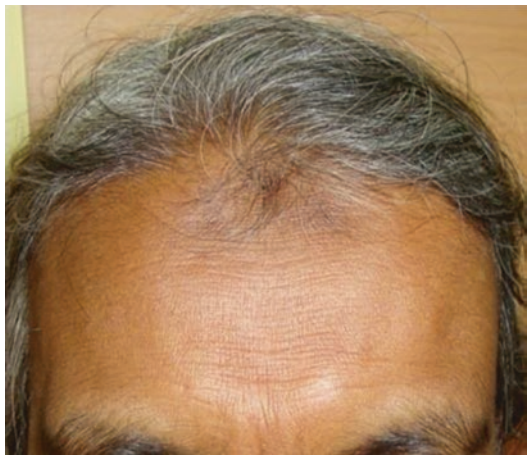


Fig. 8.24 Hyperpigmented patch on the hairline is due to allergic contact dermatitis to "Sindur" applied by Tamil married women

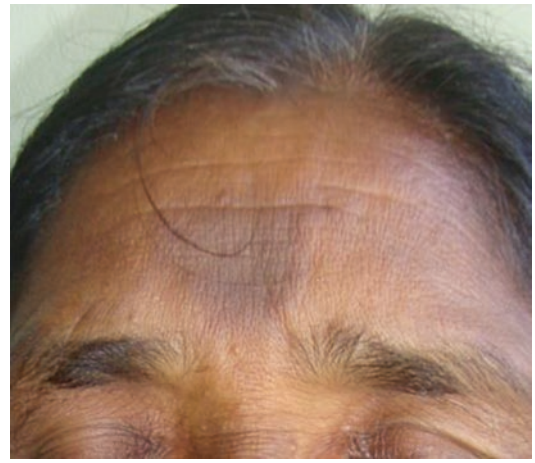


Fig. 8.25 Hyperpigmented patch on the forehead is due to allergic contact dermatitis to "Pottu" applied by Tamils both men and women at the Hindu temple

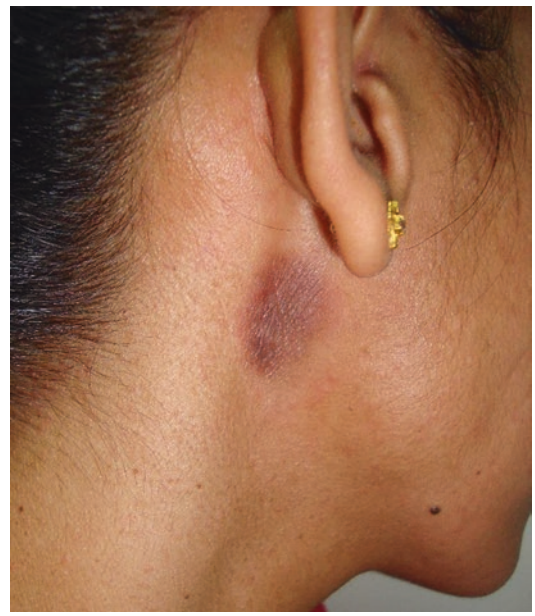


Fig. 8.26 Hyperpigmented patch following herbal medicine "Siddalepa" applied as a remedy for earache

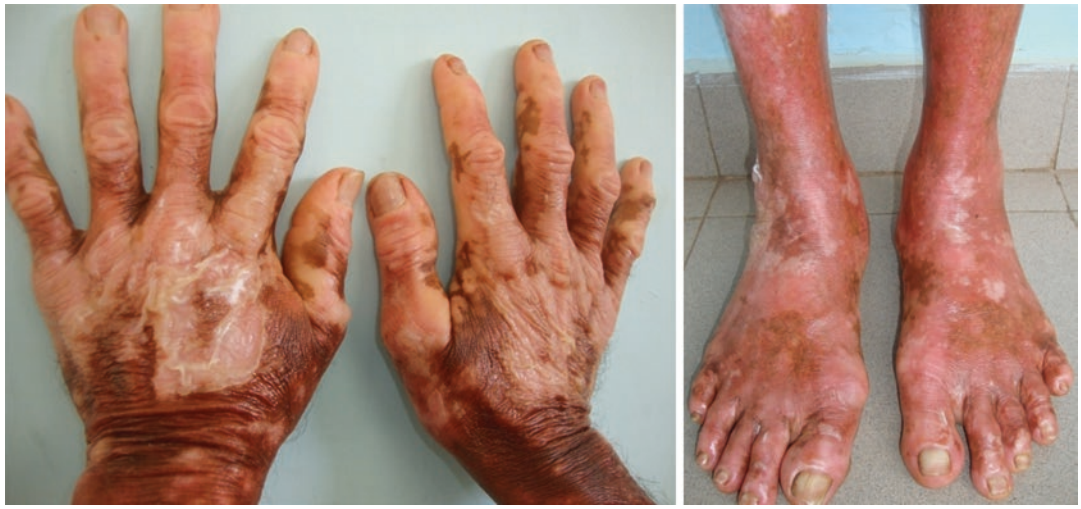


Fig. 8.27 Irritant contact dermatitis to Aurvedic oil applied on vitiligo patches

