CHAPTER **29**

PODIATRIC DERMATOLOGY: A Review

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Skin disorders make up a significant part of a busy podiatric practice. Because much of our time in practice is based on orthopedic-related pathologies, skin disorders can pose a challenge for the clinician to diagnose and treat accordingly. The purpose of this article is to serve as a review and to provide a practical approach to recognizing common disorders of the integument. This is not meant to be an all-inclusive text, but rather a focused presentation of common podiatric-related dermatoses.

Description of skin lesions can be difficult if one does not use the proper terminology. Table 1 lists definitions of skin lesions. Moreover, skin lesions can be grouped into classes based upon

Table 1

DEFINITIONS OF SKIN LESIONS

Macule	Flat lesion <1 cm
Patch	Large macule (>1 cm)
Papule	Elevated flat lesion (<0.5 cm)
Nodule	Elevated solid lesion (>0.5 cm)
Plaque	Elevated area of skin of >2 cm in diameter, a disc shaped lesion, formed by extension or coalescence of papules or nodules.
Vesicle	Fluid filled blister (<0.5 cm)
Bulla	Larger blister (>0.5 cm)
Pustule	Collection of free pus
Abscess	Localized collection of pus in a cavity (>1 cm)
Petechia	Pinhead size extravasation of blood into skin
Ecchymosis	Larger extravasation of blood into skin
Purpura	Blood in skin up to 2 mm in diameter, may be palpable
Hematoma	Large purpura
Wheal	Accumulation of dermal edema
Angioedema	Diffuse edema of deep dermis extending to subcutaneous tissue
Comedo (comedones)	Plug of keratin and sebum wedged in a dilated pilosebaceous orifice
Burrow	Small tunnel in the skin that houses scabies
Telangiectasia	Visible dilatation of small cutaneous blood vessels
Poikiloderma	Combination of atrophy, reticulate hyperpigmentation and telangiectasia
Sclerosis	Induration of the subcutaneous tissues
Gangrene	Death of tissue, usually due to loss of blood supply
Scale	Flake from the horny layer
Crust	Dried serum, exudate or tissue fluid
Ulcer	Whole of the epidermis and part of dermis lost
Excoriation	Linear erosion or ulcer produced by scratching
Lichenification	Chronic thickening of the epidermis with prominence of the normal skin markings.
Erosion	Partial loss of the epidermis
Fissure	Slit in the skin
Sinus	Channel that permits escape of pus or fluid
Scar	Result of healing, normal structure replaced by fibrous tissue
Atrophy	Thinning of skin due to diminution of the epidermis, dermis or subcutaneous fat
Stria	Linear, atrophic, pink or white lesions due to changes in connective tissue

their morphology and color. When classifying lesions based upon morphology, location, and characteristics, one can quickly obtain a differential diagnosis. Symmetrical rashes generally suggest some sort of endogenous process, for example psoriasis or atopic eczema.

History taking is important. One should ask about timing and duration of the rash, details of the rash spreading, evolution of rash and original morphology (i.e., blisters), symptoms such as itch, pain, burning sensation, numbness, precipitating and relieving factors such as climate, sunlight, and prior treatment (over-the-counter medications such as antifungals, antihistamines, and cortisone creams). Also, it is important to assess for current skin disorders located elsewhere on the body, or history of skin disorders as a child such as atopic eczema. Social history such as work type and traveling can be helpful as well.

Examination of dermatoses should be based upon morphology, color, location, and secondary lesions (crusting, lichenification, and whether or not it has scale). Table 2 lists common primary and secondary lesions.

Not all scaling rashes of the foot are tinea pedis. A simple and straight-forward way to rule out mycotic infection is to obtain a skin scraping and send it for a KOH preparation or PAS stain. Rather than make a guess as to whether a scaling rash is tinea pedis versus eczema, obtain the proper diagnosis and treat accordingly. Table 3 includes a differential diagnosis of lesions that have scale. Table 4 includes a list of dermatoses that present with lichenification.

When it comes to thick, discolored toenails one has to think twice about onyhcomycosis. How often do you send a nail specimen that clinically presents as onychomycosis and the pathology report says "no fungal elements seen?" We have all been taught that it is difficult to grow fungus in the lab or that it is difficult to get a good sample. It is my belief that many of the presumed fungal nails are not primary fungal infections. We all have a story about a patient that completed oral antifungal

Table 2

Primary skin lesions

Macule
Papule
Nodule
Tumor
Plaque
Vesicle
Bullae
Pustule
Wheal
Burrow
Telangiectasia

Secondary Skin Lesions

Scale
Crust
Atrophy
Lichenification
Erosion
Excoriation
Fissure
Ulceration
Scar
Eschar
Keloids
Petechiae, Purpura, and Ecchymosis

Table 3

LESIONS THAT HAVE SCALE

Seborrheic keratosis
Stucco keratosis
Pityriasis alba
Tinea pedis
Pityriasis rosea
Psoriasis
Lichen planus
Pityriasis rubra pilaris
Secondary syphilis
Seborrheic dermatitis
Cutaneous drug reaction

Table 4

LICHENIFIED LESIONS

Atopic dermatitis
Neurodermatitis
Lichen simplex chronicus
Chronic contact dermatitis

therapy with terbinafine or itraconazole and did not have any improvement. That patient may have done a second course of therapy that failed as well. Was it drug failure or was it due to treating the wrong disease? Non-mycotic diseases of the nail (nail root trauma, biomechanical microtrauma, peripheral arterial disease, systemic diseases such as psoriasis, and diabetes) are probably more common that we think. If the nail specimen is negative for fungus, then one has to consider other treatment options. In addition, who says there can not be concomitant fungal infection with non-mycotic diseases of the nails such as nail root disease?

