105 Skin

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Definition

Skin, our vital interface with the environment, is the largest organ of the body. It effectively prevents or neutralizes most physical, chemical, and biologic assaults; extends our senses (touch, feel, temperature, pain); and, with eccrine sweating, provides a thermoregulatory control that is unique among animals. The skin also serves as an immunologic organ, and its role in the regulation of lymphocytes appears to be yet another important, protective function. The fabric of skin, its epidermis, and supporting dermis contains most of the structural elements found in the deeper body organs. It should be examined, then, with the expectation that changes in its appearance are signs of external damage or a reflection of hidden, systemic disease. The various conditions are diagnosed by their primary, or characteristic, lesions, which must be precisely defined in order to be appropriately classified (Table 105.1).

The nondermatologist should be advised that the peculiar argot of the specialty, which at first seems daunting, represents an additional aid to diagnosis. Most of the odd-sounding Greek and Latin names turn out to be either literal or metaphoric descriptions of the disorders. There is much learning, and even fun, discovering what pityriasis rosea, lupus erythematosus, comedo, and mycosis fungoides really mean. A standard medical dictionary, or special dermatologic lexicon, will make the conditions studied more truly memorable!

Technique

Most people, particularly physicians, assume that because they can see, they are good observers. In truth, observation is a skill that requires conscious effort and practice. Good natural or artificial light and an appropriately exposed patient are the other prerequisites of a good dermatologic examination. The technique of observing quadrants of the body using gown and drape sheet will preserve the patient's modesty and ensure cooperation. Always perform a complete examination rather than look at only what the patient may think is important or suitable for inspection; otherwise the primary lesion, or a more important lesion of which the patient is unaware, may be missed. Lives have been saved because an examiner found an early resectable melanoma in the middle of the back in a patient who came in with a complaint of "poison ivy" on the exposed hands and forearms. Examine each patient from head to toe!

Clinical Significance

An orderly categorization of skin lesions (Table 105.2) proceeds by asking "what, how, and where" the abnormalities are visualized. The characteristic *morphology* of the eruptive lesion (size, shape, color, structure), before it is scratched or infected, is important information that immediately limits the diagnostic possibilities. The *arrangement* of the individual lesions to each other and the body, and the *distribution* on particular anatomic sites, are all used as adjunctive data, refining the choices within the morphologic group. This

Table 105.1
Types of Skin Lesions

Primary lesions
Macule: a sharply circumscribed area showing alterations of color, *not appreciably* elevated or depressed.
Papule: a well-defined elevated lesion of the skin up to 5 mm in diameter.
Nodule: solid lesion of the skin or subcutaneous tissue over 5 mm in diameter.
Tumor: a large nodule. When a nodule is more than 2 or 3 cm in diameter, it is usually called a tumor.
Vesicle (blister): a sharply demarcated, elevated, fluid-containing lesion of the skin, usually less than 6 mm in diameter.
Bulla: a larger vesicle.
Pustule: a small, usually less than 5 mm, fluid-filled lesion of the skin that contains pus.
Wheal (hive, urtica, or welt): an *evanescent*, elevated, red lesion of the skin.
Petechia: a less than 5 mm diameter macule resulting from a deposition of blood into the skin. The term purpura is at times used for lesions of this type that are somewhat larger, which may also be palpable.
Ecchymosis: A larger area of discolored skin resulting from bleeding into the skin.
Telangiectasis: visibly dilated, superficial, cutaneous blood vessels.
Comedo (white or blackhead): a white, gray, or black noninflammatory plug in the follicle.
Burrow: a tunnel, tract, or passage in the skin made by such parasites as the mite of scabies and the larvae of larva migrans.
Cyst: a noninflammatory collection of fluid or semisolid material surrounded by a well-defined wall.

Secondary or consecutive skin lesions
Scale: this represents dry exfoliation.
Crust (scab): a collection of epidermal debris, serum, pus, etc., dried together to form a hard mass and overlying an area of epithelial injury.
Fissure: a crack in the skin.
Erosion: a superficial loss of epithelium that heals without a scar formation.
Ulcer: the loss of the entire epithelium that may heal with scar formation.
Atrophy: a disappearance, or "wasting," of tissues or parts of tissues.
Excoriation (scratch mark): a linear area of injury resulting from scratching.
Scar: a fibrotic residual of a previous inflammatory process.

Table 105.2
Classification of Skin Disorders

- Papulosquamous
  - Seborrheic dermatitis
  - Psoriasis
  - Dermatophytoses
  - Mycosis fungoides
  - Atopic eczema
  - Pityriasis rosea
  - Secondary syphilis
  - Lichen planus
  - Tinea versicolor
- Vesiculobullous
  - Contact dermatitis
  - Herpes simplex
  - Herpes zoster
  - Bacterial infections
  - Kawasaki's disease
  - Pemphigus vulgaris
  - Bullous pemphigoid
  - Scabies
  - Erythema multiforme
  - Erythema chronicum migrans
  - Erythema nodosum
  - Purpura
- Papulonodular
  - Acne vulgaris
  - Rosacea
  - Granulomas
- Tumors
  - Benign
    - Verruca vulgaris
    - Molluscum contagiosum
    - Melanocytic nevus
    - Skin tags
    - Seborrheic keratosis
    - Vascular neoplasms
    - Epidermoid cysts
  - Malignant
    - Basal cell carcinoma
    - Squamous cell carcinoma
    - Bowen's disease
    - Paget's disease
    - Malignant melanoma
- Pigmentary
  - Generalized
    - Addison's disease
    - Acromegaly
    - Hemochromatosis
    - Ochronosis
    - Tissue storage lipoidoses
  - Localized
    - Peutz-Jeghers syndrome
    - Leopard syndrome
    - Generalized neurofibromatosis
    - Hypopigmentation
- Sclerosis and induration
  - Scleroderma
  - Eosinophilic fasciitis
  - Sclererderma
  - Erysipelas and cellulitis
- Atrophy
  - Necrobiosis lipoidica diabeticorum
  - Lichen sclerosus et atrophicus
- Ulcerations
  - Chronic arterial ulcers
  - Stasis ulcers
  - Vasculitic ulcers
  - Pyoderma gangrenosum
  - Infectious ulcers

requires both a very minute inspection of the skin and a more distant global assessment. The detailed view will show whether special skin structures are involved in the disease process. Monomorphic (lesions of similar size and shape) outbreaks characterize disorders that may be limited to hair follicles, for example, or eccrine sweat ducts. Inflammatory changes of these appendageal structures are common (folliculitis and prickly heat, respectively) and are quickly removed from further diagnostic consideration.