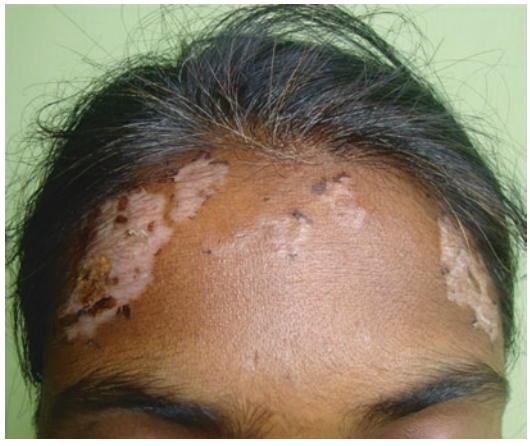


Fig. 8.28 Vitiliginous patches on the forehead following irritant contact dermatitis to garlic applied to relieve headache

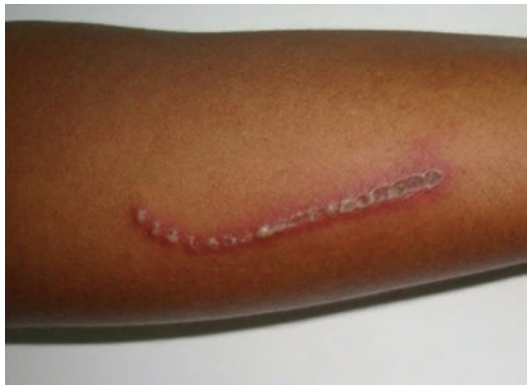


Fig. 8.29 Linear vesicular pustular eruption following contact with an irritant plant

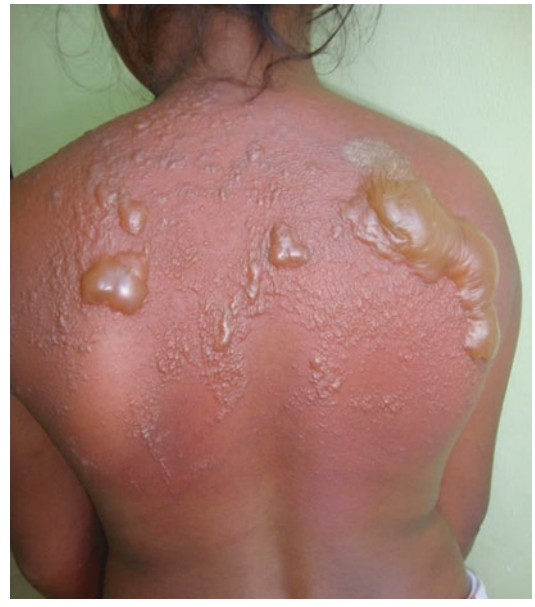


Fig. 8.30 Irritant contact dermatitis to permethrin lotion applied for scabies

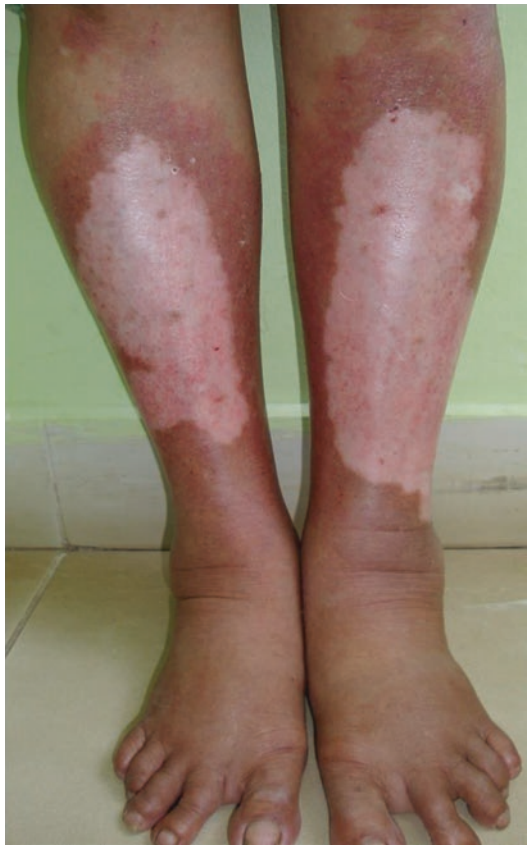


Fig. 8.31 Irritant contact dermatitis to 10% coal tar lotion applied on vitiligo patches

