Dermatopathology-
We’ve Only Just Begun

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Let us watch well our beginnings, and results will manage themselves.

Alexander Clark
Patterns

Less Specific

Epidermis

Dermis/Vessels/Hair Follicles

Fat/Vessels

More Specific

Inflammatory Cell Type
Epidermis
Acantholysis

- Loss of cohesion between epidermal or adnexal keratinocytes
- Grover’s disease, Pemphigus, Darier’s disease, Hailey-Hailey
Acanthosis

- The increase in the thickness of the stratum malpighii
- Acanthosis nigricans,
  Pale cell acanthoma
Apoptosis

- Dropping off of colloid bodies from the epidermis into the dermis
- Occurs in disorders in which basal cell damage occurs, such as lichenoid tissue reactions
- Lichen planus, LPLK, DLE
Bulla

- Cavity of at least 5 mm in diameter forming within or below the epidermis
- Bullous pemphigoid, EBA, DH
Coronoid Lamella

- The cornoid lamella is tilted toward the center of such a lesion
- Peripherally migrating clone of abnormal keratinocytes forming the cornoid lamella
- Porokeratosis
Epidermolytic Hyperkeratosis

- Vacoulation of the keratohyaline granular layer
- Epidermolytic hyperkeratosis, Congenital Ichthyosiform erythroderma
Lichenoid (Interface)

- Epidermal basal cell damage manifested with cell death or liquefactive degeneration (basal vacuolar change)
- Interface sometimes applied only to poikilodermatous reactions with mild basal damage with vacuolar change
- Lichen planus, Fixed drug eruption, LPLK
Parakeratosis

- Retention of nuclei in the stratum corneum
- Normal finding on mucous membranes
- Spongiotic dermatitis (Eczema)
Psoriasiform

- Epidermal hyperplasia with regular elongation of rete ridges
- Several layers of scale resulting from bouts of activity
- Psoriasis, PRP, Lichen striatus, MF
Spongiotic

- Intraepidermal intercellular edema with widened intercellular spaces and elongation of intercellular bridges
- Subclassify by inflammatory cell type
- Eczema
Epidermal Reaction Patterns

- Orthokeratosis
- Hyperkeratosis
- Spongiosis
- Parakeratosis
- Acanthosis

Modify by Inflammatory Cell type
Orthokeratosis

Hyperkeratosis  Acanthosis
Epidermal/Dermal Reaction Patterns

- Superficial perivascular
- Superficial and deep perivascular
- Nodular and diffuse
- Intraepidermal vesicular and pustular
- Subepidermal vesicular
Caseation Necrosis

- Identical to coagulation necrosis and ischemic necrosis
- Affected tissue has lost its structural outline and appears as pale eosinophilic, amorphous and finely granular
- Tuberculosis, Necrobiotic xanthogranuloma
Fibrinoid Necrosis

- Fibrin deposition in the wall of small vessels
- Commonly associated with leukocytoclastic vasculitis
Flame Figures

- Encrustation of eosinophilic granules around collagen
- Frequent in conditions with dermal eosinophilia
- Well’s syndrome, arthropod, drug reactions
Granulation Tissue

- Newly formed dermis arising in healing wounds and characterized by numerous fibroblasts and new capillaries and an infiltrate consisting of lymphoid cells, macrophages, and plasma cells
- Decubitus ulcer
Granuloma

- Chronic proliferative lesion consisting of mononuclear cells and epithelioid cells or multinucleated giant cells or both
- Cells lie in groups and are often surrounded by lymphoid cells
- "Naked" granulomas have few to none of these surrounding lymphoid cells
- Sarcoidosis, foreign body
Grenz Zone

- A narrow area of uninvolved dermis between the epidermis and a dermal inflammatory or neoplastic infiltrate. "Grenz" is German for "border"
- Some lymphomas, granuloma faciale
Necrobiosis

- Altered collagen that loses its normal eosinophilic coloration and fibrillar appearance, becoming slightly bluish and "smudged"
- Necrobiosis lipoidica, some infections
Nuclear Dust

- Fragmented nuclei scattered in the dermis, predominantly around blood vessels
- Leukocytoclastic vasculitis, granuloma faciale, Sweet’s syndrome
Epidermal Changes

Spongiotic

Ballooning

Psoriasiform/Lichenoid

Superficial/Deep

No Epidermal Changes

Perivascular

Intestinal

*Modify by Inflammatory Cell Type

Epidermal Changes

Interface

Epidermal Changes
Modify by Inflammatory Cell Type

Lichenoid/Interface

Spongiotic

Psoriasiform

Psoriasiform Lichenoid
Superficial Perivascular No Epidermal Changes

- Tinea versicolor
- Dermatophytosis
- Erythrasma
- Pitted keratolysis
- Vitiligo
- Schamberg's disease
- Viral exanthems
- Drug eruption (one type)
- Urticaria, late
- Erythema figuratum, superficial
Superficial Perivascular/Interstitial
No Epidermal Changes

