

**DEFINITIONS OF TERMS USED IN
DERMATOLOGY AND DERMATOPATHOLOGY
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Reading: Basic Pathology, pp 789-802

MACROSCOPIC TERMS

1. Macule - circumscribed area less than 1 cm. in diameter characterized by its flatness which is distinguishable from surrounding skin only by its change in color.
2. Patch - circumscribed area larger than 1 cm. in diameter characterized by its flatness which is distinguishable from surrounding skin only by its change in color.
3. Papule - elevated, solid lesion less than 1 cm. in diameter.
4. Nodule - elevated, solid lesion 1 cm. or greater in diameter.
5. Plaque - elevated, flat-topped lesion greater than 1 cm. in diameter.
6. Vesicle - fluid-filled lesion less than 1 cm. in diameter.
7. Bulla - fluid-filled lesion 1 cm. or more in diameter.
8. Pustule - discrete, pus-filled, raised area.
9. Wheal - pruritic, transient, elevated area with variable blanching and erythema formed as the result of dermal edema. Wheals often have pseudopods around the periphery.
10. Scale - dry excrescences of cornified material.
11. Lichenification - thickened and rough, dry skin characterized by prominent skin markings, usually the result of chronic rubbing in a susceptible person.
12. Excoriation - a traumatic lesion characterized by a breakage of the epidermis. Such lesions are self-induced.

MICROSCOPIC TERMS

1. Hyperkeratosis - increased thickness of the stratum corneum often associated with a qualitative abnormality of the keratin.
2. Parakeratosis - mode of keratinization characterized by the retention of nuclei in the stratum corneum.
3. Acanthosis - epidermal hyperplasia.

4. Dyskeratosis - abnormal keratinization occurring prematurely within individual cells or groups of cells below the granular zone.
5. Acantholysis - loss of intercellular connections resulting in loss of cohesion between keratinocytes.
6. Papillomatosis - projections of the dermal papillae above the skin surface.
7. Spongiosis - intercellular edema of the epidermis.
8. Exocytosis - movement of inflammatory cells into the epidermis.
9. Erosion - discontinuity of the skin surface exhibiting partial thickness loss of the epidermis.
10. Ulceration - discontinuity of the skin surface exhibiting full thickness loss of the epidermis and portions of the dermis.
11. Vacuolar change - formation of vacuoles within or beneath the basal cells along the dermal-epidermal junction.

Diseases of the Skin I

PAPULOSQUAMOUS DISEASES

The papulosquamous diseases are a heterogenous group of disorders that are grouped together by historical precedent and because, at some time in their course, they are manifested clinically by papules covered with scale.

<u>Disease</u>	<u>Etiology</u>
Psoriasis	Genetic abnormality
Seborrheic dermatitis	Unknown
Pityriasis rosea	Unknown
Lichen planus	Unknown
Tinea corporis	Fungal infection
Secondary syphilis	Treponemal infection

- A. Psoriasis: Psoriasis is inherited but the genetic pattern is disputed. Some authorities favor a multifactorial inheritance whereas others favor a dominant pattern with incomplete penetrance. Twenty to thirty percent of family members with the genetic predisposition will express the disease. It affects about 1-2% of the population.

Psoriasis commonly begins in the second or third decade. It runs an unpredictable course of remissions and exacerbations. The skin of psoriatics is vulnerable to injury in that psoriatic lesions sometimes develop in areas of skin trauma (Koebner phenomenon). A small percentage of patients (usually children) develop an acute generalized eruption of small ("guttate") psoriatic lesions after a beta-streptococcal infection of the oropharynx. Compared to the general population, an increased number of psoriatics have rheumatoid-like arthritis or arthritis of the distal interphalangeal joints.

The individual lesions of psoriasis are sharply demarcated papules. They have a beefy red color and are covered by fine, silvery (micaceous) scales. They are distributed mainly over pressure areas such as the elbows and knees. If the scale is removed, a small bleeding point may be produced (Auspitz sign). The nails are often affected. Involvement of the nail matrix leads to tiny pits on the nail surface, and involvement of the nail bed leads to separation of the nailplate (onycholysis).

Histologically, the stratum corneum shows confluent parakeratosis. There is loss of the granular zone. The epidermis is acanthotic with elongation of the rete ridges to a fairly even length. The blood vessels in the dermal papillae are dilated and tortuous. There is an inflammatory infiltrate of lymphocytes, macrophages and neutrophils. The neutrophils migrate into the upper epidermis where they form small aggregates called Munro microabscesses.

Epidermal kinetics in psoriasis:

	<i>Turnover Time</i>	<i>Mitotic Index</i>	<i>Cell Cycle</i>	<i>DNA-S Phase</i>
Normal skin	28 days	3-5%	450 hrs	11 hrs
Psoriatic skin	4 days	23%	37 hrs	8 hrs

- B. Pityriasis Rosea: P.R. is a benign disease of unknown etiology. It occurs with increased frequency in the fall and spring. It begins abruptly and resolves spontaneously after 6-12 weeks. Children and young adults are most often affected, but it can occur at any age; recurrences are rare.

P.R. starts with a single red, scaly plaque called the "herald" or "mother" patch. A week or so later there is a secondary eruption of crops of scaly papules. The papules are oval and are distributed on the trunk and proximal extremities. Their long axes follow the lines of cleavage of skin (so-called "Christmas tree" distribution). The palms, soles and oral mucosa are spared.

