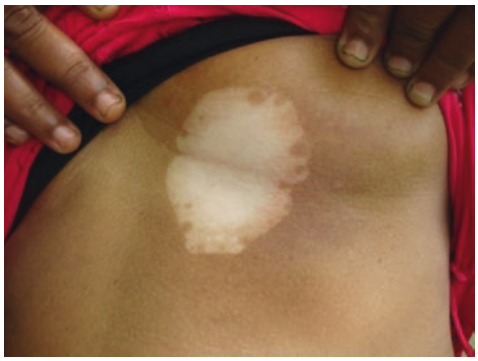
Vitiligo

41

Ranthilaka R. Ranawaka

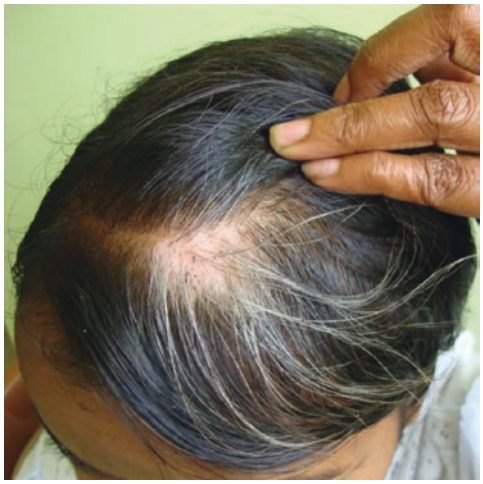
41.1 Introduction

Vitiligo is a major cosmetic concern in pigmented skin. This chapter illustrates various clinical manifestations of vitiligo such as non-segmental vitiligo, leukotrichia, poliosis, isomorphic or Koebner phenomenon, reverse Koebner phenomenon, segmental vitiligo, hypochromic vitiligo (vitiligo minor), trichrome vitiligo and speckled vitiligo. Vitiliginous lesions can appear following chemical and physical agents too. Vitiliginous patches confined to bilateral shins in middle- and old-aged women are very common in our settings. These lesions are not progressive, and no causative factors identified.

1. 

A 35-year-old woman came with this asymptomatic depigmented patch on left submammary area for 8 months. She did not have similar skin patches elsewhere.

(a) What is your differential diagnosis?
(b) How do you differentiate them?
(c) What is the best available treatment with minimal side effects?

2. 

A 22-year-old woman is worried that she is getting grey hair. Her grey hair is localized to one area.

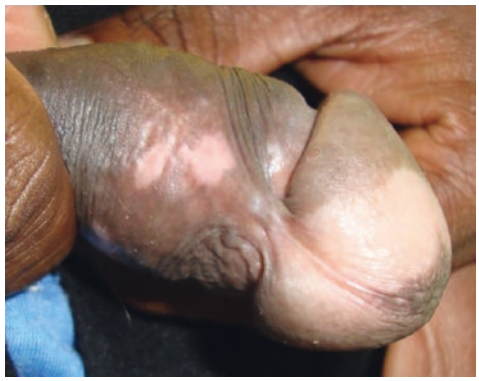
(a) What is the explanation for this?
(b) How do you treat this woman?

The clinical photographs in this chapter are photographed by Dr. Ranthilaka R. Ranawaka, Consultant Dermatologist, General Hospital Kalutara, Sri Lanka.

R. R. Ranawaka (✉)
General Hospital Kalutara, Kalutara, Sri Lanka

R. R. Ranawaka et al. (eds.), *Atlas of Dermatoses in Pigmented Skin*,
https://doi.org/10.1007/978-981-15-5483-4_41

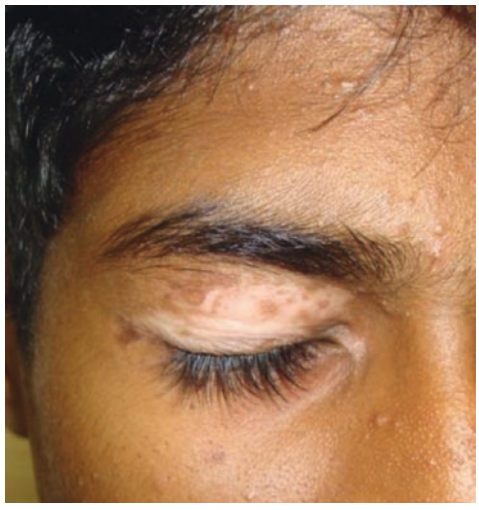
3



A 42-year-old man came with vitiliginous patches on glans penis, penile and scrotal skin for more than 6 months.

(a) What is your differential diagnosis?
(b) How do you differentiate them?
(c) Why is it important to differentiate?

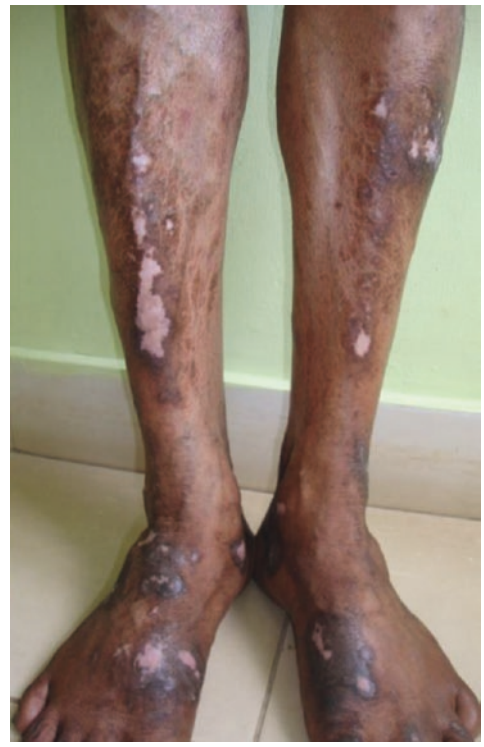
4



A 16-year-old boy had developed this solitary patch on the face for 3 months.

(a) What is your diagnosis?
(b) What is the best available treatment for the boy?

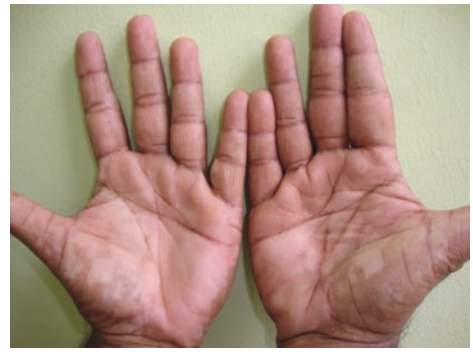
5.