The most common skin disorders affecting the lower extremity include fungal infections, eczematous conditions, psoriasis, and cutaneous manifestation of systemic disease (i.e., diabetes related dermopathy, granuloma annulare, and necrobiosis lipoidica diabeticorum). Table 5 lists common cutaneous manifestations of internal disease.

Less common skin disorders include cutaneous malignancies such as basal cell carcinoma, squamous cell carcinoma, and malignant melanoma. Certainly any suspicious looking lesion whether pigmented or not should be biopsied.

The term eczema can be confusing to define or to explain to patients. Eczema in simple terms describes an inflammatory skin eruption. In the initial stages of the disease process, common clinical findings include erythema, papulo-vesicular lesions, weeping, and crusting. Later stages include red-purple color with scale, lichenification, and possibly pigmented skin. Epithelial disruption and non-sharp margination are its characteristics.

Eczema can be defined histologically by the presence of a predominantly lymphohistiocytic infiltrate around the upper dermal blood vessels, associated with varying degrees of spongiosis and acanthosis. Eczema can further be categorized depending on its presentation. For example, atopic eczema is common in infants and adolescents, which is associated with atopy and elevated level of IgE. Table 6 lists the different types of eczema.

Table 5

LOWER EXTREMITY-RELATED CUTANEOUS MANIFESTATIONS OF INTERNAL DISEASE

Disease	Manifestation
Diabetes mellitus	Necrobiosis lipoidica diabeticorum
	Diabetic dermopathy
	Bullous diabeticorum
	Neurotrophic ulcerations
	Granuloma annulare
Thyroid disease	Pretibial myxedema
	Brittle nails with longitudinal ridges
Scleroderma	CREST Syndrome
Lupus	Raynoud's phenomenon
	Nail fold telangiectasias
	Splinter hemorrhages
	Livedo reticularis
	Calcinosis
	Erythema nodosum

Table 6

ECZEMA

Stage	Morphology of Lesions	Symptoms	Examples
Acute	vesicles, blisters, intense red	intense itch, stinging, burning	acute contact dermatitis, acute nummular eczema, stasis dermatitis, pompholyx
Subacute	red, scale, fissuring, parched appearance, scalded appearance	slight to moderate itch, stinging, burning	ontact allergy, irritation, atopic dermatitis, stasis dermatitis, nummular eczema, asteatotic eczema
Chronic	thickened skin, lichenified excoriation, fissuring	moderate to intense itch	atopic dermatitis, lichen simplex chronicus, hyperkeratotic eczema

The most common dermatoses of the geographic region of the foot include tinea pedis, eczema, xerosis, and contact dermatitis. In the lower leg, the most common dermatoses include xerosis, stasis dermatitis, and lichen simplex.

For treatment of dermatoses, obtaining the correct diagnosis is critical. In fungal infections, topical and/or oral antifungals are appropriate. For dermatitis and eczema, topical steroids are the mainstay of treatment. Therefore, depending on the location of the rash (dorsal foot versus plantar foot), a moderate to high potency topical steroid can be considered. One should be cautious about using topical steroids more than 2 weeks at a time. Once the rash is under control, lower potency topical steroid or Pimecrolimus 1% (Elidel), a topical non-steroidal anti-inflammatory cream, should be used for maintenance.

Avoiding aggravating stimuli is important too. For example, determining the underlying source for contact dermatitis is critical to prevent recurrence. For xerotic eczema, one should avoid more than one bath/shower a day, hot water, salts in the water, and one should use hydrating creams immediately after the bath/shower. Dry skin has little to do with lack of oils in the skin, but rather lack of water in the skin (hydration). For patients with atopic eczema and psoriasis, avoiding harsh soaps when bathing and using a non-soap cleanser such as Cetaphil can be helpful.

Biopsies are encouraged for any lesion which is not easily identified as a benign process (i.e., dermatofibroma). Dermatologists biopsy just about everything, so why should we be any different? It does not take much time to get a biopsy, causes little morbidity to your patient, and tissue diagnosis is definite. Rather then be pretty sure, get confirmation. It makes you a better clinician and it is in the best interest for your patients. To illustrate, I can remember a case of an 30-year-old male who had a dark raised, firm nodule on his great toe, medial border I was certain it was a dermatofibroma because it looked like one. To my surprise, the pathology report came back as juxta-articular benign neoplasm of borreliosis. Looking back on the case I noticed in his intake (history) form that he complained of fatigue and tiredness. Maybe his symptoms were coincidental or possibly from borelliosis (Lyme Disease).

Familiarizing yourself with clinical pictures of dermatoses for recognition is important, but understanding the characteristics, location, and color of the lesion should narrow your differential diagnosis to a few entities. As a student/resident, a dermatologist taught me to describe exactly what you see, i.e., a silvery scale on an erythematous base (psoriasis) or an erythematous patch with lichenification over the lateral malleolus (lichen simplex chronicus). In addition, the more you biopsy, the more confident you get in recognizing lesions and their particular disease process.