

Glossary

- Acanthosis** Epidermal hyperplasia characterized by thickening of the stratum spinosum.
- Adnexotropic** With a tropism for cutaneous adnexal structures. *See* folliculotropic and syringotropic.
- Anaplastic** Atypical appearance of cell nuclei. Nuclei are often large, irregularly shaped, and hyperchromatic with prominent nucleoli.
- Angiocentric** Centered around or distributed around blood vessels.
- Angioinvasion** Invading the wall of the blood vessel with associated endothelial cell necrosis and dropout.
- Angiotropic** Describing an affinity for tumor cells to attach to the vascular surfaces, either the abluminal surface (in melanoma) or the luminal surface (as in intravascular large B-cell lymphoma).
- Anthracyclines** Family of cell-cycle nonspecific cancer chemotherapy agents derived from *Streptomyces* bacteria. These compounds inhibit DNA and RNA synthesis by intercalating between base pairs and also by inhibiting topoisomerase II. Examples include doxorubicin and daunorubicin.
- B symptoms** Fever (>38 °C), night sweats, and weight loss (>10 % body weight over <6 months). These are important prognostic factors in some lymphomas.
- Bexarotene** Retinoid antineoplastic agent used in the treatment of cutaneous T-cell lymphoma (CTCL). Bexarotene selectively activates the retinoid X receptors (RXRs), causing cell differentiation and apoptosis.
- Blastic** A cytologic descriptor of enlarged cells with round nuclei resembling stem cells.
- Blastic plasmacytoid dendritic cell** Also known as plasmacytoid monocytes or professional type 1 interferon-producing cells. Special subset of dendritic cells that produces the majority of interferon-alpha in the human body.
- Borrelia burgdorferi*** Spirochete bacterium responsible for causing Lyme disease. Carried by the *Ixodes* tick.
- Bulla** Intraepidermal or subepidermal cavity greater than 5–10 mm in diameter and containing serous fluid and/or inflammatory debris.
- Centroblast** An intermediate cell in the process of B-cell differentiation. Centroblasts are B cells derived from antigen-stimulated B blasts and located in the dark zone of the germinal center; these undergo somatic hypermutation and proliferation.
- Centrocyte** An intermediate cell in the process of B-cell differentiation, centrocytes are B cells derived from centroblasts that have migrated to the light zone of the germinal center. They undergo selection.
- Cerebriform** Resembling the fissures and contours of the brain. Classically used to describe the nuclei of Sézary cells and the cells of mycosis fungoides.
- CHOP** Chemotherapy regimen commonly used for non-Hodgkin lymphoma, consisting of Cyclophosphamide (an alkylating agent), Hydroxydaunorubicin (an intercalating agent, also known as doxorubicin), Oncovin (a microtubule inhibitor, also known as vincristine), and Prednisone.
- Colonized follicle** Nonneoplastic lymphoid follicle overrun by neoplastic cells.
- Constitutional symptoms** Nonspecific, generalized symptoms including weight loss, fevers, fatigue, malaise, chills, night sweats, and decreased appetite.
- Cutaneous Lymphocyte Antigen (CLA)** A skin lymphocyte homing receptor. Typically present on Sezary cells.
- Cutaneous lymphoid hyperplasia (CLH)** A dense dermal reactive lymphoid infiltrate that mimics cutaneous lymphoma (*see* pseudolymphoma).
- Dendritic cell (DC)** Antigen-presenting cell that acts as an intermediate between the innate and adaptive immune systems. DCs are present in the skin, mucosal epithelium, bloodstream, and lymph nodes.
- Disseminated intravascular coagulation (DIC)** Widespread activation of the clotting cascade, resulting in formation of thrombi in small vessels throughout the body, causing tissue ischemia and necrosis. A consumptive coagulopathy that also depletes clotting factors and platelets, simultaneously resulting in severe bleeding.
- Doxorubicin** Anthracycline chemotherapy agent. *See* anthracycline.

- Epidermotropism** The presence of cytologically atypical lymphocytes in the epidermis usually with minimal to no accompanying spongiosis. Cells may either be present singly, surrounded by a clear halo, or in groups, as in the Pautrier microabscesses of mycosis fungoides. The cytologic atypia of the lymphocytes distinguishes epidermotropism from exocytosis. *See* Pautrier microabscess.