A 55-year-old man is worried that he is getting vitiligo on legs.

(a) What is your diagnosis?
(b) How do you manage this?

6.



A 34-year-old man came with vitiligo on palms and soles bilaterally.

(a) What is the prognosis in this condition?

Answers

1. Vitiligo, lichen sclerosus

Skin biopsy for histopathology

This was confirmed vitiligo. Since it is a solitary lesion, 0.1% tacrolimus topical ointment can cure the lesion without side effects.

2. She has a vitiligo patch on the scalp which caused depigmentation of overlying hair (Leukotrichia).

   Since it is a solitary lesion, 0.1% tacrolimus topical ointment is the first choice of therapy but costly. Clobetasol ointment twice daily application also gives good results and is much cheaper.
3. Vitiligo, lichen sclerosus

   Skin biopsy for histopathology

   Vitiligo confined to genitals can leave alone without treatments.

   Genital lichen sclerosus is a premalignant condition which should be treated aggressively (see Chap. 49). Lichen sclerosus can be treated with either topical tacrolimus or topical potent steroid. Topical tacrolimus is the first-line therapy without side effects but is expensive. Clobetasol ointment is also effective but can give rise to secondary genital candidiasis.
4. Vitiligo

   0.1% tacrolimus topical ointment is the first choice of therapy.
5. Postinflammatory depigmentation secondary to chronic eczema

   Reassure the patient; treat eczema.
6. When vitiligo is confined to palms and soles, it is cosmetically acceptable. Since there are no hair on palms and soles, re-pigmentation is poor as re-pigmentation starts from the melanocytes left over at the base of the hair follicles (perifollicular re-pigmentation).

41.2 Clinical Manifestations of Vitiligo

Vitiligo is a major cosmetic problem in pigmented skin. It is a common form of localized depigmentation. It is an acquired condition resulting from the progressive loss of melanocytes (Kumarasinghe 1995; Birlea et al. 2013).

Classified into two major forms (van Geel and Speeckaert 2016):

1. Segmental vitiligo—unilateral maculae in a segmental/band-shaped distribution. They start earlier in life than non-segmental vitiligo and often stabilize within the first year of onset.
2. Non-segmental vitiligo—bilateral maculae, often distributed in an acrofacial pattern or scattered symmetrically over the entire body.

Segmental vitiligo is characterized by its early onset, rapid stabilization and unilateral distribution. Recent evidence suggests that segmental and non-segmental vitiligo could represent variants of the same disease spectrum. Observational studies with respect to its distribution pattern point to a possible role of cutaneous mosaicism (van Geel and Speeckart 2017, van Geel et al. 2013, 2014).

Associated Diseases Amongst autoimmune diseases, the strongest association is with thyroid disease. The association between vitiligo and halo naevi is well established. Areas of depigmentation sometimes develop in patients with melanoma.

Genetics Approximately 30% of patients have a positive family history (Figs. 41.1, 41.2, 41.3, 41.4, 41.5, 41.6, 41.7, 41.8, 41.9, 41.10, 41.11, 41.12, 41.13, 41.14, 41.15, 41.16).

41.3 Differential Diagnosis

Post inflammatory depigmentation, steroid induced depigmentation, lichen sclerosus, chemical/physical leukoderma (Figs. 41.17, 41.18, 41.19, 41.20, 41.21, 41.22).

41.4 Treatments

Treatment may be divided into pharmacological, surgical and physical, which can sometimes be combined (Speeckaert and van Geel 2017; Faria 2014).

1. *Pharmacological Treatment*

   Topical

   (a) Topical corticosteroid therapy is considered a first-line treatment of vitiligo, since it is low-cost and easy to apply. It is limited by the risk of local adverse effects, such as atrophy, striae and telangiectasias and also systemic side effects.

   (b) Calcineurin inhibitors—topical tacrolimus has no risk of atrophy.

Topical tacrolimus ointment 0.03% or pimecrolimus cream 1% has efficacy for vitiligo in infants, which serves to achieve an appropriate level of safety and tolerability during the 6-month period of applications (Hu et al. 2019). No sign of immunosuppression was found amongst infants treated intermittently with 1% pimecrolimus cream for up to 2 years; they demonstrated normal immune responses to vaccinations and did not show increases in the incidence of systemic infections or skin infections over time (Paul et al. 2006).

Systemic—Systemic corticosteroid therapy is used in cases of disseminated vitiligo lesions with rapid progression. Oral steroids minipulse has been used in order to minimize adverse events.

2. *Physical Treatment*—Ultraviolet (UV) radiation, both in UVA and UVB spectrum.

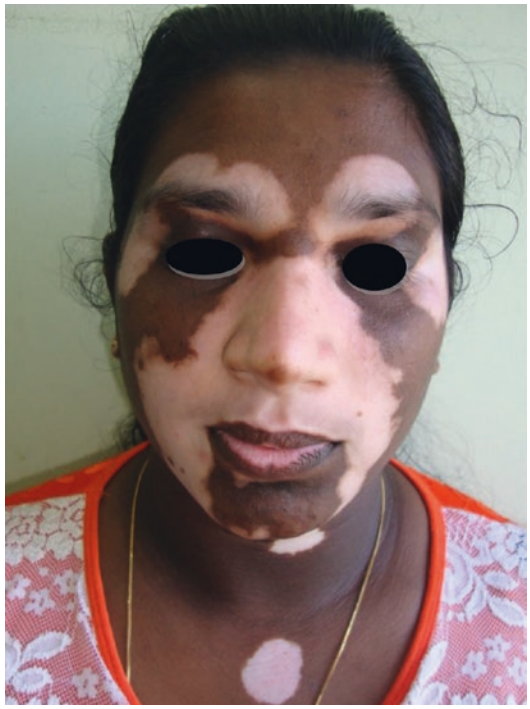


Fig. 41.1 Non-segmental vitiligo. Bilateral maculae, symmetrically distributed

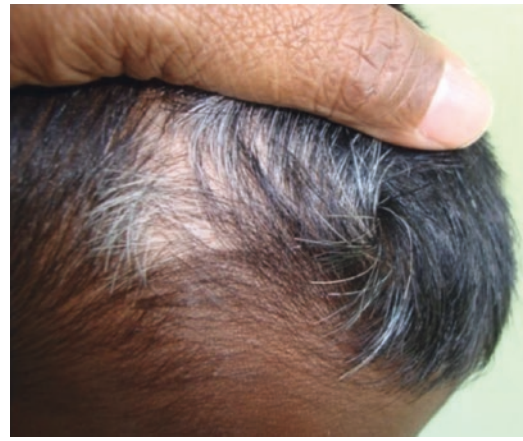


Fig. 41.2 Focal lesions of vitiligo showing localized area of white hair (leukotrichia). This is undetermined or unclassified vitiligo