An attempt should be made to assess the extent, level, and location of the disease within the skin, both by sight and palpation. This is an integral part of determining the basic morphology and provides insight into the pathophysiology of the disorder. The early lesion, for example, of *erythema nodosum*, which originates deep within the dermis, will at ten paces look like any other regular round, red circle. It must be differentiated from *tinea corporis*, *granuloma annulare*, and *necrobiosis lipoidica*, which may also appear on an affected leg, but with significant and obvious variations in feel and appearance that permit precise identification.

Papulosquamous Disorders

These are the red, dry, scaly lesions that may be nonpalpable (macular) or slightly infiltrated and papular.

SEBORRHEIC DERMATITIS

Most people, at one time or another, will manifest one or several signs of this common condition. On glabrous skin it occurs as flat, superficial, red scaly patches with an indistinct, roughly annular outline. Typically the scalp, central portions of the face (eyebrows, nasolabial crease), retroauricular space, external ears (and canals), sternum, and intertriginous areas may be affected. This chronic, recurring problem is pruritic and prone to secondary bacterial or candidal infection. No age group is exempt, with the infants' "cradle cap" and "diaper rash" being one of the first encounters with the condition. The etiology is unknown, but exacerbations follow periods of stress. The "butterfly rash" of *systemic lupus erythematosus* should not be confused with seborrheic dermatitis. The collagen disease extends from cheek to cheek across the nose, and may be accompanied by a photosensitivity-like dermatitis on exposed areas of the body, along with telangiectatic and atrophic lesions.

PSORIASIS

In contrast to seborrheic dermatitis, the individual lesions are deeper, palpable, sharply marginated, red papules or plaques, surmounted with a heavy white (micaceous) scale. Typical plaques are distributed on the scalp, elbows, knees, and gluteal cleft. Lesions may assume geometric or unnatural outlines from antecedent trauma (e.g., linear psoriasis in a scratch mark or plaques limited to the sunburned portion of extremities). This *isomorphic response*, or *Koebner's phenomenon*, is of diagnostic significance, although not specific, and emphasizes the need for preventive measures and patient education in this disease. The fingernails and toenails may be involved with minor or gross deformities, and a rheumatoid arthritis-like picture occurs in genetically predisposed patients. The most feared complication of psoriasis (and the other papulosquamous diseases) is uncontrolled spread of the condition with total body involvement. The disability is akin to a life-threatening thermal injury.

DERMATOPHYTOSES (RINGWORM, TINEA CORPORIS)

Fungus infections are typically red, round scaly lesions of the nonhairy skin, which have an active spreading border (sometimes vesicular) and clearing of the central, older portions of the lesions. The more serpiginous bordered, the more the superficial resemblance to the tracks produced by larval form of the true worm (tinea) known as "creeping eruption." The fungal hyphae live within the outer dead, horny layers of the skin and may be demonstrated by direct microscopic examination following potassium hydroxide digestion of scrapings (Chapter 103). The lesions are usually symptomatic, in contrast to those of *erythema chronicum migrans* (see below), which have a somewhat similar clinical appearance.

MYCOSIS FUNGOIDES (CUTANEOUS T-CELL LYMPHOMA)

A variety of clinical forms occur as the neoplastic T cells establish themselves within the skin and systemic organs. Earliest lesions are macular, erythematous, indistinct scaly superficial areas that ultimately show admixed hues of red and yellowish discolorations (poikiloderma). Larger dermal infiltrations of the abnormal cells produce well-circumscribed, deep, red plaques that resemble psoriasis, except that they lack the heavy scale and characteristic distribution of the benign condition. Instead of the more regularly annular lesions of psoriasis, mycosis fungoides plaques tend toward figurate, scalloped, extravagant outlines. Ultimately the lesions may ulcerate or produce nodular tumors. Total body *exfoliative erythroderma* is frequently seen in severe cases (Sézary syndrome).

ATOPIC ECZEMA (ATOPIC DERMATITIS)

The appearance of the disorder varies with the age of the patient and the acuteness or chronicity of the condition. Initially the lesions are very red, poorly defined, macular areas of skin that quickly become scratched, eroded, weeping, and crusted. In infants the cheeks and extensor extremities are involved; in older children the sites of predilection include the neck and antecubital and popliteal spaces. The acute lesions are very prone to secondary bacterial infection and predispose the patients to dissemination of herpes simplex, herpes zoster, and vaccinia. The severe pruritus accompanying the condition causes much rubbing and scratching, leading to marked dryness, scaling, cracking, and lichenification of the skin.

PITYRIASIS ROSEA

The very distinctive lesions of this condition are oval, pink, superficial maculopapules with a fine peripheral scale. They are of millimeter to centimeter size and characteristically line up on the torso with the long axes of their ovals parallel to each other and the body creases. A single, annular, larger, but otherwise similar lesion, called the "herald patch," precedes the general breakout over the torso by several days to several weeks. The lesions tend to be asymptomatic. Although proof is lacking, the etiology is presumed to be viral, since pityriasis rosea is seen primarily in young adults, in limited endemic areas, in the spring and fall. A vague prodrome of malaise and low-grade fever, and mild lymphadenopathy, may accompany the rash. It is difficult to distinguish from secondary syphilis except by serological testing.

SECONDARY SYPHILIS

Weeks to months following the mucocutaneous primary chancre of syphilis, which may not be apparent to the patient, annular, infiltrative maculopapular lesions develop on the trunk, face, and extremities. They are usually associated with nonspecific constitutional complaints and adenopathy. The palms and soles are involved, and there may be accompanying patchy hair loss and tumid lesions in the anogenital area (condyloma latum) and *mucous patches* (flat, grayish, rounded erosions) on the oral and genital mucosal surfaces. Care must be taken when examining patients suspected of syphilis, since the lesions, particularly the anogenital oozing type, contain viable spirochetes. Serum obtained by scraping a skin lesion may be used for darkfield demonstration of the spirochete; or serological tests, which are always reactive in this stage of the disease, will confirm the diagnosis.

LICHEN PLANUS

This uncommon disorder, of unknown etiology, like pityriasis rosea is sometimes confused with secondary syphilis. The characteristic lesions are infiltrative papules with a distinctive polygonal outline. The lichen planus papules have a flat top, violaceous color, and lacy superficial scale. They are usually present on the acral extremities, but may also be seen on the genitalia and in patches or erosions on the oral mucosa. The cutaneous lesions demonstrate the isomorphic or Koebner's response to trauma. The scalp may show hair loss, with permanent scarring, and the nails may be thinned, pitted, and dystrophic. Biopsy confirms the diagnosis of this pruritic, chronic, but usually self-limited disease.

