CHAPTER 35

Approach to Tropical Dermatology

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Travelers to tropical locations often encounter skin problems. They are among the top three reasons returning travelers seek medical care. Many of the skin diseases common in the tropics are also common in temperate climates, although they may be modified by factors related to climate, geography, and socioeconomic conditions.

In studies of returning travelers with cutaneous diseases, the most common conditions, in decreasing order of frequency, are cutaneous larva migrans (Chapter 37), pyodermas (Chapter 36), arthropod-induced dermatitis (such as scabies), myiasis, tungiasis (Chapter 37), and cutaneous leishmaniasis (Chapter 39). In addition to infectious skin problems the harsh environment of the tropics can also affect the skin through environmental factors, including increased heat and humidity as in miliaria, increased exposure to solar radiation (Chapter 36), biting arthropods, and exposure to new contact allergens and/or irritants (Chapter 36).

Some of the cutaneous diseases common among travelers to tropical areas, and endemic in local populations, are considered "neglected diseases." Scant comprehensive data exist about their prevalence, and there is little research comparing the relative efficacy of treatment options. Diagnosis in travelers' home countries can also be difficult because of the relative rarity of these diseases outside the tropical environment.

The evaluation of cutaneous lesions acquired in the tropics should follow general dermatologic principles, but with appropriate consideration of unique tropical disease etiologies. This chapter focuses on the basic approach to the patient with skin disease in or having returned from the tropics. A primer on topical therapy is also included.

CLINICAL APPROACH

The evaluation of the patient with a chief complaint of skin lesions or rash should include a systematic approach with physical examination, history, and appropriate diagnostic tests. In contrast to most general medical providers, dermatologists rely mostly on visual inspection of the skin, noting primary lesion morphology and distribution. History and laboratory tests are often used to confirm a specific diagnosis or narrow a differential diagnosis made from physical examination.

The examination of the skin should be performed in good light. Whenever possible, the entire skin surface should be examined, including the hair, scalp, nails, and mucous membranes. In certain instances, it may also be important to examine the patient for lymphadenopathy and organomegaly.

A precise description of findings allows the rash to be categorized into general groups, limiting diagnostic possibilities. *Primary* changes—those directly due to the disease process—should be distinguished from *secondary* changes, which are modifications occurring over time as the result of external factors, such as rubbing, scratching, or superimposed bacterial infection. Secondary changes include scale, crusts, excoriations, and lichenification. The common types of primary lesions are defined as in **Box 35.1.**

Box 35.1 Common types of primary lesions

- *Macules* are focal alterations in skin color <10 mm in diameter without any change in texture or thickness
- *Patches* are similar nonpalpable color changes >10 mm in diameter
- *Papules* are solid elevated lesions <10 mm in diameter
- *Plaques* are solid elevations >10 mm in diameter
- *Nodules* are solid masses located more deeply within the skin and can be of any size
- *Vesicles* are clear, fluid-filled blisters <5 mm in diameter
- *Bullae* are clear, fluid-filled blisters >5 mm in diameter
- *Pustules* are filled with opaque purulent material
- *Erosions* are shallow depressions with loss of partial or full thickness epidermis; may be a ruptured vesicle
- *Ulcers* are deeper areas of epithelial loss, into the dermis or even the fat
- *Scale* is visible accumulation of stratum corneum and may be a primary or secondary change.

Important points of the history include a list of countries visited, duration of time in each location, whether urban or rural areas were visited, and information about specific activities (e.g., fishing, camping). Specific details about the skin problem should include a description of the onset and evolution of the lesions, associated symptoms, and all forms of treatment used, including nonprescription treatment. A history of antecedent trauma, insect bite, suspected precipitating factors, exposure to animals, similar rash in companions, and personal or family history of similar or other skin disease should be explored.

Diagnostic tests are often needed to supplement physical diagnosis. These include Gram stain, mineral oil test for scabies, potassium hydroxide (KOH) examination, and skin biopsy. The KOH examination is a quick, easy, and inexpensive test in the diagnosis of fungal infections. The technique is discussed with dermatophyte infections (Chapter 38). Gram stain is invaluable for diagnosis of bacterial and some fungal (e.g., *Pityrosporum*) skin infections.