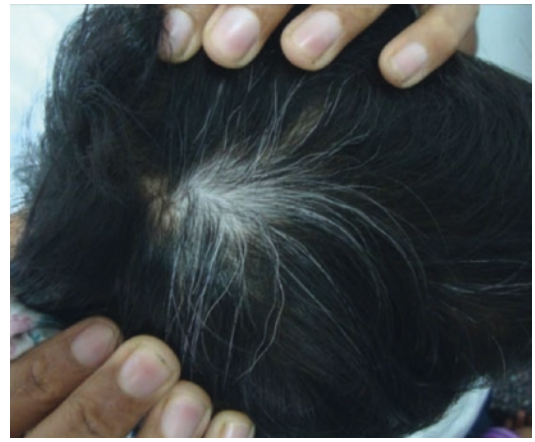


Fig. 41.3 Leukotrichia

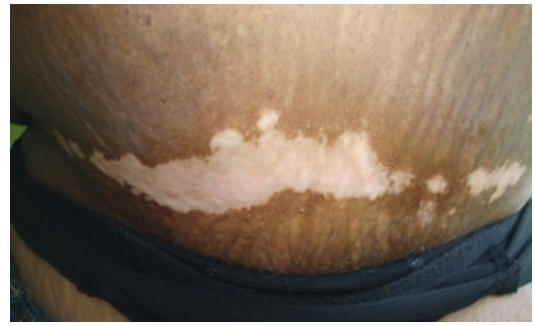


Fig. 41.4 Vitiligo at a site of chronic pressure (around the waist). Isomorphic or Koebner phenomenon

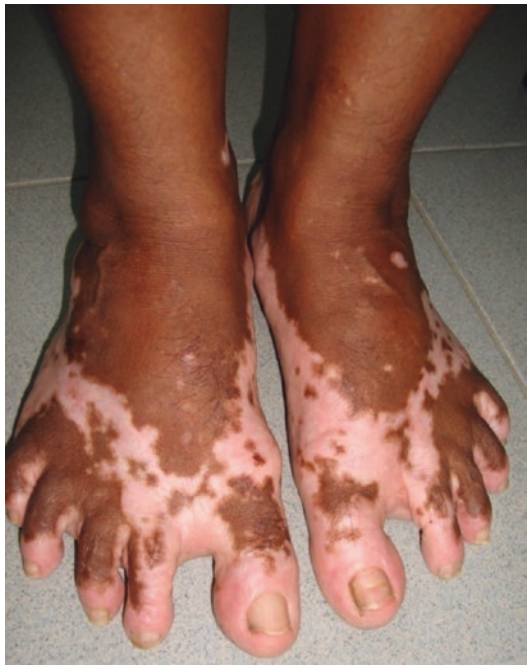


Fig. 41.5 Isomorphic or Koebner phenomenon. Vitiligo appearing along the shoe contact in a woman with generalized vitiligo

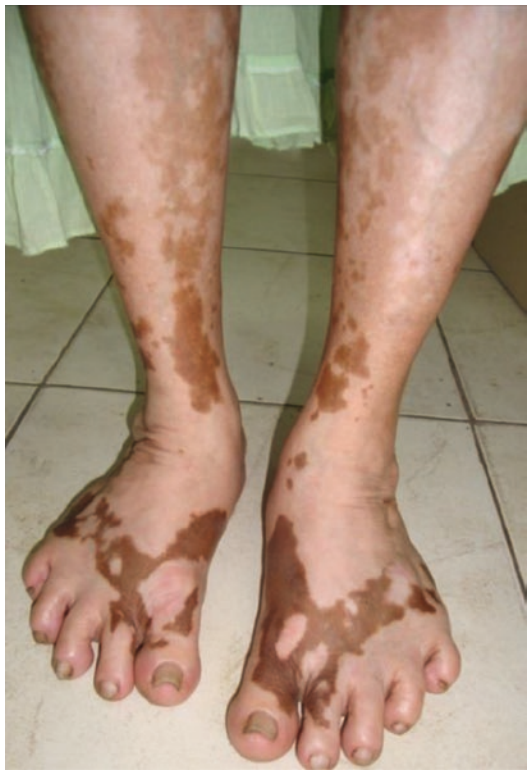


Fig. 41.6 Reverse Koebner phenomenon. Sparing of normal skin along the shoe contact in a woman with universal vitiligo

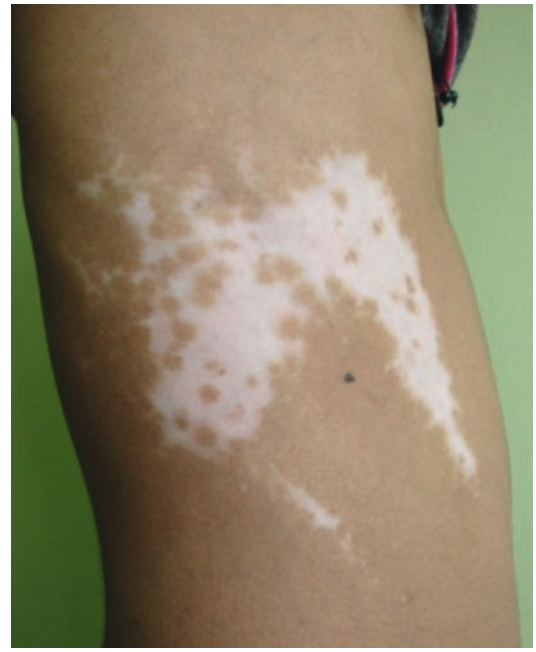


Fig. 41.7 Segmental vitiligo along the Blaschko's lines in a 15-year-old boy

Narrowband UVB (311nm) is considered a first-line option for vitiligo.

Phototherapy with UVA and psoralens (PUVA therapy) in the forms 8-methoxypsoralen, 5-methoxypsoralen or trimethylpsoralen which may be used in their oral and topical presentations.

3. *Surgical Treatment*—Surgical melanocyte transplantation for patients with stable disease who failed to respond to classical therapies. Punch grafting (PG) is the easiest and lowest-cost technique, although it is generally limited to treating small areas. Suction blister epidermal grafting (SBEG), split-thickness skin grafts are other surgical options.