- Schamberg's disease
  PUPPP
- Dermatitis herpetiformis
  Linear IgA dermatosis
  Dermatitis herpetiformis-like drug eruptions
  Acute discoid lupus erythematosus/SLE
  Leukocytoclastic vasculitis
  Erythema marginatum
- Bullous pemphigoid/Herpes gestationis, urticarial
  Pemphigus vulgaris, urticarial
  Arthropod
  PUPPP
- Urticaria
- Postinflammatory pigmentary alteration
  Macular amyloidosis
- Urticaria pigmentosa
  Brachioradial pruritis
Superficial Perivascular Psoriasiform

- Psoriasis
- Allergic contact dermatitis
- Nummular dermatitis
- Dyshidrotic dermatitis
- Pityriasis rubra pilaris
- Seborrheic dermatitis
- Dermatophytosis
- Candidiasis
- Lichen simplex chronicus
- Prurigo nodularis
- Acanthoma fissuratum
- Pressure papule from prosthesis
- Surfer's nodules
- Chondrodermatitis nodularis helicis
Superficial Perivascular Spongiotic Psoriasiform

- Allergic contact dermatitis
- Nummular dermatitis
- Dyshidrotic dermatitis
- Id reaction
- Seborrheic dermatitis
- Nonbullous congenital ichthyosiform erythroderma
- Lichen striatus
Superficial Perivascular Lichenoid/Interface

- Lichen planus
- Lichenoid drug
- Pityriasis lichenoides chronica
- DLE
- Dermatomyositis
- GVH
- EM
Superficial Perivascular Psoriasiform/Lichenoid

- Lichen striatus
- Bullous pemphigoid
- Herpes gestationis, urticarial
- Mycosis fungoides
Superficial/Deep
No Epidermal Changes

- Polymorphous light eruption, early
- Erythema figuratum
- Erythema chronicum migrans
- Pernio
- Erythema nodosum
- PMLE
- DLE, tumid
- CLL
- B-cell lymphoma
- Arthropod insult
- Erythema chronicum migrans
- Scleroderma
- Leprosy, indeterminate
Superficial/Deep
Perivascular and Interstitial

- Suppurative folliculitis, periphery
- Neutrophilic eccrine hidradenitis
- Flea bite
- Cellulitis
- Erythropoietic protoporphyria
- Arthropod
  - Erythema chronicum migrans
  - Well's syndrome
- Granuloma annulare
- Necrobiosis lipoidica
- Interstitial granulomatous dermatitis with arthritis
- Mycosis fungoides, granulomatous
Superficial/Deep
Epidermal Lichenoid-Interface

- PLEVA
  Fixed drug eruption
  Dermatophytosis
- LyP
- GVH
- DLE
- Acrodermatitis chronica atrophicans
- Mycosis fungoides, plaque
Nodular/Diffuse Dermatitis

- Lymphocytes
- Neutrophils
- Plasmacytes
- Histiocytes (Granulomas)
- Eosinophils
Nodular/Diffuse Dermatitis

- Histiocytes
  (Granulomas)
  - Sarcoidal
  - Tuberculoid
  - Palisaded
  - Suppurative
Nodular/Diffuse Dermatitis

- Histiocytes
  - (Granulomas)
  - Tuberculoid
  - Suppurative
# Nodular/Diffuse Dermatitis

<table>
<thead>
<tr>
<th>Cell Type</th>
<th>Diagnosis</th>
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<tbody>
<tr>
<td>Neutrophils</td>
<td>Sweets</td>
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<tr>
<td>Eosinophils</td>
<td>Well’s, Hypersensitivity</td>
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<tr>
<td>Plasma cells</td>
<td>Lyme disease</td>
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<tr>
<td>Histiocytes</td>
<td>Granulomatous diseases</td>
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<tr>
<td>Mixed</td>
<td>Granuloma faciale</td>
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</tbody>
</table>
Intraepidermal Vesicular and Pustular Dermatitis

Vesicular
- Ballooning
- Spongiosis
- Acantholysis
- Cleaving

Pustular
- Intracorneal
- Subcorneal
Intraepidermal Vesicular Dermatosis

Inflammatory Cells Modify

- Spongiosis
- Intraepidermal vesicle
- Intraepidermal bullae
Intraepidermal Spongiosis