TINEA VERSICOLOR

Pityriasis versicolor, the European and more appropriate name for this common condition, is manifest as a finely scaled macular eruption of diverse colors. Early lesions are small, annular, and perifollicular, usually pink to tan in color. They rapidly coalesce and may cover large areas of the upper torso, neck, and upper extremities. Ultimately, particularly on dark skin, the lesions show as hypopigmented macules. This condition results from an overgrowth of a yeast organism generally found in small numbers within the hair follicles of many people. Heat, humidity, and unknown factors contribute to the production of these asymptomatic lesions. Diagnosis is confirmed by direct microscopic examination of potassium hydroxide digested scrapings of the scales that show budding yeast organisms ("meatballs") and pseudohyphae ("spaghetti"). The hypopigmentation stems from a direct cytotoxic effect of a specific metabolite of the organism (azelaic acid) on the pigment cells. As a result, the return to a normal skin color may be delayed until long after the infection has actually been eradicated and should not be a reason for continued therapy.

Vesiculobullous Disorders

Small or larger blisters, depending on their location within the skin, may be very fragile and temporary, producing immediate superficial erosions or deep, persistent dissecting lesions with or without inflammatory cells (pustules).

CONTACT DERMATITIS

The most common acute inflammations of the skin result from contact with environmental allergic or toxic agents,

either chemical or physical. These produce intensely symptomatic red areas that may be papulovesicular, blistered, and edematous, depending on the degree of damage or local response. The hallmark is the circumscribed, patterned nature of the eruption, which reflects the mode of contact with the offending agent. Chemical and physical burns, photosensitivity, and allergic reaction resemble one another and are distinctly more common on exposed parts of the body. A careful history will identify the suspect, offending material, or modality, but confirmation unfortunately requires controlled reproduction of the condition by appropriate patch testing (Chapter 103), once the acute condition is controlled.

HERPES SIMPLEX

Whether the primary or recurrent type of common viral infection, this condition characteristically consists of grouped, superficial, umbilicated vesicles on an erythematous base. The intraepidermal location accounts for the tendency to erosion. Unroofing the vesicle also provides easy access to material that may be smeared on a glass slide and stained to reveal the diagnostic viral infected epidermal cells (see Chapter 109, Tzanck preparation). The lesions may occur on any part of the body following inoculation, but the perioral and genital areas are sites of predilection (fever blisters, cold sores).

HERPES ZOSTER

This recredescence of a prior varicella infection greatly resembles the clinical lesions of herpes simplex except that there is an obvious dermatomal distribution corresponding to the cutaneous nerves associated with the infected posterior ganglia. A prodromal pain or burning frequently precedes the appearance of the grouped vesicles. Multinucleated giant cells, similar to those found with herpes simplex, are seen in Tzanck preparations.

BACTERIAL INFECTION

Impetigo is a localized staphylococcal and/or streptococcal infection that presents as a superficial blister atop a red macule that quickly evolves to eroded, exudative, "honey-crusted" lesions. On healing, the annular area remains red and is surrounded by a peripheral scale, with central clearing, and may be confused with one of the papulosquamous dermatoses. The lesions are more common in young children and generally occur on the extremities or the face.

The *staphylococcal scalded skin syndrome* is a severe, generalized blistering and desquamation of the skin that results from a circulating bacterial toxin. This, too, is primarily a disease of infants and young children. *Toxic shock syndrome,* also caused by a circulatory staphylococcal toxin, more frequently occurs in adult women as an acute febrile illness with severe multisystem dysfunction and shock. A toxic erythema may be localized to the groin area or may be diffuse. It generally proceeds to desquamation of the skin, 7 to 10 days after onset of the illness.

KAWASAKI'S DISEASE (MUCOCUTANEOUS LYMPH NODE SYNDROME)

This disorder, which occurs in children, also shows either a local or diffuse erythema associated with edematous palms and soles, which desquamate. It does not manifest the renal insufficiency, hypotension, and shock of the staphylococcal scalded skin syndrome. Kawasaki's disease is still of unknown etiology.

PEMPHIGUS VULGARIS

This uncommon disease of adults is one of the few truly life-threatening dermatoses. It is characterized by generalized, flaccid vesicles and bullae, on either normal or reddened skin, which quickly erode and crust. The mucous membranes are severely involved and responsible for the considerable morbidity attending the untreated condition. The disease results from an autoimmune reaction directed against the epidermis that produces acantholytic cells devoid of usual attachment processes. These may be seen readily in Tzanck preparations of the blister, and the diagnosis confirmed by biopsy and immunofluorescent studies demonstrating the specific antibody reaction at the cell surfaces. The relatively superficial locale of the intraepidermal pathology accounts for the tendency of the pemphigus blister to spread and enlarge when pressed (Nikolsky's sign).

BULLOUS PEMPHIGOID

This is a rare disease of older adults, which runs a symptomatically disturbing but generally benign course. The bullae present in this condition are large and tense, and are randomly distributed on the general body, without the regular and severe mucous membrane involvement that characterizes pemphigus. The blisters are subepidermal and therefore do not enlarge or rupture easily with finger pressure. Immunofluorescent biopsy technique reveals a diagnostic pattern of antibodies localized at the epidermal basement membrane.

SCABIES

Infestation with the human scabies mite must always be ruled out when a patient complains of severe nocturnal itching and manifests multiple excoriations in and about the axillae, flexor aspects of the wrists, interdigital finger spaces, nipples, waistline, and genitalia. The pathognomonic burrow, a black dotted line produced by the egg-laying female, or the linear small vesicles that contain the mite's eggs and feces, are difficult to locate against the background of multiple scratch marks and erosions. Definitive diagnosis is established by microscopic demonstration of the organism or its products (Chapter 109).

ERYTHEMA MULTIFORME (REACTION PATTERNS)

As the name of the condition implies, a wide variety of lesion forms (macules, papules, vesicles, pustules) sharing a common inflammatory characteristic, the erythema or redness, are grouped together in this category. Since erythema multiforme itself represents the central ground of a spectrum of disorders of diverse etiology, all characterized by damage to the skin's vasculature, it is useful to consider the group in its entirety. At any point in the evolution of these conditions, one, several, or all types of the lesions described may be present. Diagnosis depends on the sequence of systemic, as well as local, events, and definite recognizable patterns emerge as classic syndromes. For the most part, additional investigation will be required to pinpoint the etiologic agent, since the reaction patterns may be broadly categorized as "allergic reactions." As a common example, all the viral exanthems fit into this inclusive definition, yet each can be separated from the other by the evolution of the typical rash, the accompanying physical signs, complaints, and epidemiology.