This 36 year-old man or the 40 year-old woman did not have similar vitiliginous lesions elsewhere in the body. When vitiliginous patches appear only on genital skin lichen sclerosus (LS) to be excluded as long term sequele in two diseases contradict. Only skin biopsy can differentiate two as early LS do not show skin atrophy clinically (see Chap. 49). When the vitiligo is confined to genitalia treatment is not essentially prescribed. Most patients are satisfied with reassurance and education that treatment can be started when the disease spread to other sites.

Fig. 41.8 Segmental vitiligo in a 49-year-old woman

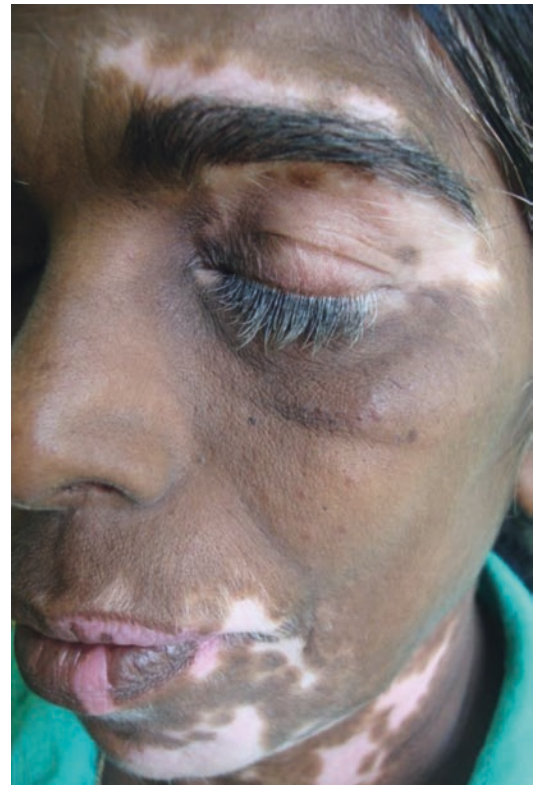


Fig. 41.9 Closer view showing white eyelashes (poliosis) and white skin hair (leukotrichia) around the mouth

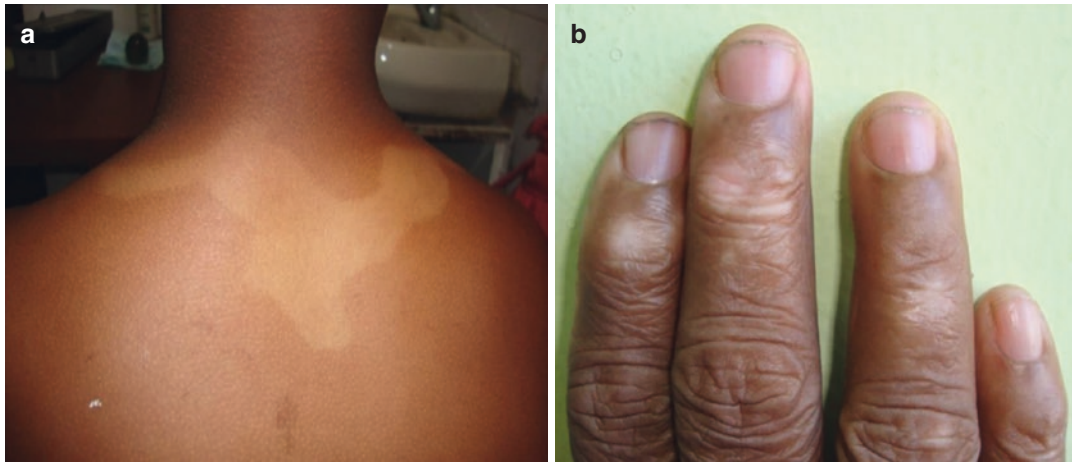


Fig. 41.10 (**a**, **b**) Hypochromic vitiligo (vitiligo minor). A form of vitiligo that seems to be limited to dark-skinned individuals. Refers to partial defect in pigmentation. Repeated biopsies may be needed to exclude the early stages of cutaneous lymphoma as a differential diagnosis

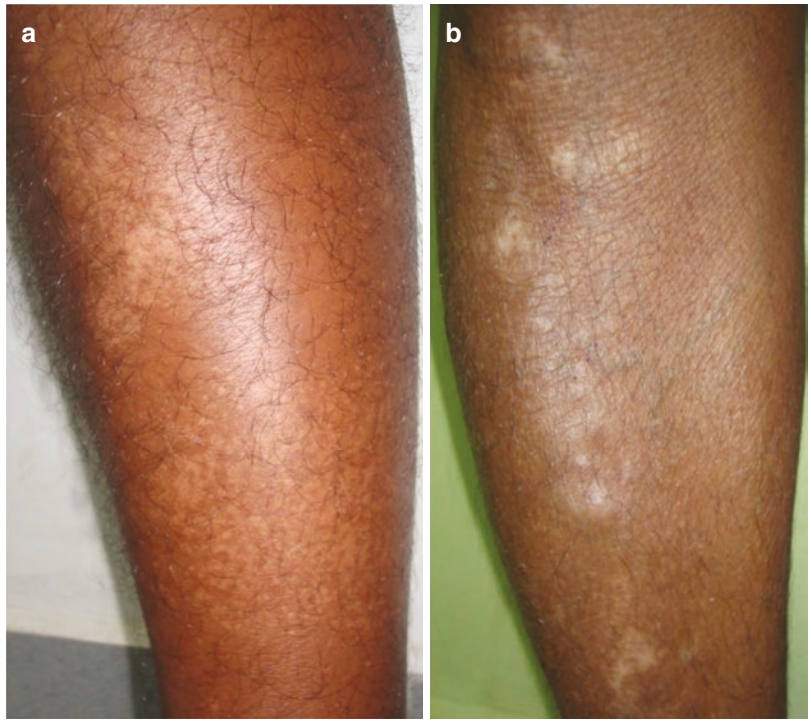


Fig. 41.11 (**a**, **b**) Hypochromic vitiligo (vitiligo minor)