- Epstein-Barr virus (EBV)** Also known as human herpes virus-4 (HHV-4); one of the most common human viral pathogens. Enveloped DNA virus responsible for causing infectious mononucleosis and associated with an array of malignancies, including extranodal natural killer/T-cell lymphoma (eNK/TCL), Hodgkin lymphoma, Burkitt lymphoma, and nasopharyngeal carcinoma.
- Erosion** Incomplete loss of epidermis without damage to the basement membrane. Typically heals without scarring.
- Erythroderma** Also called exfoliative dermatitis; characterized by diffuse erythema and scaling involving most, if not all, of the skin (>80–90 % of body surface area).
- Etoposide** Cytotoxic antineoplastic agent in the class of topoisomerase II inhibitors. Prevents religation of DNA strands after unwinding and causes the formation of double-stranded breaks; DNA damage then promotes apoptosis. Used to treat a variety of hematologic and solid malignancies.
- Exocytosis** The presence of mononuclear cells in the epidermis with or without accompanying spongiosis. Typically seen in inflammatory conditions. The lack of significant lymphocytic atypia distinguishes exocytosis from epidermotropism.
- Extranodal lymphoma** Lymphoma arising in sites other than the lymph nodes, most commonly the skin and gastrointestinal tract.
- Flow cytometry** Biophysical technique that permits assessment of the size, granularity, and expression of cell-surface markers for individual cells. Cells are treated with fluorescently labeled antibodies and suspended in liquid. Suspended cells flow one by one through an exciting light (a laser), and light scatter and emission spectra are recorded, allowing the phenotype of individual cells to be assessed.
- Flower cell** Characteristic cellular morphology of cells in adult T-cell leukemia/lymphoma (ATLL).
- Follicle center cells** Centrocyte and centroblast B cells located in the follicle center of a lymphoid follicle. Typically CD10+ Bcl6+ Bcl2–.
- Follicular dendritic cells (FDC)** CD21+ CD23+ dendritic cells of mesenchymal origin found in primary and secondary lymphoid follicles. These cells form the meshwork that supports the B cells of the follicle center; FDC meshworks may be disrupted in neoplastic or colonized lymphoid follicles.
- Follicular mucinosis** Accumulation of dermal mucin in the pilosebaceous unit.
- Folliculotropic** With a tropism for the hair follicle.
- Grenz zone** Area of uninvolved dermis between the basement membrane zone and the underlying dermal infiltrate or neoplasm.
- Hematopoietic stem cell transplantation (HSCT)** The transfer of multipotent hematopoietic stem cells from the bone marrow, peripheral blood, or cord blood. These transplants may be autologous (from the recipient) or allogeneic (from another individual).
- Hemophagocytic syndrome (HPS)** Also known as hemophagocytic lymphohistiocytosis (HLH). Characterized by macrophage phagocytosis of erythrocytes, leukocytes, platelets, and precursors in the bone marrow. It can be associated with a variety of conditions, including malignancy, infection, immunodeficiency, and autoimmune diseases. In cutaneous lymphoma, HPS may be seen in gamma-delta T-cell lymphoma and rarely in subcutaneous panniculitis-like T-cell lymphoma.
- Histiocyte** Tissue macrophage. Histiocytes have large, elongated, lightly staining nuclei with visible nuclear borders.
- HTLV-1** Human T-lymphotropic virus-1, the delta retrovirus responsible for adult T-cell leukemia/lymphoma. The lymphomagenic effect of this virus is likely secondary to random integration into the host cell genome.
- Imiquimod** Toll-like receptor 7 agonist, used as a topical chemotherapeutic agent. Works as an immune modifier, causing cancer cell death by enhancing the local immune response.
- Immunoglobulin heavy chain (IgH)** The large polypeptide subunit of an immunoglobulin. An antibody is composed of one IgH chain and two Ig light chains.
- Immunophenotype** Immunohistochemical characteristics of a cell or group of cells. In dermatopathology, typically assayed using immunohistochemical stains.
- Inside-out follicle** Large neoplastic follicle center cells may surround aggregates of small T and B cells.
- Langerhans cell** CD1a+, langerin+, CD4+ dendritic cell present in the upper layers of the stratum basale and spinosum.
- Leukemia cutis** Infiltration of the epidermis, dermis, and/or subcutis by neoplastic leukocytes or precursors, manifesting as clinically apparent cutaneous lesions.
- Lichenoid** Characterized by a band-like inflammatory infiltrate in the superficial dermis. Typically parallel to the epidermis but may abut and obscure the dermal-epidermal junction.