The lesions encountered depend on the type of vessel (superficial, small versus. deep, large) and the degree of damage. The most subtle trauma yields the evanescent le-

sions of urticaria at one extreme, progressing through fixed macular erythemas, vesicles, bullae, petechiae, purpura, and necrotic ulcerations. The search for the etiology of any of the reactions is as wide and complicated as outlined for urticaria (Chapter 106), the least alarming of the representative lesion types. Although the broad view of possibilities should be kept in mind, each type of lesion is associated with a smaller range of probabilities, as the following representative samples indicate.

Erythema multiforme. Alternating rings of persistent erythema constitute the typical *target* or *iris lesion* that characterizes this condition. The distinct maculopapular lesions may be quite infiltrated (raised) and have a peripheral pallor. They vary in size from millimeter to centimeter diameter and are distributed symmetrically and diffusely over the body. Palmar and plantar lesions, as well as those on the mucosal surfaces, are common. The central portion of the "bull's eye" lesions may vesiculate and form a clear blister, or hemorrhagic lesion, depending on the severity of the condition. Anything from urticaria through frank purpuric lesions may accompany the pathognomonic iris type. The severe form, which seriously involves mucous membranes of the mouth, eyes, and genitalia, is termed the *Stevens–Johnson syndrome.* The more recently described *toxic epidermal necrolysis* is considered to be a severe, similar variant, usually an adverse reaction to drugs. Erythema multiforme accompanies a variety of infections and may be seen in predictable course following each episode of recurrent herpes simplex infections ("cold sores," "fever blisters," or genital herpes) in susceptible individuals. Erythema multiforme can occur after streptococcal infections, toxoid or sera injections, and may accompany deep fungal infections, the collagen diseases (particularly systemic lupus erythematosus), and occult neoplasms.

Erythema chronicum migrans. For years it was known that tick bites produce a peculiar, slowly expanding superficial annular lesion or lesions that slightly resemble dermatophyte (ringworm) infections. There is an active red, infiltrated border with a bluish-red, flat center that gives the appearance of clearing. Unlike fungus infections, the lesions, which often reach prodigious size, are asymptomatic. Today we know this as the presenting sign of *Lyme disease;* if untreated, neurologic, rheumatic, and cardiac manifestations may follow in succeeding weeks or even months. The tick is the vector for the spirochete *Borrelia burgdorferi,* which causes the symptom complex.

Erythema nodosum. The nodules are more difficult to appreciate than the typical contusion-like quality of the clinical presentation. The patient with erythema nodosum appears to have been bashed across the shins with a baseball bat. The lesions are tender, deep, dusky red, circular areas of induration. In many respects, the etiologic possibilities parallel those of erythema multiforme. Streptococcal sore throat, viral, chlamydial, and deep fungal diseases, particularly during endemics, may be accompanied by erythema nodosum. Drugs, including oral contraceptives, have produced the lesions. In sarcoidosis, erythema nodosum is a sign of favorable prognosis. With febrile conditions it may be difficult to distinguish erythema nodosum from *deep cellulitis* or *erysipelas* on clinical grounds alone.

Purpura. Bleeding into the skin (petechia, purpura, ecchymosis) is not invariably a sign of vascular damage, but may reflect underlying coagulopathies. *Actinic purpura* is commonly seen on the extensor forearms of aged white patients as a result of long-standing ultraviolet degradation of supporting collagen and subsequent easy bruisability of the unprotected vessels. The purple ecchymotic lakes only slowly fade, and invariably leave jagged, stellate linear, ivory-white scars. The nonvasculitic, nonallergic purpuras mentioned above can be clinically separated from those associated with the reaction pattern type. With allergic vascular damage the lesions are deeper, infiltrated, and constitute the *palpable purpuras.* These are usually external signs of serious internal diseases such as rheumatoid arthritis, systemic lupus erythematosus, and the *Henoch–Schönlein syndrome.* Palpable purpura is also associated with a variety of septicemias which notably include *Rocky Mountain Spotted Fever.* In *subacute bacterial endocarditis* painful infarctive papules on digits constitute *Osler's nodes.* These may be accompanied by subungual "splinter hemorrhages," and the nonpainful palmar purpuras known as *Janeway spots.* Palpable purpura, pustules, and frank infarction of the skin are also seen in the septicemias associated with gonococcal, meningococcal, and pseudomonas infections.

Papulonodular Disorders

ACNE VULGARIS

Occlusion of the distal hair follicle above the functioning sebaceous gland leads to distension of the follicle and produces the cardinal lesions, comedones. Those remaining just below the skin surface (closed comedones) are flesh-colored, enlarging papules, while the impacted follicles that communicate with the exterior (open comedones) are dark-appearing masses commonly called "blackheads." The color is from native melanin pigment, as well as oxidized lipid material, and is not an accumulation of external dirt. These lesions continue to expand until they break through the distended follicular epithelium, incite a brisk inflammatory response, and quickly pass through to their resolution as erythematous papules and pustules. Larger cystic dilatations incite larger abscess-like reactions, which heal slowly and frequently leave permanent scars. To some degree, acne is a universal mark of adolescence, and both external (friction, rubbing, oils) and internal factors (endogenous steroids) contribute to the evolution of the condition. The face and the upper torso are areas of predilection.

The distinctive feature of Agent Orange exposure in man is a severe form of comedonal (open) lesions known as *chloracne.* Either systemic or topical exposure to a variety of halogenated biphenyl organics predisposes to this condition, without regard to age of the patient.

Acne-like eruptions are associated with elevated adrenal corticoids (Cushing's disease or exogenous drugs) and from ingestion or administration of iodides and bromides. These outbreaks may be limited to acne-prone skin or become more generalized. They are usually monomorphic, inflammatory lesions (erythematous papules and pustules) without the usual comedonal component visible in acne vulgaris. Both bacterial and nonbacterial folliculitis occurs anytime hair-bearing areas are subjected to external friction, heat, humidity, etc. Occupational exposure to machine oils and tars produces localized varieties that contain all types of lesions seen in acne. A more generalized eruption, actually a *Pseudomonas folliculitis* is reported with "recreational" hot tub immersion. *Pseudofolliculitis barbae* is a common affliction in the bearded skin of black men where the irritation of shaving and the physical characteristics of the hair join to produce plugged follicles that trap and deflect the growing

hairs. These appear to burrow and grow into the skin, inciting inflammatory pustules and granulomatous papules.