Skin biopsy may be necessary in certain cases to establish the diagnosis. An established lesion without manipulation should be selected to minimize secondary changes. The skin should be prepared with antiseptic and anesthetized with lidocaine. Most dermatologists use 3- or 4-mm biopsy punches, but an incisional biopsy is also appropriate, particularly for deep lesions. Many dermatologists elect to close the biopsy wound with non-absorbable suture, although that is not absolutely necessary. If an unusual infectious agent is suspected, it is important to notify the pathologist so that special stains can be done on the skin biopsy specimen. A separate biopsy can be sent to the microbiology laboratory in a sterile container or microbiology collection tube for bacterial and fungal culture. Increasingly, molecular biology tools such as polymerase chain reaction are used to identify infectious etiologies, and these tests can be performed on biopsy specimens.

GENERAL DERMATOLOGIC TREATMENTS

Specific therapy for dermatologic diseases requires a specific diagnosis and is discussed with each disease entity in other chapters. Two aspects of dermatologic therapy, compresses and topical steroids, are discussed here.

Compresses are used to provide nonspecific relief in inflammatory dermatoses and to gently lift crust from weeping lesions. Compresses are made of several layers of cotton cloth such as tea towels that are soaked in a solution and partially wrung out. The active ingredient in most solutions used for compresses is water, although bacteriostatic or drying agents,

TABLE 35.1 Topical Steroid Strength Groups

Low potency	Hydrocortisone 1% cream or ointment
	Desonide 0.05% cream or ointment
Medium potency	Triamcinolone acetonide 0.1% cream or ointment
	Fluocinolone 0.01% cream or solution, 0.025% ointment
	Mometasone 0.1% cream or ointment
High potency	Fluocinonide 0.05% cream or ointment
	Clobetasol 0.05% cream or ointment
	Desoximetasone 0.25% cream or ointment

such as aluminum acetate (Burow solution), are frequently added. The compress is placed on the lesion and left in place for 10-15 minutes, then removed, soaked, wrung out, and replaced. The brief time on the lesion allows evaporative cooling and removes some exudate. The compress should be applied repeatedly for 15-20 minutes several times a day, more often for exudative lesions. Wet dressings should not be left on the skin for long periods, since they may macerate surrounding healthy tissue.

Topical steroids are highly effective agents for reducing the cutaneous immune response and are widely used in treating inflammatory conditions. A large number of products are available, varying greatly in potency and potential to produce side effects. In addition, different vehicles are available, including creams, ointments, lotions, solutions, gels, and sprays. It is convenient to know products of low, medium, and high potency in either cream or ointment form. Low-potency steroids are used in those areas most susceptible to topical steroid side effects: the face, axillae, groin, and genitals. Side effects of topical steroids include atrophy, telangiectasia, striae, and steroid-induced rosacea. Medium-potency steroids are used for most other body locations, except for severe or refractory conditions, which are treated with high-potency steroids.

In general, the drier the skin condition, the more hydrophobic the topical steroid vehicle should be. In descending order of greasiness are ointments, creams, lotions, and solutions. Gels, sprays, and solutions are essentially equivalent in their low or no oil content. Solutions are useful for scalp involvement. **Table 35.1** provides a simplified list of steroid preparations in each potency class.

Knowing the quantity of topical steroid to prescribe is also useful. Topical steroids should be applied sparingly in a thin layer and are usually dosed twice daily. A dose of 30 g of an agent is usually enough to cover an average adult's total body surface area once. Based on this amount, one can roughly estimate a desired quantity to prescribe. Container sizes typically are 15, 30, 60, 120, and 240 g; 1-lb and 1-kg sizes are available in some formulations. Prescribing large quantities with refills of high-potency topical steroids is not recommended.

FURTHER READING

Freedberg, I.M., Eisen, A.Z., Wolff, K., et al., 2003. Fitzpatrick's Dermatology in General Medicine, fifth ed. McGraw-Hill, New York.

Tyring, S.K., Lupi, O., Hengge, U.R., 2005. Tropical Dermatology. Elsevier, New York.