- Allergic contact dermatitis
- Nummular dermatitis
- Dyshidrotic dermatitis
- Id reaction
- Photoallergic dermatitis, early
- Dermatophytosis
- Miliaria rubra
- Gianotti-Crosti syndrome
- Pityriasis rosea
- Erythema annulare centrifugum
- Seborrheic dermatitis
- Lichen striatus
- Pityriasis alba
- Mycosis fungoides, macule/patch
- PUPPP

- Allergic contact dermatitis
- Nummular dermatitis
- Dyshidrotic dermatitis
- Id reaction
- Bullous pemphigoid
- Herpes gestationis
- Pemphigus vulgaris, urticarial
- Incontinentia pigmanti
- Toxic erythema of newborn
- Arthropod assault
Intraepidermal Ballooning

- Herpes
- Orf
- Parapox infection
- Measles
- Hydroa aestivale/Hydroa vacciniforme
Intraepidermal with Acantholysis

- Pemphigus vulgaris
- Pemphigus vegetans
- Pemphigus erythematosus
- Pemphigus foliaceus
- Fogo selvagem
- Grover’s disease
Intraepidermal
Spongiotic Psoriasiform/Lichenoid

- Allergic contact dermatitis
  Nummular dermatitis
  Dyshidrotic dermatitis
  Id reaction
  Seborrheic dermatitis
  Nonbullous congenital ichthyosiform erythroderma
  Lichen striatus

- Lichen striatus
  Bullous pemphigoid
  Herpes gestationis, urticarial
  MF
Subepidermal Vesicular Dermatosis

- Subepidermal
  - Minimal
  - Mixed
    - Neutrophils
    - Neuts/Eos
    - Mast Cells
  - Lymphocytes
Subepidermal Vesicular Dermatosis

- Bullous pemphigoid/Herpes gestationis
- Cicatricial pemphigoid
- Dermatitis herpetiformis/Linear IgA disease
- EBA
- Bullous LE
- Bullous mastocytosis
- Bullous amyloidosis
- Drug reactions
- LP
Special Categories

- Vasculitis
- Alopecia
- Folliculitis/Perifolliculitis
- Fibrosing dermatitis
- Panniculitis
Vasculitis

- Small Vessel
- Large Vessel
- Mixed
Vasculitis

- Leukocytoclastic vasculitis
- Microscopic arteritis
- Polyarteritis nodosa
- Erythema induratum
Alopecia

Non-Inflammatory
- Follicle density normal
- Follicle density decreased

Inflammatory
- Lymphocytes
- Mixed
Alopecia
Non-Inflammatory

- Follicle density normal
  - Androgenic alopecia
  - Telogen effluvium
  - Trichotillomania

- Follicle density decreased
  - Traction alopecia
Alopecia

Inflammatory

- Alopecia areata
- Lichen planopilaris
- DLE
- Scleroderma
- Folliculitis decalvans
- Tinea capitis
- Majocchi's granuloma
- Burns/Radiation
- Syphilis
- Scar
  - LPP
  - Scleroderma
  - DLE
Granulomatous Fibrosing Lymphocytes Perifolliculitis
Folliculitis/Perifolliculitis

- Infectious (Staph, Strep, Dermatophytosis, Endothrix/Ectothrix)
- Acne vulgaris
  Acne rosacea
  Perforating disorders
- Infundibulofolliculitis
- Alopecia mucinosa
- Perifolliculitis
  - Scurvy
  - Lichen planopilaris
  - DLE
  - Rosacea
  - Keratosis pilaris
Fibrosing Dermatitis

Fibrosing Dermatitis

- Fibrocytes Increased
  - Scar
  - Scleroderma/Morphea

- Fibrocytes Decreased
  - Sclerosis
  - Radiation

- Antecedents to Fibrosis
  - Ulcer
  - Granulation tissue
  - Granulomas
Sclerosis

Fibrosis

Antecedent to Fibrosis
Fibrosing Dermatitis

- Scar
- Chronic lymphedema
- Keloid
- Dermatofibroma
- Anetoderma
- Acrodermatitis chronica atrophicans
- LSEA/Morphea
- Radiation sclerosis
Panniculitis

- Septal
  - With or without vasculitis
- Lobular
  - With or without Vasculitis
Panniculitis

- Erythema nodosum
- Erythema induratum
- Lupus panniculitis
- Infectious
- Pancreatic fat necrosis
- Lymphoma
- SubQ fat necrosis
- Poststeroid panniculitis
Questions

- People talk fundamentals and superlatives and then make some changes of detail.

Oliver Wendell Holmes Jr. (1841 - 1935)