ROSACEA

This is an acne-like condition that occurs on the face and upper torso of older patients. Susceptible individuals are usually very fair skinned. Both ultraviolet damage and easy facial "flushing" are prerequisites for the development of the lesions. The center of the face, including the nose itself, bears the brunt of the damage. Telangiectases and intensely inflammatory red papules and pustules develop, as well as fleshy granulomatous papules that progress unless the patient receives adequate therapy and counseling. The bulbous, red, misshapen nose is the ultimate consequence of continued neglect.

GRANULOMAS

Deep dermal cellular infiltrates, the focal, chronic inflammatory granulomas usually present as raised, red to skin-colored papulonodular lesions. They are of diverse origin, and although some may have particular shapes, colors, and distributions, a biopsy is generally required to confirm the diagnosis.

Foreign body granuloma. Whenever foreign material is deposited within the dermis, it incites a local cellular inflammatory reaction, which varies with the type of material introduced. Isolated, red-brown nodules and papules on exposed skin may result from splinters, thorns, sand, insects' biting parts, or specific materials such as the oxides of beryllium or zirconium, which incite intense histocytic activity and granuloma formation. Even in scabies, where the characteristic lesion is vesicular, deeper penetration of the mite (in infants or in genital lesions in adults) produces long-lasting, severely pruritic granulomas. A common tumor, the *dermatofibroma* or *histiocytoma cutis*, probably represents a foreign body reaction, usually to a long-forgotten insect bite. The lesions occur on exposed parts of the extremities as isolated 0.3 to 1.0 cm, oval, firm to hard, skin-colored nodules. Since they are bound within the dermis, lateral pressure about the lesion produces the so-called dimple sign where the lesion appears to retract below the surface. The dermal tumor is benign, but after years it may produce a gradual darkening and change in the overlying epidermis, which signals the development of a basal cell carcinoma.

Infectious granulomas. Deep, chronic infections, particularly those caused by mycobacteria, fungi, leishmaniasis, and syphilis, produce slowly growing lesions that range from coalescent papules to large, fungating tumors. Only biopsy and appropriate staining procedures will distinguish the type and etiology. Large collections of lymphocytes in proliferative disorders *(lymphomas)*, present within the skin, mimic these infectious granulomas. *Pyogenic granuloma* is a common tumor that resembles both a granuloma and angioma (see below) in appearance and behavior. It is a bright red, isolated, rapidly growing lesion that protrudes atop the skin from a surrounding, slightly elevated cuff of normal tissue. It usually occurs on exposed parts of the body and may vary in size from 0.5 to 1.0 cm or more. It is friable, bleeds very easily, and may be rubbed off, only to recur quickly. It is quite benign, despite its worrisome appearance and behavior, and represents exuberant granulation tissue from trivial unrecognized trauma.

Miscellaneous granulomas

SARCOIDOSIS. Although a systemic disease, sarcoidosis also manifests its typical granulomas within the skin. They are more common in blacks in the United States, and present as yellowish brown to violaceous lesions on the face, particularly about the eyes and on the nose and mouth. Lesions in the scalp present as a scarring alopecia. The number of specific cutaneous lesions, other than previously mentioned with erythema nodosum, appears to have no prognostic relationship with the systemic disease.

XANTHOMAS. The histiocytic cells that make up these lesions are characteristically laden with lipids and are clinically yellow in color. *Eruptive xanthomas* are smaller, papular lesions that arise from a erythematous base and may be confused with inflammatory dermatoses. They usually appear suddenly, are widespread and symmetrically distributed on the torso, and are the consequence of a systemic abnormality that has resulted in elevated serum triglycerides. *Noneruptive xanthomas* slowly coalesce to form larger, yellow tumors usually on the elbows, knees, knuckles, buttocks, and Achilles tendon. Also due to an underlying lipid disorder, these xanthomas are associated with individuals who will manifest severe atherosclerotic cardiovascular disease. *Xanthelasma* are common flat xanthomas, seen as plaques on the eyelids. About half the patients with these lesions have associated increased serum cholesterol levels. Xanthelasma are of more diagnostic significance and concern when seen in younger patients.

GRANULOMA ANNULARE. This relatively uncommon condition has very distinctive lesions, except that they are, with inadequate examination, mistaken for other common skin disorders. The typical annular plaque (or plaques) are composed of dermal papules that are pink to red and surround a central area of flat, normal-appearing skin. At first glance, they are easy to confuse with tinea corporis except that the fungal disease involves the superficial layers of skin, with the spreading, active border of vesicles and/or scaling, which is absent in granuloma annulare. The fungal infection is very pruritic. Granuloma annulare is usually found on the exposed extremities, particularly in children, and may represent atypical reaction patterns to insect bites. Histologically, the lesions show necrobiosis of the dermal collagen and a distinctive histocytic and lymphocytic infiltrate, similarities shared with rheumatoid nodules and necrobiosis lipoidica (see below).

RHEUMATOID NODULES. Multiple, symmetrical, subcutaneous nodules frequently occur with rheumatoid arthritis at areas of pressure around joints. They resemble the tophi of gout in their juta-articular involvement at the elbows, knees, and fingers, and, in bedridden patients, are found over the buttocks, spine, and occiput. *Calcinosis cutis* nodules similarly resemble the gouty tophi except that they are harder and may drain their chalky contents through inflammatory ulcerations of the overlying skin. These calcium deposits of soft tissue accompany dermatomyositis, scleroderma, and systemic diseases associated with hypercalcemia.

MYXOID OR SYNOVIAL CYSTS. These are also growths that appear above or around joints. The smaller cystic, nodular tumors frequently appear on the dorsum of the hand at a distal interphalangeal joint. The lesion may be skin colored or erythematous and occasionally is painful. A larger form, which occurs subcutaneously over the wrist, is termed a *ganglion*. These tumors are frequently attached to the underlying joint capsules and are benign but difficult to treat.

Tumors of the Skin

Morphologically different growths, ranging from macular, stable discolorations (e.g., angiomas) to large, rapidly ex-

panding tumors (e.g., malignant melanoma) are included in this category to stress the neoplastic nature of the conditions. Most will be readily recognized by an examiner as abnormal growths, and it is usual to establish the precise diagnosis by biopsy.

BENIGN TUMORS

Verruca vulgaris. The common wart is an epidermal tumor initiated by the human papova virus. The appearance of warts varies according to the part of the body infected and the particular strain of the virus. Most common are the raised, papulonodular, rough, irregular scaly growths seen on the extremities of children. The lesions may be isolated or, by confluence, form large plaque-like islands of tumor. On non-pressure-bearing areas they are exophytic and protrude above the skin; on the palmar and plantar surfaces, they are pushed down into the surrounding tissue.