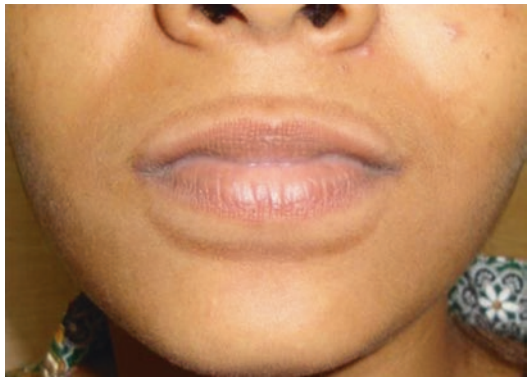


Fig. 8.32 Lip lick cheilitis; hyperpigmentation is common in pigmented skin

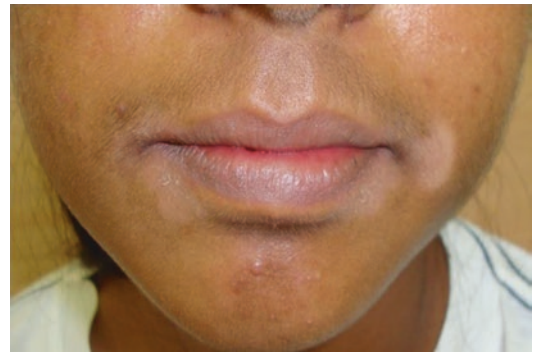


Fig. 8.33 Hypopigmentation around the mouth following lip lick cheilitis

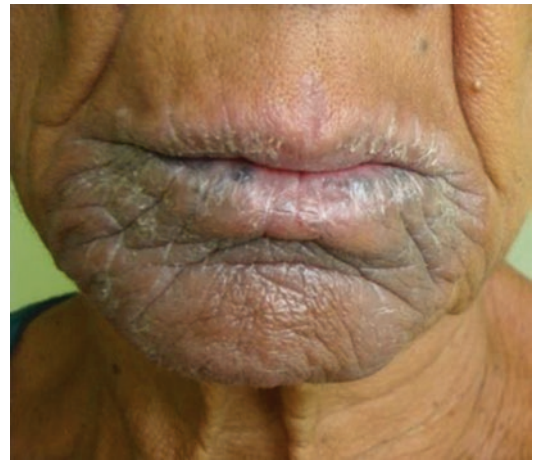


Fig. 8.34 Cheilitis following irritant contact dermatitis to drooling of saliva in an edentulous 74-year-old woman