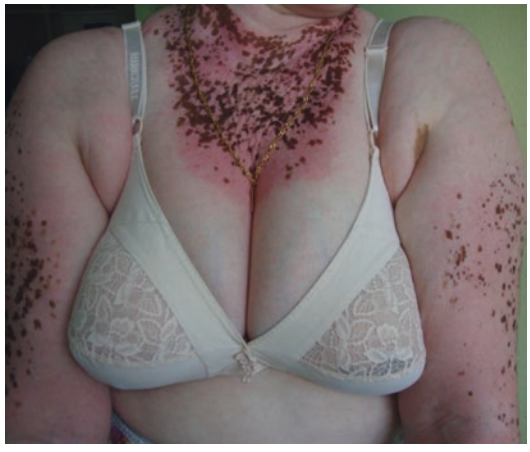


Fig. 41.12 A 52-year-old woman with universal vitiligo showing spontaneous typical perifollicular re-pigmentation only on sun-exposed areas

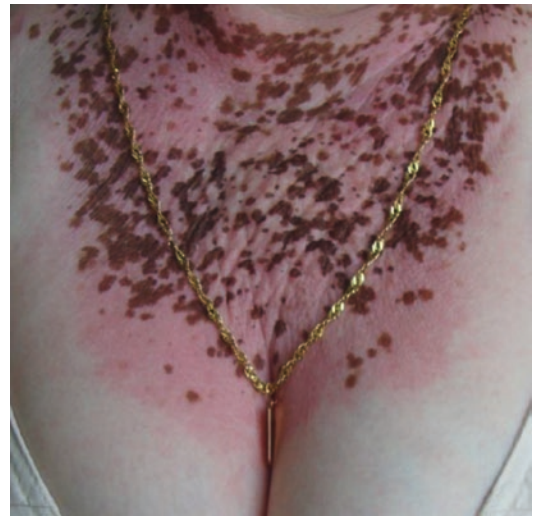


Fig. 41.13 Closer view showing typical perifollicular re-pigmentation

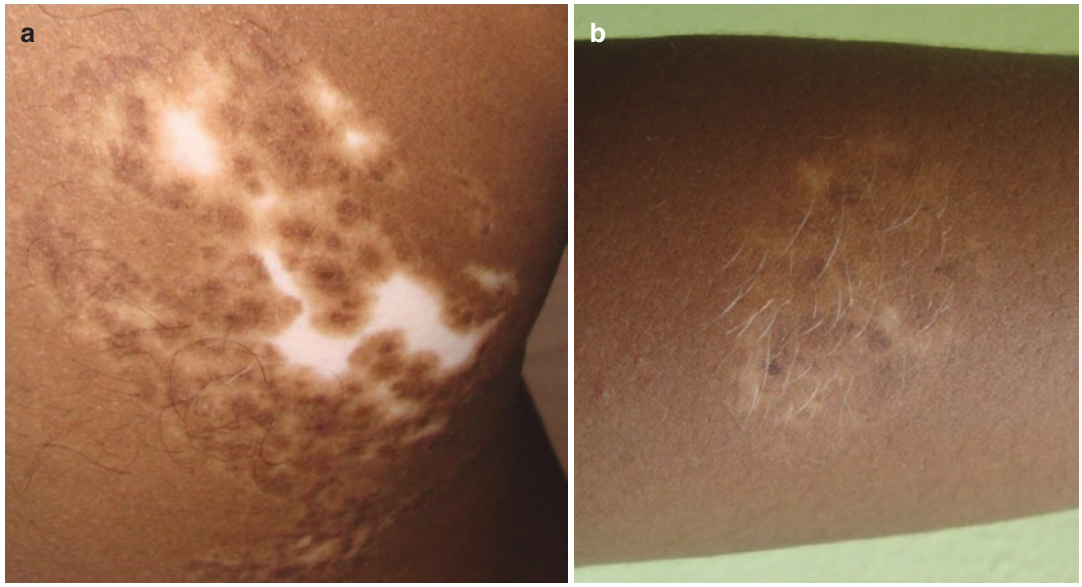


Fig. 41.14 (**a**, **b**) Trichrome vitiligo. The pigment loss may be partial or complete, or both may occur in the same areas (trichrome vitiligo). Some hairs on the patches are depigmented (leukotrichia)

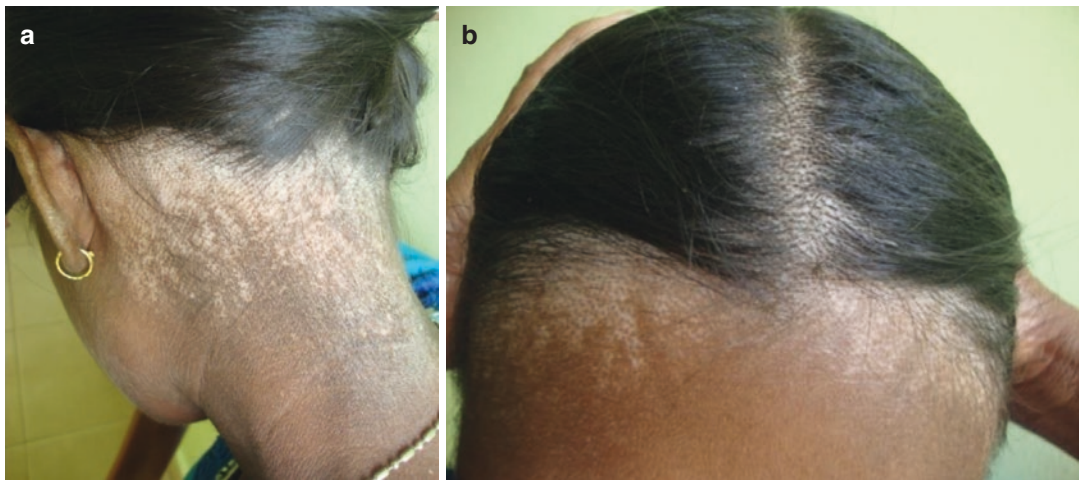


Fig. 41.15 (**a**, **b**) Speckled vitiligo in systemic sclerosis

Topical 0.1% tacrolimus is the treatment of choice in localized vitiligo lesions.

When the vitiligo is confined to genitalia, treatment is not essentially prescribed. Most patients are satisfied with reassurance and education that treatment can be started when the disease spread to other sites. Topical 0.1% tacrolimus is the treatment of choice in localized lesions.