Flat warts are a variety seen on glabrous skin, particularly on the face. Because of their soft, red to tan, nonscaly, smooth, maculopapular appearance, they are easily confused with inflammatory dermatoses, particularly lichen planus. When warts are distributed in a linear fashion from scratching and innoculation, this also effectively mimics Koebner's phenomenon (isomorphic response).

Genital warts (condyloma accuminatum, venereal warts) are rapidly growing, soft, pedunculated, or sessile tumors that have fine finger-like fronds or projections. In moist intertriginous areas they may become whitish, and must be differentiated from *condyloma latum,* the genital lesion of secondary syphilis. Unlike warts, the luetic lesions are very broad, flat, tumid excrescences. Flat, wart-like lesions on the genitals should be biopsied since some are intraepidermal carcinomas, a condition called *Bowenoid papulosis* (see Bowen's disease below). There is, indeed, mounting evidence to suggest that genital wart infections, as well as those of herpes simplex, predispose to genital carcinoma.

Molluscum contagiosum. These are monomorphic, very characteristic tumors caused by a human pox virus. The individual lesions are 2 to 5 mm pearly, flesh-colored papulonodules that have an umbilicated center. They are usually discrete, single lesions that arise from nonerythematous, normal-appearing skin. There may be few, or they may be widespread and easily confused with inflammatory dermatoses. Genital lesions are associated with venereal spread of this, as the name suggests, contagious infection.

Melanocytic nevus. The very common "moles" are benign tumors of pigment cells that can appear anywhere on the body. During the first decade they tend to be flat, macular, oval to round, brownish small tumors (3 to 6 mm), which ultimately become more elevated after puberty. Pregnancy and exogenous progestogens may darken the tumors or increase their size. In later years the lesions become lighter in color, pedunculated or sessile (resembling skin tags), and may disappear spontaneously. Large congenital nevi, particularly the "bathing suit nevi" that cover extensive areas of skin, are considered to be premalignant tumors. Additionally, there appear to be less obvious acquired nevi associated with a familial tendency toward malignant melanoma. In the *dysplastic nevus syndrome,* individuals will develop (after puberty) numerous dark lesions on the torso, which careful examination shows to be clinically atypical nevi. They are larger (more than 6 to 10 mm), have an irregular rather than oval to round shape, with notched or rough and indistinct borders. The pigmentation also varies, showing different shades of black and brown within the individual lesion, as well as admixtures of white and red.

Skin tags (acrochordon). These soft, pedunculated, pinhead to pea-sized, fleshy out-growths are very common with increasing age, more so in heavy patients. They occur in intertriginous areas, most notably the axillae, neck, and groin, and are benign but bothersome. They are seen in profusion as part of the clinical presentation of *acanthosis nigricans,* since both conditions are essentially papillomatous proliferations of skin. In acanthosis nigricans, the dark discoloration is very striking (again, in the neck, axillae, groin) but the velvety appearance and feel signify the proliferative quality of the condition. Late-onset acanthosis nigricans in adults is associated with adenocarcinomas, particularly of the gastrointestinal tract. It is also found in young obese patients, with certain drugs (oral contraceptives, corticosteroids, high doses of nicotinic acid), and accompanies a variety of endocrinopathies (diabetes mellitus, notably).

Seborrheic keratosis. These very common tumors occur generally after the fourth and fifth decades, continue to proliferate slowly, and run in families. The lesions have a stuck-on appearance, since they are essentially superficial overgrowths of normal epidermal cells. They range in size from a few millimeters to centimeters, and vary in color from light tan to black; from barely perceptible thickness to protuberent excresences, and have an irregular, verrucous, soft, friable scaly covering. They occur primarily in the nonexposed torso, but may also be present on the face and extremities. In dark-skinned people, the lesions on the face and neck present as small, pedunculated black spheroids of several millimeters in diameter. This peculiar variety has been called *dermatosis papulosa nigra,* a rather near summation of their appearance in Latin. Aside from their cosmetic concern to patients, the tumors provoke a great deal of anxiety because they fulfill the broad warning signs of skin cancer. They are expanding, dark tumors that bleed when traumatized and quickly regrow when scraped off accidently.

A rare form of *eruptive seborrheic keratosis,* similar to the usual type except for its explosive and widespread onset, is associated with malignancies, particularly gastrointestinal adenocarcinomas. This constitutes the so-called *Sign of Leser-Trélat,* an external marker of occult internal neoplasms.

Vascular neoplasms

ANGIOMAS. These are common congenital, benign neoplasms of blood vessels that vary greatly in appearance and significance, depending on the type, degree, and location of the vascular abnormality. The *nevus flammeus,* which is an overgrowth and dilation of superficial capillaries, produces a flat, pink to violet, mostly macular discoloration of the skin. It is present at the nuchal scalp of many infants at birth and may persist throughout life. When similar lesions occur in zonal distribution on the face, these so-called *port-wine stains* are at least cosmetically disturbing. In the *Sturge–Weber syndrome,* the angioma occurs within the skin innervated by the trigeminal nerve and is associated with an angiomatosis of the cerebral meninges and choroid of the eye, with visual disturbances and hemiplegia.

In the *Klippel–Trénaunay–Weber syndrome* there is an extensive unilateral nevus flammeus, with or without deeper angiomas, or lymphangiomas, which is associated with underlying bone and soft tissue hypertrophy. Arteriovenous fistulas occur and may produce functional hemodynamic changes as well.

Strawberry hemangiomas involve growth of larger, deeper vessels; they are visible at or shortly after birth as well-defined protruberant, fiery, red to purple, very obvious growths. They vary in size from the insignificant to exu-

berant, some with accelerated growth for a period of weeks or months. They usually involute spontaneously during early childhood.

Cavernous hemangiomas, which arise from even larger and deeper venous structures within the skin, are cystic, ill-defined growths with a decidedly blue color. Although they occur as isolated tumors, a number of associated conditions have been recognized.

Kassabach–Merritt syndrome occurs in infants with large hemangiomas and may be fatal in up to 30% of the patients due to an associated bleeding tendency. There is a profound thrombocytopenia secondary to the tumor-related coagulopathy.

Von Hippel–Lindau syndrome consists of cavernous hemangiomas associated with underlying similar lesions of the central nervous system.

Maffucci's syndrome is characterized by cutaneous cavernous hemangiomas with enchondromas. Nodular and angiomatous lesions occur early in life with the dyschondroplastic changes and skeletal deformities. Encroachment of the brain from skull lesions and malignant degeneration of both the angiomas and enchondromas are serious complications of this rare disorder.