Histologically there is focal, mound-like parakeratosis, focal spongiosis, slight acanthosis and a superficial perivascular inflammatory cell infiltrate of lymphocytes and histiocytes. Extravasated RBC's are often found in the papillary dermis and epidermis.

- C. Seborrheic Dermatitis: This is the most common of the papulosquamous diseases. Its etiology is unknown, but it occurs in areas of the skin that have the greatest number of and most active sebaceous glands, i.e. scalp, face, chest, back, axillae and anogenital areas. This suggests an abnormality of sebaceous gland metabolism but other factors are surely involved. Severe, recalcitrant seborrheic dermatitis is a cutaneous finding in AIDS.

The primary lesion is a small papule with a pink or slightly yellow color. The amount of scale is variable. Scalp, eyebrows, nasolabial folds, axillae, mid-chest and -back, and inguinal folds are the most common sites.

Histologically there is parakeratosis at the edges of the openings of hair follicles. The epidermis shows slight acanthosis and spongiosis especially adjacent to the follicles. There is a superficial perivascular infiltrate of mononuclear cells and neutrophils with exocytosis of them into the epidermis. Neutrophils are often present in the parakeratotic areas.

- D. Lichen Planus: L.P. is an intensely pruritic eruption of unknown cause. It commonly affects young adults and remits spontaneously in 1 to 2 years. Some patients develop a lichen planus-like eruption as a hypersensitivity reaction to drugs such as hydrochlorothiazide, gold salts and antimalarials.

The individual lesion has a characteristic appearance; it is a flat-topped, smooth papule with slight scale, a polyangular shape and a blue-red (violaceous) color. Close inspection with a hand lens reveals a criss-cross of whitish lines called Wickham's striae. Wrists, genitalia, shins and oral mucosa are commonly involved. Koebner reactions occur in L.P. as well as psoriasis. A lace-like array of white papules occurs frequently on the buccal mucosa. Sometimes the oral mucosa may be involved without cutaneous involvement.

Histologic features include:

- 1) hyperkeratosis
- 2) hypergranulosis
- 3) acanthosis with saw-tooth appearance of rete ridges
- 4) dense infiltrate of mononuclear cells in the papillary dermis that obscures the dermoepidermal junction
- 5) vacuolar change and individual cell necrosis (civatte bodies) in basal layer

L.P.-like drug eruptions often contain eosinophils in the inflammatory infiltrate which are not found in idiopathic L.P.

- E. Tinea Corporis: Tinea corporis is a superficial fungal infection that is caused by several species of dermatophyte fungi. The most common organism in this country is *Trichophyton rubrum* which is an anthropophilic organism (passed from man to man). *Microsporum canis* is also commonly implicated. *M. canis* is zoophilic (passed from animal to man) and is commonly acquired from kittens and puppies.

Tinea corporis begins as one or a few scaly papules. The papules expand outward and clear in the center to produce a ring-shaped (annular) lesion. Zoophilic fungi usually produce more inflammatory lesions with vesicles at the active advancing margin. Depending upon the host immune response, the condition may remit spontaneously or pursue a chronic course with spread to other body areas.

Histopathologically, there is variable hyperkeratosis, parakeratosis, acanthosis and spongiosis. The inflammatory infiltrate often contains neutrophils in addition to mononuclear cells. Fungal hyphae can be demonstrated in the stratum corneum by the periodic acid-Schiff stain (PAS stain).

- F. Secondary Syphilis: Secondary syphilis is characterized by an asymptomatic generalized eruption that is composed of brownish-red papules. They may resemble pityriasis rosea or psoriasis. In the anogenital region, the papules may become large, verrucous and moist; then they are called condyloma lata. Unlike P.R., secondary syphilis involves the face, mucous membranes, and the palms and soles. Spotty hair loss (alopecia), which has been described as "moth-eaten", may occur. The eruption of secondary syphilis develops about 6-8 weeks after the primary chancre and heals spontaneously after 2-10 weeks.

About 25% of patients relapse if not treated. Lymphadenopathy is common. In secondary syphilis, the serologic test for syphilis is always positive in immunocompetent persons.

The histopathologic features of secondary syphilis include hyperparakeratosis with focal parakeratosis. A clue to syphilis is the presence of abundant plasma cells in the infiltrate. Furthermore, the infiltrate involves the deep vascular plexus in the skin which is not usually involved in most skin diseases. Silver stains such as the Warthin-Starry stain may occasionally demonstrate the spirochete of syphilis in the epidermis or dermis.

REVIEW QUESTIONS
Diseases of the Skin I

K TYPE Multiple true-false type (A) only 1, 2, and 3 are correct
(B) only 1 and 3 are correct
(C) only 2 and 4 are correct
(D) only 4 is correct
(E) ALL are correct

_____ 1. Lichen planus is a papulo-squamous eruption which is

- (1) violaceous in color
- (2) often on mucous membranes
- (3) very pruritic
- (4) chronic - lasting 1-2 years or longer

_____ 2. The most diagnostic skin lesions in psoriasis are (on)

- (1) papular lesions with mica scales
- (2) lesions located on the elbow and knees
- (3) pitted nails
- (4) mucous membrane

_____ 3. Lichen planus:

- (1) may affect oral mucous membranes with or without involvement of skin
- (2) characteristically shows saw tooth acanthosis
- (3) is usually pruritic
- (4) shows hyperkeratosis

ANSWERS: 1. E
2. A
3. E

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