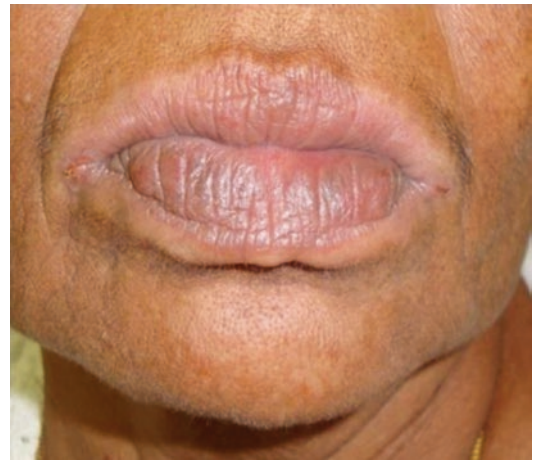


Fig. 8.35 Lip lick cheilitis showing irritant contact dermatitis to saliva

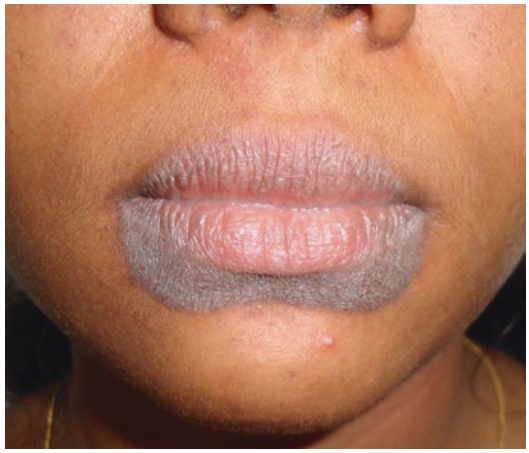


Fig. 8.36 Hyperpigmented scaly itchy patch following lip lick cheilitis

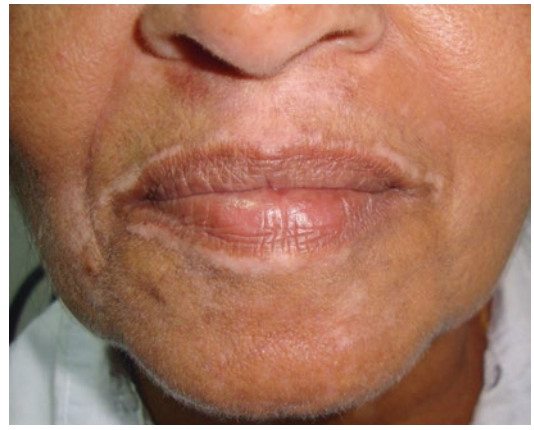


Fig. 8.37 Vitiliginous linear lesions following the habit of lip licking. She did not have vitiligo on the other areas of the body

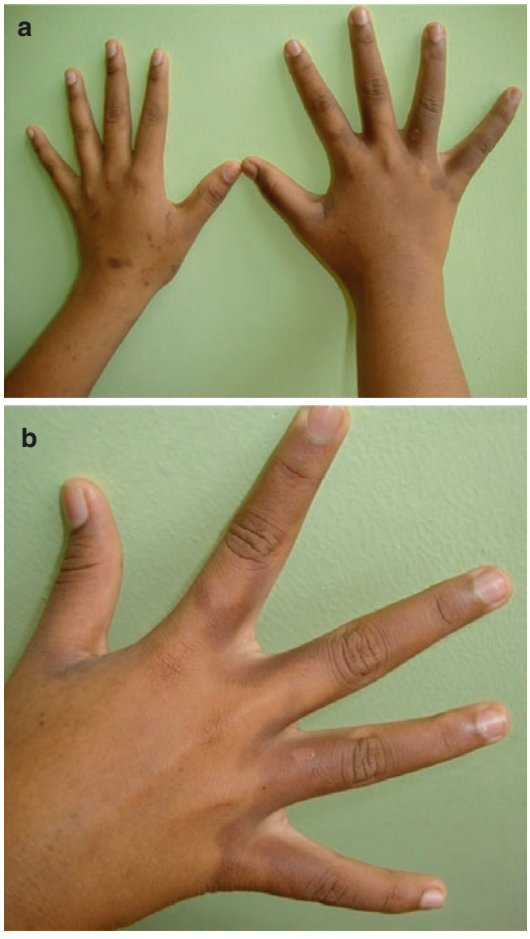


Fig. 8.38 (**a**) Phytophotodermatitis in a 15-year-old girl. Note bizarre-shaped hyperpigmentation on both hands which had appeared overnight following squeezing lime. This is very common in children. (**b**) Phytophotodermatitis. Closer view

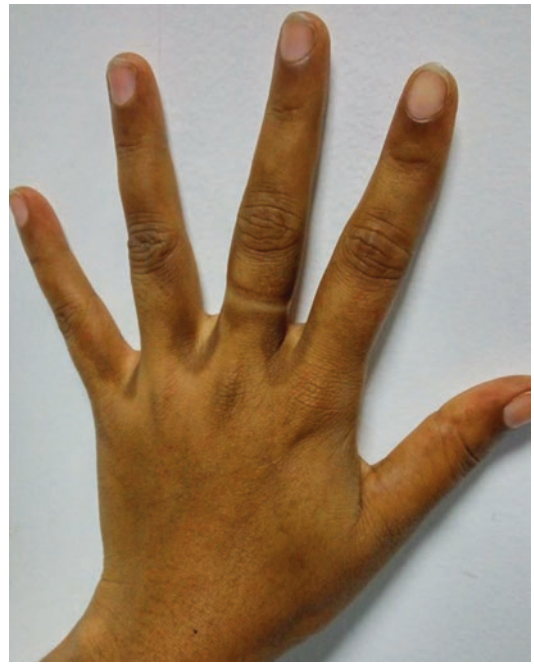


Fig. 8.39 Phytophotodermatitis in a 36-year-old housewife. Note sparing the skin which was covered by the wedding ring in the middle finger

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