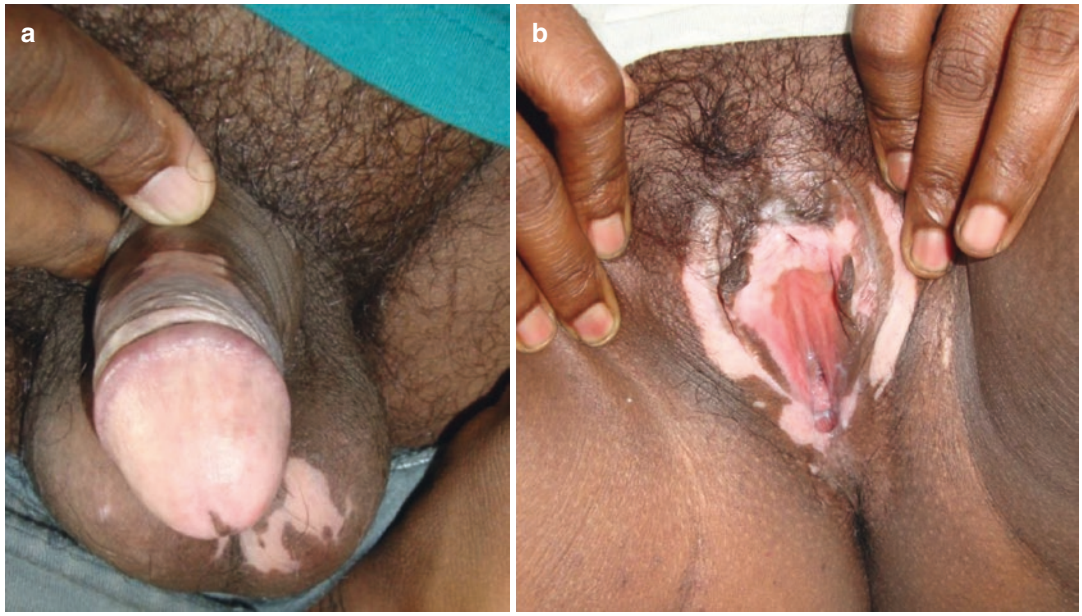


Fig. 41.16 (**a**, **b**) Vitiligo in genital skin in a 36-year-old man and in a 40-year-old woman

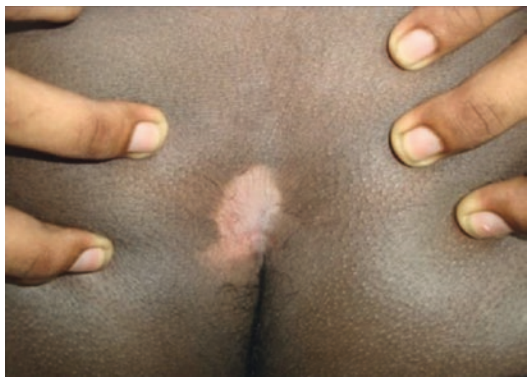


Fig. 41.17 Postinflammatory depigmentation. This depigmented patch was following intralesional steroid injection to lower spine

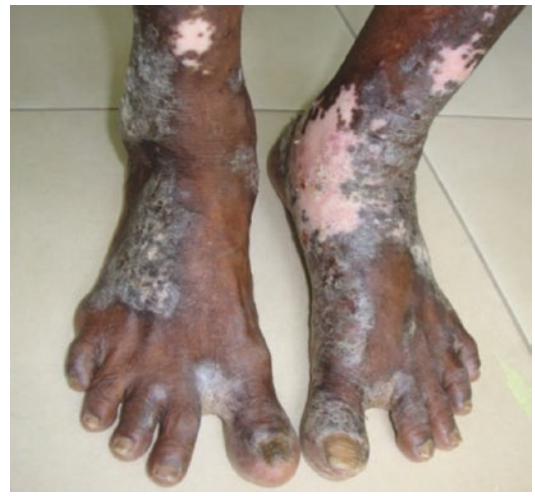


Fig. 41.18 Postinflammatory depigmentation following chronic eczema. These depigmented patches persist even after eczema is completely healed, distressing the patient. Reassurance is enough

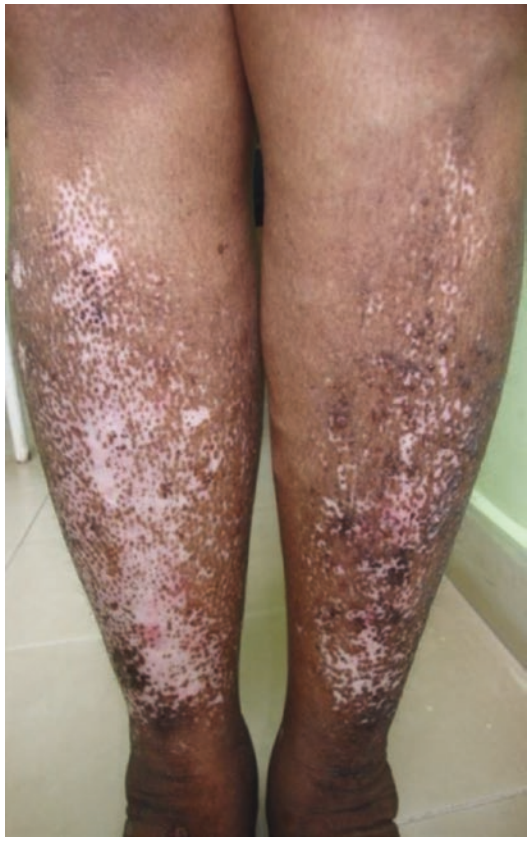


Fig. 41.19 These *vitiliginous patches* confined to areas where there was chronic eczema. Vitiliginous patches persist after eczema is healed. The patients are satisfied with reassurance