- Lymphoid follicle** Aggregate of lymphoid cells composed of a central area of large B cells and a surrounding area of smaller T cells and B cells.
- Macrophage** Monocyte-derived phagocytic and antigen-presenting cell. Macrophages play an important role in both innate and adaptive immunities.

- Macule** Circumscribed flat area less than 5–10 mm in its largest dimension, without elevation or depression relative to the surrounding skin.
- Marginal zone cell** B cell located in the marginal zone of a germinal follicle or having a cytologic phenotype similar to that of cells in the marginal zone (also termed monocytoid B cell).
- Methotrexate** Commonly used antimetabolite and antifolate drug to treat malignancies and autoimmune conditions. Used either alone or in combination with other chemotherapeutic agents.
- Microabscess** Small accumulation of cells in the epidermis. They may also be present in the subepidermal papillae.
- Monoclonal** Group of cells derived from the same ancestral cell by repeated cellular replication.
- Monomorphic** No variation in the appearance of nuclei of cells of the same type (e.g., monomorphic appearance of B cells in chronic lymphocytic leukemia/lymphoma).
- Monomorphous** Homogeneous population of cells (e.g., a monomorphous infiltrate of lymphocytes without histiocytes, plasma cells, or granulocytes).
- Mucin** In the dermis, mucin usually refers to hyaluronic acid; dermal mucin is a major component of the ground substance of tissue. Dermal mucin stains with Alcian blue, colloidal iron, and toluidine blue but is PAS-negative. Epidermal mucin is composed of neutral and acid mucopolysaccharides. It is PAS-positive, mucicarmine-positive, and diastase-resistant.
- Multiagent chemotherapy** Use of a combination of chemotherapeutic drugs to treat a neoplasm.
- Munro microabscess** Small aggregate of disintegrated neutrophils in the parakeratotic stratum corneum of psoriasis.
- Naked follicle** Collections of neoplastic follicle center cells apposed to the reticular dermal collagen without an intervening mantle zone of small lymphocytes.
- Narrowband UV-B (NBUVB)** Type of phototherapy using a specific wavelength of ultraviolet radiation (311–312 nm). Used in a variety of benign skin conditions such as psoriasis, atopic eczema, vitiligo, and lichen planus as well as in cutaneous T-cell lymphoma. Referred to as “narrowband” because it uses a single wavelength of light compared with its precursor treatment, broadband UVB therapy (290–320 nm).
- Natural killer (NK) cell** Cytotoxic lymphocyte of the humoral immune system, analogous to the cytotoxic T cell of the adaptive immune system. Involved in host response to viral infection and tumors.
- Neutrophil** Also known as polymorphonuclear cells, these granulocytes are a key component of the humoral immune system and are responsible for phagocytosis.
- Nodule** Palpable, nonfluctuant lesion, often in the dermis or subcutis, greater than 5–10 mm in width and depth.
- Oligoclonal** Group of cells derived from a few ancestral cells by repeated replication.
- Pan T-cell markers** Immunohistochemical markers found on the majority of T-cell subtypes. These include CD2, CD3, CD5, and CD7.
- Papule** Well-circumscribed, firm elevation of the skin without visible fluid; less than 5–10 mm.
- Parakeratosis** Incomplete keratinization with retention of nuclei in the stratum corneum, often associated with attenuated or absent granular layer.
- Parapsoriasis** Patches of erythema greater than 6 cm in diameter with overlying adherent scale. Frequently accompanied by atrophy and poikiloderma. The patches of parapsoriasis often occur in a bathing suit distribution and are considered by some to be a patch-stage mycosis fungoides (MF).
- Patch** A large macule (area of change in surface color) greater than 5–10 mm in its widest dimension.
- Pautrier microabscess** Intraepidermal accumulation of three or more atypical T cells within the stratum spinosum of the epidermis; seen in mycosis fungoides.
- Plaque** Circumscribed thickened, indurated, or elevated plateau-like lesion greater than or equal to 1 cm in diameter.
- Pleomorphic** Variation in appearance of nuclei of cells of the same type.
- Poikiloderma** Combination of telangiectasia, hyper- and hypopigmentation, and atrophy of the epidermis, yielding a mottled appearance.
- Polyclonal** Group of cells derived from numerous different ancestral cells.
- Polymorphous** Heterogeneous population of cells.