Blue rubber bleb nevus syndrome is a very descriptive name for this uncommon, autosomal inheritable condition. The lesions are small, cavernous hemangiomas of the skin that appear as soft, easily collapsed, blue, cystic coalescent lesions. They are associated with gastrointestinal angiomas, usually of the small intestine, which may bleed and produce clinical problems.

Cherry angiomas occur on the torso with advancing age in adults, appearing as discrete, multiple, widespread, 1 to 5 mm, bright red, slightly elevated tumors that blanch easily with pressure. They are the most common vascular tumor found on the skin and have no clinical significance.

Spider angiomas are flat macular or elevated lesions composed of a central dilated arteriole surrounded by a radial burst of superficial legs, or radicles, which collapse and disappear when pressure is applied to the feeder vessel. They vary in size from millimeters to centimeters and are usually found on the face, upper torso, or extremities. Their occurrence in pregnancy and with a variety of hepatic disorders suggests a common endocrine origin such as increased estrogen stimulation. Vascular spiders are also classified as telangiectases, which are dilated vessels, rather than the result of proliferative activity. Telangiectases tend to be uniformly flat macular, vascular mats and are a prominent feature of several of the so-called collagen diseases, including systemic lupus erythematosis, dermatomyositis, and systemic sclerosis. Here they tend to be found on the face and the distal extremities. In *hereditary hemorrhagic telangiectasia* (Rendu-Osler-Weber disease), the mucosa of the nose, lips, tongue, and mouth are almost always involved and may constitute an important clinical clue to the etiology of obscure internal bleeding in almost any organ system.

Angiokeratomas are angiomas with a covering scale and are commonly found in the scrotal and vulvar skin of older people. They have no clinical significance. Should similar lesions be seen in young men with spread to the lower trunk and proximal lower extremities, they may be the presenting sign of *Fabry's disease* (angiokeratoma corporis diffusum). This is a sex-linked inborn error of glycosphingolipid metabolism that produces widespread, multisystem disease, with grave renal and cardiovascular consequences.

Kaposi's sarcoma, though not truly a "benign" tumor, is of vascular origin and has an apparently prolonged course as a malignancy, with multifocal systemic development rather than metastatic spread. Unlike those associated with patients afflicted with *acquired immune deficiency syndrome* (AIDS), it was usually found (uncommonly) in elderly men of Jewish or Italian heritage, where it produces more cutaneous, rather than systemic, problems. The usual presentation is as purple plaques, nodules, and tumors of the lower legs and dorsa of the feet. In AIDS patients the lesions tend to be more widespread and "atypical," although histologically congruent with the "classic" variety.

Epidermoid (keratinous) cysts. These are smooth-surfaced, yellowish, freely movable intradermal tumors with a soft, cystic feel, which on close examination show a central pore. They vary from millimeter to several centimeters in size, and if squeezed, either express through the pore or rupture, liberating a noisome cheesy substance. They are erroneously called "sebaceous cysts," but take their origin from the follicular epithelium. They tend to become apparent after puberty and at midlife. Those occurring in children should raise the suspicion that they are the cutaneous marker for *Gardner's syndrome* and are associated with a familial tendency to malignant colonic polyps.

MALIGNANT TUMORS

Basal cell carcinoma. Small papular tumors at first, basal cell carcinomas progressively grow and develop a pearly infiltrative border with dilated vessels at the rim and surrounding skin. Larger lesions may show central ulcerations and crusting. Although the tumors are typically flesh colored, pigmented basal cell carcinomas may be mistaken for melanomas. These cancers typically appear on sun-exposed areas of fair-skinned people.

Squamous cell carcinoma. This also is found on exposed skin and is usually a more rapid-growing ulcerative tumor than basal cell carcinoma. Histopathological examination is frequently required to differentiate between these carcinomas. They are both regularly found on sun-ravaged skin that shows mottled pigmentary changes, yellowish, elastotic dermal deposits, atrophy, and telangiectases. *Actinic keratoses* are poorly defined, pink to red, superficial scaly lesions, which are precursors to the carcinomas. They have a rough, dry feel that usually alerts the patients to their presence. The term "senile keratoses" previously used for these lesions should be urgently abandoned, both for the confusion it creates with seborrheic keratoses, which tend to occur on older people and because actinic keratoses and frank basal and squamous cell carcinomas also occur on the sun-exposed skin of susceptible young people.

Bowen's disease (squamous cell carcinoma in situ). This more often resembles an isolated plaque of psoriasis occurring as a solitary crusty, well-marginated plaque, often on sun-exposed areas.

Paget's disease. This is a more exudative, weepy, red, superficial, well-defined plaque, usually occurring on the nipple or areola of the breast or on the anogenital skin. It is associated with an underlying intraductal carcinoma.

Malignant melanoma. The clinical characteristics and behavior of melanomas vary from the slow-growing, flat, brownish, irregular spots on sun-exposed skin (usually the face) of elderly people (lentigo maligna, Hutchinson's freckle, malignant melanoma in situ) through the very aggressive dark, nodular, erosive tumors that may arise anywhere. There is also a marked variation of abnormal colors—blue, red, and white—and irregularity of shape, with the deeper tumors having a much poorer prognosis.

Pigmentary Alterations of Skin

Generalized darkening of the skin is difficult to appreciate because changes may be gradual and require familiarity with the "normal" coloration of the patient. Diffuse hyperpigmentation of the skin, however, notably occurs in *Addison's disease, acromegaly, hemochromatosis,* and in the rare inborn errors of metabolism of *ochronosis* and the *tissue storage lipoidoses.* Exogenous drugs and poisons are also occasionally associated with generalized pigmentary changes, including certain tetracyclines, phenothiazine, antimalarials, and heavy metals.

Local areas of hyperpigmentation that have systemic implications include the following:

PEUTZ–JEGHERS SYNDROME

Small brown to black macules, usually under 5 mm in diameter, are observed on the face and extremities during the second and third decade of life. They are asymptomatic and have a predilection for the vermillion lips, buccal and rectal mucosa, central portion of the face, and tips of the fingers and toes. This is an autosomal dominantly inherited condition associated with gastrointestinal polyps that are, for the most part, benign.

LEOPARD SYNDROME (LENTIGNOSIS PROFUSA SYNDROME)

This autosomal dominantly inherited condition is characterized by multiple generalized small dark freckles (lentigines) present at birth and the other parts of its mnemomic title (lentignosis, electrocardiographic conduction defects, ocular hypertelorесis, pulmonary stenosis, abnormalities of the gentilia, retardation of growth, and deafness, sensorineural).