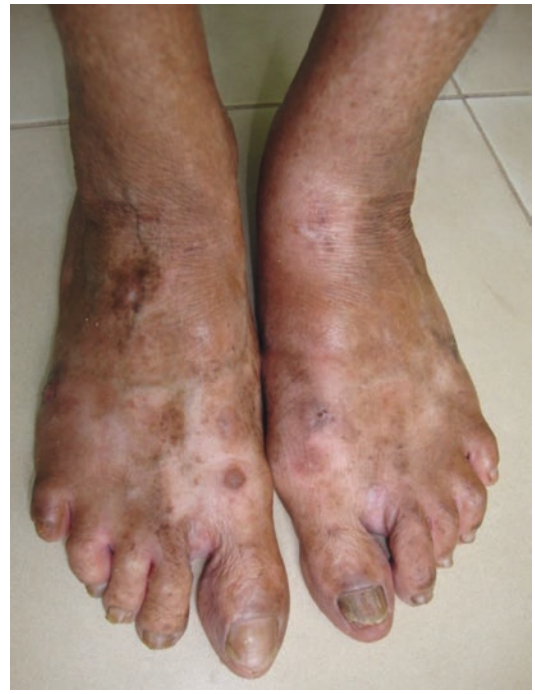


Fig. 41.20 Depigmentation following topical potent steroids to feet eczema

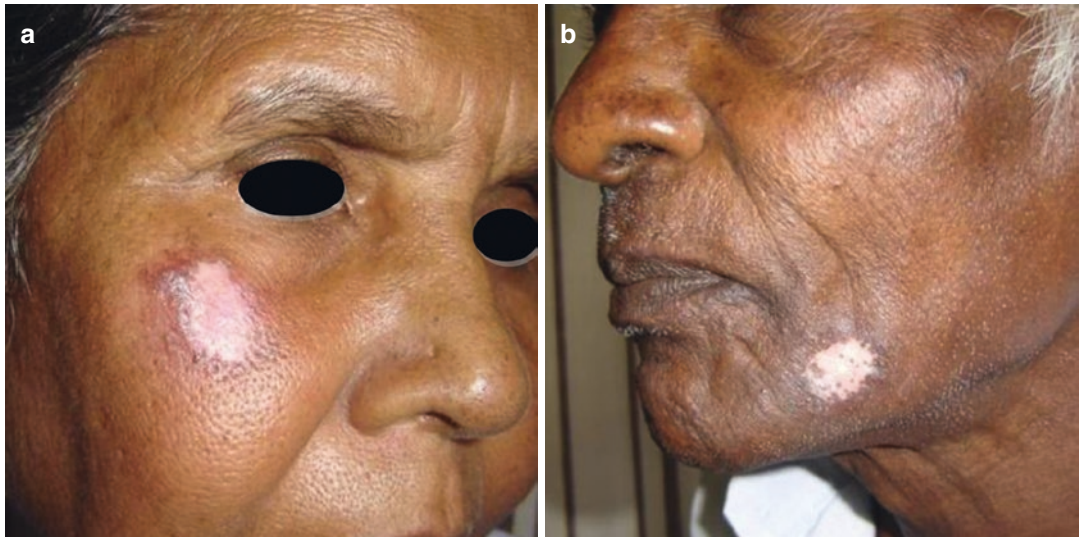


Fig. 41.21 (**a**, **b**) Postinflammatory depigmentation resembling vitiligo following liquid nitrogen cryotherapy to cutaneous leishmaniasis (see Chap. 21)

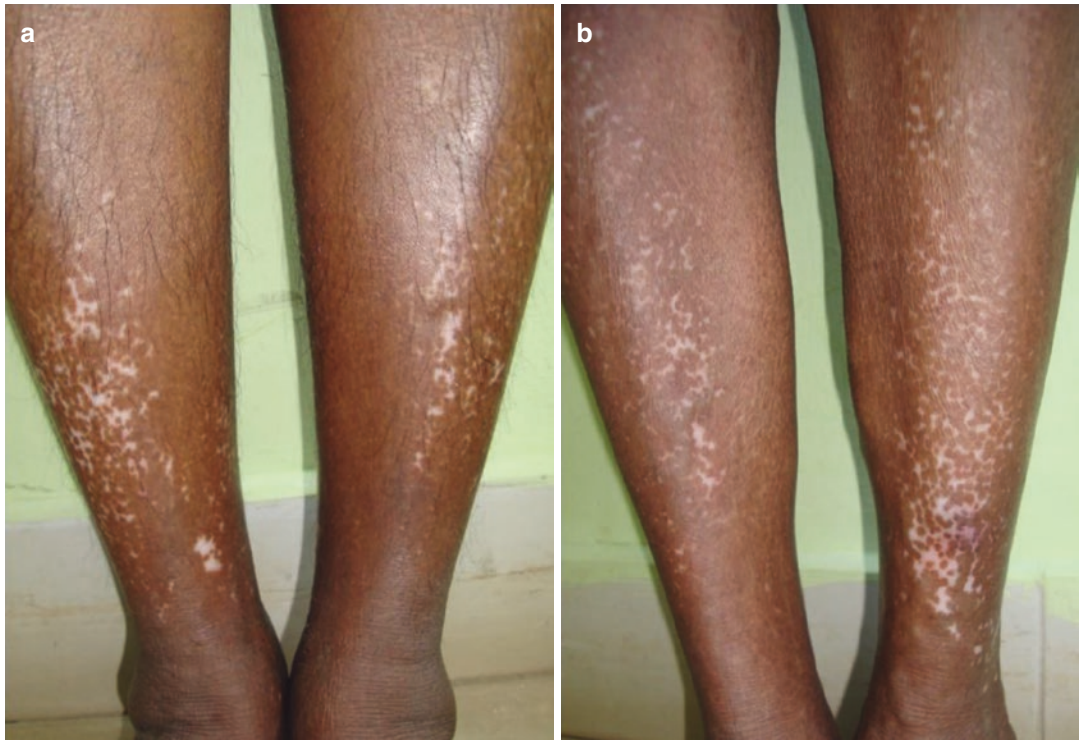


Fig. 41.22 (**a**, **b**) Vitiliginous patches confined to bilateral shins in middle- and old-aged women are very common in our settings. These lesions are not progressive, and no causative factors identified. This is not associated with vitiligo. This skin problem is not researched in Sri Lanka

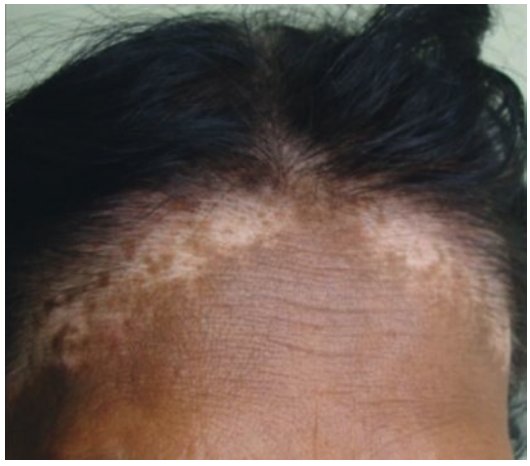


Fig. 41.23 Vitiliginous contact dermatitis following black hair dye (see Chap. 8)