- Positron emission tomography (PET) scan** Nuclear medicine scan that produces a three-dimensional image of the body, indicating areas of increased metabolic activity. Patients receive a bolus of a biologically active tracer, most commonly fluorodeoxyglucose (FDG), which is taken up in larger quantities by metabolically active tissue and then imaged.
- Prednisone** Synthetic corticosteroid used for immune suppression. Used in chemotherapy, autoimmune diseases, rheumatic disorders, allergic disorders, and for the treatment and prevention of posttransplant rejection.
- Proliferative index** Immunohistochemically based measurement of tumor cell proliferative rate using markers of cellular proliferation, most commonly Ki-67.
- Provirus** Viral genomic material integrated into host cell DNA. In many cases, this integration can be oncogenic.
- Pseudoepitheliomatous hyperplasia** Histopathologic reaction pattern characterized by a benign hyperplasia of epidermal and adnexal epithelia resembling squamous cell carcinoma.

- Pseudolymphoma** Benign lymphocytic proliferation that clinically and histopathologically may resemble a lymphoma (*see* cutaneous lymphoid hyperplasia).
- Psoralen+UVA (PUVA) treatment** A form of phototherapy using oral or topical psoralen, a photosensitizing agent derived from plants that intercalates into DNA in combination with light in the UV-A spectrum. Has been used successfully in mycosis fungoides and other cutaneous T-cell lymphomas as well as in benign conditions, including psoriasis, eczema, and vitiligo.
- Pustule** Intraepidermal or subepidermal fluid-filled space containing inflammatory cells, typically neutrophils.
- R-CHOP** CHOP chemotherapy with the addition of rituximab. *See* CHOP.
- Reactive follicle** Benign lymphoid hyperplasia resulting in follicle formation.
- Retinoid** Class of compounds derived from vitamin A. Common examples include bexarotene, isotretinoin, and tazarotene.
- Rituximab** Chimeric monoclonal antibody against the B-cell cell-surface protein CD20, commonly used in the treatment of B-cell-derived hematologic malignancies.
- Sézary cell** Characteristic cell of Sézary syndrome, a T cell with a convoluted/cerebriform nucleus. Typically found in the circulation but occasionally may be found in skin biopsies.
- Somatic hypermutation** Diversification of B-cell receptors via mutation of variable regions of immunoglobulin genes.
- Spongiform pustule of Kogoj** Multilocular pustule in the upper stratum spinosum composed of neutrophils in a sponge-like network of degenerated keratinocytes. These are suggestive of psoriasis but can be seen in a variety of other conditions.
- Spongiosis** Intercellular edema between keratinocytes of the epidermis (with increased space between the keratinocytes) and visible intercellular junctions. Severe spongiosis may result in spongiotic intraepidermal vesicle formation.
- Syringotropic** With a tropism for eccrine structures.
- T cell** Lymphocyte that is the primary affecter of cell-mediated immunity. T cells derive their name from the fact that they mature in the thymus. Subsets of T cells include CD4+ helper T cells, CD8+ cytotoxic T cells, follicular helper T cells, and more.
- Tagging** In mycosis fungoides, tagging refers to the presence of atypical cells with cerebriform nuclei arrayed along the dermal-epidermal junction, either singly or lined up in a row.
- T-cell receptor (TCR)** Molecule on the surface of T cells responsible for binding antigens presented by major histocompatibility complex (MHC). In 95 % of T cells this receptor is composed of alpha and beta chains, while 5 % are composed of gamma and delta chains.
- Telangiectasia** Visible dilation of small superficial blood vessels.
- Tumor** Neoplastic proliferation in the epidermis, dermis, or subcutis forming a solid mass greater than 10 mm in diameter.
- Ulcer** Discontinuity of the epidermis caused by complete loss of epidermis and basement membrane zone. Parts of the dermis and subcutaneous fat may also be lost. Typically associated with granulation tissue and healing with scarring.
- Vesicle** Well-circumscribed, fluid containing cavity less than 5–10 mm in diameter.
- Vincristine** Vinca alkaloid, used in chemotherapy. A mitotic inhibitor that prevents microtubule assembly by binding to tubulin, thus killing rapidly dividing cells. Also called Oncovin, it is the “O” in CHOP chemotherapy regimens. *See* CHOP.
- Zidovudine** An antiretroviral drug used to treat HIV/AIDS. A member of the class of nucleoside analog reverse-transcriptase inhibitors (NRTIs).

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