GENERALIZED NEUROFIBROMATOSIS (VON RECKLINGHAUSEN'S DISEASE)

Regularly outlined ("coast of California") brown macules 1 to 5 cm or more, usually more than six in number, and axillary freckling (Crowe's sign) are the characteristic local areas of hyperpigmentation that characterize this condition. They have their onset during infancy and increase in size and number. The conspicuous cutaneous neurofibromas develop after puberty. In 50% of the cases, the condition is inherited as an autosomal dominant, and there may be a wide range of associated systemic conditions. *Lisch nodules* are pigmented iris hamartomas that are asymptomatic but are useful in establishing the diagnosis.

A variety of osseous abnormalities, primarily scoliosis, are seen. Symptomatic tumors of the acoustic and optic nerves, and mental retardation, are frequent central nervous system problems. Acromegaly, cretinism, thyroid abnormalities, Addison's disease, and diabetes have all been reported with neurofibromatosis, and a significant number of patients with pheochromocytoma also have multiple neurofibromatoses. Hypertension and severe vascular deformities are also reported in children with the condition. Large tumors may produce grotesque malformations of the physiognomy, as exemplified by the notorious "Elephant Man."

HYPOPIGMENTATION

Hypopigmentation or depigmentation may occur locally following any inflammatory condition of the skin and is most common in tinea versicolor infections. *Vitiligo* probably represents a systemic autoimmune response against the patient's own pigment cells. It occurs as sharply marginated, usually annular, areas of white skin. The lesions are symmetrical and have a predilection for the face, neck, and acral parts of the extremities. Other autoimmune diseases (thyroiditis, pernicious anemia, diabetes mellitus, and alopecia areata) may be associated with the condition.

Peculiar, geometric, elliptical shaped, hypopigmented macules ("ash leaf macules") scattered on the torso are considered one of the earliest pathognomic signs of *tuberous sclerosis.* This autosomal, dominantly inherited syndrome is also known as *epiloia* (epilepsy, low intelligence, and adenoma sebaceum). The skin lesions (adenoma sebaceum) are multiple, yellow-pink papulonodules that develop in the central portion of the face during childhood and superficially resemble a persistent acne. *Periungual fibromas* and *shagreen patches* (leathery, collagenous plaques about the lumbosacral area) are also commonly seen. Retinal and cerebral tumors account for the neurologic findings associated with the condition, and there is an increased incidence of other unusual tumors (renal hamartomas and cardiac rhabdomyomas) in these patients.

Sclerosis and Indurations

SCLERODERMA

The hallmark of the disease is the poorly defined induration and thickening of skin, primarily in the acral extremities and the face. The patient develops a characteristic pinched appearance and is unable to smile easily. Irregular mottling and pigmentary disturbances are seen in the affected skin. Hypopigmentation, with surrounding color about the hair follicles, produces a "salt and pepper" look. Ulcerations, particularly of the fingertips, may be present, and as previously described, telangiectasia and calcinosis cutis.

EOSINOPHILIC FASCIITIS (SCHULMAN'S SYNDROME)

This resembles scleroderma, manifesting a marked edema and induration of the extremities. Most patients have eosinophilia and hypergammaglolubinemia, and on deep biopsy, a histopathologic picture distinct from scleroderma.

SCLEREDEMA

An uncommon diffuse, slightly erythematous induration of skin usually on the upper torso and neck. If the face is involved, the resemblance is of the "moon face" and "buffalo hump" appearance of Cushing's disease. The condition may follow acute bacterial febrile conditions, although an association with diabetes mellitus is noted.

ERYSIPELAS AND CELLULITIS

Acute bacterial infection presents as red, hot, sharply marginated, indurated, tender plaques, most commonly seen on the face and extremities. Streptococcal infection is a frequent cause, although hemophilus infection may be seen in children. Infections by unusual organisms (e.g., cryptococcus) may occur in immunosuppressed patients. Repeated streptococcal infections of the extremities, with resultant hypertrophy, ultimately lead to *elephantiasis,* a grotesque enlargement of the affected part with fibrous overgrowth of the skin and the development of deep nodular tumors with intervening crypts and tunnels.

Atrophy

NECROBIOSIS LIPOIDICA DIABETICORUM (NLD)

A "doorway diagnosis" of the typical lesion can be made, so characteristic is its appearance. A well-circumscribed, annular to oval, atrophic plaque on the anterior shins, usually several centimeters in diameter, NLD has a typical yellowish color with a mottled erythema contributed by the superficial, dilated blood vessels. A biopsy is diagnostic. Although less than 0.5% diabetics have NLD, more than 50% of patients with NLD have diabetes. Long-standing lesions frequently ulcerate.

LICHEN SCLEROSUS ET ATROPHICUS

The typical lesions are bone white, very smooth, atrophic, sharply marginated, oval to annular plaques that typically appear on the genitalia, although they may appear anywhere on the body. Diagnosis is confirmed by biopsy. The chronic lesions may ulcerate and develop areas of squamous cell carcinoma.

Ulcerations

CHRONIC ARTERIAL ULCERS

The ulcerations that accompany arteriosclerotic and hypertensive cardiovascular disease are painful, sharply marginated, and found on the lateral lower extremities and toes.

STASIS ULCERS

The lesions associated with venous insufficiency are more commonly present over the medial malleolus, usually with pitting edema, varicosities, mottled pigmentation, erythema, and nonpalpable petechiae and purpura. The stasis dermatitis and ulcers are generally pruritic rather than painful.

VASCULITIC ULCERS

These also occur on the lower extremities and are painful, sharply marginated lesions, which may have associated palpable purpuras and hemorrhagic bullae. The collagen diseases, septicemias, and a variety of hematological disorders (e.g., thrombocytopenia, dysproteinemia) may be the cause of this severe, acute condition.

PYODERMA GANGRENOSUM

This occurs as single or multiple, very tender ulcers of the lower legs. A deep red to purple, undermined border surrounds the purulent central defect. Biopsy fails to reveal a vasculitis. In half the patients it is associated with a systemic disease such as ulcerative colitis, regional ileitis, or leukemia.

INFECTIOUS ULCERS

These ulcers follow direct innoculation with a variety of organisms and may be associated with significant regional adenopathy. Mycobacteria infection, anthrax, diphtheria, blastomyosis, sporotrichosis, tularemia, and cat-scratch fever are examples. The genital ulcers of primary syphilis are typically nontender with a clean, firm base. Those of chancroid and granuloma inguinale tend to be ragged, dirty, and more extravagant lesions.

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