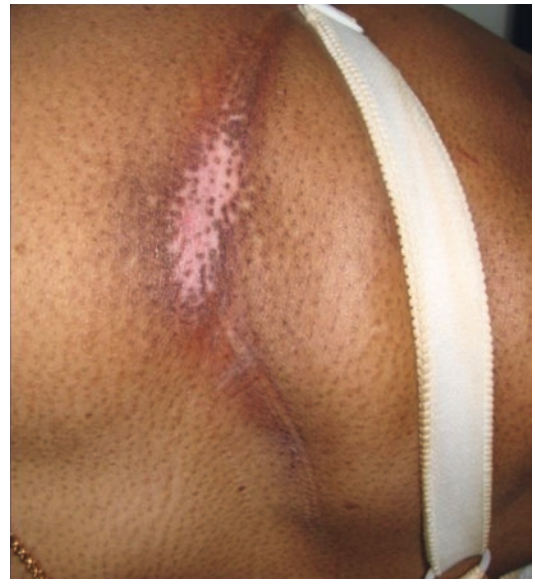


Fig. 41.24 Vitiliginous contact dermatitis to elastic strap of the brassiere

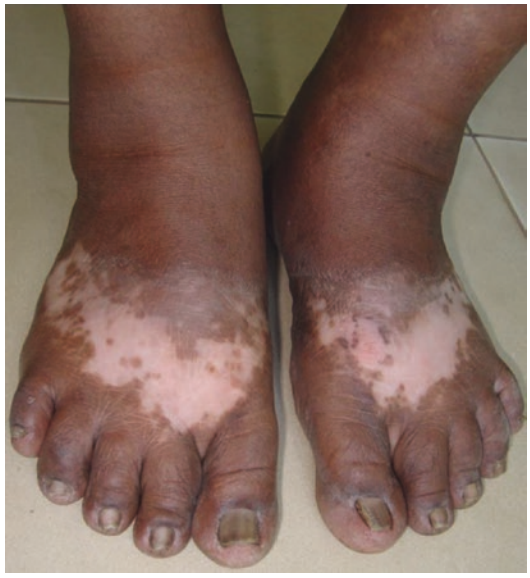


Fig. 41.25 Vitiliginous lesions following contact dermatitis to shoes

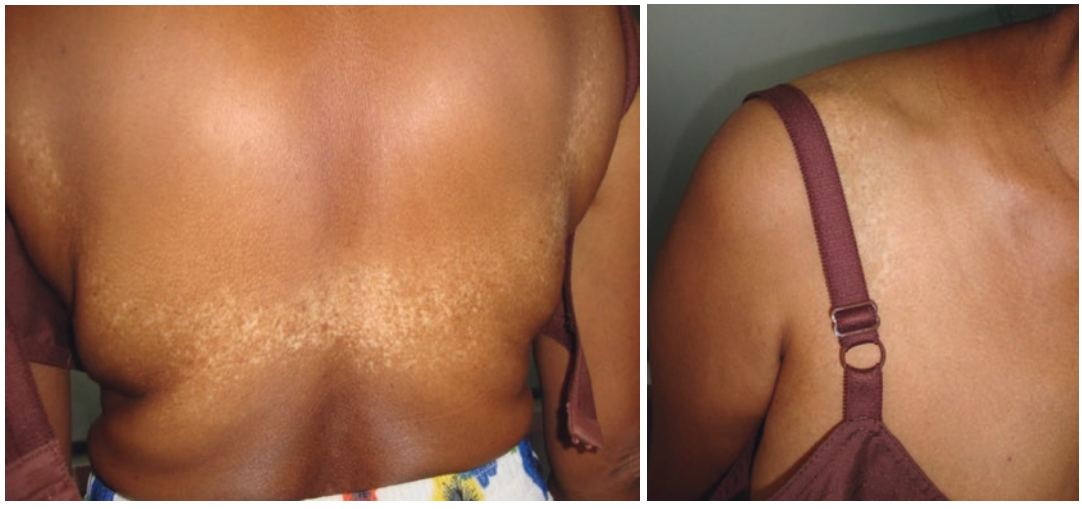


Fig. 41.26 Vitiliginous patches at the area of the brassiere

41.5 Chemical/ Physical Leukoderma

Vitiliginous lesions can appear following chemical and physical agents (Damevska et al. 2019). These are marked and a cosmetic concern in pigmented skin (Figs. 41.21, 41.23, 41.24, 41.25, 41.26).

References

Birlea SA, Ahmad FJ, Uddin RM et al (2013) Association of generalized vitiligo with MHC class II loci in patients from the Indian subcontinent. J Invest Dermatol 133(5):1369–1372. https://doi.org/10.1038/jid.2012.501

Damevska K, Peev I, Ranawaka RR, Simeonovski V (2019) Hypopigmentation from chemical and physical agents. In: Hypopigmentation. Taylor & Francis Group, Boca Raton. https://doi.org/10.1201/9781315146454-24

Faria AR, Tarlé RG et al (2014) Vitiligo—Part 2—classification, histopathology and treatment. An Bras Dermatol 89(5):784–790. https://doi.org/10.1590/abd1806-4841.20142717

Hu W, Xu Y, Ma Y et al (2019) Efficacy of the topical calcineurin inhibitors tacrolimus and pimecrolimus in the treatment of vitiligo in infants under 2 Years of age: a randomized. Open-label pilot study. Clin Drug Investig 39(12):1233–1238. https://doi.org/10.1007/s40261-019-00845-x

Kumarasinghe SP (1995) An optimistic approach to treatment of vitiligo. Ceylon Med J 40(3):94–96

Paul C, Cork M, Rossi AB et al (2006) Safety and tolerability of 1% pimecrolimus cream among infants: experience with 1133 patients treated for up to 2 years. Pediatrics 117(1):e118–e128

Speeckaert R, van Geel N (2017) Vitiligo: an update on pathophysiology and treatment options. Am J Clin Dermatol 18(6):733–744. https://doi.org/10.1007/s40257-017-0298-5

van Geel N, Speeckaert R (2016) Acquired pigmentary disorders. In: Rook's textbook of dermatology, 9th edn. Wiley-Blackwell Science, London, p 88.34

van Geel N, Speeckaert R (2017) Segmental Vitiligo. Dermatol Clin 35(2):145–150. https://doi.org/10.1016/j.det.2016.11.005

van Geel N, Speeckaert R, Melsens E et al (2013) The distribution pattern of segmental vitiligo: clues for somatic mosaicism. Br J Dermatol 168(1):56–64. https://doi.org/10.1111/bjd.12013

van Geel N, Bosma S, Boone B, Speeckaert R (2014) Classification of segmental vitiligo on the trunk. Br J Dermatol 170(2):322–327. https://doi.org/10.1111/bjd.12652